1433 Webster Street Mixed-Use Project

CEQA Analysis

Prepared for:

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

February 2018

Prepared by:

Lamphier-Gregory
1944 Embarcadero
Oakland, CA 94606

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I. PROJECT CHARACTERISTICS

1. Project Title:
1433 Webster Street Mixed-Use Project--PLN16-117

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

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

3. Project Location:
1433 Webster Street (southwest corner of 15th and Webster Streets, consisting of two parcels: the corner lot at 359 15th Street (A.P. N. 008-624-35) and the adjacent parcel at 1433 Webster Street (A.P.N. 008-624-36); also 363 15th Street (A.P.N. 008-624-34) (air rights only)

4. Project Sponsor's Name and Address:
Village Glen Oakland 1 LLC
c/o Nautilus Group Inc.
1433 Webster Street
Oakland, CA 94612

5. General Plan Designations:
Central Business District

6. Zoning:
Central Business District- Commercial (CBD-C) on 1433 Webster Street (lot 36);
Central Business District – Pedestrian Retail (CBD-P) on 359 15th Street (lot 35)

Height Area 7 (No limit) on 1433 Webster Street
Height Area 2 (85 feet maximum) on 359 15th Street

7. Requested Permits:
Regular Design Review (Planning Code §17.136.040)
Major Conditional Use Permit (Planning Code §17.134.020 (e))
Variance for Loading

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II. EXECUTIVE SUMMARY

The project applicant, Village Glen Oakland 1 LLC, is seeking approval by the City of Oakland to build a new 29-story High Rise Office/Residential/Retail Mixed-use building that would include 179 dwelling units, 1,300 sf of ground floor retail space, one level subterranean parking and an above-grade podium containing 60,000 sf of conventional office space. The proposed residential density utilizes the City's Density Bonus provisions of the Planning Code for an affordable housing commitment and unused airspace development rights acquired from the adjacent property at 363 15th street.[1] Existing buildings on the corner parcel (359 15th Street) and the primary parcel (1433 Webster Street) would be demolished.

This California Environmental Quality Act (CEQA) Analysis evaluates the 1433 Webster Street Mixed-Use Project. 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 tiering provisions under CEQA Guidelines Sections 15183 and 15183.3 to tier from the program-level analysis completed in the City of Oakland General Plan Land Use and Transportation Element (LUTE)[2] and LUTE Environmental Impact Report (EIR) (1998),[3] and the Central District Urban Renewal Plan Amendments EIR (2011) (Redevelopment Plan EIR)[4]—collectively referred to herein as the Program EIRs—that analyzed environmental impacts associated with adoption and implementation of the General Plan and Redevelopment Plan Amendments.

Based on the information and conclusions set forth on the following pages, this CEQA Analysis consists of (a) a Class 32 CEQA Exemption (b) findings of consistency with CEQA Guidelines Section 15183, (c) findings of consistency with CEQA Guidelines Section 15183.3, and (d) consistency with Guidelines Sections 15168 and 15180. No additional environmental documentation or analysis is required.

[1] The City's Density Bonus provisions derive from and were adopted pursuant to California Government Code §65915 et. seq. (California Government Code , Title 7. Planning and Land Use, Division 1, Planning and Zoning [65000 - 66210]) Chapter 4.3. Density Bonuses and Other Incentives [65915 - 65918]. The number of incentives available to development projects in Oakland is controlled by the applicable provisions of the Government Code.
[2] City of Oakland, 1998. *General Plan*, Land Use and Transportation Element.
[3] City of Oakland, 1998. Oakland General Plan Land Use and Transportation Element EIR.
[4] City of Oakland, 2011. Proposed Amendments to the Central District Urban Renewal Plan EIR.

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 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 in Section IV.

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 more recent City of Oakland Standard Conditions of Approval (SCAs), the latter of which are described in Attachment A.

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 that would be reduced to a less-than-significant level with the implementation of mitigation measures and/or SCAs: aesthetics (views, architectural compatibility and shadow only); air quality (construction dust [including PM_{10}] 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)[5]; and transportation/circulation (intersection operations Downtown).

[5] The 1998 LUTE EIR addressed effects on solid waste demand and infrastructure facilities for water, sanitary sewer and stormwater drainage under Public Services.

Less-than-significant impacts were identified for the following resources in the 1998 LUTE EIR and Initial Study: aesthetics (scenic resources, light and glare); air quality (clean air plan consistency, roadway emissions 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 encroachment); public services (water demand, wastewater flows, stormwater quality, parks services); and transportation/circulation (transit demand). No impacts were identified for agricultural or forestry resources, and mineral resources.

Significant unavoidable impacts were identified for the following environmental resources in the 1998 LUTE EIR: air quality (regional emissions, 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 (Redevelopment Plan Amendments EIR)

The 1433 Webster Street Mixed-Use Project site is located within the Central District Urban Renewal Plan Area, which generally encompasses the entire Downtown--approximately 250 city blocks (828 acres) in an area generally bounded by Interstate 980 (I-980), Lake Merritt, 27th Street and the Embarcadero. The Oakland City Council adopted the Central District Urban Renewal Plan (Redevelopment Plan) for the Project Area in June 1969. The City prepared and certified an EIR for proposed amendments to the Urban Renewal Plan in 2011, and amended or supplemented the Plan up to April 3, 2012.[6] The 2011 Redevelopment Plan EIR was designated a "Program EIR" under CEQA Guidelines Section 15180; as such, subsequent activities are subject to requirements under CEQA Guidelines Section 15168.

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

[6] The 2011 EIR addressed two amendments. A 17th Amendment to the Redevelopment Plan 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.

Environmental Effects Summary – 2011 Redevelopment Plan Amendments EIR

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

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

The 2011 Redevelopment Plan EIR determined that the Proposed Amendments combined with cumulative development would have significant unavoidable impacts on the following environmental resources: air quality (toxic air contaminant exposure and odors); cultural resources (historic); and traffic/circulation (roadway segment operations).[7] 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 (SCAs)

The City established its Standard Conditions of Approval and Uniformly Applied Development Standards (SCAs) in 2008, and they have since been amended and revised several times.[8] 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

[7] The 2011 Redevelopment Plan Amendments EIR also identified significant and avoidable noise effects specifically associated with the potential development of a new baseball stadium at Victory Court, and multimodal safety at at-grade rail crossings, both near the Oakland Estuary. These effects would not pertain to the Project given the distance and presumably minimal contribution of multimodal trips affecting these impacts.

[8] The most recent update of the SCAs was published by the City of Oakland on April 11, 2017.

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, etc. 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 must occur prior to approval of the Project. Where applicable, SCAs have been identified that will mitigate such impacts. 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 is specified and required, and where the Project commits to developing measures that comply with the requirements and criteria identified.

IV. PURPOSE AND SUMMARY OF THIS DOCUMENT

The purpose of this document is to provide required CEQA compliance for the proposed 1433 Webster Street Mixed-Use Project. 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; and
   - Are located on a site that can be adequately served by all required utilities and public services.

2. **Project Consistent with a Community Plan or Zoning.** Public Resources Code 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 that 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 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 Central District Urban Renewal Plan Amendments EIR (2011)—are applicable to the 1433 Webster Street Mixed-Use Project and provide the basis for use of the Community Plan Consistency provisions.

3. **Qualified Infill Streamlining.** Public Resources Code Section 21094.5 and State CEQA Guidelines Section 15183.3 allow streamlined environmental reviews for certain qualified infill projects by limiting the topics that are subject to review at the project level, provided the effects of infill development have been addressed in a planning-level decision or by uniformly applicable development policies. Infill projects are eligible if they are:
   - Located in an urban area and on a site that either has been previously developed or adjoins existing qualified urban uses on at least 75 percent of the site's perimeter.

- Able to satisfy the performance standards provided in State CEQA Guidelines Appendix M; and
- Consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy.

No additional environmental review is required if the infill project would not cause any new specific effects or more significant effects or if uniformly applicable development policies or standards would substantially mitigate such effects.

The analysis in the Program EIRs—the 1998 LUTE EIR and the Central District Urban Renewal Plan Amendments EIR —are applicable to the 1433 Webster Street Mixed-Use Project and are the previous CEQA documents providing the basis for use of the Qualified Infill streamlined review provisions under CEQA Guidelines Section 15183.3.

4. **Program EIRs and Redevelopment Projects.** CEQA Guidelines Section 15168 (Program EIRs) and Section 15180 (Redevelopment Projects) provide that the 2011 Redevelopment Plan Amendments EIR can be used as a Program EIR in support of streamlining and/or tiering provisions under CEQA. The 2011 Redevelopment Plan 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 evaluates the specific environmental effects of the Project 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. The Project is legally required to incorporate and/or comply with the applicable requirements of the mitigation measures identified in the General Plan 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).

1433 Webster Street Mixed-Use 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.
- **Community Plan Consistency and 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 in Section VIII of this CEQA Analysis, the Project is permitted in the zoning districts where the Project site is located (CBD-P and CBD-C) and is consistent with the bulk, density, and land use standards envisioned in the General Plan; the Project designates 5% of its units for very low income residents, which qualifies it for housing density bonuses and incentives per Tables 17.107.01and 17.107.05 of the Planning Code. 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 B to this document. Therefore, consistent with CEQA Guidelines Section 15183, this CEQA Analysis satisfies the requirements for a community plan exemption.
- **Qualified Infill Streamlining:** The analysis conducted and presented in this CEQA Analysis indicates that the Project is a qualified infill project, pursuant to State CEQA Guidelines Section 15183.3, and therefore subject to streamlined review. The infill eligibility criteria are evaluated and project-specific findings are provided in Attachment C.
- **Program EIRs and Redevelopment Projects:** The 1433 Webster Street Mixed-Use Project is consistent with the land uses identified for the area in the Central District Urban Renewal Plan and analyzed in the 2011 Redevelopment Plan Amendments EIR. The analysis in the 2011 Redevelopment EIR and in this CEQA Analysis demonstrates that the 1433 Webster Street Mixed-Use 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 EIRs, as summarized in the CEQA analysis below, indicates that the prior CEQA documents adequately analyzed the potential environmental impacts associated with the Project. 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 under CEQA is required.

SCAs that would apply to the 1433 Webster Street Mixed-Use Project are listed in Attachment A to this document. 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 1433 Webster Street Mixed-Use Project were also identified in the 2011 Proposed Amendments to the Central District Urban Renewal Plan EIR; the 1998 LUTE EIR was developed prior to the City's application of SCAs.

V. PROJECT DESCRIPTION

This section describes the proposed 1433 Webster Street Mixed-Use Project (the Project) 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 1, the Project is located at the southwest corner of 15th and Webster Streets on a site comprised of two adjacent parcels with combined lot area of approximately 15,856 square feet (.364 acres). The two parcels are 359 15th Street (APN 008-624-35) and 1433 Webster Street (APN 008-624-36). A third parcel at 363 15th Street is also part of the Project site; when the lot area of this third parcel (2,108 sf) is added to the other two parcels, the total lot area for the Project is approximately 17,964 sf (0.41 acres). This larger lot area is the basis on which allowable residential density is calculated. The existing building on the third parcel would be retained and the unused development potential (air rights) would be transferred to the active part of the Project site, enabling additional dwelling units to be included in the Project.

Regional access to the Project location is provided by Interstates I-980, I-880 and I-580, approximately 0.47 to 1.3 miles from the site, respectively. There is a Bay Area Rapid Transit (BART) station less than 0.25 miles west of the Project site at 12th Street and Broadway. Alameda-Contra Costa Transit (AC Transit) bus routes 1, 11, 12, 18, 1R, 26, 51A, 58L, 72, 72M, 72R, 800, 802, 805, 840, 851 and the Broadway Shuttle all stop within 0.25 mile of the Project site.

Existing Conditions, Land Use History, and Surrounding Land Uses

The Project site is currently occupied by 2-story buildings, with 100% lot coverage of each. The existing building at 1433 Webster Street is a commercial office building containing approximately 19,000 sf of floor area. The building at 359 15th Street is a commercial building with approximately 9,000 sf of floor area. The site is essentially flat. There is no vegetation on the site. There are four street trees of the same nonnative species on the site (*Lophostemon confertus*; multiple common names include brush box, Queensland box, Brisbane Box, pink box, box scrub, and vinegar tree): two each on the Webster Street frontage (diameters at breast height (DBH) of 12.5” and 14.5”), and the 15th Street frontage (DBH of 11” and 14”). These trees are planned for removal, which will require a tree removal permit pursuant to Oakland Municipal Code Section 12.36. Four new street trees are proposed to be planted as part of the Project (*Acer Buergerianum*, trident maple), two on the Webster frontage and two on 15th Street.

The buildings at 1433 Webster Street and 351-359 15th Street (referred to throughout as “359 15th”) do not appear to qualify as historical resources under CEQA Section 15064.5. The Webster Street parcel was first developed in 1914 as a tire sales and service building. After World War II, additional rooms were created for tire repair and recapping. In 1980 the building was converted to office space, which is its current land use. The 15th Street parcel was constructed in 1938 as a one-story brick commercial building. A partial second-story was added in 1955. It is currently vacant commercial office space.

Land uses near the Project site include a mix of older and newer urban uses, mostly 2- or 3-stories in height. Specifically, nearby land uses include:

- A partially-completed new multi-family residential development is underway across from the YWCA building at the northeast corner of 15th and Webster Streets; work on that project has been halted in mid-construction for many months.

- Buildings on the east façade of Webster Street across from the Project site consist of 2- and 3-story commercial buildings, with ground-floor retail businesses and offices, and other mixed uses (commercial or residential) on upper floors. A large rooftop solar photovoltaic array sits atop 1438 Webster.

- 363 15th Street, the air space rights to which have been purchased by the Applicant, is a single-story dental office. The buildings along 15th Street extending west towards Franklin Street are single-story commercial/retail.

- Buildings along 14th Street, extending both east and west from Webster, are primarily single-story commercial.

- A surface parking lot is directly adjacent south of 1433 Webster Street building. This lot has been designated a Housing Opportunity Site in the City's General Plan Housing Element.[9]

- The nearest existing residences are located on the east side of Webster Street above commercial businesses just north of 14th Street (126 feet away from the Project site).

- Four blocks to the west is Oakland's Chinatown area, located generally between 7th and 10th Streets and between Harrison and Broadway.

Figure 2 shows the Project site in relation to neighboring land uses.

Five cultural resources that qualify as historical resources under CEQA are located within 1500 feet of the Project area, including:

1. Oakland YWCA Building (1515 Webster St, northwest corner of 15th & Webster), was designated as an Oakland Landmark (LM 77-151) in 1977 and listed on the National Register of Historic Places (NRHP) in 1984. The building is currently the home of Envision Academy of Arts and Technology, a public charter high school with over 400 students.

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[9] Housing Element of the General Plan 2015-2023, Table C-6.

2. The Oakland Hotel (270 13th Street) was listed on the California Register of Historic Resources (CRHR) in 1979.

3. Main Post Office and Federal Building (201 13th Street) was listed on the NRHP in 1980.

4. No. 45 site of the College of California (1314 Franklin Street) was the former home for the University of California. It is now a parking garage.

5. The White Building (327-349 15th Street) was designated an Oakland Landmark (LM-85-319) in 1985 and was listed on the NRHP in 1996.. It is also a contributing element to the Harrison and Fifteenth Streets Historic District of Oakland, which is comprised of two other commercial buildings fronting on 15th Street from Webster to Harrison, and four buildings fronting on Harrison between 14th and 15th . This District was also listed in the NRHP in 1996.

General Plan, Zoning and Height District Designations

The Project site's General Plan designation is Central Business District. This designation aims to encourage high density, mixed-use development that supports large-scale offices, commercial retail and urban high-rise residential units. However, the two parcels that comprise the Project site are in two different but compatible zoning districts, as indicated in **Figure 3**. The corner parcel at 359 15th Street is zoned Central Business District – Pedestrian (CBD-P). The intent of the CBD-P zone is to create, maintain, and enhance areas of the Central Business District for ground-level, pedestrian-oriented, active storefront uses. Upper story spaces are intended to be available for a wide range of office and residential uses. The 1433 Webster Street parcel is zoned Central Business District – Commercial (CBD-C). The intent of the CBD-C zone is to create, maintain, and enhance areas of the Central Business District appropriate for a wide range of ground-floor office and other commercial activities. Upper-story spaces are intended to be available for a wide range of residential and office or other commercial activities.

The separate parcels that comprise the Project site are also in different Height Areas. The parcel at 359 15th Street is in Height Area 2 (85´ limit), the parcel at 1433 Webster is in Height Area 7 (unlimited height). The Project is seeking a waiver of a development standard (height restriction) for the parcel at 359 15th St., pursuant to Oakland Planning Code Section 17.107.95, on the grounds that the Project would be physically precluded from building the additional 30 units allowed from the 20% density bonus, because without the height waiver it would need to construct the additional units by adding height to the 1433 Webster parcel. For structural stability reasons, this would no longer allow for the Project to be assembled from factory-built modules with load-bearing walls constructed out of cold form metal framing, which has a lower structural capacity than a steel or concrete frame (see section VIII for further detail).

FIGURE 1. PROJECT LOCATION

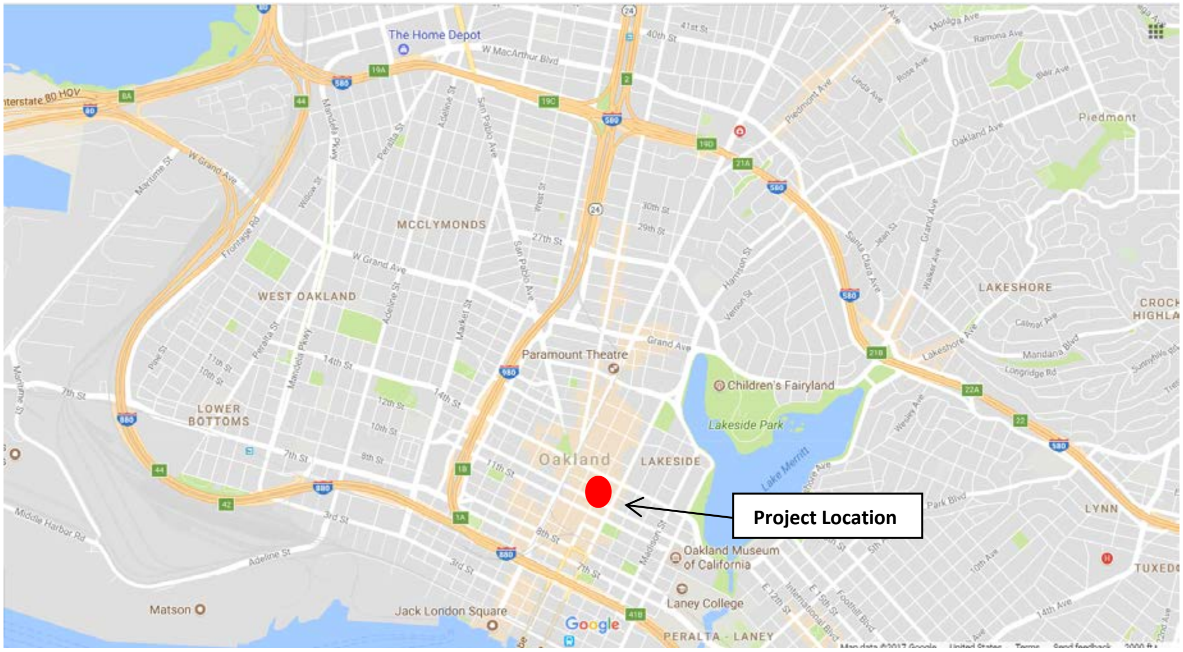


FIGURE 2. PROJECT SITE

FIGURE 3. APPLICABLE ZONING DISTRICTS

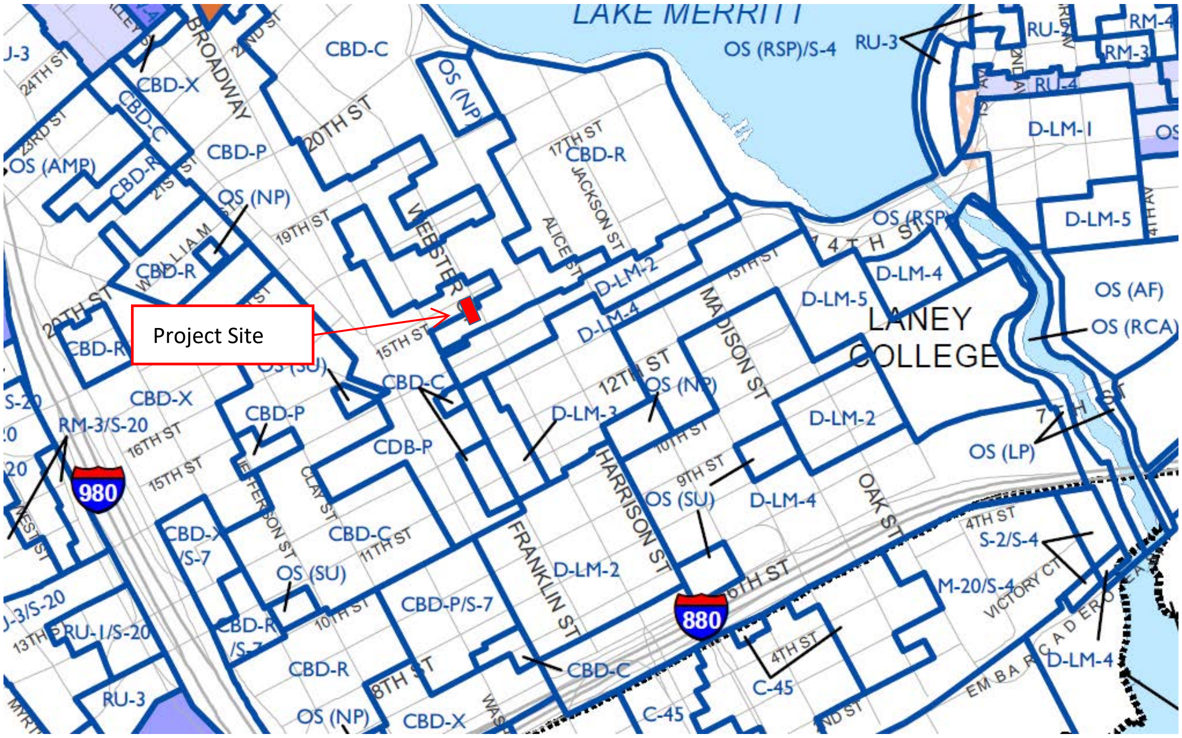


FIGURE 4. PERSPECTIVE RENDERING FROM SOUTHWEST VANTAGE POINT

Proposed Project

The Project would consist of a 29-story building including approximately 1,130 sf of ground floor retail space, up to 60,000 sf of conventional office space, and 179 residential apartments. The garage would provide parking for 86 vehicles utilizing puzzle-lift equipment on the ground floor and one level below grade.

The proposed residential density utilizes the City's Density Bonus provisions of the Planning Code and unused airspace development rights acquired from the adjacent property at 363 15th Street. Existing buildings on the corner parcel (359 15th Street) and the primary parcel (1433 Webster Street) would be demolished. In total, the new building would have a surface footprint of approximately 15,900 square feet (100 percent of the Project site), constructed at a commercial floor area ratio (FAR) of 3.6. The building would be 360'-6" feet in height to the top of the roof structure.

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

Pedestrian Access

Pedestrian access to the site is provided by the sidewalks along 15th Street and Webster Street. The Project will not remove existing pedestrian facilities, increase street crossing distances, add new vehicle travel or turn lanes, or remove existing buffering elements.

Vehicular Access, Parking and Loading

Vehicle access is provided by a driveway on Webster Street. Since Webster Street is a one-way street, the Project access point will be a new right-in right-out driveway.

The Project would provide 86 off street (subterranean) parking spaces which is greater than the minimum per City Code Section 17.116.060 for the CBD-C zone (0), and less than the maximum allowable (346). The Project would provide one loading berth within the parking garage. Based on City Code requirements, one loading berth is required for the proposed 203,760 square feet of residential space, and two loading berths are required for the proposed 60,000 square feet of commercial (i.e., office and retail) space. Therefore, the proposed Project would require two additional loading berths to meet the City's code for loading; the Project is requesting a variance from the City's loading requirements.

Bicycle Parking

The Project would provide 53 long-term bike parking spaces and 14 short-term bike parking spaces. This would meet the City Code requirements for bike parking spaces

Emergency Access

The Project is bounded to the north by 15th Street and to the east by Webster Street and does not interfere with available roadway capacity for potential emergency vehicle routes along either roadway.

Truck Circulation

In the vicinity of the Project site, trucks are prohibited on 14th Street and 13th Street east of Webster Street. Designated truck routes near the Project site include 8th Street, 7th Street, and I-880 Northbound to the south, and Castro Street and I-980 to the west. Trucks during both construction and the normal commercial uses of the site would be advised to avoid the prohibited roadways and take alternative roads to and from designated truck routes. Trucks accessing the site would ingress and egress at the driveway on Webster Street to the site's loading berth. According to the City of Oakland's municipal code, three loading berths are required for the combination of land uses and densities at this site; the current site plan designates a single residential loading berth.

Landscape and Design

Sidewalks bounding the Project site currently contain four street trees, two on the 15th Street frontage and two on Webster Street. In accordance with the proposed landscape plan, the existing street trees would be removed and replaced by two new 24 inch Box Tristania Conferta street trees, planted in 4' x 8' sidewalk planters.

In addition, trees and other landscape elements are proposed for the 6th floor open space amenity area and at the roof deck open space area (Figures 8 and 10).

The Project is contemporary in design, utilizing a metal panel curtain wall and curtain wall glazing at the office and residential levels. Storefront glazing with aluminum windows would face the Webster and 15th Street frontages. The Project will be GreenPoint rated and LEED certified (for the office portion of the Project) in compliance with the City's Green Building Ordinance.

Population and Employment

Using a population generation rate established for the surrounding area of 1.87 persons per household, the Project generates up to 348 new residents. The approximately 60,000 square feet of office space and 1,130 square feet of retail or restaurant space would generate approximately 122 employees.[10]

[10] Using a standard generation rate of 500 sf per employee.

Utilities

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

Table 1 summarizes the Project, and **Figures 5 through 12** depict the Project site and the Project's proposed building plans.

Table 1: Project Development Summary	
Description	Amount
Building Total	
Total Lot Area	18,004 sf (0.41 acres) [11]
Total Gross Floor Area	315,309 sf
Building Height	360' 8"
Retail Space	1,132 sf
Office Space	60,0000 sf
Residential Units	179
Parking Spaces	86
Ground Floor	
Total floor area	10,177 sf
Lobby, Retail, Office	5,739
Parking	7,796 sf, 38 puzzle lift spaces
Parking (P1 underground)	
P1	15,457 sf, 48 puzzle lift spaces
Total Parking Floor Area	23,253 sf
Office Space	
Ground Floor Office Lobby	2,381 sf
Floors 2-5	13,640 nsf each floor
Sixth Floor	
Group Open Space	2,997 sf
Mechanical & Amenities	10,649 sf
Residential Floors 7 – 28	
Residential Floor Area	10,535 sf per floor (two 1-BR units, six 2-BR units)
Private Open Space	200 sf on each of 11 alternating even-numbered floors
Total Residential Floor Area	233,534 sf
Floor 29	
Residential Floor Area	8,050 sf (3 3BR Penthouse Units)
Private Open Space	1,590 sf

[11] Includes 2,108 sf from 363 15th Street from purchase of air rights

FIGURE 5. WEBSTER STREET ELEVATION

FIGURE 6. GROUND LEVEL LOBBY PLAN

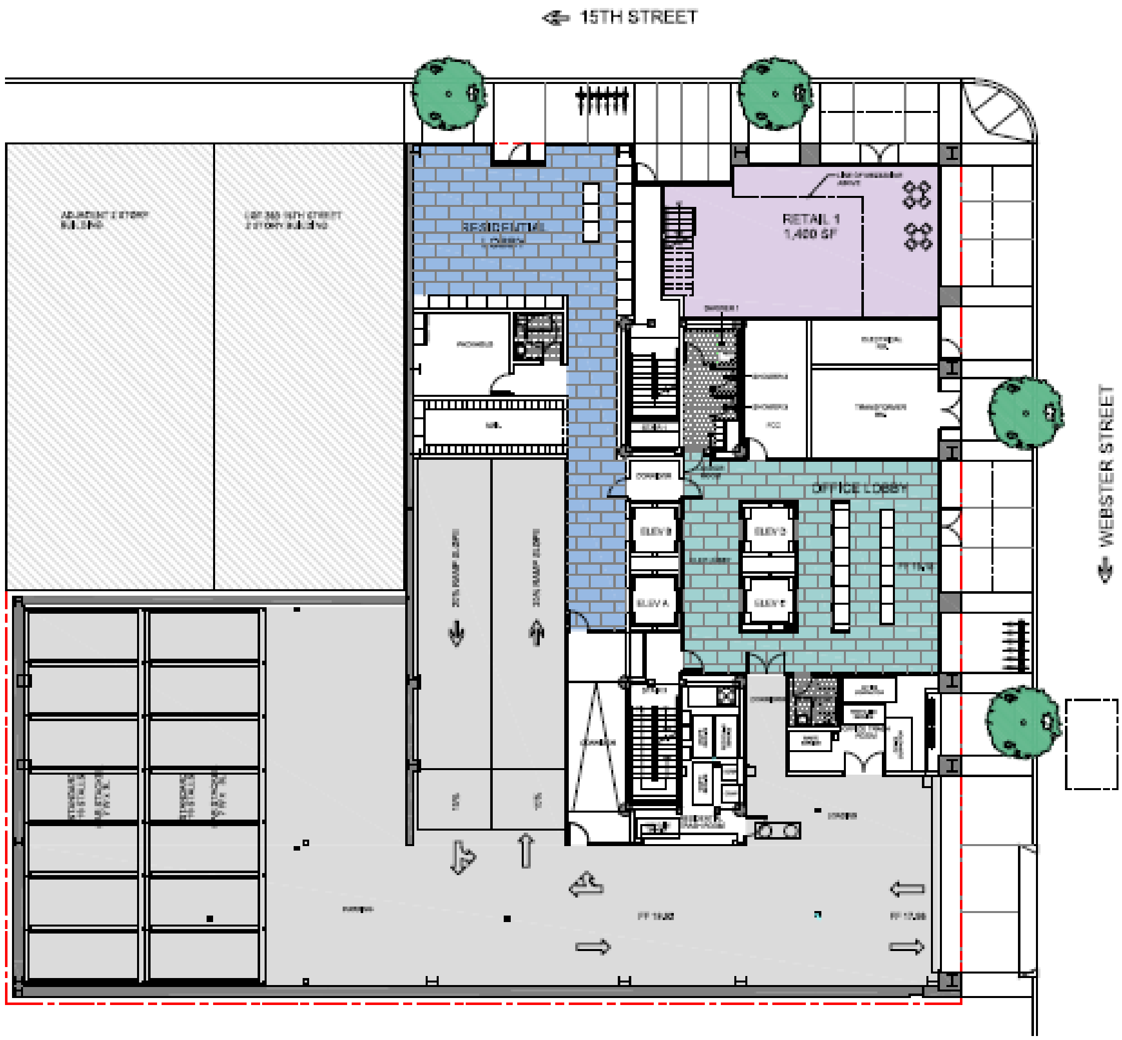


FIGURE 7. TYPICAL OFFICE FLOOR PLAN

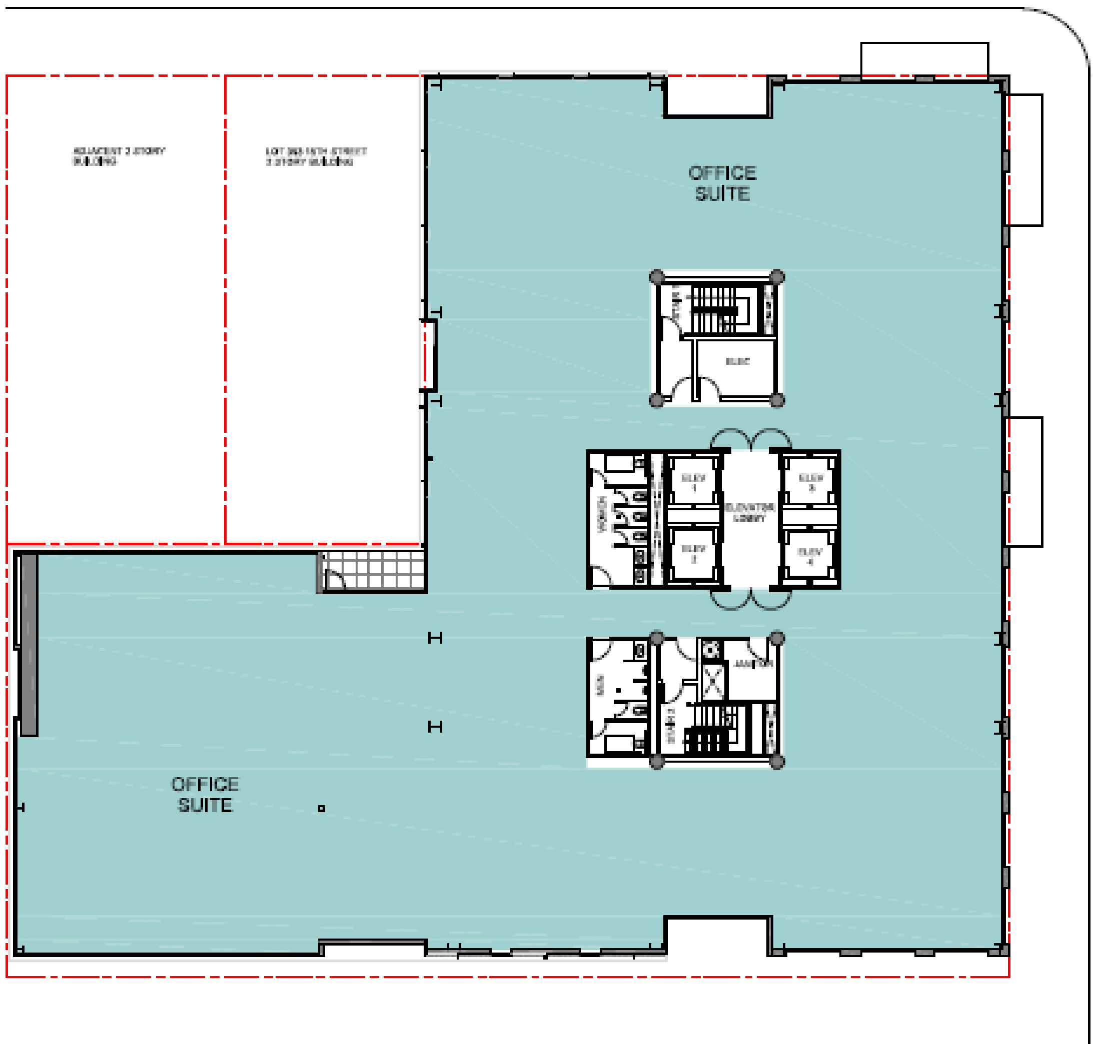


FIGURE 8. LEVEL 6 AMENITY PLAN

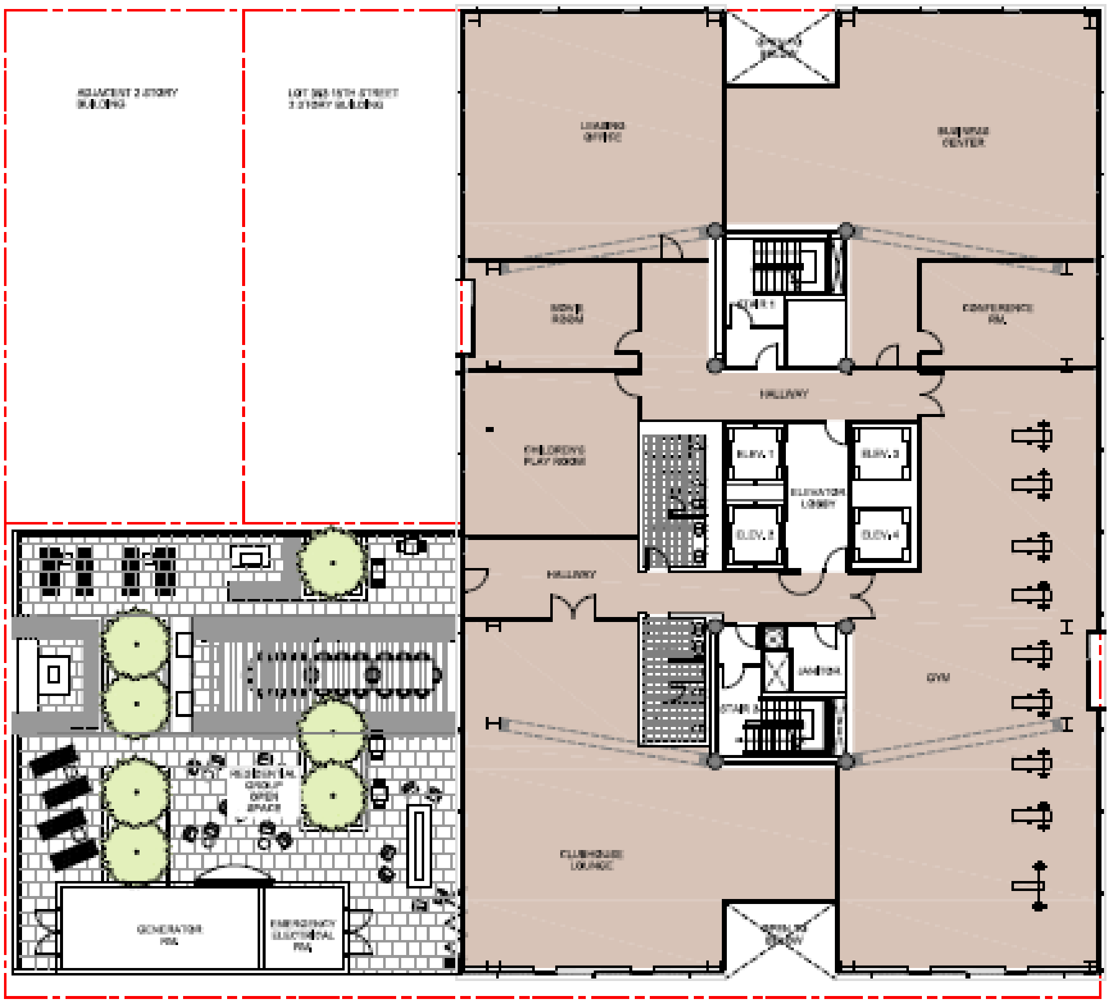


FIGURE 9. TYPICAL RESIDENTIAL FLOOR PLAN

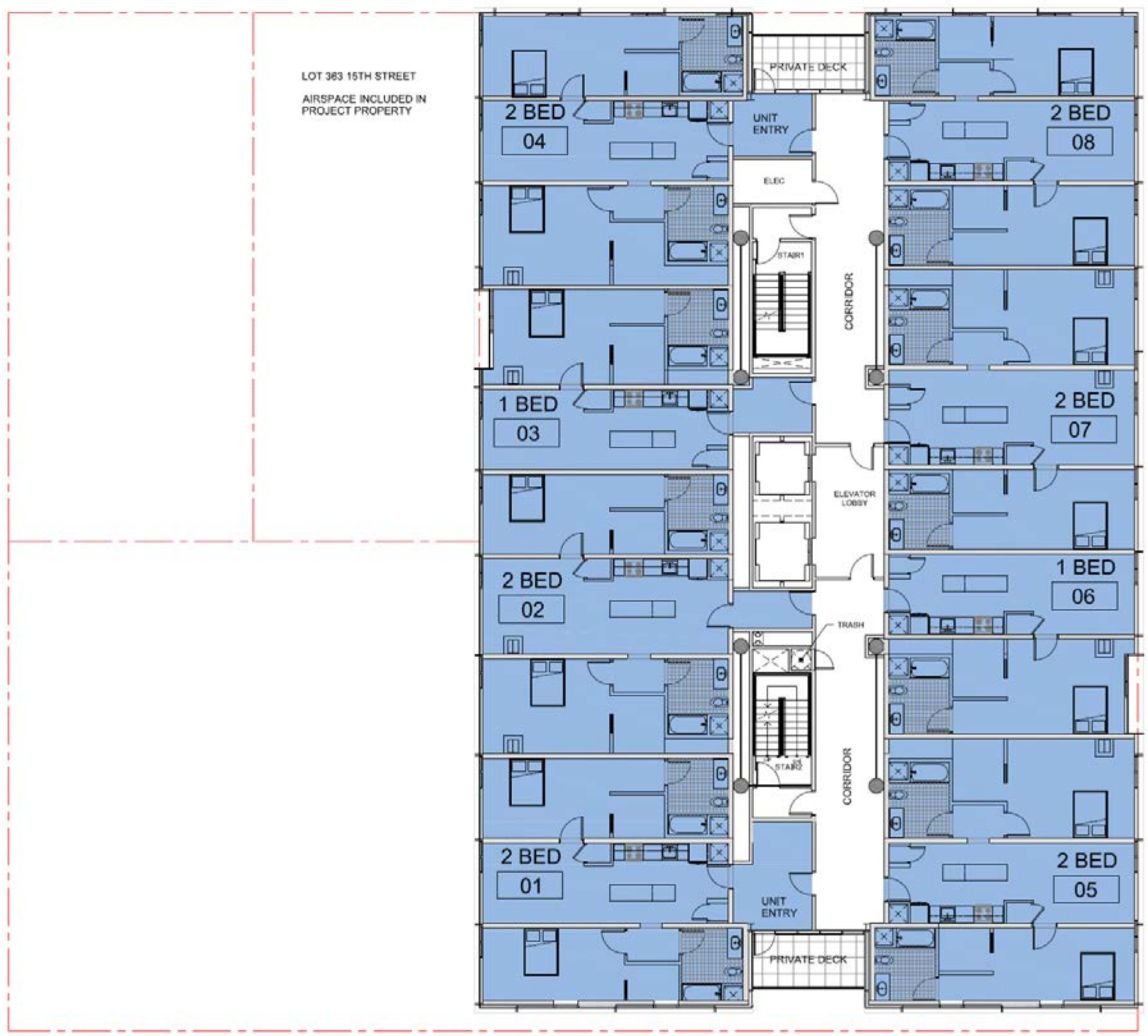
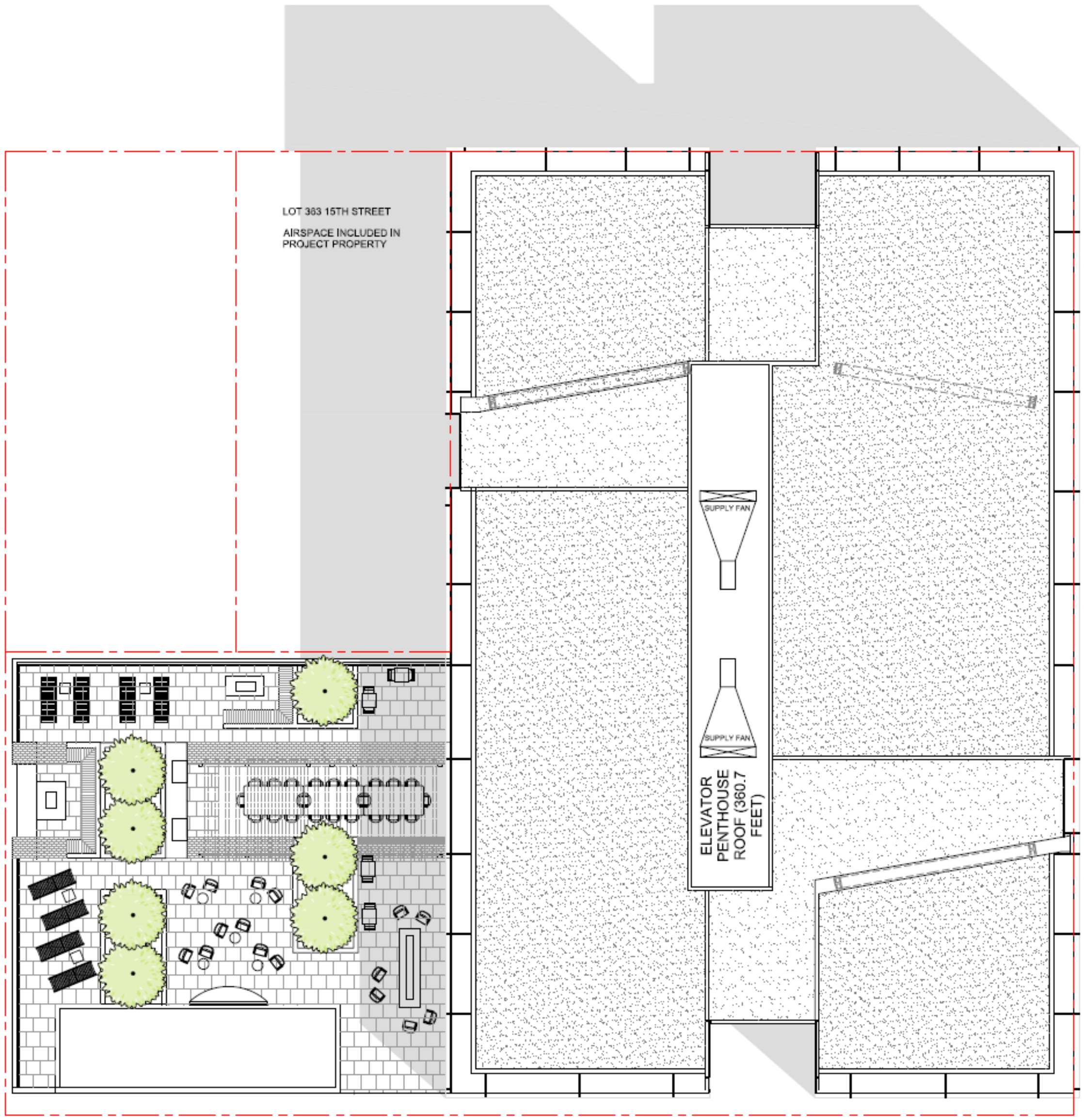


FIGURE 10. ROOF DECK AMENITY SPACE



Project Construction

The Project would be constructed over an approximately 14 month period and is anticipated to start in the first quarter of 2020. Construction activities would consist of demolition of the existing commercial buildings, excavation, foundation construction, and construction of the building and finishing interiors.

Construction phasing is expected to require the following durations:

- Demolition of existing buildings – 3 weeks
- Site preparation, excavation and shoring: 5 weeks
- Building construction: 47 weeks;
- Commissioning, testing, and final inspection: 4 weeks

Demolition, excavation, shoring and construction of foundations are anticipated to occur over the course of about two months. Excavation would expose the site to a depth of approximately 24 feet below grade level and require approximately 7,065 cubic yards of soil to be excavated and off-hauled. Groundwater is believed to be between 21 and 27 feet below ground surface[12] and dewatering is anticipated to be required during shoring and foundation work.

The Project foundation would involve use of conventional spread footings, drilled piers and a post tensioned concrete mat. A structural steel framework would be erected within which modular building elements would be installed, all fabricated off-site and trucked to the site for installation. The factory assembled modules would be stacked and fastened together at the site, resulting in substantially shorter construction process than conventional construction methods. Finishing work would occur within the building perimeter following installation of the fabricated elements.

Typical equipment used during construction would include hydraulic excavators, drilling auger equipment, dump trucks and backhoes. Hoisting would be via an electric tower crane, truck crane and man lift. The Project sponsor 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. This would be accomplished and enforced through provisions in the construction contract and subcontracts.

During construction the two street frontages would be barricaded to protect pedestrians from harm and provide a staging area for material storage and the tower crane. This would remove parking from the Webster Street and 15th Street frontages during the 14 month construction

[12] AEI Consultants, Inc., 2013. *Phase I Environmental Site Assessment, 1433 Webster Street, Oakland, California 94612*. February 20.

period. In addition, straw wattles would be placed around open borders of the site for the duration of demolition and grading activities.

Depending on the construction phase, the number of on-site construction workers could range from approximately 10 to 100 workers per day. The maximum number of workers would be present during installation of the fabricated elements and interior finishing work. The minimum number of workers would be present during grading, excavation, and site preparation.

The building's operating staff is anticipated to be approximately 10 workers, and the commercial/retail staff would be approximately 10.

Project Approvals

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

Actions by the City of Oakland

- Planning Commission: Design Review, CEQA determination, Conditional Use Permit (projects over 200,000 sf, greater than 250' height); Variance for Loading Berths
- Building Bureau – Building permit.
- Other City Permits **– Demolition and g**rading permits and other related onsite and offsite work permits.

Actions by Other Agencies

- Bay Area Air Quality Management District (BAAQMD) – Issuance of permits for installation and operation of the emergency generator.
- Regional Water Quality Control Board (RWQCB) – Waste Discharge Requirements or NPDES Permit.
- East Bay Municipal Utility District (EBMUD) – Approval of new service requests and water meter installation.

VI. SUMMARY OF FINDINGS

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

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

- **Class 32 Exemption:** The following analysis demonstrates that the Project is consistent with Criterion 15332 (a), (b), (c), (d), and (e), and that no exceptions per CEQA Guidelines Section 15300.2 apply to the Project that have not been previously identified and mitigated under the City of Oakland General plan and its supporting EIRs.
- **Community Plan Exemption:** The following analysis demonstrates that the Project is consistent with the development density established by existing zoning and General Plan policies for which an EIR was certified (i.e., the Program EIRs). As such, the analysis presents substantial evidence that, other than Project-specific effects which may be peculiar to the Project or its site, the Project’s potential contribution to overall cumulatively significant effects has already been addressed as such in the Program EIRs, or will be substantially mitigated by the imposition of SCAs, as further described in Attachment A.
- **Qualified Infill Streamlining:** The following analysis demonstrates that the Project is located in an urban area on a site that has been previously developed; satisfies the performance standards provided in CEQA Guidelines Appendix M; and is consistent with the General Plan land use designation, density, building intensity and applicable policies. As such, this environmental review is limited to an assessment of whether the Project may

cause any project-specific effects, and relies on uniformly applicable development policies or standards to substantially mitigate cumulative effects.

- **Program EIRs and Redevelopment Projects:** The analysis in the 2011 Redevelopment Plan EIR and in this CEQA Analysis demonstrates that the Project would not result in substantial changes or involve new information that would warrant preparation of a subsequent EIR, per CEQA Guidelines Section 15162, because the level of development proposed for the site is within the broader development assumptions analyzed in the previous EIRs. The effects of the Project have been addressed in those EIRs and no further environmental documents are required in accordance with CEQA Guidelines Sections CEQA Guidelines Sections 15168 and 15180.

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

Darin Ranelletti Environmental Review 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 properly 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. In addition, the analysis also presents substantial evidence that there are no exceptions that apply to the Project or its site, that the Project would not have a 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 Sections VIII, Class 32 Categorical Exemption Analysis, and IX, Exceptions To Categorical Exemptions, as well as Attachments B and C, provide substantial evidence to support the use of the:

- Community Plan Exemption;
- Qualified Infill 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 Section 15332(a): General Plan and 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.

1. The Project is aligned with policies set forth in the LUTE of the General Plan as listed below:

The General Plan land use designation for the site is 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, retail, urban high-rise residential, institutional, open space, cultural, educational, arts, entertainment, service, community facilities, and visitor uses.

- **Policy D10.2 Locating Housing.** Housing in the downtown should be encouraged in identifiable districts, within walking distance of the 12th Street, 19th Street, City Center, and Lake Merritt BART stations to encourage transit use, and in other locations where compatible with surrounding uses.

  The Project would provide 179 new housing units within the Downtown and within walking distance of regional transit access. The Project site is less than 0.25 mile from the 12th Street Oakland BART Station.

- **Policy D11.1 Promoting Mixed-Use Development.** Mixed-use developments should be encouraged in the downtown for such purposes as to promote its diverse character, provide for needed goods and services, support local art and culture, an give incentive to reuse existing vacant or underutilized structures.

- **Policy D11.2 Locating Mixed-Use Development.** Mixed-use development should be allowed in commercial areas, where the residential component is compatible with the desired commercial function of the area.

  The Project is a mixed-use development in an urban area. It would redevelop two existing commercial facilities with a 29-story building that would include ground-floor retail, four floors of commercial office space, and 22 floors of residential (179 units total, a mix of one- and two-bedroom units).

Therefore, the Project would be consistent with the General Plan policies detailed above for the Central Business District Downtown, as it would construct a new mixed use building consistent with the General

Plan's height and intensity limits and would provide support to other commercial development in the downtown area consistent with the General Plan.

2. The Project is consistent with the development density established by existing Zoning, Community Plan or General Plan policies.

Two different zoning classifications apply to the Project site. The northern parcel (359 15th Street) is zoned Central Business District – Pedestrian (CBD-P). The intent of the CBD-P zone, per Oakland Planning Code Section 17.58.010, is to create, maintain, and enhance areas of the Central Business District for ground-level, pedestrian-oriented, active storefront uses. Upper story spaces are intended to be available for a wide range of office and residential activities. The larger of the two parcels (1433 Webster), is zoned Central Business District – General Commercial Zone (CBD-C). The intent of the CBD-C zoning designation 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.

Consistency with bulk, density and land use standards is achieved in this case with the acceptance by the City of two considerations. First, the proposed dwelling unit density achieves consistency by (a) acquiring the unused development rights, also known as "air rights," that attach to the property at 363 15th Street and applying, or adding the land area of that property to the active part of the Project site; and (b) committing to designate 5% of the dwelling units as affordable to very low income households, thereby qualifying under the City's Density Bonus ordinance (Chapter 17.107, Oakland Planning Code) for a 20% increase in the number of dwelling units allowed on the site.

With regard to dwelling unit density, the base number of allowable residential units is calculated using the allowable density of one unit per 90 sf of lot area for the Webster Street parcel, and one unit per 200 sf of lot area for the two 15th Street parcels. These two calculations yield a total of 149 units based on lot area; use of the density bonus raises the total number of allowed residential units by 20 percent, from 149 to the proposed 179 units, as shown in Table 2, below.

Table 2: Residential Density Calculation

Parcel or Lot	Lot Area (sf)	Lot Area (ac)	Residential Density Formula	Allowable Units	Density Bonus (%)	Resulting Final Unit Count
1433 Webster St.	9,713	0.223	1:90	107.92		
359 15th St	6,142	0.141	1:200	30.71		
363 15th St.	2,108	0.048	1:200	10.54		
TOTALS	17,963	0.412		149.17	20%	179.01

The second consideration that results in a consistency finding is that the commitment to restrict the pricing on 5 percent of the residential units to be affordable by very low income households entitles the Project to an "inducement concession" as provided in the Density Bonus provisions of the City's Planning Code (Section 17.107.090). The Project Applicant is requesting a concession from the City's open space requirements applicable to the residential portion of the Project. Further, and in accordance with Section 17.107.095 of the Planning Code, the City may grant a waiver of any development standard that will have the effect of physically precluding the construction of a development at the density permitted by the application of the density bonus. In this case, the Project sponsor is requesting that the 85-foot height restriction applicable to the 359 15th Street parcel (Height Area 2) be waived to allow the proposed building height of 360' 8", consistent with the unlimited height applicable to the 1433 Webster Street parcel (Height Area 7).[13]

As indicated in Planning Code Section 17.107.30 (F), "the granting of a Density Bonus shall not be interpreted, in and of itself, to require a General Plan amendment, zoning change, or other discretionary approval." In other words, the density bonus is consistent with existing zoning, and enabled under the City's Planning Code to encourage the construction of affordable housing.

3. **The Project otherwise conforms to existing zoning policies.**

The Project proposes approximately 1,964 square feet of ground-floor (and mezzanine) retail space, approximately 55,300 net rentable square feet of office space, and 22 floors of residential units, a mix of one- and two-bedroom units. The proposed design complies with design standards and regulations of the Planning Code, including but not limited to the following:

- The two parcels exceed the minimum lot area per their respective zones from Planning Code Section 17.58.03: the lot area for the 15th Street parcel is 6,142 sf (minimum is 4,000 sf); the lot area for the Webster parcel is 9,713 sf (minimum is 7,500 sf)
- The building conforms to the zero-lot line setback pursuant to the Planning Code, Table 17.58.03.

[13] As noted above in Footnote 1, the density bonus and incentives available pursuant to this section of the Oakland Planning Code are authorized under and consistent with the provisions of California Government Code §65915 et. seq.

- The Project would provide a total of 6787 square feet of usable open space (group space and private space), which is below the required 13,425 square feet of usable open space required (based on 75 square feet per regular dwelling unit) pursuant to Planning Code Section 17.58.070. The reduced amount of open space is requested as a concession in return for the affordable housing component pursuant to Planning Code Section 17.107.
- The Project's commercial FAR for the up to 60,000 sf of commercial space (including the retail space) is 3.3, within the limits applicable under the General Plan.[14]
- The City of Oakland has amended the Planning Code regarding standards and requirements for off-street parking. For residential developments in the downtown area (CBD zones), the amendments have removed the 1 space per residential unit requirement, resulting in no minimum number of off-street parking spaces for the Project. The Project is proposing 86 spaces (0.48 spaces per unit).

Based on the analysis above, the Project is consistent with the development density established by existing zoning, community plan or General Plan policies for which an EIR was certified (i.e., the Redevelopment EIR), and the Project qualifies as a Project Consistent with a Community Plan or Zoning pursuant to CEQA Guidelines Sections 15332(a) and 15183.

Criterion Section 15332(b): Project Location, Size, and Context

Yes	No	
☑	❒	The proposed development occurs within city limits on a project site of no more than 5 acres substantially surrounded by urban uses

The Project site is located within the incorporated limits of the City of Oakland on an approximately 0.41-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 2. Therefore, the Project is consistent with the Section 15332(b).

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

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

As described in the Project Description and shown in Figure 2, the Project site consists of two 2-story commercial buildings, both extending to the limits of the site and resulting in 100 percent lot coverage. Four street trees (*Lophostemon confertus*) are adjacent to the site along Webster and 15th Streets (two along each street). 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

[14] For sites in the CBD-C zone (Webster parcel), the maximum floor area ratio (FAR) is 20.0, and in the CBC-P zone (359 15th St), the maximum FAR is 6.0. The lot area used in this calculation (18,004 sf) includes the property at 363 15th (2,108 sf), the development rights for which have been purchased as part of the Project.

immediate vicinity of the Project site.[15] Therefore, the Project site does not include habitat for endangered, rare or threatened species and is consistent with Section 15332(c).

Criterion Section 15332(d): Traffic, Noise, Air Quality, or 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 impacts for the resource topics in this criterion, organized as follows: traffic, noise, air quality, and water quality.

Traffic

A Transportation Impact Analysis (TIA) was prepared by Fehr & Peers for the Project (see Attachment D), based on the City of Oakland's CEQA Threshold of Significance Guidelines.

Vehicle Miles of Travel (VMT)

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 polices 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.

Considering these travel behavior factors, most of Oakland has a lower VMT per capita and VMT per employee ratios than the nine-county San Francisco Bay Area region. In addition, some neighborhoods of the City have lower VMT ratios than other areas of the City.

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

Estimating VMT

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 estimates VMT by automobiles for different employment categories. 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 and transit carrier for a particular scenario. For example, in the 2040 MTC model run, trips are assigned to and from each of the TAZs across the region based on the projected employment categories.

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

- Socioeconomic data developed by the Association of Bay Area Governments (ABAG)
- Population data created using 2000 US Census and modified using the open source PopSyn software
- Zonal accessibility measurements for destinations of interest
- Travel characteristics and automobile ownership rates derived from the 2000 Bay Area Travel Survey
- Observed vehicle counts and transit boardings.

The daily VMT output from the MTC Travel Model for residential and office uses comes from a tour-based analysis. The tour-based analysis examines the entire chain of trips over the course of a day, not just trips to and from the project site. In this way, all of the VMT for an individual resident or employee is included; not just trips into and out of the person's home or workplace. For example: a resident leaves her apartment in the morning, stops for coffee, and then goes to the office. In the afternoon she heads out to lunch, and then returns to the office, with a stop at the drycleaners on the way. After work she goes to the gym to work out, and then joins some friends at a restaurant for dinner before returning home. The tour-based approach would add up the total amount driven and assign the daily VMT to this resident for the total number of miles driven on the entire "tour".

Based on the MTC Travel Model, the regional average daily VMT per capita is 15.0 under 2020 conditions and 13.8 under 2040 conditions, and the regional average daily VMT per worker is 21.8 under 2020 conditions and 20.3 under 2040 conditions.

Thresholds of Significance

According to the interim *Update to CEQA Thresholds of Significance and Transportation Impact Study Guidelines* dated October 17, 2016, the following are thresholds of significance related to substantial additional VMT:

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

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 Stop (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).

Screening Analysis

The Project satisfies the Low-VMT Area screening criterion, as detailed below. It should be noted that it also satisfies the Near Transit Station criterion given its proximity to the downtown Oakland BART stations.

Criterion Number 2: Low-VMT Area

Table 3 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. Considering that the proposed project would provide 1,300 feet of retail space, the retail is considered to be local serving and the VMT per employee criterion is used to screen the VMT for the commercial component of the proposed project.

TABLE 3 – VEHICLE MILES OF TRAVEL SUMMARY

Land Use	Bay Area				TAZ 971	
	2020		2040		2020	2040
	Regional Average	Regional Average minus 15%	Regional Average	Regional Average minus 15%		
Residential (VMT per Capita)[1]	15.0	12.8	13.8	11.7	4.5	4.1
Commercial (VMT per employee)[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 November 2016.
2. MTC Model results at analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerWorker and accessed in November 2016.
Source: Fehr & Peers, 2016

As shown in Table 3, the 2020 and 2040 average daily VMT per capita and VMT per worker in the project TAZ is more than 15 percent below the regional averages. Therefore, it is presumed that the proposed project would not result in substantial additional VMT and project impacts with respect to VMT would be less-than-significant.

As also described in Attachment D, 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 (SCA TRANS-1: Construction Activity in the Public Right-of-Way and SCA TRANS-2: Transportation and Parking Demand), the Project would not result in significant effects related to traffic. Therefore, the Project is consistent with Section 15332(d), traffic.

In addition, the Project would not substantially increase the severity of the significant traffic impacts identified in the Redevelopment Plan EIR, nor would it result in new significant traffic impacts that were not identified in the Redevelopment Plan EIR. Further, there have been no substantial changes in circumstances following certification of the Redevelopment Plan EIR that would result in any new specific traffic impacts.

According to the City's guidelines, the Project would have a significant impact if it would fundamentally impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The Project is bounded to the north by 15th Street and to the east by Webster Street, and does not interfere with available roadway capacity for potential emergency vehicle routes along either roadway.

In addition, the traffic safety analysis identified the following recommended measures to address potential conflicts with pedestrians, bicyclists, activities during construction, and parking, although the measures are not required to address CEQA impacts:

- In order to reduce the potential for hazards to roadway users, it is recommended the driveway include a stop control and convex driveway mirror for exiting vehicles to prevent conflicts with pedestrians, a tight turn radius for entering vehicles to reduce speeds, and signage that brings roadway users' attentions to the various other users at the driveway.

- In the vicinity of the Project site, trucks are prohibited on 14th Street and 13th Street east of Webster Street. Designated truck routes near the Project site include 8th Street, 7th Street, and I-880 Northbound to the south and Castro Street and I-980 to the west. Trucks during both construction and the normal commercial uses of the site should avoid the prohibited roadways and take alternative roads to and from the designated truck routes. Trucks accessing the site would ingress and egress at the driveway on Webster Street to the site's loading berth. According to the City of Oakland's Municipal Code, three loading berths are required for the combination of land uses and densities at this site; the current site plan designates a single loading berth. To meet the City's berth requirements and avoid truck spillover onto Webster Street, two additional loading berths should be considered.

- The Project will not remove or degrade bikeways or add new vehicle travel or turn lanes. The Project does add a single right-in right-out driveway on Webster Street. Stop controlled access, tighter turning radii, and cautionary signage can help prevent degradation of pedestrian safety at this location.

Noise

Construction Noise

The analysis and conclusions described here are derived from an Environmental Noise Study prepared for the Applicant by RGD Acoustics (see Attachment E).

Project construction would begin with the demolition of the existing buildings on the site. An excavator would be used at locations farthest from the existing buildings. Near the existing buildings smaller equipment would be needed and saw cuts may be used to help protect the adjacent structures.

Construction of the Project is anticipated to employ modular construction techniques. This type of construction uses factory assembled modules that are stacked and fastened together at the site. Noise sources such as truck deliveries and cranes are comparable to conventional construction. However, many of the noises typical of construction sites such as hammers and nail guns are substantially reduced. The Project would not use impact or vibratory driven piles. All piles will use drilled concrete piers.

Table 4 presents the typical noise levels from various types of equipment that will likely be used during construction. The noisier equipment are generally diesel powered and generate noise levels in the range of 80 to 89 dBA at a distance of 50 feet.

Existing commercial buildings are located right up to the property lines on the west side of the project site (along 15th Street and the east side of Franklin Street). The Project building footprint is less than 1 foot from these adjacent buildings. Since noise from construction equipment is attenuated at a rate of 6 dBA for each doubling of distance, the noisiest equipment could generate noise levels greater than 100 dBA at the nearest commercial buildings when the equipment is at its nearest point.

The nearest existing residences are in the upper floors of the building located at the northeast corner of 13th and Webster Streets, approximately 440 feet southeast of the project site. Envision Academy of Arts & Technology is located directly across 15th Street from the project site. Based on information on its website, Envision Academy is a public charter high school with 411 students. The building has operable windows facing the Project site and is 67 feet from the project site. The roof has an open interior courtyard.

According to Table 4, most equipment generates a noise level of 85 dBA at a distance of 50 ft. This corresponds to an exterior noise level of 66 dBA at the closest residences and 82 dBA at the Envision Academy.[16] Standard construction with the windows closed would typically reduce interior noise levels by at least 20 decibels. In other words, the interior noise levels would be 46 dBA at the closest residences and 62 dBA at the Envision Academy with the windows closed. The noise study concluded that construction activities are expected to generate noise levels at residential properties that are in excess of the Noise Ordinance standard of 65 dBA for construction lasting more than 10 days. This is the case for the residences at 13th/Webster Streets that are within about 500 feet of the project site. Residences along Webster Street are already exposed to average noise level of 64 dBA due to existing traffic.

The noise study also concluded that construction activities are expected to generate noise levels at commercial properties that are in excess of the Noise Ordinance standard of 70 dBA for construction lasting more than 10 days. This is the case for commercial properties that border the site on the west side (i.e., the rear of commercial properties that front on Franklin Street and the adjacent building on 15th Street) as well as commercial properties across 15th & Webster Streets including Envision Academy that have line-of- sight to the site. Commercial buildings that are to the south on the same block would also be exposed to noise levels that are 5 to 10 dBA greater than the 70 dBA standard.

[16] Sound attenuates at a rate of 6 dBA per doubling of distance from the source based on the equation Atten = 20*log(Reference Distance/Distance). In this case the Reference distance is 50 ft (see Table 4). For the school: attenuation = 20*log(50/67) = -3 and thus the construction noise level would be 85 - 3 =82 dBA. For the residences, attenuation = 20*log(50/440) = -19 and the construction noise level is 85 - 19 = 66 dBA.

Table 4. Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) 50 ft from Source
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pneumatic Tool	85
Pile-driver (Impact)	101
Pile-driver (Sonic)	96
Pump	76
Roller	74
Saw	76
Scraper	89
Truck	88

Source: Federal Transit Administration *Transit Noise and Vibration Impact Assessment*, May 2006, FTA-VA-90-1003-06, (FTA 2006)

Construction activities will also generate groundborne vibration. Vibration effects are typically limited to land uses that are very close to the Project site. The City has adopted the Federal Transit Administration's (FTA 2006) recommended construction vibration damage criteria that should be used to identify problem locations that must be addressed in the final design. Since the nearest neighboring commercial building is less than one foot from the building footprint, the threshold could be exceeded if heavy equipment is used along the property line near the adjacent building (i.e. when a vibratory roller is within 26 feet of an adjacent building, or when a large bulldozer or hoe ram is within 15 feet of an adjacent building).

Several of the City of Oakland's SCAs will lessen the impacts of construction period noise and vibration. SCA NOI-1 provides reasonable limits on the days and hours of construction to avoid generating noise when it would be most objectionable to neighboring residences. SCA NOI-2 requires the Project to implement noise reduction measures for equipment and tools. SCA NOI-3 would reduce extreme noise generation by requiring development of a construction noise management plan under the supervision of a qualified acoustical consultant that includes noise reduction measures to provide the maximum feasible noise attenuation. SCA NOI-4 provides measures to respond to and track construction noise complaints

Vibration Impacts on Adjacent Historic Structures and Vibration Sensitive Activities

SCA NOI-5 would reduce potential adverse effects of vibration on adjacent historic structures or vibration sensitive activities at adjacent buildings by requiring a vibration analysis prepared by an acoustical and/or structural engineer or other appropriate professional. The affected buildings addressed by SCA NOI-5 include the nearby historic YWCA Building across 15th Street (Envision Academy) and the White Building, across Webster Street as well as the buildings with offices that are directly adjacent to the west side of the project site (i.e. that share a property line). These latter buildings include those located at 363/369/375 15th Street and 1430/1432 Franklin Street. The vibration analysis would determine pre-construction baseline conditions, establish threshold conditions that could damage nearby existing structures and/or substantially interfere with activities, and design means and methods of construction that shall be utilized to not exceed the thresholds.

With the implementation of the City of Oakland's SCAs as discussed above, construction noise and vibration impacts would be reduced to a less than significant level.

Ambient Traffic Noise

To assess the potential noise impact from increased traffic on roadways near the Project, noise levels were calculated based on volume data in the Project's traffic study. The calculated noise levels are shown in Table 5. Since the maximum increase in traffic noise of 0.3 dB is less than the City of Oakland's 5 dBA threshold of significance, this is a less-than-significant impact.

Table 5. Traffic Noise Level Increase Due to Project Generated Traffic

Roadway	L_{dn} (dBA) at Existing Land Uses		
	Existing	Existing + Project	Increase due to project
Webster Street	66.0	66.3	0.3
15th Street	64.9	65.0	0.1

Source: Environmental Noise Study--1433 Webster, RGD Acoustics, May 2017

Conflicts with Land Use Compatibility Guidelines

Based on the results of the noise measurement program, the L_{dn} at the Project building setback is 66 dBA along Webster Street and 65 dBA along 15th Street. At the corner of 15th Street and Webster

Street the L_{dn} is calculated to be 68 dBA. The predicted increase in noise due to future traffic (Year 2040) is less than 1 dBA.

The future noise levels at the Project site are in the Conditionally Acceptable range of the City's noise and land use compatibility standards for residential land use. According to these guidelines, projects exposed to this noise level may be undertaken only after a detailed analysis of the noise-reduction requirements is conducted, and if necessary noise mitigating features are included in the design (see Attachment E). Conventional construction will usually suffice as long as it incorporates air conditioning or forced fresh-air-supply systems, though it will likely require that Project occupants maintain their windows closed.

SCA NOI-6 requires that projects of this type achieve an acceptable interior noise level with sound-rated assemblies as recommended by a qualified acoustical engineer and based on the specific building design and layout. With the implementation of SCA NOI-6, interior noise is a less than significant impact.

Operational Noise

Operational noise from the Project will be from mechanical equipment associated with ventilation or refrigeration, the interior loading zone on 15th Street and vehicles entering and exiting the parking garage from Webster Street.

Mechanical noise associated with any heating, ventilation or air conditioning systems will be subject to SCA NOI-7 which requires that noise levels conform to the standards in the City's Planning Code and Municipal Code. Since all operational noise associated with the Project will be required to conform to the noise standards in the City's Planning and Municipal Code per SCA NOI-7, operational noise associated with the Project is considered a less-than-significant impact.

With the implementation of the required SCAs listed above (SCA NOI-1: Construction Days/Hours, SCA NOI-2: Construction Noise, SCA NOI-3: Extreme Construction Noise, SCA NOI-4: Construction Noise Complaints, SCA NOI-5: Vibration Impacts on Adjacent Historic Structures or Vibration-Sensitive Activities), SCA NOI-6: Exposure to Community Noise, and SCA NOI-7: Operational Noise), the Project would not result in significant effects related to noise and vibration. Therefore, the Project is consistent with Section 15332(d), noise.

In addition, the Project would not substantially increase the severity of the significant noise impacts identified in the Redevelopment Plan EIR, nor would it result in new significant noise impacts that were not identified in the Redevelopment Plan EIR. Further, there have been no substantial changes in circumstances following certification of the Redevelopment Plan EIR that would result in any new specific noise impacts.

Air Quality

The Project would result in an increase in criteria air pollutants and ozone precursor emissions from mobile on-road sources and onsite area sources during both the operational and construction periods.

The City of Oakland utilizes screening criteria to provide a conservative indication of whether a Project could result in potentially significant air quality impacts related to construction and operational emissions. If the Project's proposed number of dwelling units, square feet, or other metric is below the screening criteria, quantification of the Project's air pollutant emissions is not necessary to make a determination that the impact would be less than significant. The Project's 179 residential units are well below (35%) the operational criteria pollutant screening size of 510 units, well below (71%) the construction criteria pollutant screening size of 249 units, and only 22% of the construction criteria pollutant screening size for office space of 277,000 square feet. Therefore, the Project is well below operational and construction criteria air pollutant screening standards and would not have significant Project-specific impacts related to operational and construction criteria emissions. However, since the CalEEE model was utilized to analyze greenhouse gas emissions (see p. 65, below), modeling was conducted on construction and operational emissions for criteria pollutants and ozone precursor emissions, to confirm the conclusions drawn from application of the project size screening level.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.1 was used to estimate emissions from construction and operation of the site assuming full build-out of the project[17]. Emissions were compared to significance thresholds established by BAAQMD in June 2010, to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on BAAQMD's website and included in the Air District's updated CEQA Guidelines (updated May 2017). The significance thresholds identified by BAAQMD and used in the air quality analysis are summarized in Table 6. The project land use types and size, and anticipated construction schedule were input to CalEEMod.

Table 6. Air Quality Significance Thresholds

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	

[17] Illingworth & Rodkin, *1433 Webster Street Mixed Use Development Air Quality Assessment,* December 15, 2016. This report is the basis for the analysis in this section.

Health Risks and Hazards for Single Sources	
Excess Cancer Risk	>10 per one million
Hazard Index	>1.0
Incremental annual $PM_{2.5}$	>0.3 µg/m^3
Health Risks and Hazards for Combined Sources (Cumulative from all sources within 1,000 foot zone of influence)	
Excess Cancer Risk	>100 per one million
Hazard Index	>10.0
Annual Average $PM_{2.5}$	>0.8 µg/m^3
Greenhouse Gas Emissions	
GHG Annual Emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons or 4.6 metric tons per capita
Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less; and GHG = greenhouse gas.	

Construction Period Emissions

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines and City of Oakland consider these impacts to be less than significant if best management practices are implemented to reduce these emissions. Implementation of SCA AIR-1would ensure these impacts are less than significant.

Table 7 provides the results of modeling construction period emissions of ozone precursors (ROG and NOx) and fugitive dust (PM_{10} and $PM_{2.5}$). As the table shows, none of the pollutants would exceed significance thresholds adopted by the City. Construction period emissions would therefore produce a less-than-significant impact on air quality.

Table 7. Construction Period Emissions

Scenario	**ROG**	**NOx**	**PM_{10} Exhaust**	**$PM_{2.5}$ Exhaust**
Total construction emissions (tons)	2.49 tons	3.40 tons	0.15 tons	0.14 tons
Average daily emissions (pounds)[1]	14.1 lbs.	19.3 lbs.	0.85 lbs.	0.80 lbs.
BAAQMD Thresholds (pounds /day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	**No**	**No**	**No**	**No**

Notes: [1]Assumes 352 workdays.

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

Because the Project involves demolition of existing structures, the Enhanced Control Measures of SCA AIR-1 would also be required. Specifically, SCA AIR-1, Part w, requires construction equipment to be equipped with Best Available Control Technology for emissions reductions of NOx and particulate matter. This is interpreted as requiring equipment that meets U.S. EPA Tier 4 standards. As a result, implementation of SCA AIR-1 would reduce on-site diesel exhaust emissions by over 80 percent. As a result, construction period health risks and annual PM2.5 impacts would be minimized and result in less-than-significant impacts.

Operational Emissions

Operational air emissions from the Project would be generated primarily from autos driven by future residents and employees. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod was used to predict emissions from operation of the proposed project assuming full build-out. Table 8 displays the results of the modeling for operation emissions. As the table shows, none of the pollutants would exceed significance thresholds adopted by the City. Operational emissions from the Project would therefore produce a less-than-significant impact on air quality.

Table 8. Operational Emissions

Scenario	**ROG**	**NOx**	**PM_{10}**	**$PM_{2.5}$**
Project Operational Emissions	**1.99 tons**	**3.22 tons**	**1.15 tons**	**0.34 tons**
Existing Emissions	**0.19 tons**	**0.49 tons**	**0.19 tons**	**0.06 tons**
Net Project Emissions	**1.80 tons**	**2.73 tons**	**0.96 tons**	**0.28 tons**
BAAQMD Thresholds (tons /year)	***10 tons***	***10 tons***	***15 tons***	***10 tons***
Exceed Threshold?	***No***	***No***	**No**	**No**
Average Daily Net Project Operational Emissions (pounds)[1]	**9.9 lbs.**	**15.0 lbs.**	**5.3 lbs.**	**1.5 lbs.**
BAAQMD Thresholds (pounds/day)	***54* lbs.**	***54* lbs.**	***82* lbs.**	***54* lbs.**
Exceed Threshold?	**No**	**No**	**No**	**No**
[1:] Note: Assumes 365-day operation.				

Toxic Air Contaminants (TACs)

Project impacts related to increased community risk can occur either by (1) introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs or by (2) introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity. The BAAQMD recommends using a 1,000-foot screening radius around a project site for purposes of identifying community health risk from siting a new sensitive receptor or a new source of TACs. The Project would introduce new sensitive receptors to the area in the form of future residences. It is anticipated that the Project would include an emergency diesel-powered back-up generator. However, the generator would only be operated for testing and emergency purposes.

Operational Community Risk Impacts

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. A review of the Project area did not identify any substantial sources of mobile TAC emissions. A review of BAAQMD's Google Earth map tool used to identify stationary sources revealed six sources (generators) within 1,000 feet of the Project site. As mentioned above, the Project itself would also include a backup generator.

<u>Off-site Generator</u>

All six off-site generators were first evaluated using screening tools from BAAQMD's *Risk and Hazards Emissions Screening Calculator (Beta Version)* and *Distance Adjustment Multiplier Tool for Diesel Internal Combustion (IC) Engines*. Based on those evaluations, four (4) of the generators were found to be below screening level risk thresholds for cancer and non-cancer risk. Two (2) of the generators exceeded screening level thresholds; therefore, their emissions and dispersion concentrations were modeled to assess cancer and non-cancer risks.

Potential impacts at the proposed Project were evaluated at seventeen of the twenty-two residential floor levels to identify where maximum impacts would occur from each emission source. The maximum modeled concentrations occurred for the case of the generators located at ground level near the source buildings. The maximum annual average DPM concentration from 1587 Franklin Street occurred on the project's first residential level (seventh floor building level) at a concentration of 0.0007 $\mu g/m^3$. The maximum annual average DPM concentration from 1600 Franklin Street also occurred on the project's first residential level at a concentration of 0.0002 $\mu g/m^3$. Using BAAQMD cancer risk calculation methods the maximum estimated increased residential cancer risks would be 0.5 and 0.1 in one million for the 1587 and 1600 Franklin Street generators, respectively. Cancer risks at other floor levels would be less than the maximum risks. The cancer risks from the generators at 1587 and 1600 Franklin Street would be lower than the City's cancer risk significance threshold of greater than 10.0 in one million and would be considered a less-than-significant impact.

The maximum modeled annual $PM_{2.5}$ concentrations were less than 0.001 $\mu g/m^3$ from the generators and the maximum Hazard Index would be less than 0.0002. $PM_{2.5}$ concentrations and Hazard Indexes at other floor levels would be lower than the maximum values. The maximum $PM_{2.5}$ concentration and

Hazard Index would be below BAAQMD significance thresholds of 0.3 µg/m^3 for $PM_{2.5}$ and 1.0 for a Hazard Index and would be considered a less-than-significant impact. Details of the modeling and risk calculations are included in Attachment 3 of the Air Quality Report, which is included in full in Attachment F.

<u>On-site Generator (Stationary Source)</u>

The Project proposes an emergency back-up diesel generator located in the mechanical room area on the sixth floor building level. The proposed generator would be a Caterpillar 1,000 kilowatt (kW) emergency generator. Operation of the generator is limited to 50 hours per year of non-emergency use (i.e. testing and maintenance) by the State's Air Toxic Control Measure for Stationary Compression Ignition Engines.[18]

To obtain an estimate of potential cancer risks from the proposed generator the AERMOD dispersion model was used to estimate the maximum annual DPM concentration at on-site residential receptor locations within the proposed Project residential areas and at off-site sensitive receptor locations (school and residences).

The maximum modeled DPM and $PM_{2.5}$ concentrations occurred at the new on-site residential receptors at the seventh floor level. The maximum annual DPM and $PM_{2.5}$ concentrations were 0.0039 and 0.0037 µg/m^3, respectively. Based on the maximum DPM concentration the maximum on-site residential cancer risk would be 2.9 in one million. The maximum on-site residential HI would be less than 0.001.

Health risk impacts from operation of the Project generator were also evaluated for off-site residences and at the Envision Academy. The maximum cancer risk for an off-site residential receptor was 0.1 in one million and the maximum annual $PM_{2.5}$ concentration was 0.0002 µg/m^3. The maximum school student cancer risk at the Envision Academy was 0.2 in one million and the maximum annual $PM_{2.5}$ concentration at the Envision Academy was 0.0022 µg/m^3. The maximum HIs at both the off-site residential receptors and the Envision Academy would be less than less than 0.001. The increased cancer risks, $PM_{2.5}$ concentrations, and HIs at all sensitive receptors from operation of the project emergency generator would all be well below City significance thresholds. Generator modeling information and risk calculations are included in Attachment 3 of the Air Quality Report, which is included in full in Attachment F.

Cumulative Risk Assessment

The cumulative impacts of TAC emissions from construction of the Project and nearby stationary sources on the construction maximally exposed individual (MEI) have been summarized in Table 9. As shown in Table 9, 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.

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[18] Section 93115, title 17, California Code of Regulations

Table 9. Impact of combined sources at the Construction MEI

Source	**Maximum Cancer Risk (per million)**	**Maximum Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)**	**Maximum Hazard Index**
Project Construction			
Unmitigated	22.5	0.46	0.06
with SCAs	8.5	0.17	0.02
Project Generator	0.1	<0.01	<0.01
Plant 18912, Paetec, Generator (*2011 Screening Values*, Internal Combustion Engine distance multiplier) at ~300 feet	0.3	0.0	0.00
Plant 14742, County of Alameda-GSA, Generator (*2011 Screening Values*, Internal Combustion Engine distance multiplier) at ~555 feet	0.8	0.0	0.00
Plant 19039, Hotel Oakland, Generator (*2011 Screening Values*, Internal Combustion Engine distance multiplier) at ~555 feet	1.0	0.0	0.00
Plant 13494, Pacific Bell, Generator (Refined Modeling)	1.3	<0.01	<0.01
Plant 14532, AC Transit General Office, Generator (Refined Modeling)	0.3	<0.01	<0.01
Plant 14607, Rotunda Partners II, Generator, (*2011 Screening Values*, Internal Combustion Engine distance multiplier) at ~650 feet	3.7	0.0	<0.01
Cumulative Total			
Unmitigated	30	<0.49	<0.10
Mitigated	16	<0.20	<0.06
BAAQMD Threshold – Cumulative Sources	***>100***	***>0.8***	***>10.0***
***Significant?* Unmitigated**	***No***	***No***	***No***
Mitigated	***No***	***No***	***No***

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

In addition, the Project would not substantially increase the severity of the significant air quality impacts identified in the Redevelopment Plan EIR, nor would it result in new significant air quality impacts that were not identified in the Redevelopment Plan EIR. Further, there have been no substantial changes in circumstances following certification of the Redevelopment Plan EIR that would result in any new specific air quality impacts.

Water Quality

Yes	No	
☑	❐	Approval of the project would not result in any significant effects relating to water quality.

The Project is located within a highly urbanized environment and there are no lakes, creeks or other surface waters in immediate proximity. Lake Merritt, which is the nearest surface water body, is approximately 3,300 feet to the east (0.63 miles) and is separated from the Project site by urban development. An analysis of nearby facilities with a groundwater monitoring array found that groundwater consistently flowed to the northeast/north-northeast and was encountered at depths between 14 to 24 feet.[19] The Project is not located within the 100-year or 500-year floodplain, based on the Flood Insurance Rate Map produced by the Federal Emergency Management Agency (FEMA).[20]

Construction of the Project will involve demolition, excavation and construction, all of which could result in erosion and/or sedimentation into downstream receiving waters. Construction of the Project will result in a land disturbance of approximately 15,900 sf, which means the Project is a Regulated Project under Provision C.3 of the Municipal Regional Stormwater Permit issued by the State Water Resources Control Board (SWRCB) under the National Pollutant Discharge Elimination System (NPDES). As a Regulated Project, the Project must comply with SCA HYD-2, which requires the Project applicant to submit a Post-Construction Stormwater Management Plan to the City for review and approval with the Project drawings submitted for site improvements, and to implement the approved Plan during construction. The Project will provide treatment for all existing, new and/or replaced impervious surfaces.

Post-development stormwater peak flows will be managed by minimizing impervious surfaces, using on-site bio retention facilities (tree planter boxes, and vegetative roofs on floors 6 and 29), and by directing stormwater to a media filter located in the basement, which will remove suspended solids and sediment from the stormwater before it leaves the site. Stormwater management features will be sized to comply with the NPDES Permit (Provision C.3) and the latest edition of the Alameda County Stormwater Manual (2013). Bio retention areas on floors 6 and 29 have been sized using the 4% rule (whereby the bio retention areas are sized to comprise 4% of the contributing impervious area).

Per the criteria given in Provision C.3.e.ii of the Municipal Regional Permit, the Project would be categorized as a Special Project "A", which qualifies it to use 100 percent Low Impact Development (LID) treatment reduction credits. This means the Project is allowed to use specific types of non-LID treatment, if the use of LID treatment is first evaluated and determined to be infeasible. The types of non-LID treatment that may be used are high flow-rate media filters, and high flow-rate tree well filters (also called high flow-rate tree box filters). As mentioned above, the Project would direct all storm

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[19] Phase I ESA, 1433 Webster St. and 359 15th, prepared by Geocon Consultants, November 2015.
[20] The Project lies within Zone X on the FIRM Community-Panel Number 06001C0067G.

drainage to a media filter device located in the basement prior to discharge into the City's storm drain system.

The Project would require excavation of up to 7,065 cubic yards of soil for construction of the garage and building foundation. As indicated in City of Oakland Code 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. The grading permit would require 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 conditions, the Project site is entirely paved with impervious surfaces totaling 15,896 square feet. The total post-Project impervious surface area would be 9,248, because 6,648 sf of existing impervious surface would be replaced by vegetated roof surfaces on floors 6 and 29. Therefore, given that the site is relatively flat and impervious surface area would be substantially reduced, the potential of the Project to substantially alter drainage patterns or increase the flow of runoff would not be significant. The Project 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 (SCA HYD-1 and SCA HYD-2), the Project would comply with the NPDES Permit requirements and reduce potential impacts related to water quality. Therefore, as described above, the Project would not result in significant effects related to water quality and is consistent with Section 15332(d), water quality.

In addition, the Project would not substantially increase the severity of the significant water quality impacts identified in the Redevelopment Plan EIR, nor would it result in new significant water quality impacts that were not identified in the Redevelopment Plan EIR. Further, there have been no substantial changes in circumstances following certification of the Redevelopment Plan EIR that would result in any new specific water quality impacts.

Criterion Section 15332(e): Utilities and Public Services

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

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

The increase in residential units is consistent with the General Plan LUTE and LUTE Environmental Impact Report (EIR) (1998) and the 2011 Redevelopment Plan EIR. The Project's increase in demand for public services is consistent with these prior CEQA analyses. The Project may increase student enrollment at local schools and, pursuant to Senate Bill 50, the Project sponsor would be required to pay school impact fees, which are established to offset potential impacts from new development on school facilities. This would be deemed full and complete mitigation. In addition, the Project would provide approximately 13,520 square feet of open space (group and private) for the residential units, as described in the Project Description above.

With implementation of the required SCAs listed in Attachment A (SCA UTIL-1: Construction and Demolition Waste Reduction and Recycling, SCA UTIL-2: Underground Utilities, SCA UTIL-3: Recycling Collection and Storage Space, SCA UTIL-4: Green Building Requirements, SCA UTIL-5: Sanitary Sewer System, and SCA UTIL-6: Storm Drain System), potential impacts to utilities and public services would be reduced. Therefore, the Project site can be adequately served by all required utilities and public services and would not result in significant effects, consistent with Section 15332(e), utilities and public services.

In addition, the Project would not substantially increase the severity of the significant utilities and public services impacts identified in the Redevelopment Plan EIR, nor would it result in new significant utilities and public services impacts that were not identified in the Redevelopment Plan EIR. Further, there have been no substantial changes in circumstances following certification of the Redevelopment Plan EIR that would result in any new specific utilities and public services impacts.

IX. EXCEPTIONS TO CATEGORICAL EXEMPTIONS

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 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 in the vicinity of 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 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 that would increase the severity of any significant cumulative effects previously identified in the Program EIRs.

Pursuant to the streamlining provisions of CEQA Guidelines Sections 15183 and 15183.3, the cumulative effect of successive projects of the same type in the same place over time would not be significant. Community Plan Exemption findings and Qualified Infill Exemption findings are provided in Attachments B and C of CEQA Analysis. These additional exemption analyses present 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 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. 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 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.[21] The nearest scenic highway is Macarthur Freeway (I-580),[22] which is approximately 1.1 miles northeast of the site; the Project site is not visible from I-580. Two buildings directly across Webster (339 15th Street) and 15th Street (1515 Webster) are both Oakland City Landmarks and listed on the NRHP, but the Project would not impact these buildings and applicable SCAs would reduce potential impacts, as described under Groundborne Vibration above. See also discussion under Criterion 15300.2(f), Historical Resources below. Therefore, the exception under CEQA Guidelines Section 15300.2(d) does not apply to the Project.

Criterion 15300.2(e): Hazardous Waste Sites

Yes	No	
❒	☑	Is there an exception to the 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),[23] and the California Department of Resources Recycling and Recovery (CalRecycle) 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 (Cal/EPA). As summarized in Table 10, the Project site is not identified on any lists compiled pursuant to Section 65962.5 of the Government Code; therefore, an exception to the exemption under CEQA Guidelines Section 15300.2(e) does not apply to the Project.

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[21] 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.

[22] 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.

[23] Formerly the California Department of Health Services.

A Phase I Environmental Site Assessment (ESA) was conducted of both parcels of the Project in November 2015. The site appears to have been residentially developed prior to 1889 and remained so until sometime after 1911, suggesting the potential presence of a heating oil tank, commonly used during this time. From sometime prior to 1950 until sometime after 1969, the Site building at 1433 Webster Street is depicted as a tire sales, service, repair and garage. Additionally, an elevator is depicted on the southwest corner of the property.

A gas and oil feature, likely a gasoline fueling station, is depicted approximately 30 feet south-southwest of the Site from sometime prior to 1950 until sometime between 1953 and 1957. The ESA review of regulatory records did not identify UST removal records from this area. The Alameda County Department of Environmental Health (ACDEH) had no records indicating an environmental release at the site.

The Phase I ESA noted the following RECs in connection with the Site or adjoining properties:

- The site building at 1433 Webster Street was formerly utilized as a tire, repair shop and garage from prior to 1925 until approximately 1979 and presents a REC for the Site. The garage building was renovated into the current office building sometime around 1980. Hydraulic lifts and waste oil USTs are often associated with tire and repair shops.
- Sanborn maps depict an open elevator in the southwestern portion of the Site building at 1433 Webster Street. If the former elevator was hydraulic, the subsurface cylinders and/or potential contamination from hydraulic oil and polychlorinated biphenyls (PCB) are reasonably likely present in soil and groundwater beneath the Site.
- Sanborn maps depict a former fueling station adjacent and upgradient to the Site from prior to 1950 until 1953. Records of UST removal were not identified in the databases searched for this Phase I ESA. The adjacent property has historically been, and continues to be a parking lot, so there is a high possibility that if USTs and/or contamination were present from the former fueling station, they have not yet been identified. Given the upgradient position and distance from the Site, this former facility presents a REC for the Site.

The Phase I ESA recommended that subsurface sampling of soil and groundwater for TPH components, PCBs, and dry-cleaning solvents be conducted to determine the presence of gross contamination from former operations on or adjacent to the Site. A Phase II ESA was subsequently conducted in November 2015 to sample onsite media for the presence of such contaminants. The Phase II ESA demonstrated minor impacts of gasoline and benzene in soil vapor and concluded the following:

> The concentrations do not appear to be indicative of gross contamination beneath the Site buildings; however, benzene may be present in the subsurface above a regulatory threshold. If encountered, removal of the source gasoline and/or benzene can reasonably be expected to be performed during site grading and excavation activities for development.

> Gross contamination was not identified in soil samples collected from borings near the northeast or southwest corner of the former freight elevator; however, groundwater was not encountered in these borings, and soil samples were collected from a maximum depth of 12.5 feet. If the former freight elevator was hydraulic, the subsurface cylinders are likely still present and may extend 15 to 20 feet below the surface. Though we did not encounter contamination in the soil samples collected, the limitations of the equipment kept us from observing and sampling soil along the full length of the cylinder and from collecting a groundwater sample, which would have better identified a release.

The Project would 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 general public. The Project would be subject to the City of Oakland's SCA HAZ-1: Hazardous Materials Related to Construction, which requires implementation of best management practices for hazardous materials during construction.

In accordance with SCA HAZ-2: Site Contamination, any project involving redevelopment or change of use of a historically industrial or commercial site must submit for approval to the Alameda County Department of Environmental Health a Phase I ESA and Health and Safety Plan prepared for the Project. SCA HAZ-2 applies in this case because the current uses of the Project site include commercial uses. The Health and Safety Plan would include, but is not limited to, measures related to personal protective equipment, exposure monitoring, emergency response plan, and a training program. In addition, SCA HAZ-2 requires the implementation of best management practices for the handling of contaminated soil and groundwater discovered during construction activities to ensure their proper storage, treatment, transport, and disposal. Specifically, SCA HAZ-2 would require that all suspect soil be stockpiled on-site in a secure and safe manner and adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. If new or more significant contamination is encountered during site redevelopment earthwork, the Project sponsor shall confirm that any cleanup actions are performed consistent with applicable laws and local agency requirements as required. Implementation of SCA HAZ-2 will be reviewed, approved, and overseen by the City, and any applicable regulatory agency, as required by law.

TABLE 10 SUMMARY OF CORTESE LIST SEARCH RESULTS

Government Code Section	Responsible Agency	List Description	Project Identified on List?
65962.5(a)(1)	DTSC	List of hazardous waste facilities where DTSC have taken or contracted for corrective action because the owner failed to comply with an order or DTSC determined that immediate corrective action was necessary to abate an imminent or substantial endangerment.	No
65962.5(a)(2)	DTSC	List of all land designated as hazardous waste property or border zone property.	No
65962.5(a)(3)	DTSC	SITES IDENTIFIED WITH WASTE CONSTITUENTS ABOVE HAZARDOUS WASTE LEVELS OUTSIDE THE WASTE MANAGEMENT UNIT	No

Government Code Section	Responsible Agency	List Description	Project Identified on List?
		List of probable unauthorized disposal of hazardous waste on, under or into the land which the city, county, or state agency owns or leases. As of 1 April 2016, DTSC has not maintained or submitted a list of these records to Cal/EPA, but has indicated that they plan to in the future.	
65962.5(a)(4)	DTSC	List of sites where a hazardous substance release has been confirmed by on-site sampling and a response action is required. (HAZARDOUS WASTE AND SUBSTANCES SITE LIST)	No
65962.5(a)(5)	DTSC	List of sites in the Abandoned Site Assessment Program. DTSC concluded the Abandoned Site Assessment Program in the 1990's and no longer maintains or submits a list of these records to Cal/EPA.	No
65962.5(b)	DPH	List of all public drinking water wells that contain detectable levels of organic contaminants or require water quality analysis. Since all required analyses required for this list were to have been completed by 1988, DHS no longer submits a list of these records to Cal/EPA. In addition, DHS does not provide the location of public drinking water wells to the public.	No
65962.5(c)(1)	SWRCB	List of all underground storage tanks for which an unauthorized release report is filed. The SWRCB provides information about "Leaking Underground Storage Tank Cleanup Sites" in its GeoTracker database, which includes reports filed each year going back to fiscal year 1996/1997. According to SWRCB, both "active" and "closed" sites are included on the list.	No
65962.5(c)(2)	SWRCB	List of all solid waste disposal facilities from which there is a migration of hazardous waste into water.	No
65962.5(c)(3)	SWRCB	List of sites for which either a Cease and Desist Order or a Cleanup or Abatement Order was issued that concerns the discharge of wastes that are hazardous materials.	No
65962.5(d)	CalRecycle	Former list of solid waste disposal facilities from which there is a known migration of hazardous waste. Subsequent legislation (AB 1220 Solid Waste Disposal Regulatory Reform Act of 1993) superseded this requirement, and lists compiled under Sections of 65962.5(c)(2) and/or 65962.5(c)(3) should capture this information.	No

Consistent with the requirements of CEQA, a determination of whether the Project would have any significant impacts is included in this document. Where applicable, SCAs have been identified that will mitigate such impacts. In some instances, exactly how the measures/conditions identified will be achieved awaits completion of future studies, 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 (SCA HAZ-1: Hazardous Materials Related to Construction and SCA HAZ-2: Site Contamination), the Project's potential impacts related to the disturbance of potential soil and/or groundwater contamination would not be significant.

Criterion 15300.2(f): Historical Resources

Yes	No	
❐	☑	Is there an exception to the exemption for the project because the project may cause a substantial adverse change in the significance of a historical resource?

Historic Architectural Resources

An Historic Resources Evaluation of the Project site and its vicinity was prepared by LSA (see Attachment G). The report concluded that due to their lack of historical significance and integrity, the buildings at 1433 Webster Street and 351-359 15th Street do not appear eligible for inclusion in the California Register of Historical Resources (CRHR), nor do they qualify for listing in the City of Oakland Register of Historic Resources (Oakland Register) as candidates for City of Oakland Landmarks, Heritage Properties, or included in an S-7 or S-20 Preservation Combining Zone. For these reasons, these buildings do not appear to qualify as historical resources for the purposes of the California Environmental Quality Act (as defined at Public Resources Code §21084.1). Therefore, the Project would not have any direct impacts to historical resources.

Historic resources in the immediate vicinity of the Project site include the following buildings:

- **The Oakland Hotel, 270 13th Street.** The Oakland Hotel designed in 1912 by architects William Falville and Walter Bliss. The hotel went bankrupt during the Depression and was later purchased by the U.S. War Department in 1943 for conversion into the Oakland Area Station Hospital. The Veterans Administration ran the hospital until 1963, after which the building was September 4, 1979.
- **Oakland YWCA, 1515 Webster Street.** The Oakland YWCA was built in 1915 by architect Julia Morgan and is the first of 17 YWCA building she designed in the Bay Area. The five-story building features Italianate elements, which required repair following the 1989 earthquake. Between 2000 and 2007, the building was used as dormitories for the California College of the Arts. The building was designated an Oakland City Landmark on May 24, 1977, and listed on the NRHP on September 20, 1984.
- **Mrs. A.E. White Building, 327-349 15th Street.** This Tudor-styled, three-story building was designed by architect Clay N. Burrell and built by R. W. Littlefield in 1924. The original owner was Mrs. Addie E. White. This narrow, 150-foot long building is located on a 20-foot deep lot and contains ground-floor retail with office space above. The building was designated an Oakland City Landmark On November 12, 1985, and is also a contributing element to the Harrison and Fifteenth Streets Historic District, which was listed in the NRHP on November 7, 1996. This District is near but does not include the Project site.

- **Main Post Office and Federal Building, 201 13th Street.** This Neoclassical-style building was designed by James Wetmore and William A. Newman in 1931. It was the first federal building completed in Oakland's Civic Center, and was listed on the NRHP on November 23, 1980.
- **No**. **45 Site of the College of California, 1314 Franklin St**. From 1869-1873, the University of California was located here (previously known as the College of California). In 1873 the University moved north to Berkeley (California Office of Historic Preservation 2016). A multi-story parking garage built ca. 1953-1954 is now extant on the site.

The Project would not indirectly materially impair any of the adjacent historic resources, either within the same block or in adjacent blocks. However, the Project would cast shadows on each these nearby historic resources for short periods of the day.

- 1515 Webster--Since the Project is located south of the YWCA, no shadows will directly impact the YWCA's primary front facade on Webster Street. However, the Project will directly cast a shadow on the side (15th Street) facade of the YWCA for 3-4 hours in the afternoon each day, primarily in winter.
- 339 15th Street—This property is directly west of the Project across Webster, with most of its frontage on 15th Street. The small Webster Street frontage would be shaded in the late afternoon throughout the year. The longer frontage along 15th Street would be shaded primarily in late summer afternoon.

This shading would not materially impair any physical character-defining features of these historic buildings, nor would it alter those physical characteristics of either resource that convey its historical significance and that justify its designation as an historic resource pursuant to CEQA Guidelines §15064.5.

The Harrison and Fifteenth Historic District extends along 15th Street heading east from Webster to Harrison (excepting the parcel at the northwest corner of 15th & Webster), and south along Harrison to 14th Street. The Project would not result in indirect substantial adverse changes to the significance of the District.

With required implementation of **SCA NOI-8: Vibration Impacts on Adjacent Historic Structures or Vibration-Sensitive Activities** described under Criterion Section 15332(d) Noise above and in Attachment F, Noise and Vibration Analysis, potential adverse vibration effects on adjacent historic architectural resources would not be significant, and the exception under CEQA Guidelines Section 15300.2(f) does not apply.

Archaeological and Paleontological Resources

The Project site is located within an urbanized portion of the Downtown area, has been previously developed and is surrounded by other urban development. While no archaeological or paleontological research, investigations or database searches have been conducted for the Project site, prior studies have been conducted for areas that are not far removed from the site.[24] These studies indicate that: (a) distinct prehistoric sites have been located in the Downtown area, and (b) the Downtown area overlies geologic units that have low to moderate paleontological sensitivity. Therefore, fossils could be discovered during excavation on the Project site, and the inadvertent discovery of human remains during ground-disturbing activities could occur. Implementation of SCA CULT-1: Archaeological and Paleontological Resources – Discovery During Construction and SCA CULT-2: Human Remains – Discovery during Construction would 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.

In addition, the Project would not substantially increase the severity of the significant cultural resource impacts identified in the Redevelopment Plan EIR, nor would it result in new significant cultural resource impacts that were not identified in the Redevelopment Plan EIR. Further, there have been no substantial changes in circumstances following certification of the Redevelopment Plan EIR that would result in any new specific cultural resource impacts.

Criterion 15300.2: Other Potential Effects

Yes	No	
❒	☑	Is there an exception to the exemption for the project because the project may result in substantial adverse impacts other than those discussed above?

Shade and Shadow

Based on City of Oakland significance threshold criteria, potential adverse effects pertaining to shadows from new buildings within the Downtown area of Oakland were also considered as described below.

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

A shadow analysis was prepared for the Project by RAD/SDG[25] (see Attachment H), which shows shadows that would be cast by the building at 9:00 a.m., 12:00 p.m., and 3:00 p.m. for the summer

[24] City of Oakland, 2011. Proposed Amendments to the Central District Urban Renewal Plan EIR.
[25] RAD|SDG, *1433 Webster Street Shadow Study*, April 5, 2016, included as Attachment H to this CEQA Analysis

solstice (June 21st), spring/fall equinoxes (March 20th and September 22nd), and winter solstice (December 21st), based on City of Oakland significance threshold criteria.

The shadow analysis and a subsequent study[26] also modeled and analyzed the extent to which solar electricity generation from the rooftop photovoltaic array atop the building across Webster Street (1438 Webster Street) would be affected by shadows cast from the proposed project. The latter study determined that the building at 1438 Webster Street contains 8,145 sq. ft. of roof mounted solar collectors, installed in 2008. The solar collectors are tilted approximately 20 degrees from horizontal and face southwest.

The Solar Impact Study found that during the months of May, February and September through December the Project building would cast no shadows on the solar collectors during daylight hours. During the remaining months of the year, a shadow will be cast on a portion of the solar collectors for approximately 1-3 hours daily in the afternoon and early evening hours.

As shown in Table 1, the shadowing impacts of the new building on the nearby solar array would reduce solar output by approximately 1,384 kilowatt-hours (kWh) per year, which represents 0.85% of the total annual electricity generated by the facility. While the shading effect in this case is projected to be minor, even a more significant shading effect would not be considered a significant impact under the City of Oakland's significance criteria because it would not "substantially impair the function of the building…" because the solar equipment consists of photovoltaic solar collectors used to generate electricity as opposed to heat or hot water; any loss in solar-generated electrical power can be made up for with additional power drawn from the local provider, PG&E, with no impairment to the functionality of the building. Shadow effects on solar collectors, therefore, are considered less than significant.

Table 11: Solar Output Reduction from Project Shading Effects

Current solar output (watt-hours –wh)	163,228,630
Output after shading from 1433 Webster	161,844,881
Output Reduction (wh)	1,383,749
Output Reduction (kilowatt hours – kW)	1,384
Ouput Reduction (%)	0.85%
Output Reduction ($$), @ $0.14/kWh	$193.72

Source: RAD/SDG, May 2016.

Potential shadow impacts on adjacent historic resources are discussed under CEQA Guidelines Section 15300.2(f).

Overall, the Project would not have significant shadow impacts.

26 RAD|SDG, *1433 Webster Street Solar Collector Impact Study,* May 25, 2016, included as Attachment J to this CEQA Analysis

Wind

Under City of Oakland thresholds of significance, a project would have a significant impact if it were to create winds that exceed 36 mph, for more than one hour during daylight hours, during the year. A wind analysis is required since the Project's height is 100 feet or greater and because it is located in Downtown. The wind analysis must consider the Project's contribution to wind impacts to on- and off-site public and private spaces. Only impacts to public spaces (on- and off-site) and off-site private spaces are considered CEQA impacts.

A wind analysis has been prepared for the Project (see **Attachment H**) based on a model constructed at 1:400 scale that includes all significant surrounding buildings and topographical effects within an area with a radius of 1640 feet centered on the Project site.[27]

The mean wind speed profile and turbulence of the natural wind approaching the modelled area were simulated in WindTech's boundary-layer wind tunnel. The model was instrumented with 27 critical study locations in the wind tunnel from 36 wind directions at 10 degree increments using a 1:400 scale model of the development, including the land topography and surrounding buildings for a radius of approximately 1640 ft.

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

The model of the development was tested in the wind tunnel without the effect of any forms of wind ameliorating devices, which are not already shown in the architectural drawings. The effect of vegetation was also excluded from testing, in accordance with current AWES (2001) and ASCE (2012) guidelines. If the results of the study indicate that any area is exposed to strong winds, in-principle treatments are recommended.

The results of the study indicate that the wind conditions at each of the 27 study points are below the City of Oakland's CEQA Wind Hazard Threshold.

[27] WINDTECH, *Pedestrian Wind Environment Study 1433 Webster Street, Oakland, CA*, September 12, 2017.

Based on the results of the WindTech wind tunnel test, the Project's potential wind impacts would be less than significant and the exception to a CEQA exemption under CEQA Guidelines §15300.2 does not apply.

Greenhouse Gas (GHG) Emissions

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

<u>CalEEMod Modeling</u>

CalEEMod was used to estimate GHG emissions from operation of the site assuming full build-out of the project.[28] 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 2 of the Air Quality Report, which is included in full in Attachment F.

Service Population Emissions

The Project service population efficiency rate is based on the number of future residences plus full-time employees. The number of future residences is estimated at 453 based on the latest US Census data of 2.53 average persons per household for the City of Oakland.[29] The number of future full-time employees is estimated at 235 based on an approximate 2.5 employees per 1,000 sf, of retail and 4 employees per 1000 sf of office space, for a total service population of 688.

<u>Construction Emissions</u>

GHG emissions associated with construction were computed to be 626 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. 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.

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[28] Illingworth & Rodkin, *1433 Webster Street Mixed Use Development Air Quality Assessment,* December 15, 2016.

[29] United States Census Bureau, 2016. *Oakland (city), California QuickFacts, Persons per Household (2011-2015)*. Available online: http://www.census.gov/quickfacts/table/PST045215/0653000. Accessed: December 2nd, 2016.

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 12, annual emissions resulting from operation of the proposed project are predicted to be 2,096 MT of CO_2e. The annual emissions from operation of the existing buildings are computed as 353 MT of CO2e. The net emissions resulting from the project would be 1,743 MT of CO2e .These emissions would exceed the BAAQMD threshold of 1,100 MT of CO_2e/yr and, therefore, the service population threshold was used to determine the significance of this Project. As shown in Table 12, service population emissions would be below the BAAQMD threshold and, therefore, this would be considered a less-than-significant impact.

Table 12. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Proposed Project 2019	Existing
Area	25	0
Energy Consumption	508	89
Mobile[1]	1405	239
Solid Waste Generation	69	12
Stationary	26	-
Water Usage	63	13
Total	**2,096**	**353**
Net Project Emissions	**1,743**	
BAAQMD Threshold Total Emissions	**1,100**	
Service Population Emissions[2]	**3.04**	
BAAQMD Threshold per Service Pop.	**4.6**	

Notes: [1]Pursuant to Public Resources Code Section 21159.28 (a), a residential or mixed use project that is consistent with a regional Sustainable Communities Strategy is not required to consider emissions from cars and light-duty trucks in its analysis of impacts to global warming. However, these emissions are included here conservatively.

[2] Based on a service population of 688.

The Project is also required to determine if a GHG Reduction Plan is required, in accordance with the current SCA for a GHG Reduction Plan (SCA #38: Greenhouse Gas (GHG) Reduction Plan), which applies to any Project that meets one of three scenarios.

a. Scenario A: Projects which (a) involve a land use development (i.e., a project that does not require a permit from the Bay Area Air Quality Management District [BAAQMD] to operate), (b) exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines, and (c) after a GHG analysis is prepared would produce total GHG emissions of more than 1,100 metric tons of CO_2e annually and more than 4.6 metric tons of CO_2e per service population annually (with "service population" defined as the total number of employees and residents of the project).

b. Scenario B: Projects which (a) involve a land use development, (b) exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines, (c) after a GHG analysis is prepared would exceed at least one of the BAAQMD Thresholds of Significance (more than 1,100 metric tons of CO_2e annually OR more than 4.6 metric tons of CO2e per service population annually), and (d) are considered to be "Very Large Projects."

c. Scenario C: Projects which (a) involve a stationary source of GHG (i.e., a project that requires a permit from BAAQMD to operate) and (b) after a GHG analysis is prepared would produce total GHG emissions of more than 10,000 metric tons of CO_2e annually.]

d. Based on the analysis above, the Project does not meet any one of these three scenarios:

- Scenario A: the Project would not produce more than 1,100 MT of CO_2e annually **and** more than 4.6 metric tons of CO_2e per service population annually;
- Scenario B: the Project is not considered to be a "Very Large Project" (it does not include more than 500 dwelling units or more than 200,000 sf of office space)
- Scenario C: the Project would not produce more than 10,000 MT of CO_2e annually

Therefore the Project is not required to implement SCA 38, the Greenhouse Gas (GHG) Reduction Plan.

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

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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, Land Use and Transportation EIR (LUTE EIR, 1998)—are included herein. To the extent that any SCA identified in the CEQA Analysis was inadvertently omitted, it is automatically incorporated herein by reference.

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

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

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

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

<table>
<tr><th rowspan="2">Standard Conditions of Approval</th><th colspan="3">Implementation/Monitoring</th></tr>
<tr><th>When Required</th><th>Initial Approval</th><th>Monitoring/ Inspection</th></tr>
<tr><td colspan="4">Aesthetics, Shadow and Wind</td></tr>
<tr><td>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).</td><td>Ongoing</td><td>N/A</td><td>Bureau of Building</td></tr>
<tr><td>SCA AES-2: Landscape Plan. (#17)
a. Landscape Plan Required
The project applicant shall submit a final Landscape Plan for City review and approval that is consistent with the approved 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.</td><td>Prior to approval of construction-related permit</td><td>Bureau of Planning</td><td>N/A</td></tr>
<tr><td>b. Landscape Installation
The project applicant shall implement the approved Landscape Plan unless a bond, cash deposit, letter of credit, or other equivalent instrument acceptable to the Director of City Planning, is provided. The financial instrument shall equal the greater of $2,500 or the estimated cost of implementing the Landscape Plan based on a licensed contractor’s bid.</td><td>Prior to building permit final</td><td>Bureau of Planning</td><td>Bureau of Building</td></tr>
</table>

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
c. Landscape Maintenance All required planting shall be permanently maintained in good growing condition and, whenever necessary, replaced with new plant materials to ensure continued compliance with applicable landscaping requirements. The property owner shall be responsible for maintaining planting in adjacent public rights-of-way. All required fences, walls, and irrigation systems shall be permanently maintained in good condition and, whenever necessary, repaired or replaced.	Ongoing	N/A	Bureau of Building
SCA AES-3: Lighting. (#18) Proposed new exterior lighting fixtures shall be adequately shielded to a point below the light bulb and reflector to prevent unnecessary glare onto adjacent properties.	Prior to building permit final	N/A	Bureau of Building
Air Quality			
SCA AIR-1: Construction-Related Air Pollution (Dust and Equipment Emissions). (#19) The project applicant shall implement all of the following applicable air pollution control measures during construction of the project: a. Water all exposed surfaces of active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever feasible. b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). c. All visible mud or dirt track-out onto adjacent public roads 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	During construction	N/A	Bureau of Planning

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

Standard Conditions of Approval	**Implementation/Monitoring** When Required	Initial Approval	Monitoring/ Inspection
r. Activities such as excavation, grading, and other ground-disturbing construction activities shall be phased to minimize the amount of disturbed surface area at any one time. s. All trucks and equipment, including tires, shall be washed off prior to leaving the site. t. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel. u. All equipment to be used on the construction site and subject to the requirements of Title 13, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations") must meet emissions and performance requirements one year in advance of any fleet deadlines. Upon request by the City, the project applicant shall provide written documentation that fleet requirements have been met. v. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings). w. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM. x. Off-road heavy diesel engines shall meet the California Air Resources Board's most recent certification standard. y. Post a publicly-visible large on-site sign that includes the contact name and phone number for the project complaint manager responsible for responding to dust complaints and the telephone numbers of the City's Code Enforcement unit and the Bay Area Air Quality Management District. When contacted, the project complaint manager shall respond and take corrective action within 48 hours.			
Note: Screening analysis demonstrated that the Project would be below the applicable threshold. No further action is required under this SCA. **SCA AIR-2: Exposure to Air Pollution (Toxic Air Contaminants). (#20)** *a. Health Risk Reduction Measures* The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants. The project applicant shall choose <u>one</u> of the following methods: i. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office	Prior to Approval of Construction-Related Permit	Bureau of Planning	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents/occupants/users to air pollutants. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes that the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City. – or – ii. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City: • Installation of air filtration to reduce cancer risks and Particulate Matter (PM) exposure for residents and other sensitive populations in the project that are in close proximity to sources of air pollution. Air filter devices shall be rated MERV-13 or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required. • Where appropriate, install passive electrostatic filtering systems, especially those with low air velocities (i.e., 1 mph). • Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible. • The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall be located as far away as feasible from a loading dock or where trucks concentrate to deliver goods. • Sensitive receptors shall be located on the upper floors of buildings, if feasible. • Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (Pinus nigra var. maritima), Cypress (X Cupressocyparis leylandii), Hybrid popular (Populus deltoids X trichocarpa), and Redwood (Sequoia sempervirens).			

Standard Conditions of Approval	**Implementation/Monitoring** **When Required**	**Initial Approval**	**Monitoring/ Inspection**
• Sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible. • Existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible. • Emissions from diesel trucks shall be reduced through implementing the following measures, if feasible: • Installing electrical hook-ups for diesel trucks at loading docks. • Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards. • Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels. • Prohibiting trucks from idling for more than two minutes. • Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented.			
b. Maintenance of Health Risk Reduction Measures: The project applicant shall maintain, repair, and/or replace installed health risk reduction measures, including but not limited to the HVAC system (if applicable), on an ongoing and as-needed basis. Prior to occupancy, the project applicant shall prepare and then distribute to the building manager/operator an operation and maintenance manual for the HVAC system and filter including the maintenance and replacement schedule for the filter.	Ongoing	N/A	Bureau of Building
SCA AIR-3: Stationary Sources of Air Pollution (Toxic Air Contaminants). (#21) The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to on-site stationary sources of toxic air contaminants. The project applicant shall choose one of the following methods: a. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk associated with proposed stationary sources of pollution in the project. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on	Prior to approval of construction-related permit	Bureau of Planning	Bureau of Building

Standard Conditions of Approval	**Implementation/Monitoring** **When Required**	**Initial Approval**	**Monitoring/ Inspection**
other documentation submitted to the City. -OR- b. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City: i. Installation of non-diesel fueled generators, if feasible, or; ii. Installation of diesel generators with an EPA-certified Tier 4 engine or engines that are retrofitted with a CARB Level 3 Verified Diesel Emissions Control Strategy, if feasible.			
SCA AIR-4: Asbestos in Structures (#23). The project applicant shall comply with all applicable laws and regulations regarding demolition and renovation of Asbestos Containing Materials (ACM), including but not limited to California Code of Regulations, Title 8; California Business and Professions Code, Division 3; California Health and Safety Code sections 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended. Evidence of compliance shall be submitted to the City upon request.	Prior to approval of construction-related permit	Applicable regulatory agency with jurisdiction	Applicable regulatory agency with jurisdiction
Biological Resources			
SCA BIO-1: Tree Removal During Bird Breeding Season. (#26) To the extent feasible, removal of any tree and/or other vegetation suitable for nesting of birds shall not occur during the bird breeding season of February 1 to August 15 (or during December 15 to August 15 for trees located in or near marsh, wetland, or aquatic habitats). If tree removal must occur during the bird breeding season, all trees to be removed shall be surveyed by a qualified biologist to verify the presence or absence of nesting raptors or other birds. Pre-removal surveys shall be conducted within 15 days prior to the start of work and shall be submitted to the City for review and approval. If the survey indicates the potential presence of nesting raptors or other birds, the biologist shall determine an appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the California Department of Fish and Wildlife, and will be based to a large extent on the nesting species and its sensitivity to disturbance. In general, buffer sizes of 200 feet for raptors and 50 feet for other birds should suffice to prevent disturbance to birds nesting in the urban environment, but these buffers may be increased or decreased, as	Prior to removal of trees	Bureau of Building.	Bureau of Building.

	Implementation/Monitoring		
Standard Conditions of Approval	**When Required**	**Initial Approval**	**Monitoring/ Inspection**
appropriate, depending on the bird species and the level of disturbance anticipated near the nest.			
SCA BIO-2: Tree Permit. (#27) *a. Tree Permit Required* Pursuant to the City's Tree Protection Ordinance (OMC chapter 12.36), the project applicant shall obtain a tree permit and abide by the conditions of that permit.	Prior to approval of construction-related permit	Permit approval by Public Works Department, Tree Division; evidence of approval submitted to Bureau of Building	Bureau of Building
b. Tree Protection During Construction Adequate protection shall be provided during the construction period for any trees which are to remain standing, including the following, plus any recommendations of an arborist: i. Before the start of any clearing, excavation, construction, or other work on the site, every protected tree deemed to be potentially endangered by said site work shall be securely fenced off at a distance from the base of the tree to be determined by the project's consulting arborist. Such fences shall remain in place for duration of all such work. All trees to be removed shall be clearly marked. A scheme shall be established for the removal and disposal of logs, brush, earth and other debris which will avoid injury to any protected tree. ii. Where proposed development or other site work is to encroach upon the protected perimeter of any protected tree, special measures shall be incorporated to allow the roots to breathe and obtain water and nutrients. Any excavation, cutting, filing, or compaction of the existing ground surface within the protected perimeter shall be minimized. No change in existing ground level shall occur within a distance to be determined by the project's consulting arborist from the base of any protected tree at any time. No burning or use of equipment with an open flame shall occur near or within the protected perimeter of any protected tree. iii. No storage or dumping of oil, gas, chemicals, or other substances that may be harmful to trees shall occur within the distance to be determined by the project's consulting arborist from the base of any protected trees, or any other location on the site from which such substances might enter the protected perimeter. No heavy construction equipment or construction materials shall be operated or stored within a distance from the base of any protected trees to be determined by the project's consulting arborist. Wires, ropes, or other devices shall not be attached to any protected tree,	During construction	Public Works Department, Tree Division	Bureau of Building

<table>
<tr><th rowspan="2">Standard Conditions of Approval</th><th colspan="3">Implementation/Monitoring</th></tr>
<tr><th>When Required</th><th>Initial Approval</th><th>Monitoring/ Inspection</th></tr>
<tr><td>except as needed for support of the tree. No sign, other than a tag showing the botanical classification, shall be attached to any protected tree.
iv. Periodically during construction, the leaves of protected trees shall be thoroughly sprayed with water to prevent buildup of dust and other pollution that would inhibit leaf transpiration.
v. If any damage to a protected tree should occur during or as a result of work on the site, the project applicant shall immediately notify the Public Works Department and the project's consulting arborist shall make a recommendation to the City Tree Reviewer as to whether the damaged tree can be preserved. If, in the professional opinion of the Tree Reviewer, such tree cannot be preserved in a healthy state, the Tree Reviewer shall require replacement of any tree removed with another tree or trees on the same site deemed adequate by the Tree Reviewer to compensate for the loss of the tree that is removed.
vi. All debris created as a result of any tree removal work shall be removed by the project applicant from the property within two weeks of debris creation, and such debris shall be properly disposed of by the project applicant in accordance with all applicable laws, ordinances, and regulations.</td><td></td><td></td><td></td></tr>
<tr><td>c. Tree Replacement Plantings
Replacement plantings shall be required for tree removals for the purposes of erosion control, groundwater replenishment, visual screening, wildlife habitat, and preventing excessive loss of shade, in accordance with the following criteria:
i. No tree replacement shall be required for the removal of nonnative species, for the removal of trees which is required for the benefit of remaining trees, or where insufficient planting area exists for a mature tree of the species being considered.
ii. Replacement tree species shall consist of Sequoia sempervirens (Coast Redwood), Quercus agrifolia (Coast Live Oak), Arbutus menziesii (Madrone), Aesculus californica (California Buckeye), Umbellularia californica (California Bay Laurel), or other tree species acceptable to the Tree Division.
iii. Replacement trees shall be at least twenty-four (24) inch box size, unless a smaller size is recommended by the arborist, except that three fifteen (15) gallon size trees may be substituted for each twenty-four (24) inch box size tree where appropriate.
iv. Minimum planting areas must be available on site as follows:
• For Sequoia sempervirens, three hundred fifteen (315) square feet per tree;
• For other species listed, seven hundred (700) square</td><td>Prior to building permit final</td><td>Public Works Department, Tree Division</td><td>Bureau of Building</td></tr>
</table>

Standard Conditions of Approval	Implementation/Monitoring When Required	Initial Approval	Monitoring/ Inspection
feet per tree. **v.** In the event that replacement trees are required but cannot be planted due to site constraints, an in lieu fee in accordance with the City's Master Fee Schedule may be substituted for required replacement plantings, with all such revenues applied toward tree planting in city parks, streets and medians. **vi.** The project applicant shall install the plantings and maintain the plantings until established. The Tree Reviewer of the Tree Division of the Public Works Department may require a landscape plan showing the replacement plantings and the method of irrigation. Any replacement plantings which fail to become established within one year of planting shall be replanted at the project applicant's expense.			
Cultural Resources			
SCA CULT-1: Archaeological and Paleontological Resources – Discovery During Construction. (#29) Pursuant to CEQA Guidelines section 15064.5(f), in the event that any historic or prehistoric subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant shall notify the City and consult with a qualified archaeologist or paleontologist, as applicable, to assess the significance of the find. In the case of discovery of paleontological resources, the assessment shall be done in accordance with the Society of Vertebrate Paleontology standards. If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by the City must be followed unless avoidance is determined unnecessary or infeasible by the City. Feasibility of avoidance shall be determined with consideration of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. Work may proceed on other parts of the project site while measures for the cultural resources are implemented. In the event of data recovery of archaeological resources, the project applicant shall submit an Archaeological Research Design and Treatment Plan (ARDTP) prepared by a qualified archaeologist for review and approval by the City. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes 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	During construction	N/A	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
the Project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practicable. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant. The project applicant shall implement the ARDTP at his/her expense. In the event of excavation of paleontological resources, the project applicant shall submit an excavation plan prepared by a qualified paleontologist to the City for review and approval. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by a qualified paleontologist, as appropriate, according to current professional standards and at the expense of the project applicant.			
SCA CULT-2: Human Remains – Discovery during Construction. (#31) Pursuant to CEQA Guidelines section 15064.5(e)(1), in the event that human skeletal remains are uncovered at the project site during construction activities, all work shall immediately halt and the project applicant shall notify the City and the Alameda County Coroner. If the County Coroner determines that an investigation of the cause of death is required or that the remains are Native American, all work shall cease within 50 feet of the remains until appropriate arrangements are made. In the event that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of section 7050.5 of the California Health and Safety Code. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance, and avoidance measures (if applicable) shall be completed expeditiously and at the expense of the project applicant.	During Construction	N/A	Bureau of Building
Geology and Soils			
SCA GEO-1: Construction-Related Permit(s). (#33) The project applicant shall obtain all required construction-related permits/approvals from the City. The project shall comply with all standards, requirements and conditions contained in construction-related codes, including but not limited to the Oakland Building Code and the Oakland Grading Regulations, to ensure structural integrity and safe construction.	Prior to approval of construction-related permit	Bureau of Building	Bureau of Building
SCA GEO-2: Soils Report. (#34) The project applicant shall submit a soils report prepared by a registered geotechnical engineer for City review and approval. The soils report shall contain, at a minimum, field test results and observations regarding the nature,	Prior to approval of construction-related permit	Bureau of Building	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
distribution and strength of existing soils, and recommendations for appropriate grading practices and project design. The project applicant shall implement the recommendations contained in the approved report during project design and construction.			
Hazards and Hazardous Materials			
SCA HAZ-1: Hazardous Materials Related to Construction. (#39) The project applicant shall ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to minimize potential negative effects on groundwater, soils, and human health. These shall include, at a minimum, the following: a. Follow manufacture's recommendations for use, storage, and disposal of chemical products used in construction; b. Avoid overtopping construction equipment fuel gas tanks; c. During routine maintenance of construction equipment, properly contain and remove grease and oils; d. Properly dispose of discarded containers of fuels and other chemicals; e. Implement lead-safe work practices and comply with all local, regional, state, and federal requirements concerning lead (for more information refer to the Alameda County Lead Poisoning Prevention Program); and If soil, groundwater, or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the project applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notifying the City and applicable regulatory agency(ies) and implementation of the actions described in the City's Standard Conditions of Approval, as necessary, to identify the nature and extent of contamination. Work shall not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.	During construction	N/A	Bureau of Building
SCA HAZ-2: Site Contamination. (#40) *a. Environmental Site Assessment Required* The project applicant shall submit a Phase I Environmental Site Assessment report, and Phase II Environmental Site Assessment report if warranted by the Phase I report, for the project site for review and approval by the City. The report(s) shall be prepared by a qualified environmental assessment professional and include recommendations for remedial action, as appropriate, for hazardous materials. The project applicant shall implement the approved recommendations and submit to the City evidence of	Prior to Approval of Construction-Related Permit	Oakland Fire Department	Oakland Fire Department

Standard Conditions of Approval	**Implementation/Monitoring** **When Required**	 **Initial Approval**	 **Monitoring/ Inspection**
approval for any proposed remedial action and required clearances by the applicable local, state, or federal regulatory agency.			
b. Health and Safety Plan Required The project applicant shall submit a Health and Safety Plan for the review and approval by the City in order to protect project construction workers from risks associated with hazardous materials. The project applicant shall implement the approved Plan.	Prior to Approval of Construction-Related Permit	Bureau of Building	Bureau of Building
c. Best Management Practices (BMPs) Required for Contaminated Sites The project applicant shall ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to minimize potential soil and groundwater hazards. These shall include the following: i. Soil generated by construction activities shall be stockpiled on-site in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state, and federal requirements. ii. Groundwater pumped from the subsurface shall be contained on-site in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building.	During construction	N/A	Bureau of Building
Hydrology and Water Quality			
SCA HYD-1: Erosion and Sedimentation Control Plan for Construction. (#45) *a. Erosion and Sedimentation Control Plan Required* 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.	Prior to Approval of Construction-Related Permit	Bureau of Building	N/A

Standard Conditions of Approval	Implementation/Monitoring When Required	Initial Approval	Monitoring/ Inspection
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.			
b. Erosion and Sedimentation Control During Construction Requirement: The project applicant shall implement the approved Erosion and Sedimentation Control Plan. No grading shall occur during the wet weather season (September 15 through April 15) unless specifically authorized in writing by the Bureau of Building.	During Construction	N/A	Bureau of Building
SCA HYD-2: NPDES C.3 Stormwater Requirements for Regulated Projects. (#50) *a. Post-Construction Stormwater Management Plan Required* The project applicant shall comply with the requirements of Provision C.3 of the Municipal Regional Stormwater Permit issued under the National Pollutant Discharge Elimination System (NPDES). The project applicant shall submit a Post-Construction Stormwater Management Plan to the City for review and approval with the project drawings submitted for site improvements, and shall implement the approved Plan during construction. The Post-Construction Stormwater Management Plan shall include and identify the following: i. Location and size of new and replaced impervious surface; ii. Directional surface flow of stormwater runoff; iii. Location of proposed on-site storm drain lines; iv. Site design measures to reduce the amount of impervious surface area; v. Source control measures to limit stormwater pollution; vi. Stormwater treatment measures to remove pollutants from stormwater runoff, including the method used to hydraulically size the treatment measures; and vii. Hydromodification management measures, if required by Provision C.3, so that post-project stormwater runoff flow and duration match pre-project runoff.	Prior to Approval of Construction-Related Permit	Bureau of Planning; Bureau of Building	Bureau of Building
b. Maintenance Agreement Required The project applicant shall enter into a maintenance agreement with the City, based on the Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement, in accordance with Provision C.3, which provides, in part, for the following: i. The project applicant accepting responsibility for the adequate installation/construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures	Prior to Building Permit Final	Bureau of Building	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
being incorporated into the project until the responsibility is legally transferred to another entity; and ii. Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water Quality Control Board, San Francisco Region, for the purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary. The maintenance agreement shall be recorded at the County Recorder's Office at the applicant's expense.			
Noise			
SCA NOI-1: Construction Days/Hours. (#58) The project applicant shall comply with the following restrictions concerning construction days and hours: a. Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday, except that pier drilling and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m. b. Construction activities are limited to between 9:00 a.m. and 5:00 p.m. on Saturday. In residential zones and within 300 feet of a residential zone, construction activities are allowed from 9:00 a.m. to 5:00 p.m. only within the interior of the building with the doors and windows closed. No pier drilling or other extreme noise generating activities greater than 90 dBA are allowed on Saturday. c. No construction is allowed on Sunday or federal holidays. Construction activities include, but are not limited to, truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area. Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the City, with criteria including the urgency/emergency nature of the work, the proximity of residential or other sensitive uses, and a consideration of nearby residents'/occupants' preferences. The project applicant shall notify property owners and occupants located within 300 feet at least 14 calendar days prior to construction activity proposed outside of the above days/hours. When submitting a request to the City to allow construction activity outside of the above days/hours, the project applicant shall submit information concerning the type and duration of proposed construction activity and the draft public notice for City review and approval prior to distribution of the public notice.	During Construction	N/A	Bureau of Building

	Implementation/Monitoring		
Standard Conditions of Approval	**When Required**	**Initial Approval**	**Monitoring/ Inspection**
SCA NOI-2: Construction Noise. (#59) The project applicant shall implement noise reduction measures to reduce noise impacts due to construction. Noise reduction measures include, but are not limited to, the following: a. Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) wherever feasible. b. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures. c. Applicant shall use temporary power poles instead of generators where feasible. d. Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction. e. The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.	During Construction	N/A	Bureau of Building
SCA NOI-3: Extreme Construction Noise. (#60) a. Construction Noise Management Plan Required Prior to any extreme noise generating construction activities (e.g., pier drilling, pile driving and other activities generating greater than 90dBA), the project applicant shall submit a Construction Noise Management Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction impacts associated with extreme noise generating activities. The project applicant shall implement the approved Plan during construction. Potential attenuation measures include, but are not limited to, the following: i. Erect temporary plywood noise barriers around the	Prior to Approval	Bureau of Building	Bureau of Building

	Implementation/Monitoring		
Standard Conditions of Approval	**When Required**	**Initial Approval**	**Monitoring/ Inspection**
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. Based on the potential noise impacts from construction equipment to nearby sensitive receptors, the following draft site-specific noise attenuation measures are additionally recommended for inclusion in the Construction Noise Management Plan: • Temporary noise barriers will be placed between the proposed construction activities and nearby receptors. The noise barriers may be constructed from plywood and installed on top of a portable concrete K-Rail system to be able to move and/or adjust the wall location during construction activities. A sound blanket system hung on scaffolding, or other noise reduction materials that result in an equivalent or greater noise reduction than plywood, may also be used. Due to the proximity of the commercial and apartment buildings located at the northern and southern borders of project site, respectively, the use of Sound Transmission Class (STC) rated materials, or other materials that could similarly provide high levels of noise reduction above what plywood or sound blankets alone could provide, should be incorporated into the design of the noise barriers installed at these borders. An STC rating roughly equals the decibel reduction in noise volume that a wall, window, or door can provide. Therefore, using STC-rated materials could substantially increase the level of noise reduction provided by the barrier. The composition, location, height, and width of the barriers during different phases of construction will be determined by a qualified acoustical consultant and incorporated into the Construction Noise Management Plan for the project. • Best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) will be used for project equipment and trucks			

Standard Conditions of Approval	Implementation/Monitoring When Required	Initial Approval	Monitoring/ Inspection
during construction wherever feasible. For example, exhaust mufflers on pneumatic tools can lower noise levels by up to about 10 dBA and external jackets can lower noise levels by up to about 5 dBA. • Noise control blankets will be utilized on the building structure as the building is erected to reduce noise emission from the site. The use of noise control blankets will particularly be targeted to cover the levels of the building that have line of sight with the windows of adjacent receptors; • Construction equipment will be positioned as far away from noise-sensitive receptors as possible. The project site is surrounded by hard surfaces, and therefore, for every doubling of the distance between a given receptor and construction equipment, noise will be reduced by approximately 6 dBA. b. Public Notification Required The project applicant shall notify property owners and occupants located within 300 feet of the construction activities at least 14 calendar days prior to commencing extreme noise generating activities. Prior to providing the notice, the project applicant shall submit to the City for review and approval the proposed type and duration of extreme noise generating activities and the proposed public notice. The public notice shall provide the estimated start and end dates of the extreme noise generating activities and describe noise attenuation measures to be implemented.			
SCA NOI-4: Construction Noise Complaints. (#62) The project applicant shall submit to the City for review and approval a set of procedures for responding to and tracking complaints received pertaining to construction noise, and shall implement the procedures during construction. At a minimum, the procedures shall include: a. Designation of an on-site construction complaint and enforcement manager for the project; b. A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager and City Code Enforcement unit; c. Protocols for receiving, responding to, and tracking received complaints; and d. Maintenance of a complaint log that records received complaints and how complaints were addressed, which shall be submitted to the City for review upon the City's request.	Prior to Approval of Construction-Related Permit	Bureau of Building	Bureau of Building
SCA NOI-5: Vibration Impacts on Adjacent Historic Structures or Vibration-Sensitive Activities. (#66) The project applicant shall submit a Vibration Analysis prepared by	Prior to and during Construction	Bureau of Building	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
an acoustical and/or structural engineer or other appropriate qualified professional for City review and approval that establishes pre-construction baseline conditions and threshold levels of vibration that could damage the structure and/or substantially interfere with activities located at: • Mrs. A.E. White Building, 339 15th Street (Oakland City Landmark, contributing element to Harrison & Fifteenth Historic District, listed on NRHP). • Oakland YWCA,1515 Webster Street (Oakland City Landmark, listed on NRHP). • 363/369/375 15th Street • 1430/1432 Franklin Street The Vibration Analysis shall identify design means and methods of construction that shall be utilized in order to not exceed the thresholds. Design considerations may include operating heavy-construction equipment as far away from vibration-sensitive sites as possible and not performing demolition, earth-moving, and other ground-impacting operations simultaneously. The applicant shall implement the recommendations during construction.			
SCA NOI-6: Exposure to Community Noise. (#63) The project applicant shall submit a Noise Reduction Plan prepared by a qualified acoustical engineer for City review and approval that contains noise reduction measures (e.g., sound-rated window, wall, and door assemblies) to achieve an acceptable interior noise level in accordance with the land use compatibility guidelines of the Noise Element of the Oakland General Plan. The applicant shall implement the approved Plan during construction. To the maximum extent practicable, interior noise levels shall not exceed the following: a. 45 dBA: Residential activities, civic activities, hotels. b. 50 dBA: Administrative offices; group assembly activities. c. 55 dBA: Commercial activities. d. 65 dBA: Industrial activities.	Prior to Approval of Construction-Related Permit	Bureau of Planning	Bureau of Building
SCA NOI-7: Operational Noise. (#64) Noise levels from the project site after completion of the project (i.e., during project operation) shall comply with the performance standards of chapter 17.120 of the Oakland Planning Code and chapter 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the City.	Ongoing	N/A	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
Transportation /Traffic			
SCA TRANS-1: Construction Activity in the Public Right-of-Way. (#68) *a. Obstruction Permit Required* The project applicant shall obtain an obstruction permit from the City prior to placing any temporary construction-related obstruction in the public right-of-way, including City streets and sidewalks.	Prior to Approval of Construction Related Permit	Bureau of Building	Bureau of Building
b. Traffic Control Plan Required In the event of obstructions to vehicle or bicycle travel lanes, the project applicant shall submit a Traffic Control Plan to the City for review and approval prior to obtaining an obstruction permit. The project applicant shall submit evidence of City approval of the Traffic Control Plan with the application for an obstruction permit. The Traffic Control Plan shall contain a set of comprehensive traffic control measures for auto, transit, bicycle, and pedestrian detours, including detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. The project applicant shall implement the approved Plan during construction.	Prior to Approval of Construction Related Permit	Public Works Department, Transportation Services Division	Bureau of Building
c. Repair City Streets The project applicant shall repair any damage to the public right-of way, including streets and sidewalks caused by project construction at his/her expense within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to approval of the final inspection of the construction-related permit. All damage that is a threat to public health or safety shall be repaired immediately.	Prior to Building Permit Final	N/A	Bureau of Building
SCA TRANS-2: Bicycle Parking. (#69) The project applicant shall comply with the City of Oakland Bicycle Parking Requirements (chapter 17.118 of the Oakland Planning Code). The project drawings submitted for construction-related permits shall demonstrate compliance with the requirements.	Prior to approval of construction-related permit	Bureau of Planning	Bureau of Building
SCA TRANS-2: Transportation and Parking Demand. (#71) *a. Transportation and Parking Demand Management (TDM) Plan Required* The project applicant shall submit a Transportation and Parking Demand Management (TDM) Plan for review and approval by the City. i. The goals of the TDM Plan shall be the following: • Reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable, consistent with the potential traffic and parking impacts	Prior to Approval of Construction-Related Permit	Bureau of Planning	N/A

Standard Conditions of Approval	Implementation/Monitoring When Required	Initial Approval	Monitoring/ Inspection
of the project. • Achieve the following project vehicle trip reductions (VTR): o Projects generating 50-99 net new a.m. or p.m. peak hour vehicle trips: 10 percent VTR o 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 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			

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
station prioritized as follows: 1) Contribution to AC Transit bus service; 2) Contribution to an existing area shuttle service; and 3) Establishment of new shuttle service. The amount of contribution (for any of the above scenarios) would be based upon the cost of establishing new shuttle service (Scenario 3). • Guaranteed ride home program for employees, either through 511.org or through separate program. • Pre-tax commuter benefits (commuter checks) for employees. • Free designated parking spaces for on-site car-sharing program (such as City Car Share, Zip Car, etc.) and/or car-share membership for employees or tenants. • On-site carpooling and/or vanpool program that includes preferential (discounted or free) parking for carpools and vanpools. • Distribution of information concerning alternative transportation options. • Parking spaces sold/leased separately for residential units. Charge employees for parking, or provide a cash incentive or transit pass alternative to a free parking space in commercial properties. • Parking management strategies including attendant/valet parking and shared parking spaces. • Requiring tenants to provide opportunities and the ability to work off-site. • Allow employees or residents to adjust their work schedule in order to complete the basic work requirement of five eight-hour workdays by adjusting their schedule to reduce vehicle trips to the worksite (e.g., working four, ten-hour days; allowing employees to work from home two days per week). • Provide or require tenants to provide employees with staggered work hours involving a shift in the set work hours of all employees at the workplace or flexible work hours involving individually determined work hours. The TDM Plan shall indicate the estimated VTR for each strategy, based on published research or guidelines where feasible. For TDM Plans containing ongoing operational VTR strategies, the Plan shall include an ongoing monitoring and enforcement program to ensure the Plan is implemented on an ongoing basis during project operation. If an annual compliance report is required, as explained below, the TDM Plan shall also specify the topics to be addressed in the annual report.			

	Implementation/Monitoring		
Standard Conditions of Approval	**When Required**	**Initial Approval**	**Monitoring/ Inspection**
b. TDM Implementation — Physical Improvements 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.	Prior to Building Permit Final	Bureau of Building	Bureau of Building
c. TDM Implementation — Operational Strategies 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.	Ongoing	Bureau of Planning	Bureau of Planning
Utilities and Service Systems			
SCA UTIL-1: Construction and Demolition Waste Reduction and Recycling. (#74) The project applicant shall comply with the City of Oakland Construction and Demolition Waste Reduction and Recycling Ordinance (chapter 15.34 of the Oakland Municipal Code) by submitting a Construction and Demolition Waste Reduction and Recycling Plan (WRRP) for City review and approval, and shall implement the approved WRRP. Projects subject to these requirements include all new construction, renovations/alterations/ modifications with construction values of $50,000 or more (except R-3 type construction), and all demolition (including soft demolition) except demolition of type R-3 construction. The WRRP must specify the methods by which the project will divert construction and demolition debris waste from landfill disposal in accordance with current City requirements. The WRRP may be submitted electronically at www.greenhalo systems.com or manually at the City's Green Building Resource Center. Current standards, FAQs, and forms are available on the City's website and in the Green Building Resource Center.	Prior to Approval of Construction-Related Permit	Public Works Department, Environmental Services Division	Public Works Department, Environmental Services Division
SCA UTIL-2: Underground Utilities. (#75) The project applicant shall place underground all new utilities	During Construction	N/A	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
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.			
SCA UTIL-3: Recycling Collection and Storage Space. (#76) The project applicant shall comply with the City of Oakland Recycling Space Allocation Ordinance (chapter 17.118 of the Oakland Planning Code). The project drawings submitted for construction-related permits shall contain recycling collection and storage areas in compliance with the Ordinance. For residential projects, at least two cubic feet of storage and collection space per residential unit is required, with a minimum of ten cubic feet. For nonresidential projects, at least two cubic feet of storage and collection space per 1,000 square feet of building floor area is required, with a minimum of ten cubic feet.	Prior to Approval of Construction-Related Permit	Bureau of Planning	Bureau of Building
SCA UTIL-4: Green Building Requirements. (#77) *a. Compliance with Green Building Requirements During Plan-Check* The project applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (chapter 18.02 of the Oakland Municipal Code). i. The following information shall be submitted to the City for review and approval with the application for a building permit: • Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards. • Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit. • Copy of the Unreasonable Hardship Exemption, if granted, during the review of the Planning and Zoning permit. • Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (ii) below. • Copy of the signed statement by the Green Building Certifier 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	Prior to Approval of Construction-Related Permit	Bureau of Building	N/A

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
project still complies with the requirements of the Green Building Ordinance, unless an Unreasonable Hardship Exemption was granted during the review of the Planning and Zoning permit. • Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance. Ii. The set of plans in subsection (i) shall demonstrate compliance with the following: • CALGreen mandatory measures. • All pre-requisites per the green building checklist approved during the review of the Planning and Zoning permit, or, if applicable, all the green building measures approved as part of the Unreasonable Hardship Exemption granted during the review of the Planning and Zoning permit. • A minimum of 23 points (3 Community; 6 IAQ/Health; 6 Resources; 8 Water) as defined by the Green Building Ordinance for Residential New Construction. • Certification requirement for non-residential construction is LEED Gold • All green building points identified on the checklist approved during review of the Planning and Zoning permit, unless a Request for Revision Plan-check application is submitted and approved by the Bureau of Planning that shows the previously approved points that will be eliminated or substituted. • The required green building point minimums in the appropriate credit categories.			
b. *Compliance with Green Building Requirements During Construction* The project applicant shall comply with the applicable requirements of CALGreen and the Oakland Green Building Ordinance during construction of the project. The following information shall be submitted to the City for review and approval: i. Completed copies of the green building checklists approved during the review of the Planning and Zoning permit and during the review of the building permit. ii. Signed statement(s) by the Green Building Certifier during all relevant phases of construction that the project complies with the requirements of the Green Building Ordinance. iii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.	During Construction	N/A	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
c. Compliance with Green Building Requirements After Construction Within sixty (60) days of the final inspection of the building permit for the project, the Green Building Certifier shall submit the appropriate documentation to Build It Green and attain the minimum required certification/point level. Within one year of the final inspection of the building permit for the project, the applicant shall submit to the Bureau of Planning the Certificate from the organization listed above demonstrating certification and compliance with the minimum point/certification level noted above.	After Project Completion as Specified	Bureau of Planning	Bureau of Building
SCA UTIL-5: Sanitary Sewer System. (#79) The project applicant shall prepare and submit a Sanitary Sewer Impact Analysis to the City for review and approval in accordance with the City of Oakland Sanitary Sewer Design Guidelines. The Impact Analysis shall include an estimate of pre-project and post-project wastewater flow from the project site. In the event that the Impact Analysis indicates that the net increase in project wastewater flow exceeds City-projected increases in wastewater flow in the sanitary sewer system, the project applicant shall pay the Sanitary Sewer Impact Fee in accordance with the City's Master Fee Schedule for funding improvements to the sanitary sewer system.	Prior to Approval of Construction-Related Permit	Public Works Department, Department of Engineering and Construction	N/A
SCA UTIL-6: Storm Drain System. (#80) The project storm drainage system shall be designed in accordance with the City of Oakland's Storm Drainage Design Guidelines. To the maximum extent practicable, peak stormwater runoff from the project site shall be reduced by at least 25 percent compared to the pre-project condition.	Prior to Approval of Construction-Related Permit	Bureau of Building	Bureau of Building

ATTACHMENT B:
COMMUNITY PLAN EXEMPTION FINDINGS

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

Further, Section 15183 states,

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

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

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

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

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

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

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

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

- The land use designation for the site is Central Business District. This classification is intended to encourage, support, and enhance the downtown area as a high-density mixed-use urban center of regional importance, and a primary hub for business, communications, office, government, high technology, retail, entertainment, and transportation. The proposed mixed-use project would be consistent with this designation.
- As demonstrated under Criterion Section 15332(a): General Plan and Zoning Consistency (Section VIII), the Project is consistent with the development density established by existing zoning and General Plan policies for the site, and there are no peculiar aspects that would increase the severity of any of the previously identified significant cumulative effects in the LUTE EIR.
- The Project is consistent with the development goals in the Redevelopment Plan. The Redevelopment Plan EIR details particular projects and programs that are anticipated to include targeting investments and activities toward certain catalyst projects, infrastructure improvement projects and infill development projects that are consistent with the General Plan. The 1433 Webster Street Project is consistent with at least two major goals of these projects:
  - Re-establishment of residential area for all economic levels within specific portions of the Redevelopment Project Area.
  - Provisions of employment and other economic benefits to disadvantaged persons living within or near the Redevelopment Project Area.

Project-specific impacts peculiar to the project or site, or those not analyzed in prior EIR. Because the Project is consistent with the policies and land use designation in the LUTE, the Project's potential contribution to cumulatively significant effects has already been addressed in that prior EIR. In addition, the Redevelopment Plan EIR analyzed the cumulative effects of development projects that would occur absent the Redevelopment Plan Amendments, which would include 1433 Webster, which is not specifically addressed in the EIR. Therefore, consistent with CEQA Guidelines Section 15183 which allows for streamlined environmental review, this document needs only to consider whether there are project-specific effects peculiar to the project or its site, and relies on the streamlining provisions of CEQA Guidelines Section 15183 to not re-consider cumulative effects.

Effects Analyzed in Prior EIR

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

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

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

Environmental Effects Summary – 2011 Redevelopment Plan Amendments EIR

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

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

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

Thus, the effects of the Project were discussed in the prior EIRs.

New Specific Effects

As demonstrated in Section VII, the Project would not cause new specific effects that were not addressed in the LUTE EIR or the Redevelopment Plan EIR. The analysis of the Project in Sections VIII and IX includes all the resource topics identified as potentially incurring significant unavoidable impacts, and concludes that there would be no impacts that were not analyzed in prior EIRs.

Specifically, the analysis in Sections VIII and IX included the resource topics that the Redevelopment Plan EIR determined could have significant impacts:

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

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

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

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

Substantial New Information

There is no new information that was not known at the time the Redevelopment Plan EIR was certified in 2011that would cause more severe adverse impacts than discussed in the prior EIR. There have been no significant changes in the underlying development assumptions, nor in the applicability or feasibility of mitigation measures or SCAs included in the prior EIRs.

Standard Conditions of Approval

SCAs incorporate policies and standards from various adopted plans, policies, and ordinances, which have been found to substantially mitigate environmental effects. The SCAs are adopted as requirements of an individual Project when it is approved by the City and are designed to, and will, substantially mitigate environmental effects, thus meeting the provision of Section 15183 (f), which states that impacts that are addressed by uniformly applied development standards (in this case, City of Oakland SCAs) are not considered peculiar to the parcel for the purpose of requiring further environmental review.

Therefore, the Project is eligible for consideration of an exemption under California Public Resources Code Section 21083.3 and Section 15183 of the CEQA Guidelines.

ATTACHMENT C:
QUALIFIED INFILL STREAMLINING FINDINGS

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

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

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

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

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

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

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

Appendix M Performance Standards

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

PROJECT INFILL ELIGIBILITY

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

PROJECT INFILL ELIGIBILITY		
CEQA Eligibility Criteria		**Eligible?/Notes for Proposed Project**
	shall comply with any policies and standards identified in the local general plan, specific plan, zoning code, or community risk reduction plan for the protection of public health from such sources of air pollution. If the local government has not adopted such plans or policies, the project shall include measures, such as enhanced air filtration and project design, that the lead agency finds, based on substantial evidence, will promote the protection of public health from sources of air pollution. Those measures may include, among others, the recommendations of the California Air Resources Board, air districts, and the California Air Pollution Control Officers Association.	be required to implement the health risk reduction measures under SCA-20, including the installation and maintenance of high efficiency filtration systems with a Minimum Efficiency Reporting Value rating of 13 (MERV-13). See the discussion under Criterion Section 15332(d), Air Quality, included in this CEQA Analysis.
	2b. *Additional Performance Standards by Project Type.* In addition to implementing all the features described in criterion 2a above, the project must meet eligibility requirements provided below by project type.[a]	—
	Residential. A residential project must meet **one** of the following: A. *Projects achieving below average regional per capita vehicle miles traveled.* A residential project is eligible if it is located in a "low vehicle travel area" within the region; B. *Projects located within ½ mile of an Existing Major Transit Stop or High Quality Transit Corridor.* A residential project is eligible if it is located within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor; **or** C. *Low – Income Housing.* A residential or mixed-use project consisting of 300 or fewer residential units all of which are affordable to low income households is eligible if the developer of the development project provides sufficient legal commitments to the lead agency to ensure the continued availability and use of the housing units for lower income households, as defined in Section 50079.5 of the Health and Safety Code, for a period of at least 30 years, at monthly housing costs, as determined pursuant to Section 50053 of the Health and Safety Code.	Yes, satisfies B. The project site is well-served by multiple transit providers. The project site is within 0.25-mile of the 12th Street BART station. Alameda-Contra Costa Transit (AC Transit) bus routes 1, 11, 12, 18, 1R, 26, 51A, 58L, 72, 72M, 72R, 800, 802, 805, 840, 851 and the Broadway Shuttle all stop within 0.25 mile of the Project site.

PROJECT INFILL ELIGIBILITY		
CEQA Eligibility Criteria		**Eligible?/Notes for Proposed Project**
	Commercial/Retail. A commercial/retail project must meet **one** of the following: A. *Regional Location.* A commercial project with no single-building floor-plate greater than 50,000 square feet is eligible if it locates in a "low vehicle travel area"; **or** B. *Proximity to Households.* A project with no single-building floor-plate greater than 50,000 square feet located within ½ mile of 1,800 households is eligible.	Not Applicable. According to Section IV (G) of CEQA Appendix M, for mixed-use projects "…the performance standards in this Section that apply to the predominant use shall govern the entire project." Because the predominant use is residential, the requirements for commercial/retail projects do not apply.
	Office Building. An office building project must meeting **one** of the following: A. *Regional Location.* Office buildings, both commercial and public, are eligible if they locate in a low vehicle travel area; **or** B. *Proximity to a Major Transit Stop.* Office buildings, both commercial and public, within ½ mile of an existing major transit stop, or ¼ mile of an existing stop along a high quality transit corridor, are eligible.	The project satisfies criterion B, because it is less than .25 miles away from the 12th Street Bart Station.
	Schools. Elementary schools within 1 mile of 50 percent of the projected student population are eligible. Middle schools and high schools within 2 miles of 50 percent of the projected student population are eligible. Alternatively, any school within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor is eligible. Additionally, to be eligible, all schools shall provide parking and storage for bicycles and scooters, and shall comply with the requirements of Sections 17213, 17213.1, and 17213.2 of the California Education Code.	Not Applicable.
	Transit. Transit stations, as defined in Section 15183.3(e)(1), are eligible.	Not Applicable.
	Small Walkable Community Projects. Small walkable community projects, as defined in Section 15183.3, subdivision (e)(6), that implement the project features in 2a above are eligible.	Not Applicable.

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

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

Attachment D:
Transportation Impact Analysis

MEMORANDUM

Date: January 24, 2018

To: Nat Taylor, Lamphier Gregory

From: Bill Burton

Subject: 1433 Webster – Transportation Impact Analysis

OK16-0097

This memorandum summarizes the results of the transportation impact analysis that Fehr & Peers completed for the proposed 1433 Webster project (Project). Based on the City of Oakland's Threshold of Significance Guidelines, the proposed Project would not cause significant impacts on the local transportation system. Our analysis assumptions and summary are detailed below.

The remainder of this memorandum is divided into the following sections:

- Introduction
- Project Transportation Characteristics
- Significance Criteria
- Vehicle Miles of Travel
- Parking and Loading Assessment
- Site Plan Review

INTRODUCTION

Figure 1 illustrates the location of the Project within the local and regional street system. The proposed Project would include 179 multi-family residential units, 1,300 square feet of ground level retail, 60,000 square feet of office space and an above grade parking podium. The Project is located on the southwest corner of the 15th Street/Webster intersection. The existing site is used as a two-story commercial space. **Figure 2** shows the project site plan of the street level.

Access to the proposed Project's parking garage would be provided by a driveway on Webster Street which would be used by Project residents.

PROJECT TRANSPORTATION CHARACTERISTICS

Automobile Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the local roadway network. For this analysis, trip generation is estimated for typical weekday AM peak and PM peak hours. **Table 1** summarizes the trip generation for the proposed Project. The estimates presented are based on the most recently published rates in the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (9th Edition) with an adjustment accounting for trips that would be made by other modes.

The ITE data is based on data collected at mostly single-use suburban sites where the automobile is often the only travel mode. However, the Project site is in a mixed-use urban environment in Downtown Oakland where many trips are walk, bike, or transit trips. Since the Project is four blocks from the 19th Street and 12th Street/City Center BART Stations, this analysis reduces the ITE based trip generation by 43 percent to account for the non-automobile trips. This reduction is consistent with City of Oakland *Transportation Impact Study Guidelines* and is based on the Bay Area Travel Survey (BATS) 2000, which shows that the non-automobile mode share within one-half mile of a BART Station in Alameda County is about 43 percent. A 2011 research study shows reducing ITE based trip generation using BATS data results in a more accurate estimation of trip generation for mixed use developments than just using ITE based trip generation.[1]

As summarized in **Table 1**, the Project is estimated to generate about 1,128 daily, 90 AM peak hour, and 112 PM peak hour net new vehicle trips. The amount of traffic generated by the existing land uses to be removed by development of the Project have been deducted from the Project's forecast trips

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1 *Evaluation of the Operation and Accuracy of Five Available Smart Growth Trip Generation Methodologies*. Institute of Transportation Studies, UC Davis, 2011.

TABLE 1: VEHICLE TRIP GENERATION FOR 1433 WEBSTER

Land Use	*Units*[1]	*ITE Code*	*Daily*	*AM Peak Hour*			*PM Peak Hour*		
				In	*Out*	*Total*	*In*	*Out*	*Total*
Residential	179 DU	220	1,190	18	73	91	72	39	111
Retail	1.3 KSF	820	404	7	5	12	16	17	33
Office	60.0 KSF	710	662	83	11	94	15	74	89
Subtotal			*2,236*	*108*	*88*	*196*	*102*	*129*	*231*
Existing Office	25.145 KSF	710	-277	-34	-5	-39	-6	-31	-37
Proposed Project Only Trip Generation			1,979	74	84	158	97	99	196
Non-Auto Reduction (-43%)[2]			-851	-32	-36	-68	-42	-43	-84
Total Project Trips			**1,128**	**42**	**48**	**90**	**55**	**56**	**112**

Notes:

1. DU = Dwelling Units, KSF = 1,000 square feet.
2. City of Oakland Transportation Impact Study Guidelines.

Source: ITE Trip Generation Manual, 9th Edition, 2012; Fehr & Peers, 2018.

Trip Generation for All Travel Modes

Consistent with City of Oakland *Transportation Impact Study Guidelines,* **Table 2** presents the estimates of Project trip generation for all travel modes.

TABLE 2: TRIP GENERATION BY MODE

Mode	*Mode Share Adjustment Factors*[1]	*Daily*	*Weekday AM Peak Hour*	*Weekday PM Peak Hour*
Automobile	57.0%	1,128	90	112
Transit	30.4%	602	48	60
Bike	3.9%	77	6	8
Walk	23.0%	455	36	45
Total Trips	-	1,979	158	196

Notes:

1. Based on City of Oakland Transportation Impact Study Guidelines assuming project site is in an urban environment within 0.5 miles of a BART Station.

Source: Fehr & Peers, 2018.

SIGNIFICANCE CRITERIA

The City of Oakland's CEQA Thresholds of Significance require an evaluation of potential impacts related to vehicle miles traveled (VMT) criteria; in September, 2016, the City adopted VMT as the standard of significance for CEQA traffic analyses and no longer applies traffic load and capacity thresholds related to Level of Service (LOS). According to the City's significance criteria specified in the adopted April 2017 City of Oakland Transportation Impact Review Guidelines – Land Use Development Projects, the project would have a significant impact on the environment if it would:

- 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 LOS or other measures of vehicle delay); or
- Cause substantial additional VMT per capita, per service population, or other appropriate efficiency measure; or
- 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:

1. For residential projects, a project would cause substantial additional VMT if it exceeds existing regional household VMT per capita minus 15 percent.

2. For office projects, a project would cause substantial additional VMT if it exceeds the existing regional VMT per employee minus 15 percent.

3. For retail projects, a project would cause substantial additional VMT if its VMT 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 ½-mile of a Major Transit Corridor or Stop[2] and satisfies the following:
    a. Has a Floor Area Ratio (FAR) of more than 0.75.
    b. Include less parking for use by residents, customers, or employees of the project than other typical nearby uses, or more than required by the City (if parking minimums pertain to the project site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the project site).
    c. Is consistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Transportation Commission).

VEHICLE MILES OF TRAVEL

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.

Considering these travel behavior factors, most of Oakland has a lower VMT per capita and VMT per employee ratios than the nine-county San Francisco Bay Area region. In addition, some neighborhoods of the City have lower VMT ratios than other areas of the City.

Estimating VMT

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.

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

The MTC Travel Model estimates VMT by automobiles for different employment categories. 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 and transit carrier for a particular scenario. For example, in the 2040 MTC model run, trips are assigned to and from each of the TAZs across the region based on the projected employment categories.

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

- Socioeconomic data developed by the Association of Bay Area Governments (ABAG)
- Population data created using 2000 US Census and modified using the open source PopSyn software
- Zonal accessibility measurements for destinations of interest
- Travel characteristics and automobile ownership rates derived from the 2000 Bay Area Travel Survey
- Observed vehicle counts and transit boardings.

The daily VMT output from the MTC Travel Model for residential and office uses comes from a tour-based analysis. The tour-based analysis examines the entire chain of trips over the course of a day, not just trips to and from the project site. In this way, all of the VMT for an individual resident or employee is included; not just trips into and out of the person's home or workplace. For example: a resident leaves her apartment in the morning, stops for coffee, and then goes to the office. In the afternoon she heads out to lunch, and then returns to the office, with a stop at the drycleaners on the way. After work she goes to the gym to work out, and then joins some friends at a restaurant for dinner before returning home. The tour-based approach would add up the total amount driven and assign the daily VMT to this resident for the total number of miles driven on the entire "tour".

Based on the MTC Travel Model, the regional average daily VMT per capita is 15.0 under 2020 conditions and 13.8 under 2040 conditions, and the regional average daily VMT per worker is 21.8 under 2020 conditions and 20.3 under 2040 conditions.

Screening Analysis

The Project satisfies the Low-VMT Area and Near Transit Station screening criterion, as detailed below.

Criterion Number 2: Low-VMT Area

Table 3 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. Considering that the proposed project would provide 1,300 feet of retail space, the retail is considered to be local serving and the VMT per employee criterion is used to screen the VMT for the commercial component of the proposed project.

TABLE 3 – VEHICLE MILES OF TRAVEL SUMMARY

Land Use	Bay Area				TAZ 971	
	2020		2040		2020	2040
	Regional Average	Regional Average minus 15%	Regional Average	Regional Average minus 15%		
Residential (VMT per Capita)[1]	15.0	12.8	13.8	11.7	4.5	4.1
Commercial (VMT per employee)[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 November 2016.
2. MTC Model results at analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerWorker and accessed in November 2016.

Source: Fehr & Peers, 2018

As shown in Table 3, the 2020 and 2040 average daily VMT per capita and VMT per worker in the project TAZ is more than 15 percent below the regional averages. Therefore, it is presumed that the proposed project would not result in substantial additional VMT and project impacts with respect to VMT would be less-than-significant.

Criterion Number 3: Near Transit Station

The Project also satisfies screening criterion number 3 as it is within ½ mile of two BART stations and many downtown bus facilities. It is also consistent with the other required criteria, including floor area ratio, parking and consistency with the regional SCS.

PARKING AND LOADING ASSESSMENT

The Project would provide 86 parking spaces for the residential land use. Parking would not be provided for commercial land uses. **Table 4** summarizes automobile parking demand for the Project. Based on the five-year, 2013 American Community Survey (ACS) data, average automobile ownership in Downtown Oakland[3] is about 0.54 vehicles per unit, which corresponds to peak parking demand of about 97 vehicles for the residents. There could be additional parking demand for the visitors of the residents, which is not captured in the residential parking demand. Commercial uses on the site are expected to generate demand for an additional 88 vehicles using parking demand rates from the Institute of Transportation Engineers' (ITE) *Parking Generation, 4th Edition* reference. These rates were adjusted using City standard factors for transit, bicycle and walk trips in this portion of the City. Overall, the site is expected to have a parking deficit of approximately 11 residential spaces and a deficit of 88 commercial spaces. Any demand generated by the commercial portions of the site would need to be accommodated in local on-street parking or in other area parking garages that are open to the public.

TABLE 4: PROJECT AUTOMOBILE PARKING SUPPLY AND DEMAND

Use	*Units[1]*	*Parking Demand Rate*	*Parking Demand*	*Parking Supply*	*Difference*
Residential	179 DU	0.54[2]	97[4]	86	-11
Retail	1.3 KSF	2.14[3]	3	0	-3
Office	60.0 KSF	1.41[4]	85	0	-85

Notes:

1. DU = dwelling unit; KSF = 1,000 square feet.
2. Average automobile ownership per residential unit in Downtown Oakland based on 2013 ACS.
3. ITE Parking Demand, 4th Edition, Land Use Code 820 (Rate = 3.76 spaces/KSF), adjusted by 43% to account for transit, walk and bike trips per City Guidelines.
4. ITE Parking Demand, 4th Edition, Land Use Code 701 (Rate = 2.47 spaces/KSF, adjusted by 43% to account for transit, walk and bike trips per City Guidelines.
5. This does not take into account potential parking demand for visitors of the residential units.

Source: Fehr & Peers, 2018.

Table 5 presents the off-street automobile parking requirement for the Project. The project site lies within two Central Business Districts (CBD-P and CBD-C) according to Oakland's Citywide Zoning Map. Based on City of Oakland Municipal Code requirements, commercial and residential uses in this portion of the central business district do not need to provide parking for either CBD-P or CBD-C zones.

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[3] Census tracts for Downtown Oakland were selected as tracts 4028, 4029, 4030, and 4031.

TABLE 5: PROJECT AUTOMOBILE PARKING SUPLY AND CODE REQUIREMENTS

Use	*Units*[1]	*Code Requirement*
Residential	179 DU	0[2]
Retail	1.3 KSF	0[3]
Office	60.0 KSF	0[3]
Total Parking Required		0
Parking Supply		86
Parking Surplus		**86**

Notes:
1. DU = dwelling unit; KSF = 1,000 square feet.
2. City Municipal Code Section 17.116.060 for multi-family dwellings in Zone CBD-C.
3. City Municipal Code Section 17.116.080 for commercial uses in Zone CBD-P or CBD-C.

Source: Fehr & Peers, 2018; Oakland Municipal Code, 2017.

In addition to auto parking, the Project would provide 53 long-term bike parking spaces and 14 short-term bike parking spaces. As shown in **Table 6**, this would meet the City Code requirements for bike parking spaces.

TABLE 6: PROJECT BIKE PARKING SUPPLY AND CODE REQUIREMENTS

Use	*Code Requirement*	*Supply*	*Difference*
Short Term Bike Parking	14	14	0
Long Term Bike Parking	53	53	0

Source: Fehr & Peers, 2018; Oakland Municipal Code, 2017.

The Project would provide one loading berth within the parking garage. Based on City Code requirements, two loading berths are required for the proposed 203,760 square feet of residential space, and one loading berth is required for the proposed 61.3 square feet of commercial space. Therefore, the proposed site plan requires two additional loading berths to meet the City's code for loading.

The addition of a project driveway on Webster Street would require the removal of on-street parking. This driveway would require the removal of two parking spaces along Webster Street.

SITE PLAN REVIEW

The Project's site plan and circulation are discussed below.

Site Access and Interface with Road Network

The site plan was reviewed to determine if it would directly or indirectly cause or expose roadway users to a permanent and substantial transportation hazard due to a new or existing physical design feature or incompatible uses. According to the site plan, vehicle access is provided by a driveway on Webster Street. Since Webster Street is a one-way street, the project access point will be a right-in, right-out driveway. In order to reduce the potential for hazards to roadway users, it is recommended that the driveway include a stop control and convex driveway mirror for exiting vehicles to prevent conflicts with pedestrians, a tight turn radius for entering vehicles to reduce speeds, and signage that brings roadway users' attentions to the various other users at the driveway.

Emergency Vehicle Access

The site plan was reviewed to determine if it would fundamentally impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The Project is bounded to the north by 15th Street and to the east by Webster Street and does not interfere with available roadway capacity for potential emergency vehicle routes along either roadway.

Truck Circulation

In the vicinity of the project site, trucks are prohibited on 14th Street and 13th Street east of Webster Street. Designated truck routes near the project site include 8th Street, 7th Street, and I-880 Northbound to the south and Castro Street and I-980 to the west. Trucks during both construction and the normal commercial uses of the site should avoid the prohibited roadways and take alternative roads to and from the designated truck routes. Trucks accessing the site would ingress and egress at the driveway on Webster Street to the site's loading berth. According to the City of Oakland's municipal code, three loading berths are required for the combination of land uses and densities at this site; the current site plan designates a single residential loading berth. To meet the city's berth requirements and avoid truck spillover onto Webster Street, two additional loading berths should be considered.

Pedestrian Circulation

The site plan was reviewed to determine if it would directly or indirectly result in a permanent substantial decrease in pedestrian safety. Pedestrian access to the site is provided by the sidewalks along 15th Street and Webster Street. Additionally, the Project will provide new street trees and planter boxes along these sidewalks. The Project will not remove existing pedestrian facilities, increase street crossing distances, add new vehicle travel or turn lanes, or remove existing buffering elements. The Project does add a single right-in right-out driveway on Webster Street. Stop controlled access, tighter turning radii, and cautionary signage can help prevent degradation of pedestrian safety at this location.

Bicycle Circulation

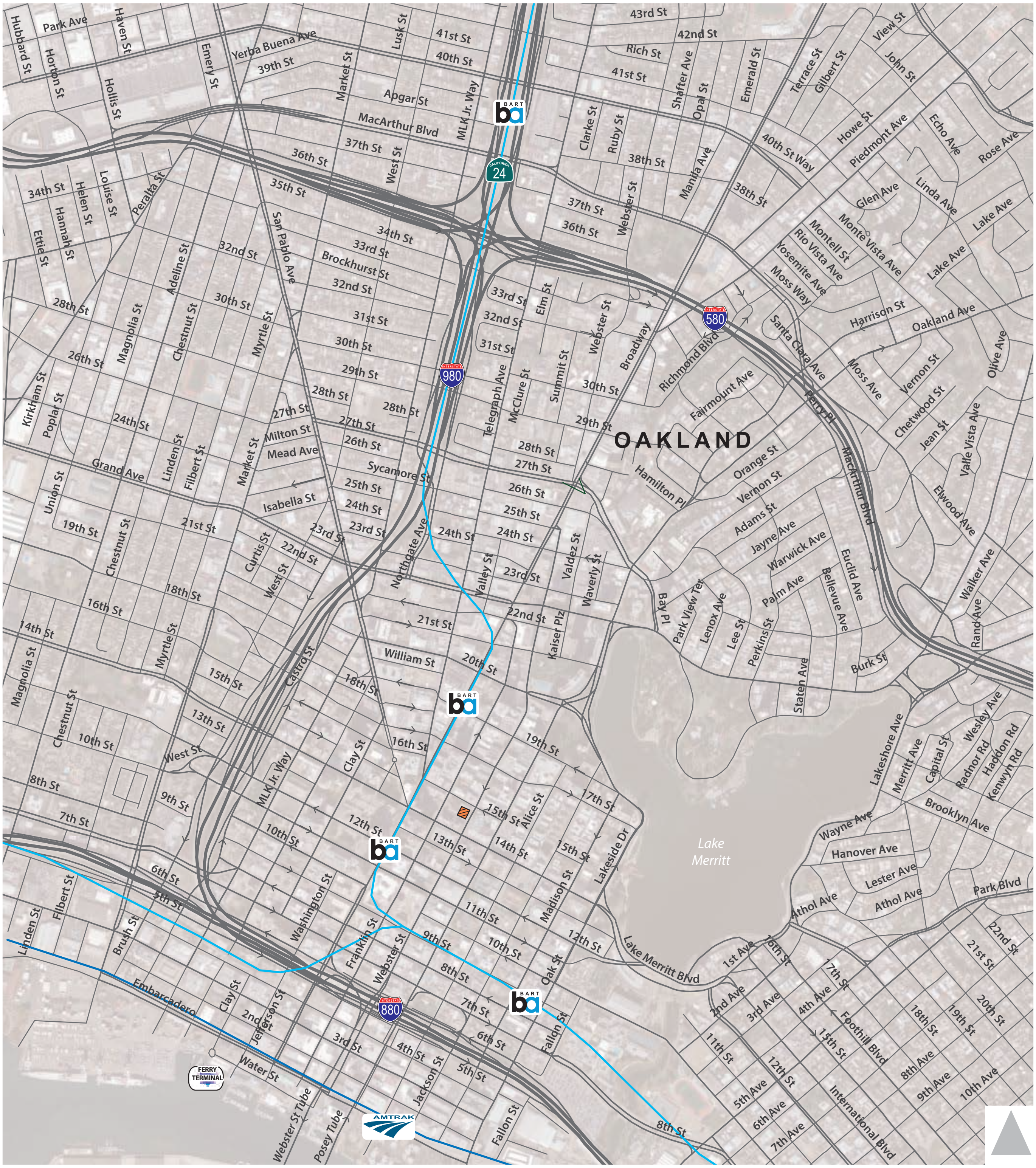
The site plan was reviewed to determine if it would directly or indirectly result in a permanent substantial decrease in bicycle safety. Bicycle access to the site is provided by a Class II bicycle lane along Webster Street. Additionally, the Project will provide new short- and long-term bicycle parking on-site. The Project will not remove or degrade bikeways or add new vehicle travel or turn lanes. The Project does add a single right-in right-out driveway on Webster Street. Stop controlled access, tighter turning radii, and cautionary signage can help prevent degradation of pedestrian safety at this location.

Pedestrian Routes between Project and Major Bus Routes

The site plan was reviewed to determine if it would directly or indirectly result in a permanent substantial decrease in bus rider safety. Transit access to the site is provided by two Bay Area Rapid Transit (BART) stations four blocks to the north and to the south. The Project does not remove or degrade transit facilities in its vicinity. Furthermore, it does not degrade pedestrian facilities between the Project and transit stations.

Attachments:

Figures:



LEGEND

Project Site

Figure 1

Project Site Location

OK16-0097_1_ProjSite

Figure 2

Project Site Plan

Attachment E:
Historic Resource Evaluation

HISTORICAL RESOURCES EVALUATION OF 1433 WEBSTER STREET & 351-359 15TH STREET

OAKLAND, ALAMEDA COUNTY, CALIFORNIA

Prepared by:

Michael Hibma, M.A. RPH #603
Angelique Theriot, M.A.
LSA
157 Park Place
Point Richmond, California 94801
(510) 236-6810
www.lsa.net

Project No. NAU1601

LSA

December 2016

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APPENDICES

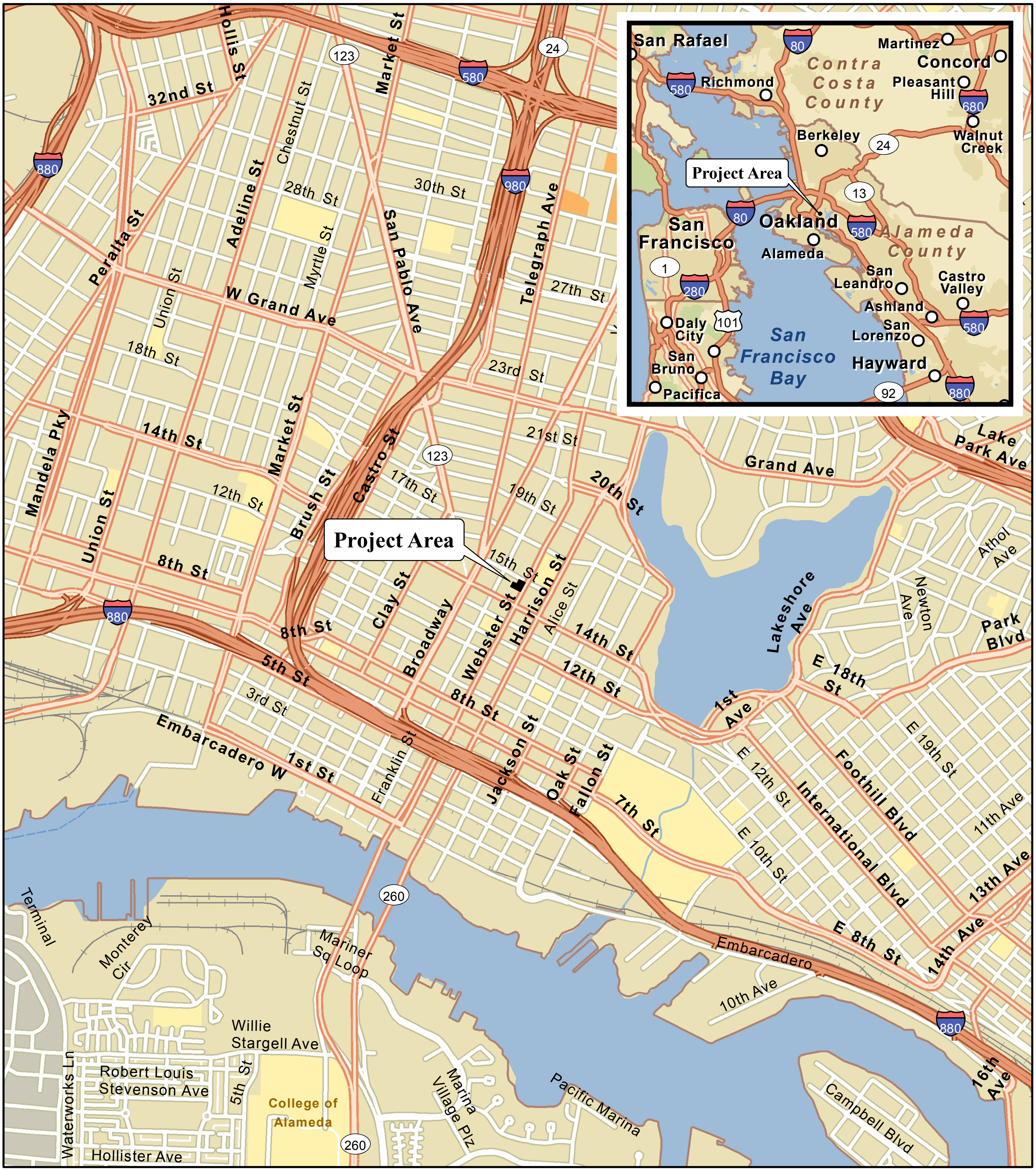
1.0 EXECUTIVE SUMMARY

This report presents the results of Historical Resources Evaluation (HRE) conducted by LSA for two commercial buildings located on two parcels at 1433 Webster Street (APN 008-0624-036) and 351-359 15th Street (APN 008-0624-035), in Downtown Oakland, Alameda County, California (Figures 1 and 2). The building at 1433 Webster Street, built in 1914, is constructed of reinforced concrete and masonry on a 0.223-acre rectangular parcel. The building at 351-359 15th Street, built in 1938, is constructed of reinforced concrete and masonry on a 0.141-acre square parcel. These parcels form the 0.365-acre project area, which is bordered to the east by Webster Street, to the north by three single-story commercial buildings, to the west by a single-story office building, and to the south by a vacant lot. The proposed project would demolish the existing buildings (1433 Webster Street and 351-359 15th Street) and redevelop the property with a 25-story, mixed-use, multi-family residential building containing 179 units.

LSA conducted background research, a field survey, and resource recordation to prepare this HRE, which addresses the significance criteria of the California Register of Historical Resources and the Historic Preservation Element (HPE) of the *Oakland General Plan*.

This report includes (1) a description of the regulatory context for cultural resources in the project area; (2) a summary of the methods used to prepare the HRE; (3) a description of the buildings and their respective historic contexts; (4) eligibility evaluations of the buildings in the project area; (5) an effects assessment based on the *Secretary of the Interior's Standards for the Treatment of Historic Properties* for project-related effects and assesses the compatibility of the proposed design to adjacent and nearby historical resources; and (6) supplementary assessments of potential shadow and wind effects to adjacent historical resources.

As documented in this report, LSA concludes that due to their lack of historical significance and integrity, the buildings at 1433 Webster Street and 351-359 15th Street do not appear eligible for inclusion in the California Register of Historical Resources (CRHR), nor do they qualify for listing in the City of Oakland Register of Historic Resources (Oakland Register) as candidates for City of Oakland Landmarks, Heritage Properties, or included in an S-7 or S-20 Preservation Combining Zone. For these reasons, these buildings do not appear to qualify as historical resources for the purposes of the California Environmental Quality Act (as defined at Public Resources Code §21084.1).



LSA

FIGURE 1

N

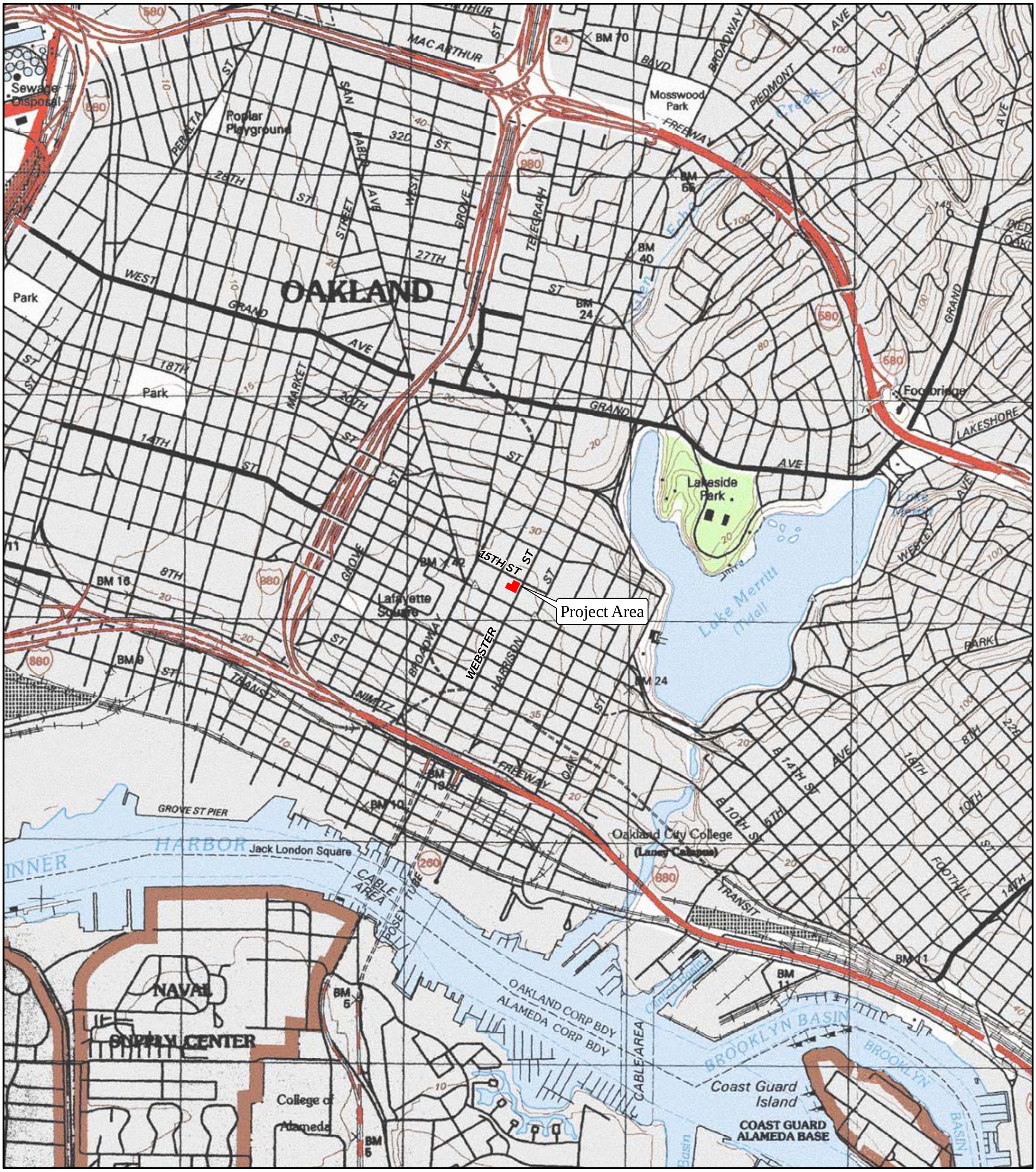
0 1000 2000
FEET

SOURCE: ESRI StreetMap North America (2012).

Architectural Eligibility Evaluation of
1433 Webster Street and 351-359 15th Street
Oakland, Alameda County, California

Regional Location and Project Area

I:\NAU1601\GIS\Maps\Cultural\Figure 1_Regional Location and Project Area.mxd (2/19/2016)



LSA

FIGURE 2

N

0 1000 2000

FEET

SOURCE: USGS 7.5-minute Topo Quads -
Oakland West, Calif. (1980) and *Oakland East, Calif.* (1980).

Architectural Eligibility Evaluation of
1433 Webster Street and 351-359 15th Street
Oakland, Alameda County, California

Project Area

I:\NAU1601\GIS\Maps\Cultural\Figure 2_Project Area.mxd (2/19/2016)

2.0 REGULATORY CONTEXT

2.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

Discretionary project approvals must comply with the requirements of the California Environmental Quality Act (CEQA). The term CEQA uses for significant cultural resources is "historical resource," which is defined as any resource that meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register of Historical Resources (CRHR);
- Listed in a local register of historical resources;
- Identified as significant in an historical resource survey meeting the requirements of §5024.1(g) of the Public Resources Code (PRC); or
- Determined to be an historical resource by a project's lead agency.

An historical resource consists of "Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California . . . Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (PRC Section 5024.1). For a cultural resource to qualify for listing in the CRHR it must be significant under one or more of the following criteria:

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

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

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

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

In addition to being significant under one or more criteria, a resource must retain enough of its historic character and appearance to be recognizable as an historical resource and retain integrity, which is defined as the ability of a resource to convey the reasons for its significance (CCR Title 14 §4852(c)). For a cultural resource to be considered for listing in the CRHR, — enough time must have passed for there to be a scholarly perspective on the resource and the reasons for its potential significance. Generally, this period is expressed as an age of 50 years or older.

In *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation* it states that the quality of significance is present in districts, sites, buildings, structures, and objects that possess integrity (National Park Service 1997:2). There are seven aspects of integrity to consider when evaluating a cultural resource: *location*, *design*, *setting*, *materials*, *workmanship*, *feeling*, and *association*:

- *Location* is the place where the historic property was constructed or the place where the historic event occurred. The actual location of a historic property, complemented by its setting, is particularly important in recapturing the sense of historic events and persons.
- *Design* is the combination of elements that create the form, plan, space, structure, and style of a property. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials.
- *Setting* is the physical environment of a historic property. Setting refers to the character of the place in which the property played its historical role. Physical features that constitute the setting of a historic property can be either natural or manmade, including topographic features, vegetation, paths or fences, or relationships between buildings and other features or open space.
- *Materials* are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- *Workmanship* is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. It is the evidence of the artisan's labor and skill in constructing or altering a building, structure, object, or site.
- *Feeling* is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character.
- *Association* is the direct link between an important historic event or person and a historic property.

"To retain historic integrity, a property will always possess several, and usually most, of the aspects" (National Park Service 1997:44).

2.2 CITY OF OAKLAND

2.2.1 Historic Preservation Element (HPE)

The Historic Preservation Element (HPE) of the Oakland General Plan serves as a comprehensive document that outlines goals, policies, and objectives that guide historic preservation efforts in Oakland. Components of the HPE are summarized below, including those policies relevant for designating historical resources for purposes of CEQA. HPE policies define the criteria for legal significance that must be met by a resource before it is listed in Oakland's local register of historical resources, and would, therefore, be considered a historical resource under CEQA. Based on a city-wide preliminary architectural inventory completed by the Oakland Cultural Heritage Survey (OCHS), pre-1945 properties have been assigned a significance rating of A, B, C, D, or E and assigned a number (1, 2, or 3) which indicates its district status. The ranking system indicates a property's status as a historical resource and identifies those properties warranting special consideration in the planning process and is described in Table A.

Table A: Oakland Cultural Heritage Survey Significance Ratings

Rating Level	Description
A: Properties of Highest Importance	This designation applies to properties considered clearly eligible for individual National Register of Historic Places (NRHP) and City Landmark designation. Such properties consist of outstanding examples of an important style, type, or convention, or intimately associated with a person, organization, event, or historical pattern of extreme importance at the local level or of major importance at the state or national level.
B: Properties of Major Importance	These are properties of major historical or architectural value but not sufficiently important to be rated "A". Most are considered individually eligible for the NRHP r, but some may be marginal candidates. All are considered eligible for City Landmark designation and consist of especially fine examples of an important type, style, or convention, or intimately associates with a person, organization, event, or historical pattern of major importance at the local level or of moderate importance at the state or national level.
C: Properties of Secondary Importance	These are properties that have sufficient visual/architectural or historical value to warrant recognition but do not appear individually eligible for the NRHP. Some may be eligible as City Landmarks and are superior or visually important examples of a particular type, style, or convention, and include most pre-1906 properties
D: Properties of Minor Importance	These are properties which are not individually distinctive but are typical or representative examples of an important type, style, convention, or historical pattern. The great majority of pre-1946 properties (over 25,000 citywide) are in this category. Many "D" and lower-rated properties are Potential Designated Historic Properties (PDHPs), either because they have higher contingency ratings or because that contribute or potentially contribute to a district. "PDHP" is not a formal designation. It is a category based on OCHS ratings, and the ratings simply report what OCHS has found throughout Oakland. The ratings help inform which properties may warrant preservation. For example, a PDHP rated B, "major importance," even if it is not a designated landmark, will likely be more challenging to alter or demolish, and will receive higher priority for preservation assistance, than one rated D, "minor importance."
E, F, or *: Properties of No Particular Interest	Properties that are of no particular interest, less than 45 years old, visually undistinguished, or modernized.
District Status	**Description**
1	A property in an API or NRHP-quality district. An API is a historically or visually cohesive area or property group identified by the OCHS which usually contains a high proportion of individual properties with ratings of "C" or higher.
2	A property in an Area of Secondary Importance (ASI) or a district of local significance. An ASI is similar to an API except that an ASI does not appear eligible for the NRHP.
3	A property not within a historic district.

Note: Properties with ratings of "C" or higher or are contributors to or potential contributors to an API or ASI are considered Potential Designated Historic Properties (PDHP) that may warrant consideration for preservation by the City. The OCHS has assigned some properties a contingency rating, indicated by a lower-case letter. A contingency rating is a potential rating under some condition, such as "if restored" or "when older" or "with more information." A plus (+), minus (-), or asterisk (*) symbol indicates respectively whether the property contributes to the API or ASI, does not contribute, or potentially contributes.

Source: City of Oakland, 1994. *Historic Preservation Element*.

The HPE also establishes the following policy with respect to historical resources under CEQA:

- *Policy 3.8:* For the purposes of environmental review under CEQA, the following properties will constitute the City of Oakland's Local Register of Historical Resources (Oakland Register):
  - All "Designated Historic Properties," i.e., those properties that are City Landmarks, which contribute to or potentially contribute to Preservation Districts, and Heritage Properties;
  - Those "Potential Designated Historic Properties" that have an existing rating of "A" or "B" or are located within an "Area of Primary Importance;"
  - Until complete implementation of Action 2.1.2 (Redesignation), the "Local Register" will also include the following designated properties: Oakland Landmarks, S-7 Preservation Combining Zone properties, and Preservation Study List properties.

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

- Policy 3.1: Avoid or Minimize Adverse Historic Preservation I Related to Discretionary City Actions. The City will make all reasonable efforts to avoid or minimize adverse effects on the Character-Defining Elements of existing or Potential Designated Historic Properties which could result from private or public projects requiring discretionary actions.
- Policy 3.4: City Acquisition for Historic Preservation Where Necessary. Where all other means of preservation have been exhausted, the City will consider acquiring, by eminent domain if necessary, existing or Potential Designated Historic Properties, or portions thereof, in order to preserve them. Such acquisition may be in fee, as conservation easements, or a combination thereof.
- Policy 3.5: Historic Preservation and Discretionary Permit Approvals. For any project involving the complete demolition of Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: 1) the design quality of the proposed project is at least equal to that of the original structure and is compatible with the character of the neighborhood; or 2) the public benefits of the proposed project outweigh the benefit of retaining the original structure; or 3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.
- Policy 3.7: Property Relocation Rather than Demolition. As a condition of approval for all discretionary projects involving demolition of existing or Potential Designated Historic Properties, the City will normally require that reasonable efforts be made to relocate the properties to an acceptable site.

2.2.2 Designated Historic Properties

The Oakland Planning Code currently provides for five types of historic property designations: Landmarks, S-7 and S-20 preservation combining zones (historic districts), preservation study list, and heritage properties.

Oakland Landmarks (Section 17.07.030(p) of the Oakland Planning Code). Landmark properties have "special character or special historical, cultural, educational, architectural, aesthetic or environmental interest or value." This definition is more specifically interpreted in the Landmark Board's "Guidelines for Determination of Landmark Eligibility" (City of Oakland 1994). The buildings in the project area are not an Oakland City Landmarks.

S-7 and S-20 Preservation Combining Zone (Sections 17.84 and 17.100B of the Oakland Planning Code). The S-7 and S-20 Preservation Combining Zones are the City's historic preservation zoning districts. Areas eligible for S-7 designation are those having "special importance due to historical association, basic architectural merit, or the embodiment of a style or special type of construction, or other special character, interest, or value." District boundaries are formed partly by historic tract boundaries and apparent historic natural or man-made features (e.g., shoreline, railroad tracks) that bounded the district's development and partly by later intrusion or demolition. The S-20 zone is same as an S-7, albeit designed for larger areas.

There are currently nine S-7 and S-20 preservation districts containing approximately 1500 individual properties citywide. The project area is not bounded within an S-7 or S-20 preservation district.

Preservation Study List and Heritage Properties (Section 17.102.060 of the Oakland Planning Code). The Preservation Study List, used in the first three decades of the Landmarks Board's existence, was defined as "a list of facilities under serious study for possible landmark designation or for other appropriate preservation action." The Landmarks Board, the Planning Commission, or the Planning Director could add properties to the list while it was active. A new, formal designation called Heritage Property is defined in the Historic Preservation Element of the General Plan as "properties which definitively warrant preservation but which are not Landmarks or Preservation Districts." Properties are eligible for nomination if they have at least an existing or contingency "C" (secondary) rating or could contribute to a preservation district. Heritage Property can be considered a less exclusive form of Landmark designation.

Policy 2.5 of the HPE creates the Heritage Property designation described above. This designation is available to any properties with an OCHS Intensive Survey rating of "A," "B," or "C" (or an "A" or "B" rating from a Reconnaissance Survey), or which contribute to any area meeting the Preservation District eligibility guidelines. The Planning Director can postpone demolition of a Study List/Heritage Property for up to 120 days, during which time Landmark or other preservation district designations may occur or other means to preserve the property are investigated. The buildings in the project area are not listed Oakland Heritage Properties.

3.0 METHODS

LSA conducted a records search, literature review, archival research, consultation, field survey, and eligibility evaluation for this HRE. Each task is described below.

3.1 RECORDS SEARCH

At the request of LSA, staff at the Northwest Information Center (NWIC) conducted a records search (File #15-1218) of the project area and adjacent properties on February 23, 2016. The NWIC is an affiliate of the State of California Office of Historic Preservation and the official state repository of cultural resource records and reports for Alameda County. The records search was done to identify previous cultural resources and associated documentation in and adjacent to the project area. The records search included a review of the following federal, state, and local inventories:

- *California Points of Historical Interest* (California Office of Historic Preservation 1992);
- *California Historical Landmarks* (California Office of Historic Preservation 1996);
- *Five Views: An Ethnic Historic Site Survey for California* (California Office of Historic Preservation 1988); and
- *Directory of Properties in the Historic Property Data File* (California Office of Historic Preservation, April 15, 2012). The directory includes the listings of the NRHP, National Historic Landmarks and the CRHR; California Historical Landmarks, and California Points of Historical Interest.

3.2 LITERATURE REVIEW

LSA reviewed the following publications, maps, and websites for historical information about the project area and its vicinity:

- *Historic Civil Engineering Landmarks of San Francisco and Northern California* (American Society of Civil Engineers, San Francisco Section 1977);
- *California Place Names* (Gudde 1998);
- *Historic Spots in California* (Hoover et al. 1990);
- *Oakland West, Calif*., 7.5-minute topographic quadrangle (U.S. Geological Survey 1949, 1959, 1968, 1973, 1980, 1992);
- Sanborn Fire Insurance Company Maps for Oakland (Sanborn-Perris Map Co., Ltd., 1894, 1911, 1929, 1950);
- *An Architectural Guidebook to San Francisco and the Bay Area* (Cerny 2007)
- *Historic Context: Unreinforced Masonry Buildings in Oakland, 1850-1948* (Oakland Cultural Heritage Survey 1995);

- Online Archive of California at http://www.oac.cdlib.org;
- *The Architect and Engineer* at https://archive.org/index.php;
- Calisphere at http://www.calisphere.universityofcalifornia.edu; and
- D*esignated Landmarks, Heritage Properties, and Preservation Districts* at http://www2.oaklandnet.com/Government/o/PBN/OurServices/Historic/DOWD009012 .

3.3 ARCHIVAL RESEARCH

On February 24, 2016, LSA conducted research at the Oakland History Room located in the Oakland Public Library. The archival research examined maps, block books, and local directories. Information identified the architectural and historical and architectural context of the area former owners and tenants, structural alterations, as well as past land uses within the project area. LSA conducted supplemental research at the Oakland Cultural Heritage Survey (OCHS) on March 3, 2016, to review the historical development of the Merritt Tract, which includes the project area. The archival research included an examination of local histories, maps, images, government records, building permits, and previous survey evaluation forms of the buildings in and adjacent to the project area.

3.4 CONSULTATION

On February 19, 2016, LSA sent a letter with maps depicting the project area to the Oakland Cultural Heritage Survey (OCHS) and the Oakland Heritage Alliance (OHA) requesting any information or concerns they may have regarding the buildings in the project area (Appendix B).

3.5 FIELD SURVEY

LSA architectural historian Michael Hibma, M.A., conducted a field survey of the project area and a cursory visual review of the surrounding neighborhood on March 3, 2016. The exterior of the buildings at 1433 Webster Street and 351-359 15th Street were reviewed and photographed, as was the architectural context of the surrounding neighborhood.

4.0 RESEARCH AND FIELD SURVEY RESULTS

4.1 RECORDS SEARCH

The records search did not identify any previously evaluated resources within the project area. The records search identified three previously evaluated cultural resources adjacent to the project area:

- **Mary J. Bradley Store/P-01-001044.** This two-story brick commercial building, constructed in 1916 at 1401-1415 Webster Street, is southwest of and adjacent to the project area. The building was converted to two stories from its original single-story-with-mezzanine plan at an unidentified date. The building includes 10 storefronts for businesses with offices above. The building was previously recorded by OCHS in 1994 as part of its citywide cultural resource survey (OCHS 1994) and assigned a rating of "C3," indicating that this building is a "Property of Secondary Importance" not located within a historic district.
- **A. Babcock Auto Showroom/P-01-001045**. This one-story reinforced concrete and stucco Beaux Arts commercial building, constructed in 1922 at 1418-1432 Webster Street, is southeast of and adjacent to the project area. Originally, this building served as an auto garage before conversion as a recreational center by the Oakland Athletic Club after 1952. The 1994 OCHS survey assigned the building a rating of "D2+," indicating that this building is a "Property of Minor Importance" located in "an Area of Secondary Importance" and a potential contributing element to a district.
- **Hugo Muller Building/P-01-001046**. This two-story reinforced concrete and brick commercial building, constructed in 1924 at 1436-1460 Webster Street, is east of and adjacent to the project area. This building was converted for recreational use as the Oakland Athletic Club Annex after 1952. Alterations include bay infill, roof tile removal, window alteration, and the removal of ornamentation. The 1994 OCHS survey assigned the building a rating of "DC2+," indicating that this building is a "Property of Minor Importance" located in "an Area of Secondary Importance" and a potential contributing element to a district.

4.2 LITERATURE REVIEW

Literature and map review identified information regarding the historical context of the project area, as summarized below.

4.2.1 Literature and Map Review

The literature and map review identified two cultural resources adjacent to the project area that qualify as historical resources under CEQA:

- **Oakland YWCA/P-01-003695.** The Oakland YWCA was built in 1915 by architect Julia Morgan at 1515 Webster Street, and is the first of 17 YWCA building she designed in the Bay Area. The five-story building features Italianate elements, which required repair following the 1989 earthquake. Between 2000 and 2007, the building was used as dormitories for the California

College of the Arts. The building was designated an Oakland City Landmark on May 24, 1977, and listed on the NRHP on September 20, 1984 (California Office of Historic Preservation 2016).

- **Mrs. A.E. White Building/P-01-004570.** This Tudor-styled, three-story building at 327-349 15th Street/1464-1466 Webster Street was designed by architect Clay N. Burrell and built by R. W. Littlefield in 1924. The original owner was Mrs. Addie E. White. This narrow, 150-foot long building is located on a 20-foot deep lot and contains ground-floor retail with office space above. The building was designated an Oakland City Landmark On November 12, 1985, and is also a contributing element to the *Harrison and Fifteenth Streets Historic District*, which was listed in the NRHP on November 7, 1996 (Bloomfield 1996).

The literature and map review identified four cultural resources within 1,500 feet of the project area that qualify as historical resources under CEQA:

- **The Oakland Hotel/P-01-004567.** The Oakland Hotel designed in 1912 at 270 13th Street by architects William Falville and Walter Bliss. The hotel went bankrupt during the Depression and was later purchased by the U.S. War Department in 1943 for conversion into the Oakland Area Station Hospital. The Veterans Administration ran the hospital until 1963, after which the building was vacant until conversion into senior housing in 1978. The building was listed on the CRHR on September 4, 1979 (California Office of Historic Preservation 2016).
- **Main Post Office and Federal Building/P-01-004566.** This Neoclassical-style building was designed by James Wetmore and William A. Newman in 1931 at 201 13th Street. It was the first federal building completed in Oakland's Civic Center (California Office of Historic Preservation 2016), and was listed on the NRHP on October 23, 1980.
- **No**. **45 Site of the College of California/P-01-008106**. From 1869-1873, the University of California was located at 1314 Franklin Street which was previously known as the College of California. In 1873 the University moved north to Berkeley (California Office of Historic Preservation 2016). A multi-story parking garage built ca. 1953-1954 is now extant on the site.

By the early-20th century, the project area was in an area of Oakland that was already densely developed. Early development was facilitated by the growth of streetcar lines in the area in the late 19th century. The earliest Sanborn Fire Insurance Company map available that depicts the project area were created in 1889, at which time the project area is depicted as two residential parcels on Block 2010. Prior to the continuation of 15th Street to Harrison Street in 1921, portions of the project area were included on both Block 2010 and Block 1254. The following chronology summarizes the development of the boundary of Block 2010.

Sanborn Block 2010 in 1889

- In 1899, the overall area contained large single-family dwellings, railroad infrastructure, lodging buildings, and commercial spaces.
- City Block 2010 included 9 single-family dwellings with associated outbuildings, 2 multi-family dwellings, and the First Presbyterian Church at 1200 Franklin Street with an associated carriage house and classroom building. A large lot is depicted in the south corner of the block.
- The project area is depicted as two rectangular lots each containing a 2-story dwelling. The addresses were listed as 1225 and1229 Webster Street. The dwelling depicted at 1229 Webster Street in the parcel currently occupied by 351-359 15th Street, is depicted as fire-damaged.

- 15th Street terminated at Franklin Street, and did not continue through City Block 2010 (Sanborn-Perris Map Co., Ltd. 1889:8).

Sanborn Block 2010 in 1903

- The blocks surrounding Block 2010 contain dense commercial development, multi-story lodging buildings, and the Macdonough Theater at 1166 Broadway.
- Block 2010 remains residential in use, and Kane and Daly's Livery is depicted southwest of the project area.
- The project area contained two lots with two single-family dwellings at 1225 and 1229 Webster Street.
- 15th Street terminated at Franklin Street and did not continue through Block 2010 (Sanborn-Perris Map Co., Ltd. 1903:140).

Sanborn Block 2010 in 1912

- The blocks surrounding Block 2010 contain dense commercial and residential development. Several former single-family dwellings depicted on surrounding blocks on earlier Sanborn maps had been converted to multi-family flats by 1912. Businesses in the area included several movie theaters, garages, offices, and the Pacific States Telephone and Telegraph Company at 1275 Franklin Street.
- Block 2010 remains residential in use, with only one former single-family dwelling having been converted to multi-family flats by 1912. Kane and Daly's livery and First Presbyterian Church at 1200 Franklin Street with its associated outbuildings remained on the block by 1912.
- The project area is depicted as two lots with two single-family dwellings at 1225 and 1229 Webster Street.
- 15th Street terminated at Franklin Street and did not continue through Block 2010 (Sanborn-Perris Map Co., Ltd. 1912:153).

Sanborn Block 2010 in 1950

- By 1950, 15th Street had been extended through the project area, which divided Block 2010 from Block 1254. The street extension also required demolition of four single-family dwellings on Block 2010 at 1225, 1229, 1253 and 1259 Webster Street.
- The blocks surrounding Block 2010 contain dense commercial development, with most of the dwellings depicted on earlier Sanborn maps replaced with shops, auto garages, and parking lots, reflecting the popularity of the automobile in post-World War II America. Several hotels are depicted in the area, including the Hotel Harrison, Hotel Coit, and the Harrison Apartment Hotel.
- Block 2010 is exclusively commercial in use. The block was renumbered from the 1200 block of Webster Street prior to the extension of 15th Street, to the 1400 block of Webster following the street's extension. The First Presbyterian Church on the block had been replaced by a dance hall by 1950. The block depicts the Insurance Building and the Jules Building on 14th Street.
- The current buildings in the project area are depicted. They consist of one reinforced-concrete tire sales and service garage located at 1433 Webster Street, and one six-unit commercial building located at 351-359 15th Street. These buildings replaced two single-family dwellings at 1225 and

1229 Webster Street depicted on earlier 1889-1912 Sanborn maps (Sanborn-Perris Map Co., Ltd. 1950:153).

Sanborn Block 2010 in 1952

- By 1952, the area surrounding Block 2010 remained densely commercial. The Liberty Theater on Block 2011 had been renamed the Central Theater, and was converted from a live theater to a movie house. A restaurant on Block 1255 had been demolished to create a parking lot.
- Block 2010 remains the same as it is depicted on the 1950 Sanborn map.
- The project area remains the same as it is depicted on the 1950 Sanborn map (Sanborn-Perris Map Co., Ltd. 1952:153).

4.3 ARCHIVAL RESEARCH

4.3.1 *Webster Street*. A review of county Tax Assessor's block books at the Oakland History Room indicates that the building at 1433 Webster Street (APN 008-0624-036) was owned by 1925 by Lulu A. Leete. The building at 351-359 15th Street (APN 008-0624-035) was owned by M.E. Patton and Helen Dille (Oakland Tax Assessor 1925:192). Records at OCHS for 1433 Webster Street consisted of an OCHS identification and survey sheet prepared in 1994 (Serial No. 4623) (OCHS 1994). The form states that the building was designed by architect Charles W. McCall. Information about the builder was illegible. Information on-file at OCHS indicated that 1433 Webster Street is not listed as an Oakland Landmark, a Heritage Property, or regarded for its architectural qualities (City of Oakland 2015; OCHS 1994).

Records at OCHS for 351-359 15th Street consisted of a California Department of Parks and Recreation Series 523 (DPR 523) Series form records prepared in 1994. The building was described by OCHS surveyors as "an Art Deco store building, remodeled as late-20th century office building, in the 15th and Webster Street district" (OCHS 1994). The form states that the building was designed by architects Chester A. Miller and Carl I. Warnecke, and built by E.T. Leiter and Sons. The building at 351-359 15th Street is not listed as an Oakland Landmark, a Heritage Property, or regarded for its architectural qualities (City of Oakland 2015; OCHS 1994). Other materials reviewed included a DPR 523 Series form record prepared by OCHS in 1996 (#FWG- 15th and Webster Street District) (OCHS 1996). The 15th and Webster Street District (District) was described by OCHS surveyors as a "visually distinctive early-20th century commercial district of approximately 10 buildings, on 10 assessors parcels, on parts of 2 [city] blocks, in Central Oakland" (OCHS 1996). However, this District was never formally nominated or recognized as a historical resource by the City.

4.3.1 Building Permits

According to information on-file at OCHS, building permit #35603 was issued to C.W. Broderick, president of the Imperial Garage and Supply Company, on June 29, 1914 to construct a tire sales and service building at 1441-1443 Webster Street and the building was designed by local architect Charles W. McCall (OCHS 1995). The building was converted from a garage to a brake repair shop in the 1950s, and later into an office building in 1980-81. The veterans' assistance organization Swords to Plowshares moved its office to the building in 2006. The building is currently vacant. The table below lists other notable permitted events in the history of the building.

Table B: Building Permits – 1433 Webster Street

Date	Permit Number	Description
6/29/1914	35603	New construction.
9/11/1929	440452	Removal of a portion of the 2nd floor to include a ramp.
11/29/1931	A48112	Repair of fire-damaged flooring and a portion of the roof.
3/1/1945	135102	Construction of two new rooms in the building for tire repair and recapping.
11/9/1951	1339286	Installation of four 8'-tall doors and one 12'-tall door to the building's façade.
11/6/1969	16597	Signage addition.
3/19/1974	C77034	Remodeling of the waiting room, removal of two stairways, wiring repair, installation of concrete on the first floor, installation of steel reinforcement in the first floor ceiling, and elevator shaft repair.
10/7/1980	D18947	Conversion of auto garage into office space.
12/11/1980	94362	Electrical repairs.
2/2/1981	003470	Mechanical repairs and air conditioning permit.
3/9/1981	95235	Electrical permit.
5/3/1981	95914	Electrical permit.
11/14/1981	D22365	Interior remodeling for a suite of medical offices.
2/9/1982	008748	Plumbing permit.
5/13/1991	D20718	Interior remodeling for a suite of law offices.
5/13/1991	D20719	Interior remodeling for a suite of architecture offices.
5/9/2000	B0001035	Installation of wrought iron security fence and gates.
3/4/2005	E0500453	Electrical permit.

3/23/2005	M0500467	Mechanical permit.
5/3/2005	B040639	Tenant improvements on second floor.
5/23/2005	B0500465	Removal of existing partition, construction of new partitions and doors to create new rooms for "The Work Force Collaborative"
3/28/2005	E0500799	Electrical permit.
4/26/2006	OB040252	Two parking metered spots reserved for dumpster.
6/23/2006	ZC061726	Zoning clearance for low-income and homeless assistance services.
11/14/2006	ZC062443	Zoning clearance for health services business license.
1/12/2009	ZC090084	Zoning clearance for homeless assistance offices.

According to information on-file at OCHS, building permit #A73555 was issued to local steel mill owner Stephen S. Herrick on July 2, 1938, to construct a one-story brick commercial building at 351-359 15th Street. The building was designed by local architects Miller and Warnecke and built by the Oakland-based construction company E.T. Leiter and Sons. The table below lists other notable permitted events in the history of the building.

Table C: Building Permits – 351-359 15th Street

Date	Permit Number	Description
4/2/1938	A73555	New construction.
2/15/1951	B55446	Interior remodeling.
5/?/1955	B58057	Construction of a second story over 1/3 of floor area.
6/14/1955	B57280	Permit illegible.
?/?/1957	B66438	Electrical and heating permit.
6/26/1958	B75073	Office alteration.
Date illegible	A43941	Vacant building to be used as real estate office.
2/18/1999	B9900613	Seismic retrofit.

12/12/1999	OB990821	Reserved parking meters.
3/13/2012	1201019	Graffiti, trash, and debris removal from façade.
10/2/2012	1205118	Graffiti, trash, and debris removal.
12/12/2012	1206832	Graffiti removal.
4/5/2013	X1300829	Installation of 12kV lines and box for service to 1587 Franklin Street.
4/13/2015	X1500828	Sidewalk replacement and cable conduit installation.
2/10/2016	X1600293	Soil borings on 15th Street near Webster Street.
2/10/2016	OB1600158	Ten parking metered spots reserved for construction vehicles.

4.4 CONSULTATION

On February 19, 2016, LSA sent letters describing the proposed project to the Oakland Cultural Heritage Survey, as well as to the Oakland Heritage Alliance. A summary of the responses is below.

Oakland Cultural Heritage Survey. On February 26, 2016, LSA emailed OCHS asking if they had received the LSA letter and to contact LSA with any questions or concerns regarding the study area. No response has been received to date.

Oakland Heritage Alliance. On February 23, 2016, LSA received an email form OHA with a letter attached. The letter stated OHA's concerns regarding potentially salvageable original materials underneath the modern façade, potential effects to adjacent historical resources (YWCA building, Mrs. A. E. White Building, and commercial buildings along the west side of 15th Street). The focus of OHA's response was requests for information regarding potential project effects. The letter did not share any historical information regarding the building themselves, previous owners, or alterations.

4.5 FIELD SURVEY

The field survey of the project area identified two buildings in the project area: 1433 Webster Street (APN 008-0624-036) and 351-359 15th Street (APN 008-0624-035). These buildings are currently vacant. The buildings cover their respective parcels, rests on concrete slab foundations, and are covered by roofs hidden behind parapets and covered in an undetermined type of roofing. Please see Appendix A for DPR 523 Series form records for each of these buildings. The subsections below summarize the physical characteristics of these buildings.

4.5.1 1433 Webster Street

The walls of this building are of reinforced concrete or masonry construction. The east-facing façade is segmented by evenly spaced full-length stucco-clad vertical elements that shelter a recessed entry way and street-level windows. A set of metal security bars encloses the recessed ground-floor entry areas. Fenestration consists of large steel-framed sash windows set in anodized aluminum frames. The building has one main entrance consisting of a replacement door at the far right side of the eastern, street-facing façade. Landscaping consists of two young street trees lining the sidewalk.

4.5.2 351-359 15th Street

The walls of this building are of reinforced concrete or masonry construction. The north and east-facing façades feature a ribbon of equal-spaced replacement windows along the ground level set in anodized aluminum frames. Above the windows is a narrow band of textured stucco with "International Contact, Inc." lettering displayed. Above that is a taller band of pre-cast, rough-textured brown stucco or pre-cast masonry panels which in turn are topped by a narrow band of plated or painted metal. The building has two entrances. The main entrance is located under a recessed entry area at the northeast corner of the building (which faces the intersection of 15th and Webster streets) and a secondary entrance is near the middle of the north-facing 15th Street façade and consists of a replacement, metal framed glass doors. Landscaping consists of two young street trees lining the city sidewalk.

5.0 ELIGIBILITY EVALUATION

This section presents the historic and architectural context of the project area and evaluates the eligibility of the buildings at 1433 Webster Street and 351-359 15th Street under CRHR and HPE significance criteria.

5.1 HISTORIC CONTEXT

The following presents the land use development and architectural context of the project area.

5.1.1 Oakland

The San Francisco Bay was home to several tribal groups prior to the arrival of Europeans. These groups included the Wintun and the Coast Miwok, as well as the *Costanoan* who inhabited what would become the city of Oakland. The project area is entirely within the former *Rancho San Antonio* land grant, originally granted by Spain to Luis Maria Peralta on August 3, 1820, in appreciation of his forty years of military service. His 43,000-acre rancho included what are now the cities of Oakland, Berkeley, Alameda, Albany, El Cerrito, Emeryville, and parts of San Leandro and Piedmont. Peralta's land grant was re-confirmed by the Mexican government in 1822. When the United Sates annexed California in 1848, the Treaty of Guadalupe-Hidalgo stipulated that existing land grants be reviewed and confirmed to the grantees. Peralta's grant was reviewed and honored by the U.S. Land Commission after California became a state in 1850. Despite legal ownership, squatters moved in and overwhelmed the Peraltas. Cattle were stolen and slaughtered, and trees logged (Hoover, et al. 1990:18-19). When Luis Peralta died in San José in 1851, San Antonio was divided amongst his sons Ignacio, José Domingo, Antonio María, and José Vicente. The land that was to become Oakland was given to José Vicente. Peralta Hacienda Historical Park, on 34th Avenue, preserves the headquarters of Rancho San Antonio.

In 1849, a squatter named Moses Chase pitched a tent at what would become the foot of Broadway and hunted game (Munro-Fraser 1883:485). A year later, Andrew Moon, Horace W. Carpentier, and Edson Adams illegally built a house on Peralta's property at the foot of Broadway, near the banks of the Oakland-Alameda Estuary. This house site is in what is now Jack London Square. José Vicente Peralta sought eviction of the group, but eventually relented and allowed them to lease the land with the stipulation of not platting a town. Moon, Carpentier, and Adams violated this agreement and hired Julius Kellersberger, a Swiss engineer, to survey the land and plat the town; formerly known as *Encinal de Temescal* ("oak grove by the sweathouse"), it eventually became known as Oakland (Gudde 1998:266). During the Gold Rush, the small town of Oakland first developed along its waterfront at the foot of Broadway, which was called Main Street at the time, with development limited only by the available modes of transportation (Bagwell 1996).

The state legislature was persuaded by Carpentier to incorporate Oakland in 1852. Carpentier then promptly won election as Mayor the following year. The state deeded all waterfront property to the City of Oakland, which in turn passed an ordinance giving control of the land, over 10,000 acres, to Carpentier in exchange for a new school house, a wharf, and $20,000. Carpentier, however, maintained control of the wharf and charged whatever fees he desired for its use (Bagwell 1996). He went on to serve as an Assemblyman, convincing the Legislature to create Alameda County out of southern Contra Costa County. Many saw Carpentier's actions as a grab for more land and power. Through his busy law practice, many political connections, and vast personal wealth and property, Carpentier prospered handsomely. His total control of the wharf resulted in a 20-year monopoly on San Francisco ferry service and the railroad service connecting the ferry terminal with downtown. Carpentier died in 1918 worth approximately $20 million (Bagwell 1996). Carpentier's steam ferry service to San Francisco prospered, and on October 30, 1869, the first horse-car service followed a route from the estuary up Broadway to Telegraph Avenue at 36th Street. Nine days later the transcontinental railroad's inaugural west bound train rolled into Oakland to the Central Pacific Railroad's (CPRR) new 7th Street Station.

In 1860, only 1,543 people resided in Oakland, ten years later the city was home to over 10,500 and trebled by 1880, surpassing Sacramento as California's second largest city after San Francisco. By 1891, Oakland's first electric street car line connected Oakland's waterfront with the City of Berkeley along Telegraph Avenue (Sappers 2007; Bagwell 1996). The selection of Oakland as the CPRR western terminus paved the way for a population explosion. Infrastructure supporting the population boom and transcontinental transportation service included vast railroad yards, repair shops, and a wharf extending two-miles into San Francisco Bay. Oakland acquired a reputation as an upright family town known as the "bedroom of San Francisco," as Oakland residents commuted on ferries back and forth to San Francisco. After the 1906 earthquake and fire, refugees from San Francisco lived for months in a tent community set up by the U.S. Army in Lakeside Park on the shores of Lake Merritt at Adams Point (Bagwell 1996; Fradkin 2005). The influx of people to Oakland escaping the 1906 devastation prompted the development of new residential areas in Oakland to accommodate many of the displaced San Franciscans who had moved to Oakland. Older neighborhoods grew more densely populated as new apartment buildings and related growth became part of Oakland's residential fabric (Woodbridge 1984)

Commercial enterprises and industrial development, particularly the Port of Oakland and the Oakland Municipal Airport, propelled Oakland's growth in the 20th century. During World War II, the Port provided land and facilities to the Army and Navy. By 1943, Oakland had become the largest shipping center for the Pacific Theater of Operations; within two decades it was the largest container terminal on the West Coast. As suburbs grew outward during the 1950s, the inner core of the City began to decline as residents left for the outlying areas made accessible via new freeways. Typifying older U.S. cities that clung to an industrial base, Oakland soon lagged behind cities such as Long Beach, Sunnyvale, San Leandro, San Francisco, and Orange County in attracting jobs. The main factor driving the exodus of industry was the cost of land, as the price was higher in the city core than in outlying areas such as southern Alameda County. Factories were incentivized to relocate rather than expand as operating expenses increased and profitability declined. Between 1960 and 1966, over 10,000 jobs relocated to outlying areas in southern Alameda County (Self 2003). The loss of jobs reduced the tax base while simultaneously creating more demands for city services for those who did not or could not leave for the suburbs. This began a perception of Oakland, as with many large American, industrial-based cities during the 1960s and 1970s, of a city with a neglected urban core, high unemployment, cyclical racial and ethnic tension, and reduced economic opportunity (Bagwell 1996). This trend began to reverse in the 1980s as reinvestment and redevelopment helped to invigorate the City's image and prospects. In 1995, California's "Golden Triangle," which included Oakland, San Jose, and San Francisco, was named by *Fortune Magazine* as the best place to do business in the United States.

5.1.2 Downtown Oakland

The area around Downtown Oakland developed in the 1890s due to the expansion of electric streetcar lines linking downtown with its surrounding suburbs. Downtown development expanded northward along Broadway to 14th Street in the early-20th century, and the area became an upscale commercial center. This new commercial center attracted residents from surrounding Oakland suburbs, as well as from Berkeley and Alameda. In 1903, Oakland's residential streetcar lines were consolidated into the Key System, and service was expanded outward from downtown toward the Oakland Hills. Following the 1906 Earthquake and Fire, Oakland experienced a commercial post-earthquake boom, as San Francisco residents escaped the damaged city. Many residents and businesses displaced from San Francisco also relocated to downtown Oakland, an area which retained much of its building stock. By 1915, architects began to use steel frame construction to build downtown, which allowed for taller buildings. Services in the area diversified as well, with many banks and government buildings constructed in the area between 1905 and 1920 (Oakland Cultural Heritage Survey 1998).

In 1915, the Oakland Chamber of Commerce and other local business interests conducted a study of the effects of long city blocks and dead-end streets on urban development. The study found those non-through streets in downtown Oakland, such as 15th and 17th Streets, discouraged development by cutting off and diverting traffic (Hegemann 1915). In 1921, 15th Street was extended through Webster Street, connecting Franklin Street to Harrison Street, requiring demolition of many single-family residential dwellings near Lake Merritt. The lots were then re-subdivided, and reoriented from narrow north-south lots to east-west lots. It also increased traffic through an area that had been primarily residential and further encouraged commercial development. Residents opposed extending the streets, which lowered their property values (Oakland Cultural Heritage Survey 1985:4).

Downtown development in the 20th century can be characterized by several distinct concentrations of businesses types. The area near Broadway and 14th Street became a financial services and office building corridor by the end of the 1920s. Developers replaced wooden buildings in the area with two-story to three-story masonry buildings. Banks, insurance agencies, and real estate companies continued to move to newly-constructed office buildings in the area until the Great Depression of the 1930s. Ornamentation typically consisted of simple paneling with elements of Renaissance Revival, Baroque, Art Nouveau and Art Deco styles, with Chicago-style horizontal windows (Oakland Cultural Heritage Survey 1985). During the Depression, new commercial construction slowed, but many business owners continued to invest in their properties by renovating building façades in an attempt to modernize their buildings and reengage customers. Civic building construction during the 1930s shifted eastward from downtown toward areas near Lake Merritt. These buildings include the Alameda County Courthouse, the Main Branch Post Office and Federal Building, and the Main Branch of the Oakland Public Library (Oakland Cultural Heritage Survey 1998). Following the end of the World War II, commercial and office development resumed in downtown Oakland east of Broadway near 14th Street.

In the 1950s and 1960s, many historic buildings in Oakland were demolished in favor of urban redevelopment. The Oakland Redevelopment Agency formed in 1956 with the authority to designate which areas would be targeted by renewal efforts. In 1966, the Oakland Planning Commission received federal redevelopment funds, but focused redevelopment plans largely in West Oakland. Although much of downtown Oakland's historic building stock was spared demolition, the area still struggled through urban disinvestment in the 1960s and 1970s. Several large-scale redevelopment projects proposed for downtown Oakland in the 1980s failed to make it past the planning stages. Downtown vacancy rates in the 1980s remained around 15%. Following the 1989 earthquake, Oakland planners made decisions on whether or not to renovate or demolish downtown buildings on a case-by-case basis, and many buildings constructed in the early-20th century received extensive upgrades. Downtown Oakland began to experience reinvestment as many businesses relocated to more affordable downtown properties in the 1990s and 200s (Oakland Planning History 2016).

5.1.3 Project Area

As presented in Section 4 above, these buildings were built in the early-to-mid-20th century in response to the growth of Downtown Oakland and the proliferation of the use of personal automobile. As Oakland's central business district grew in the early-to-mid-20th century, developers looked to residential areas along the western shore of Lake Merritt to expand the street grid and workers traveling into downtown or resided nearby but lacked personal garage space required facilities to store their personal vehicles. These buildings served those needs and their subsequent alterations and changes in use reflect the later-20th century changes in Oakland and the East Bay as workers moved away from Oakland to suburban areas and the area later became desirable as professional office space.

5.2 ARCHITECTURAL CONTEXT

Architecture in the project area parallels trends elsewhere in California from the 1910s to the 1950s. The section below describes each building type in the project area followed by a discussion of the representative aspects of their respective architectural qualities.

5.2.1 1433 Webster Street

Vernacular. The building at 1433 Webster Street does not currently possess strong elements of any particular style, but rather was designed to perform a utilitarian purpose. The two-story former auto garage is of reinforced concrete construction with concrete flooring. The 1951 Sanborn map indicates the roof originally included six wire glass skylights and an open elevator, but these have since been removed. In the early-20th century, few automobile owners had private garages at their homes, and the wood and canvas on early cars was vulnerable to the elements. The construction of public garages during this period met the need for auto storage. The reinforced concrete masonry indicated on the 1950 Sanborn map is typical of public garage construction of the period, given the business' increased risk of fire due to on-site oil and gasoline storage (Kostura 2010; Jakle and Sculle 1994). The building was also constructed with a concrete ramp which allowed automobile storage on the second story of the building as well. The building's roof was supported by interior concrete columns. The building's conversion from a public garage into office spaces in 1980-81 resulted in the building's utilitarian stucco-clad façade.

Some general character-defining features of the vernacular style are:

- One or two stories;
- Square or rectangular footprint;
- Built of reinforced concrete or concrete framed with brick infill;
- Wide, steel sash windows separated by narrow pilasters, spandrels, and walls clad in either concrete or brick;
- Minimal or simplistic ornamentation; and
- Building materials including steel or wooden truss frames, masonry, and plaster (McAlester and McAlester 2003:464-467).

The building's location also reflects local and national historic development patterns. Auto garages were most common in neighborhoods closest to downtown due to population density (Kostura 2010). The building at 1433 Webster Street is close to both the dense Oakland downtown and nearby Lake Merritt neighborhoods. This location gave automobile owners ready access from both their residences and the central business district.

Charles W. McCall. Records at OCHS credit Charles W. McCall with the design of the building at 1433 Webster Street. Charles McCall was born in Oakland in 1876, and moved to Europe in his early childhood. He studied at the Perkins Academy, as well as the Bournemouth Institute of Arts and Sciences in England. McCall returned to Oakland in 1897, when he was 21, and worked for architects D.F Oliver, F.D. Voorhees, and N. Barker until opening his own architecture firm in Berkeley eight years later. He was a member of the San Francisco Chapter of the American Institute of Architects, and designed over 250 homes and businesses in the Bay Area throughout his career (San Francisco Public Library 2016). The city block McCall designed at the intersection of Ashby Avenue and Adeline Street was designated Berkeley Landmark #278 in 2004. Other notable examples of McCall's work include:

- The Wakefield Building, built in 1924, at 426 17th Street, Oakland;
- The Robert Dollar Building, built in 1919, at 311 California Street, San Francisco;
- The Livermore-McCall House, built in 1915, at 1085 Vallejo Street, San Francisco;
- The College National Bank, built in 1923, at 2032 Shattuck Avenue, Berkeley; and
- The Porter Building, built in 1992, at 409-11 15th Street, Oakland.

5.2.3 351-359 15th Street

Modern. The building at 351-359 Webster Street possesses elements of the Modern style. The Modern style has its roots in the rise of industrial manufacturing during the late 19th century. Architects who favored this style focused on open floor plans and challenged traditional concepts of building layouts and massing. They sought to move away from decorative elements that referenced obsolete historical influences and motifs and toward designs that emphasized a building's function. Modern style buildings also represent a large range of designs, from simple functional ranch residences to high-concept public facilities. Architects during the early-20th century gradually embraced the machine age, prompting a turn toward a sleeker, more refined appearance. While some architects created eclectic interpretations of traditional design and forms, other architects disregarded such influences as archaic. Modern buildings also encompass several subtypes, including Prairie and Brutalist designs. The advent of the Modern style was dependent on advances in building material technology, as the ready availability of steel and concrete encouraged architects to move away from traditional forms by removing their dependence on walls as load-bearing necessities.

Following the stock market crash of 1929 and the Great Depression of the 1930s, designers stripped away Art Deco's rich materials and jazzy ornamentation to emphasize a sense of smooth motion conveyed by clean lines. Known as "Streamlining," this design concept reflected the hope held by many that science and technology would rejuvenate the economy. The streamlining design movement of the 1930s helped establish the modern, post-World War II American aesthetic, which abandoned all historical reference in architecture. Bricks and stone were replaced with sheets of glass or metal. This found widespread favor as reflective of post-war American society, and spread to all major cities and outlying areas. Modern-styled buildings were economical to build; they had a simple design without elaborate ornamentation that was easily replicated, a quality that appealed to businesses (Wiseman 2000:149).

The general character-defining features of the Modern style are:

- Square or rectangular footprint;
- Flat roof;
- Subdued color schemes;
- Minimal amount of façade ornamentation to draw attention of passersby to the interior;
- Simple cubic "extruded rectangle" massing;
- Windows running in broken horizontal rows forming a grid;
- Façade angles at 90 degrees; and
- Building materials of steel, formed concrete, chrome, or plated surfaces (Gelernter 1999:248-249; McAlester and McAlester 2003:464-467).

Miller and Warnecke. The building at 351-359 15th Street was designed by architects Chester A. Miller and Carl I. Warnecke. They partnered on an Oakland-based architecture firm, which designed prolifically in the Bay Area between 1917 and 1951. Chester Miller was born in Oakland into a working class family in 1890, and moved to Berkeley after establishing his architecture practice. Miller was unable to attend school because he had to work to support his parents from an early age (Pacific Coast Architect Database 2016). Carl Warnecke was born in Canada in 1891 and moved to California with his family in 1901. Warnecke attended the *Ecole des Beaux Arts* in France, but did not graduate due to the school's closure during World War I. Neither man graduated from college but held architecture apprenticeships. Warnecke's son, John Carl Warnecke, also studied architecture, and the two formed the firm Warnecke and Warnecke in 1952. Notable examples of Miller and Warnecke's work include:

- The Lakeview Branch of the Oakland Public Library, built in 1949, at 550 El Embarcadero, Oakland;
- The Main Branch of the Oakland Public Library, built in 1948, at 125 14th Street, Oakland;

- The Tudor Hall Apartments, built in 1929, at 150 17th Street, Oakland;
- East Oakland High School (now Castlemont High School), built in 1929, at 5801 Macarthur Boulevard, Oakland; and
- The Women's City Club of Oakland (now Malonga Casquelourde Center for the Arts), built in 1927, at 1428 Alice Street, Oakland (Pacific Coast Architecture Database 2016).

5.3 APPLICATION OF SIGNIFICANCE CRITERIA

California Register of Historical Resources Criteria

This section applies the CRHR significance criteria to the buildings at 1433 Webster Street and 351-359 15th Street, and assesses the buildings' status under the HPE. The project area does not contain any built environment resources that were previously listed or determined eligible for inclusion in the CRHR.

5.3.1 1433 Webster Street

Criterion 1: Is it associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage?

Research indicates that the building at 1433 Webster Street is associated with the industrial and commercial growth of Oakland in the early-20th century, as well as with the growth of automobile culture. Its construction is tied to the expansion of the city's downtown east of Broadway, as well as the rise of automobile culture as one of many public garages in the area. The 1950 Sanborn map of the project area shows a similar public garage located across the street from the project area (Sanborn-Perris Map Co., Ltd 1950:153). No evidence was identified to elevate this particular building in associative stature, however. It does not possess specific, important associations with this context that distinguish it from other buildings with similar, design, construction, history, and use. The building at 1433 Webster Street is not significant under Criterion 1.

Criterion 2: Is it associated with the lives of persons important in our past?

Research into records on file at the OCHS indicates that the building at 1433 Webster Street is associated with local architect Charles W. McCall and the Imperial Garage and Supply Company. Charles McCall designed hundreds of buildings throughout the Bay Area. The building did not contain McCall's offices, and did not play a prominent role in the development of his architectural practice. The Imperial Garage and Supply Company, owned by C.W. Broderick, was one of several such public garages operating in Oakland by 1914 (OCHS 1996). The building at 1433 Webster Street is not significant under Criterion 2.

Criterion 3: Does it embody the distinctive characteristics of a type, period, or method of construction, or represent the work of an important creative individual, or possess high artistic values?

This building at 1433 Webster Street reflects the style and method of construction typical of other public garages constructed during the early-20th century. It possesses no strong or vibrant artistic values, and is highly utilitarian in nature. It does not possess any elements which make it a notable example of any of these characteristics, however. While this building was designed by noted architect Charles W. McCall, the building is not a notable example of his work during the period, and was completely remodeled in 1980-81. Better examples of McCall's work that retain the character defining features of his design are located in other commercial and residential areas of the East Bay and San Francisco (Pacific Coast Architecture Database 2016). The building's façade and interior were significantly altered in 1980-81. The building at 1433 Street is not significant under Criterion 3.

Criterion 4: Has it yielded, or may it be likely to yield, information important to history?

This criterion is usually used to evaluate the potential of archaeological deposits to contain information important in understanding the past lifeways of Oakland's early historic-period and pre-contact inhabitants. Its application to architecture is less common in eligibility assessments due to the prevalence of multiple media that otherwise document the form, materials, and design of a given building type. Information about vernacular design and construction techniques, as represented by 1433 Webster Street, is well documented in literature describing architectural forms and designs for industrial properties, which has been extensively published and is widely available to the public. For these reasons, the building at 1433 Webster Street will not yield information important to the history of the local area, California, or the nation. The building at 1433 Webster Street is not significant under Criterion 4.

5.3.2 351-359 15th Street

This section applies the CRHR significance criteria to the building at 351-359 15th Street.

Criterion 1: Is it associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage?

Research indicates that the building at 351-359 15th Street is associated with the commercial growth of Oakland in the early-20th century. Its construction is tied to the expansion of the city's downtown east of Broadway. The 1950 Sanborn map of the project area shows seven other similar commercial buildings on Block 2010, and dozens of others in the surrounding area (Sanborn-Perris Map Co., Ltd 1950:153). No evidence was identified to elevate this particular building in associative stature, however. It does not possess specific, important associations with this context that distinguish it from other buildings with similar, design, construction, history, and use. The building at 351-359 15th Street is not significant under Criterion 1.

Criterion 2: Is it associated with the lives of persons important in our past?

Research into records on file at the OCHS indicates that the building at 351-359 15th Street was designed by local architects Chester Miller and John Carl Warnecke. Miller and Warnecke were prolific architects who designed numerous buildings throughout the Bay Area. The building did not contain their offices, and did not play a prominent role in the development of their architectural practice. The building was constructed for Stephen S. Herrick, owner of Herrick Iron Works, as an investment property (OCHS 1995). The offices of Herrick Iron Works were not located within the building. The building at 351-359 15th Street is not significant under Criterion 2.

Criterion 3: Does it embody the distinctive characteristics of a type, period, or method of construction, or represent the work of an important creative individual, or possess high artistic values?

This building does embody the style, type, and method of construction typical of other commercial buildings constructed in the Modern style within the same time period. It possesses no strong or vibrant artistic values, and does not possess any elements which make it a notable example of a Modern style building. While this building was designed by acclaimed architects Miller and Warnecke, the building is not a notable example of their work. Better examples of Miller and Warnecke's work that retain the character defining features of their designs are located elsewhere throughout downtown Oakland, as well as other commercial and residential areas in East Bay (Pacific Coast Architecture Database 2016). The building at 351-359 15th Street is not significant under Criterion 3.

Criterion 4: Has it yielded, or may it be likely to yield, information important to history?

This criterion is usually used to evaluate the potential of archaeological deposits to contain information important in understanding the past lifeways of Oakland's early historic-period and pre-contact inhabitants. Its application to architecture is less common in eligibility assessments due to the prevalence of multiple media that thoroughly document the form, materials, and design of a given building type. Information about Modern design and construction techniques, as represented by 351-359 15th Street, is well documented in literature describing architectural forms and designs for industrial properties, which has been extensively published and is widely available to the public. For these reasons, the building at 351-359 15th Street will not yield information important to the history of the local area, California, or the nation. The building at 351-359 15th Street is not significant under Criterion 4.

5.3.2 Oakland Register

1433 Webster Street. In 1994, the OCHS assigned a rating of 'F3' to the building at 1433 Webster Street. Properties with ratings of "C" or higher, contributors or potential contributors to an Area of Primary or Secondary Importance are considered Potential Designated Historic Properties (PDHP) that may warrant consideration for preservation by the City. Properties rated "E" or lower are of no particular interest, less than 45 years old, visually undistinguished, or modernized (City of Oakland 2015). Therefore, this building's rating of F3 does not qualify it as a PDHP nor does it qualify the building for individual listing in the Oakland Register. The building at 1433 Webster Street is not located within an historic district. Based on the background research and field survey conducted for this study, LSA concurs with OCHS' resource status determination for 1433 Webster Street.

351-359 15th Street. In 1994, the OCHS assigned a rating of 'Ed2' to the building at 351-359 Webster Street. Properties with ratings of "C" or higher, contributors or potential contributors to an Area of Primary or Secondary Importance are considered PDHPs that may warrant consideration for preservation by the City. Properties rated "E" or lower are of no particular interest, less than 45 years old, visually undistinguished, or modernized (City of Oakland 2015). Therefore this building's rating of Ed2 does not qualify it as a PDHP nor does it qualify the building for individual listing in the Oakland Register. The building at 351-359 15th Street is not located within an historic district. Based on the background research and field survey conducted for this study, LSA concurs with OCHS' resource status determination for 1433 Webster Street.

In 1996, OCHS surveyors identified the "15th and Webster Street District" and characterized it as a "Visually distinctive early-20th century commercial district of approximately 10 buildings, on 10 assessor's parcels, on parts of 2 blocks, in Central Oakland" (OCHS 1996). The tentative district was roughly bounded on the south by 14th Street, on the east by Harrison Street, on the north by 15th Street, and on the west by Franklin Street. The building 351-359 15th Street (APN 008-0624-035) was included in this tentative district. However, the district was never formally nominated and recognized as a historical resource by the City and is not listed by OCHS among the commercial-themed historic districts in Oakland. The district is an Area of Secondary Importance and is not listed among Oakland's Designated Landmarks, Heritage Properties, and Preservation Districts (City of Oakland 2015).

5.4 INTEGRITY ASSESSMENT

Historic integrity refers to the ability of a resource to convey its significant historical associations. Integrity is a critical component of historical resources that are listed in, or eligible for listing in, the CRHR. This section discusses the historic integrity of the building at 1433 Webster Street with respect to seven aspects: *location*, *setting*, *design*, *feeling*, *materials*, *workmanship*, and *association*.

5.4.1 1433 Webster Street

The integrity of the building at 1433 Webster Street was assessed due its association with architect Charles McCall.

- The building at 1433 Webster Street has not been moved and retains integrity of *location.*
- The building at 1433 Webster Street does not retain integrity of *setting* or *feeling.* Changes to setting and feeling are reflected in the gradual transformation of the surrounding neighborhood from 1914 through today. This change has altered the residential character of the area into one more reflective of the area's growing need for commercial services such as office buildings, parking lots, and restaurants. This decades-long change resulted in more property allocated to serve nearby commercial and civic needs. Many of the dwellings located in the area were demolished to encourage commercial development following the extension of 15th and 17th Streets in 1921.
- The building at 1433 Webster Street does not retain integrity of *workmanship*, *design*, or *materials*. The building's use has changed over time from a public garage to a brake shop in the 1950s, and later into an office building. This conversion included interior renovation and the removal of the garage's concrete ramp. The building's façade was altered in 1980-81, and replaced with unornamented stucco cladding. The building's windows were replaced as well, and its original concrete floor was altered. Skylights depicted on the 1950 Sanborn map were removed.
- The building at 1433 Webster Street does not retain integrity of *association* with the early-20th century downtown development or the growth of automobile culture in Oakland, Alameda County, California, and nationwide. The changes in the neighborhood that contrast with its original residential use, combined with the change in the use of the building itself, have compromised its integrity of *association*.

5.4.2 351-359 15th Street

The integrity of the building at 351-359 15th Street was assessed due to its association with architects Chester Miller and Carl Warnecke.

- The building at 351-359 15th Street has not been moved and retains integrity of *location.*
- The building at 351-359 15th Street retains integrity of *setting* and *feeling.* The area's commercial character remains intact.
- The building at 351-359 15th Street does not retain integrity of *workmanship*, *design*, or *materials*. The building's use has changed over time from a six-unit commercial building into an office building. The building received several renovations in 1951, 1955, and 1958. Alterations to the façade include the replacement of windows and doors, and stucco cladding. A second story was added over 33% of the building's interior in 1955.
- The building at 351-359 15th Street does retain integrity of *association* with early-20th century commercial development in Oakland, Alameda County, California, and nationwide.

6.0 EFFECTS ASSESSMENT

6.1 PROJECT DESCRIPTION

The project area is at the southwest corner of the intersection of Webster and 15th streets in downtown Oakland (Appendix A: Figures 1 and 2). The proposed project would demolish existing buildings at 1433 Webster Street (APN 008-0624-036) and 351-359 15th Street (APN 008-0624-035), and construct a 29-story, mixed-use residential building. The new building would cover the entire 0.365-acre project area, and would maintain a zero setback from the parcel boundary.

The base or podium portion of the proposed building would be four stories tall and contain commercial retail fronting Webster and 15th streets. The upper 25 floors will contain 179 one- and two-bedroom residential units. The building would have an L-shaped footprint, and the massing would be broken up into a bundle of six thin tower-like features. The ground-floor c would have aluminum-framed storefronts with aluminum signage and full-height windows. Entrances would be recessed and covered with a wood-clad overhang. The six, tower-like features would constitute the building's structural and visual framework and be clad in painted aluminum panels interspersed with regularly spaced, rectangular fenestration set in extruded aluminum frames. The two tower-like features on the north-facing façade (15th Street) would be separated with a full-height opening to add visual interest and match the Webster Street façade. The roof would have areas pf public open space (Appendix C).

6.2 PROJECT-SPECIFIC EFFECTS

According to Section 15064.5(b) of the *CEQA Guidelines*, a proposed project with "an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment." Examples of substantial adverse change include "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (Section 15064.5(b)(1) of *CEQA Guidelines*).

6.2.1 Project-Specific Effects on Individual Historical Resources

As the existing buildings in the project area are not eligible for listing, project-specific direct effects were not assessed. The buildings are within the boundary of the 15th and Webster Street District ASI, identified in 1996 by OCHS and described as a "visually distinctive early-20th century commercial district of approximately 10 buildings on 10 assessors parcels in parts of two blocks in Central Oakland" (OCHS 1996). However, as described previously in Section 4.3, this ASI was never formally nominated or recognized as a historical resource by the City, and as the HPE states: "[a] property in an (ASI) or a district of local significance is similar to an Area of Primary Importance (API) except that an ASI does not appear eligible for the NRHP" and is not an historical resource for the purposes of CEQA. The buildings in the project area are not included in an identified historic district or API.

6.2.2 Project-Specific Effects on Adjacent Historical Resources

This effects assessment is focused on five historical resources adjacent to the project area that were identified during the background research to prepare the HRE. These include:

- **Mary J. Bradley Store/P-01-001044.** This two-story brick commercial building, constructed in 1916 at 1401-1415 Webster Street, is southwest of the project area.
- **A. Babcock Auto Showroom/P-01-001045**. This one-story reinforced concrete and stucco Beaux Arts commercial building, constructed in 1922 at 1418-1432 Webster Street, is southeast of the project area.
- **Hugo Muller Building/P-01-001046**. This two-story reinforced concrete and brick commercial building, constructed in 1924 at 1436-1460 Webster Street, is east of the project area.
- **Oakland YWCA/P-01-003695.** The Oakland YWCA, designed by architect Julia Morgan and constructed in 1915 at 1515 Webster Street, is northeast of and across 15th Street from the project area.
- **Mrs. A.E. White Building/P-01-004570.** This Tudor-styled three-story building at 327-349 15th Street/1464-1466 Webster Street is south of and across Webster Street from the project area.

Generally, these character-defining architectural features of these buildings are:

- Wood-framed or reinforced concrete construction;
- Textured stucco or brick-clad exterior walls;
- Roofs covered in barrel or Mission tile;
- Recessed main entrances;
- Stamped metal cornices; and
- One-part commercial composition. This resource type is a single-story, street-level building. Many were constructed with large plate-glass display windows for use as retail showcase space with earlier examples featuring an entrance topped with a decorative pediment, cornice, or false-front façade. Architectural terra cotta ornamentation was also used. These building types are common in the cities of California and other western states (Longstreth 2000:54-67).

6.2.3 Proposed Demolition

The project will demolish two non-eligible buildings and will not result in significant adverse changes to a historical resource. The buildings' Modern and Vernacular commercial styles are well-represented in the building stock of Oakland, Alameda County, and the East Bay. The buildings are heavily altered, as well, which significantly diminished their architectural integrity. This compromised integrity minimizes their contribution to the area's early-to-mid 20th century architectural context.

The Secretary's Standards guide historic preservation and are used by Federal agencies and local governments to evaluate proposed rehabilitation, restoration, preservation, and reconstruction work on or near historical properties (a.k.a. "historical resources," as defined by CEQA). According to Section 15064.5(b)(3) of the *CEQA Guidelines*, a project that generally "follows the [Secretary's

Standards] […] shall be considered as mitigated to a level of less than a significant impact on the historical resource." The Secretary's Standards are not inflexible rather they are a practical and uniform means for assessing and describing potential effects to historical resources. The measure of a potential effect is proportionate to conformance to the guidance.

The Secretary's Standards comprise four sets of standards to guide the treatment of historic properties: Preservation, Rehabilitation, Restoration, and Reconstruction (Weeks and Grimmer 1995:2). Those four distinct treatments are defined as follows:

Preservation: The Standards for Preservation ". . . require retention of the greatest amount of historic fabric, along with the building's historic form, features, and detailing as they have evolved over time."

Rehabilitation: The Standards for Rehabilitation ". . . acknowledge the need to alter or add to a historic building to meet continuing new uses while retaining the building's historic character."

Restoration: The Standards for Restoration ". . . allow for the depiction of a building at a particular time in its history by preserving materials from the period of significance and removing materials from other periods."

Reconstruction: The Standards for Reconstruction ". . . establish a limited framework for re-creating a vanished or non-surviving building with new materials, primarily for interpretive purposes."

Typically, one set of standards is chosen. For this assessment, project-related activities would not cross the parcel boundaries or physically alter any portions or features of any adjacent historical resources; however, a potential to alter the integrity of the *contextual* setting of those resources remains. Evaluating integrity of setting requires that "physical features and their relationships should be examined not only within the exact boundaries of the property, but also between the property and its *surroundings* [emphasis in original]" (National Park Service 1997:45).

Only one treatment standard, Rehabilitation, addresses potential effects to setting by *adjacent* new construction; therefore, how this project conforms to the Standards for Rehabilitation will be the basis for evaluating effects to any adjacent historical resources and integrity of setting. Of the 10 Standards for Rehabilitation issued, only two (Standards 9 and 10) directly address new, adjacent construction and are applicable to this effects analysis. Rehabilitation Standards 9 and 10 are quoted below.

Standard 9: *New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.*

Standard 10: *New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*

As previously discussed in Section 4.4.1, the National Park Service defines integrity as "the ability of a property to convey its significance" (National Park Service 1997:44). The seven aspects of integrity are: *location*, *design*, *setting*, *materials*, *workmanship*, *feeling*, and *association*. Ideally, the property should retain some features of all seven aspects of integrity (National Park Service 1997:48).

The National Park Service has issued supplemental guidance, based on the Secretary's Standards, for the practical incorporation of new construction within historic contexts (National Park Service 2015). The guidance sates that "new construction needs to be built in a manner that protects the integrity of the historic building(s) and the property's setting." While the proposed project would not directly affect any adjacent historical resources, elements of the guidance are applicable for the assessment of project-related indirect effects (e.g., visual effects).The contextual setting of a given historical resource can extend beyond any specific or legal boundaries and include aspects in the surrounding area to help modern visitors understand the historical resource(s) in their architectural and social contexts. These aspects can include, but are not limited to: massing, spacing, density, materials, street setbacks, and any open areas within the parcel.

The National Park Service guidance provides the following instructive concepts:

1. Related new construction – including buildings, driveways, parking lots, landscape improvements and other new features – must not alter the historic character of a property. A property's historic function must be evident even if there is a change of use.

2. The location of new construction should be considered carefully in order to follow the setbacks of historic buildings and to avoid blocking their primary façades. New construction should be placed away from or at the side or rear of historic buildings and must avoid obscuring, damaging, or destroying character-defining features of these buildings or the site.

3. Protecting the historic setting and context of a property, including the degree of open space and building density, must always be considered when planning new construction on an historic site. This entails identifying the formal or informal arrangements of buildings on the site, and whether they have a distinctive urban, suburban, or rural character. For example, a historic building traditionally surrounded by open space must not be crowded with dense development.

4. In properties with multiple historic buildings, the historic relationship between buildings must also be protected. Contributing buildings must not be isolated from one another by the insertion of new construction.

5. As with new additions, the massing, size, scale, and architectural features of new construction on the site of a historic building must be compatible with those of the historic building. When visible and in close proximity to historic buildings, the new construction must be subordinate to these buildings. New construction should also be distinct from the old and must not attempt to replicate historic buildings elsewhere on site and to avoid creating a false sense of historic development.

6. The limitations on the size, scale, and design of new construction may be less critical the farther it is located from historic buildings.

7. As with additions, maximizing the advantage of existing site conditions, such as wooded areas or drops in grade, that limit visibility is highly recommended.

8. Historic landscapes and significant viewsheds must be preserved. Also, significant archeological resources should be taken into account when evaluating the placement of new construction, and, as appropriate, mitigation measures should be implemented if the archeological resources will be disturbed (National Park Service 2015).

6.3 COMPLIANCE ASSESSMENT

The following presents the results of a Rehabilitation Standards-based assessment of the proposed project in relation to the adjacent historical resources previously listed at Section 6.2.2. The following assessment matrix analyzes the potential for indirect effects (National Park Service 2015). Following the Standards-based assessment, two supplemental analyses of potential effects due to wind and shade will be presented.

Table D: Secretary's Standards for Rehabilitation

Rehabilitation Standard	Compliant	Not Compliant	Not Applicable
Standard 1: *A property would be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.*			**X**
Standard 2: *The historic character of a property would be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize the property would be avoided.*			**X**
Standard 3: *Each property would be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historical properties, would not be undertaken.*			**X**
Standard 4: *Changes to a property that have acquired significance in their own right would be retained and preserved.*			**X**
Standard 5: *Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property would be preserved.*			**X**
Standard 6: *Deteriorated historic features would be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature would match the old in design, color, texture, and, where possible, materials. Replacement of missing features would substantiated by documentary and physical evidence.*			**X**
Standard 7: *Chemical or physical treatments, if appropriate, would be undertaken using the gentlest means possible. Treatments that cause damage to historic materials would not be used.*			**X**
Standard 8: *Archaeological resources would be protected and preserved in place. If such resources must be disturbed, mitigation measure would be undertaken.*			**X**

Standard 9: *New additions, exterior alterations, or related new construction would not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and would compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property and environment.*	**X***		
Standard 10: *New additions and adjacent or related new construction would be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*	**X**		

*****If the proposed project complies with mitigation measures listed at Section 6.3.2

6.3.1 Rehabilitation Standards 1-8

There is no work proposed within the boundaries of any adjacent historical resources. Therefore, Standards 1 through 8 are not applicable.

6.3.2 Rehabilitation Standard 9

> *New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property and environment.*

The intent of Rehabilitation Standard 9 is to avoid or limit potential actions that would diminish the integrity of a historical resource as the result of new construction. As previously mentioned, a historical resource should retain some features of all seven aspects of integrity f which are *location, setting, design, materials, feeling, workmanship* and *association* (National Park Service 1997:48). A basic integrity test for properties is to imagine i a historical contemporary would recognize the resource as it exists today (National Park Service 1997:48). The following section analyzes the key aspects of integrity for adjacent historical resources and provides determinations regarding impact(s) of the proposed project.

Integrity of *location* is the place where the historical resource was constructed or the place where the historic event occurred. The adjacent historical resources would remain where they are and therefore, the project would not have a significant effect on integrity of location.

Integrity of *setting* refers to the character of the place in which the historical resource gained historical importance. The immediate setting of the project area is densely urban in character and includes those physical features and their relationships within their parcel boundaries and with each other. Although the project would not result in new construction or project-related activity within the boundaries of any adjacent historical resources, integrity of the immediate setting comprising one- to four-story buildings built over 80 years ago would be impacted by constructing a 353-foot tall building in the project area. However, the degree of impact is diminished by the pattern of constructing multi-story, high-rise mixed-use buildings in downtown Oakland over the last 30 years.

The area within and adjacent of a one-block radius of the project area currently includes several modern institutional and commercial buildings that are of similar construction, were recently built, and in some instances, similar in size and design to the proposed project.

These buildings include:

- 1587 Franklin Street (APN 008-0622-012-07) (15 stories);
- 1600 Franklin Street (APN 008-0624-028-02) (10 stories);
- 1619 Harrison Street (APNs 008-0625-023-00; -024-00) (13 stories);
- 1330 Broadway (APN 002-0053-001-00) (18 stories);
- 1700 Broadway (APN 008-0623-014-00) (10 stories);
- 1221 Broadway (APN 002-0097-044-00) (25 stories); and
- 1333 Broadway (APN 002-0097-001-00) (10 stories).

The following list identifies projects within a two-block radius of the project area that were recently approved and would construct commercial buildings similar in size and design to the proposed project:

- 1331 Harrison Street (APN 002-0065-006-01) (25 stories, 125 residential units);
- 1640 Broadway (APN: 008-0622-001-05; -001-02; 001-03; -00-104) (33 stories, 254 residential units, 5,000 ft^2 ground floor retail);
- 250 14th Street (APNs 008-0626-018-00; -017-00) (16 stories, 126 residential units/approximately 3,200 ft^2 of retail); and
- 1700 Webster Street (APN 008-0625-014-01) (24 stories, 200,000 ft^2, mixed-use, 206 residential units and approximately 5,100 ft^2 of ground floor retail).

The proposed building would be significantly larger in size, scale, and massing than the adjacent historical resources. At 29 stories in height, the proposed building would be nearly nine to fifteen times the height of the two and three-story adjacent historical resources across Webster Street and five times the overall height as the four-story YWCA Building located across 15th Street. The massing and density of the proposed building would be a significant massing and design departure from the adjacent historical built environment, where the buildings have smaller footprints and some degree of architectural ornament.

The proposed project would construct a 29-story thereby creating a denser, more vertical built environment on a relatively monumental scale than the one-to-four story scale and massing of the adjacent historical resources. This would be a significant effect to integrity of setting. However, the contextual setting includes a historical resource's surroundings outside of its parcel boundaries and the relationship to the surrounding context. As previously stated in Section 6.3.2, the proposed project would introduce neither the first nor the largest modern mixed-use building of this type within or adjacent to a two-block radius of the project area. Much of the surrounding area has been altered in the last 30 years, when the existing primary land use pattern was one- to four-story commercial or institutional development interspersed with vacant parcels (mostly used as automobile parking).

Integrity of *materials* reflects the physical elements that were assembled, combined, or deposited during a particular period of time in a particular pattern or configuration. Integrity of materials assesses whether sufficient authenticity of a historical resource remains. The project would not alter the materials of the adjacent historical resources. As previously described in Section 6.1, the massing of the new building would be broken up into a bundle of six thin tower-like features. The first four stories would be visually separated to create a distinct base or podium feature separated into four four-story rectangular symmetrical sections that reference the existing scale and massing of the commercial storefronts. The separation in massing would introduce visual interest and reduce a uniform monolithic feeling in the overall design. Should reference materials found on the adjacent historical resources in the base or podium design in a manner also harmonious to the overall building aesthetic, the total effect to the historical fabric of the built environment of Webster and 15th streets would soften to a degree that the cohesiveness and comprehensibility would not be materially impaired.

To this end, below are some general design and materials recommendations for the base or podium portion of the new building:

- Reference the basic three-part pattern of the nearby historical built environment. Generally, this pattern is consists of an articulated base, a main vertical or shaft element, and topped with an overhanging cornice on the main, street-facing façades;
- Include materials to reference adjacent historical buildings in a manner that would be discernable as new construction. Examples of materials are: buff or light-colored wall cladding (e.g., brick or stucco), minimal terra cotta, marble, or stucco ornamentation, with ornamental accents of terra cotta, cement or plaster. Other materials, such as premanufactured lintels and cornices, would also be compatible; and
- Elaborately detailed entrance or entrances and glass and metal storefronts, metal awnings and pergola, terracotta panels and sunscreens, and metal cladding are clearly modern in nature and would be appropriate if used minimally on façades fronting adjacent historical resources.

While the project would not restore the area's historical integrity of setting, it would not introduce a visual impact that deviates from land use and development patterns that have emerged within in Downtown Oakland in the last 30 years.

Integrity of *feeling* is a property's expression of the aesthetic or historic sense of a particular period of time. The historical resources adjacent to the project area would continue to convey a sense of late-19th and early-20th century urban life. The proposed project should neither replicate the earlier built environment, nor, as discussed above, introduce obvious modern materials or features on sections of the project facing adjacent historical resources that are visually jarring and diminish integrity of feeling. The density, height, and proximity of the proposed project would diminish integrity of feeling of adjacent historical resources by altering the area around the project area. The proposed project would have a significant effect on integrity of feeling. However, as previously stated, the proposed project would not be the first such building in the area and the degree of impact is diminished by the recent pattern of constructing multi-story high-rise mixed-use buildings in downtown Oakland.

Finally, integrity of *association* is the direct link between an historic event, person, or architectural design, trend, or method of construction and a historical resource. A property must be sufficiently intact to convey the relationship between the person and the property to an observer. The historical resources adjacent to the project area would remain unchanged by the proposed project, and their respective integrity of association would remain intact. The proposed project would not have a significant effect on integrity of association.

6.3.3 New Construction within the Boundaries of Historic Properties

The following are applicable considerations provided in the document entitled *New Construction within the Boundaries of Historic Properties* (National Park Service 2015). New construction would occur within the boundaries of the 15th and Webster Street District ASI, described by OCHS surveyors in 1996 as a "visually distinctive early 20th century commercial district of approximately 10 buildings, on 10 assessors parcels, on parts of 2 blocks, in Central Oakland" (OCHS 1996). However, this District was never formally nominated or recognized as a historical resource by the City. Although the buildings slated for demolition are within an ASI, the ASI as a whole does not appear eligible for the NRHP, usually because they are less intact or less unique than Areas of Primary Importance (API) and would not be considered a "historical resource" as defined at California Public Resources Code §5024.1. Therefore, , the selected aspects are useful in assessing the project's compliance with Rehabilitation Standard 9.

Of the eight total aspects, the following are applicable to this analysis:

- *The location of new construction should be considered carefully in order to follow the setbacks of historic buildings and to avoid blocking their primary elevations. New construction should be placed away from or at the side or rear of historic buildings and must avoid obscuring, damaging, or destroying character-defining features of these buildings or the site.*

The proposed building would correspond with the zero sidewalk setbacks of adjacent historical resources. The project's setbacks conform to those of commercial buildings within the project area and a two-block radius. New construction would not block or obscure any views of or from any adjacent historical resources, which would remain clearly visible from 15th and Webster streets.

- *Protecting the historic setting and context of a property, including the degree of open space and building density, must always be considered when planning new construction on an historic site. This entails identifying the formal or informal arrangements of buildings on the site, and whether they have a distinctive urban, suburban, or rural character. For example, a historic building traditionally surrounded by open space must not be crowded with dense development.*

New construction would not cross the parcel boundaries of any adjacent historical resources, and the increased density would intensify the block's overall modern urban feel and character. However, this area is already characterized by dense urban built environment typically found in downtown areas. This increased density is consistent with the urban uses that characterize such inner-city cores, and, therefore, would not constitute a change sufficient to adversely impact the project area's historic setting.

- *In properties with multiple historic buildings, the historic relationship between buildings must also be protected. Contributing buildings must not be isolated from one another by the insertion of new construction.*

As previously stated, new construction would occur within the boundaries of the 15th and Webster Street District ASI, which was never formally nominated or recognized as a historical resource by the City, and is not a "historical resource" under CEQA. However, the current buildings in the project area constitute a "break" or "gap" in the continuity of the ASI's historical built environment, i.e., historical resources located on the east side of Webster Street and historical resources along the south side of 15th Street. The project would remove two non-contributing elements that were considered by OCHS in 1996 to demarcate the ASI's boundaries and replace them with new construction that would not alter any of the spatial relationships within the ASI. The existing inter-relationship among the historical resources adjacent to the project area would not be altered by the proposed construction.

- *The limitations on the size, scale, and design of new construction may be less critical the farther it is located from historic buildings.*

The distances from the adjacent historical resources and the project area would either be zero or minimal. Although historical resources adjacent to the project area would continue to convey a sense of late-19th and early-20th century urban life, the introduction of a 29-story building would introduce a significant change in the visual signature of the built environment surrounding the project area. The density, height, and proximity of the proposed project would diminish integrity of feeling of adjacent historical resources by altering the feeling and context of the historical built environment area around the project area. The proposed project would have a significant effect on integrity of feeling. However, as previously stated, the proposed project would not be the first such building in the area and the degree of impact is diminished by the recent pattern of constructing multi-story high-rise mixed-use buildings in Downtown Oakland.

- *Historic landscapes and significant viewsheds must be preserved. Also, significant archeological resources should be taken into account when evaluating the placement of new construction and, as appropriate, mitigation measures should be implemented if the archeological resources will be disturbed.*

No landscape elements or viewsheds were formally identified as a character-defining feature in previously prepared documentation of any historical resources adjacent to the project area. However, there currently is a mile-long view corridor between the upper stories of Oakland's City Hall (City Hall) and the 18th Street Pier on the eastern shore of Lake Merritt. Assessing a project's visual effects on historical resources, including view corridors, is, by nature, a subjective process. Published guidelines by the Delaware State Historic Preservation Office (DSHPO)and the State of Virginia Department of Historic Resources, however, describe a standard, qualitative method to assist in determining whether proposed project-related activities may result in adverse effects to nearby historic properties (Delaware State Historic Preservation Office 2003; Virginia Department of Historic Resources 2010).

As noted previously, the Secretary's Standards state that an adverse effect to a historical resource would occur if the property or its immediate surroundings were altered such that the significance of the character-defining features of that property would be materially impaired. The DSHPO guideline identifies two types of adverse visual effects, *aesthetic* and *obstructive*, that can be used to determine whether the "immediate surroundings" of a historical resource would be altered to result in an adverse effect:

- *Aesthetic Effects*: A project would have a negative aesthetic effect on a historic property if it eliminates open space or scenic views that contribute to a property's significance or introduces visual elements that are incompatible, greatly out of scale, in great contrast, or out of character with the character of the historic property (which includes both the historic property and later development).
- *Obstructive Effects*: A project would have an obstructive effect if it blocks or intrudes into a scenic view; blocks a significant feature of the scenic view; blocks another historic property visible from the subject historic property; or provides visual elements that would detract from a scenic view or a historic property.

To assess the project's potential aesthetic and/or obstructive effects on historical resources, it is necessary to understand the reasons for their significance (i.e., their eligibility under appropriate significance criteria) and the critical aspects of their integrity that convey that significance. By way of example, a rural farmstead or historic battlefield significant for their associations with historic events is particularly susceptible to visual effects because new construction may adversely affect critical components of the property's integrity that convey its significance, including the integrity of the setting and feeling. Other resources that are significant for their architecture demonstrate this significance primarily through integrity of design, materials, and workmanship, which are generally less susceptible to visual changes in the surrounding setting.

Generally, during construction, motorists and pedestrians passing by a historical resource and visitors to a historical resource would have indirect and direct views of and from historical resources partially obstructed by the temporary presence of construction equipment and work crews. These visual obstructions would be temporary in nature and remain for the duration of construction-related activity required for a given location. Following construction-related activity, motorists and pedestrians passing by a historical resource and visitors to a historical resource may have partially obstructed indirect and direct views of and from historical resources. As demonstrated in the analysis below, obstructed views following construction would be minor and would be from few vantage points for motorists and pedestrians. The effects analysis for areas in and adjacent to historical resources is presented below.

The view corridor between the 18th Street Pier and City Hall provides viewers interrupted views across Lake Merritt to City Hall through a gap in the downtown Oakland skyline. Both City Hall and the 18th Street Pier were built as part of a series of civic improvements guided by Oakland Mayors Frank K. Mott (1905-1915) and John L. Davie (1895-1897, 1915-1931), to elevate Oakland's profile and desirability among cities on the West Coast for people to live, work, and invest in (Blackford 1993:4, 73-82). To this end, from 1907 to 1915, a series of civic improvements were made to Lake Merritt. These include a paved boulevard around the lake, creating parklands along the shore, and construction of some the lake's distinctive buildings and structures including the Pergola in 1913, the 18th Street Pier (originally named East 18th Street Boat Landing) in 1914, the Pumping Station in 1908-1909, the Municipal Boathouse in 1914-1917, and the Canoe/Sailboat House built in 1915. However, for the reasons explained below, the orientation and placement between City Hall and 18th Street Pier were coincidental.

The 18th Street Pier gave public access onto Lake Merritt and to enjoy views of the lake and areas on the opposite shores. Rather than to capture or frame downtown Oakland, the siting and orientation of the 18th Street Pier was "to mark where one of the hillside streams flowed into the Lake" (Allen, Annalee *East Bay Times* 15 August 2016). Viewers looking west beyond the lake from the 18th Street Pier would have easily picked out the profile of City Hall. However, during the subsequent 100 years, the skyline of downtown Oakland filled in with taller buildings many with more prominent visual signatures than City Hall. A skyline crowded with buildings was the long-term outcome desired by Oakland's civic boosters and politicians such as Mayors Mott and Davie in their advocating investing public money in civic improvement projects. As downtown Oakland filled in with many tall skyscrapers, the profile and prominence of City Hall diminished.

The proposed project would not obstruct or block views around Lake Merritt to or from the 18th Street Pier and any of the other early-20th century improvements and parklands that ring Lake Merritt. The project would obstruct or block a portion of views west from the 18th Street Pier beyond Lake Merritt towards Downtown Oakland. The project would not alter the setting in a way that diminishes the historic significance of either the 18th Street Pier or City Hall. The collective visual signature of Oakland's Downtown built environment has radically changed in the 102 years following City Hall's opening (1914) which has gradually altered views from Lake Merritt west to downtown Oakland. For the reasons stated above, although the proposed project would fully obstruct specific views west from the 18th Street Pier to City Hall, this would not result in an adverse effect.

6.3.3 Rehabilitation Standard 10

> *New additions and adjacent or related new construction would be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*

If the proposed new building was removed in the future, the essential form and integrity of the adjacent historical resources would remain unimpaired. As designed, the proposed project would be in compliance with Rehabilitation Standard 10.

6.3.4 Conclusion - Secretary's Standards Compliance Assessment

No existing historical resources would be demolished, destroyed, relocated, or altered as a result of the project in a way to result in a substantial adverse change in their historical significance. The proposed construction would be in partial compliance with Rehabilitation Standard 9. Several design measures have been implemented in response to Standard 9, particularly the inclusion of compatible architectural details and materials that reference, but do not duplicate, historical resources adjacent to the project area.

The introduction of a building that increases density has the potential to impact integrity of setting and feeling of this area of downtown Oakland. However, the impact would not be adverse, as the design would not introduce a visual impact that deviates from land use and development patterns that have emerged within in Downtown Oakland in the last 30 years. To diminish impacts to the contextual integrity of the adjacent historical resources, the proposed design will provide a clear interruption or break in the overall massing between the bottom four stories and the upper 25 stories to harmonize with the earlier pattern of four-story maximum building height. Although the overall building would be 353 feet tall and contain 29 stories, the interruption of massing near the ground will diminish or lessen the overwhelming height or monolithic appearance of the proposed building.

6.4 SHADOW AND WIND EFFECTS

This section evaluates the effects of the proposed project on visual resources in the vicinity of the project area, as well as effects from shade/shadow and wind. This section is based on: (1) field surveys of the project area; (2) a review of the data provided by the project applicant, including visual simulations and perspective drawings; (3) sun and shadow pattern simulations that show "before and "after" representations of the proposed project prepared by RAD Design | SDG; (4) shade/shadow simulations of existing buildings and of the proposed building prepared in September 2016, by RAD Design | SDG; and (5) a *Pedestrian Wind Review* prepared by Rowan Williams Davies & Irwin, Inc., (RWDI).

6.4.1 Shade and Shadow

Shadow pattern simulations were prepared by RAD Design | SDG for the existing conditions surrounding the project area for the following dates: March 21 (spring equinox - when the day and night are approximately the same length); June 21 (summer solstice - when the sun is at its highest point in the sky); September 21 (fall equinox - when the day and night are approximately the same length); and December 21 (winter solstice - when the sun is at its lowest point in the sky). Simulations were prepared for three times during each day: 9:00 a.m. (morning); 12:00 p.m. (noon); and 5:00 p.m. (late afternoon). The shadow simulations assume sunny conditions, and do not take into account fog or overcast conditions. Special attention was paid to the YWCA Building, an Oakland City Landmark located north of the project area, across 15th Street. The shadow study also took into account shadow effects to nearby solar collectors (Appendix D).

Existing shadows in the vicinity of the project area are cast from the high-rise office buildings located south and west of the project area. The following provides a description of specific shadow patterns for the previously described days and times:

- *March 21*. In the morning, shadow lengths cast by the proposed building in the project area would cast a two-city-block-long shadow to the west, covering the tops of the buildings on the south side of 15th Street and through the middle of the adjacent city block to Broadway. At noon, the shadow of the proposed building would shorten and move northwest to cover most of the section of 15th Street between Webster and Franklin streets, as well as completely cover the existing building at the southwest corner of 15th and Franklin streets intersection. In the late afternoon, the shadow of the proposed building would lengthen and move east to fall on the Webster and 15th street intersection and on across the adjacent city block to the Harrison and 17th streets intersection. The YWCA Building at 1515 Webster Street would be fully exposed to sunlight during the day except for an interval in the early afternoon as the shadow footprint would swing from the northwest to the east. This analysis is similar to the September 21 equinox measurement period.
- *June 21*. The morning shadows from the proposed building in the project area fall on portions of adjacent parking lots to the northwest. At noon, the shadow shortens to fall on adjacent buildings along the south side of 15th Street., During the afternoon, the shadow of the proposed building would lengthen, swing to the east to cover the Webster and 15th street intersection, and also completely cover the Mrs. A.E. White Building. The YWCA Building would be fully exposed to sunlight during the day except for the early afternoon as the shadow footprint of the proposed building would move from the northwest to the east.

- *September 21*. Please see the March 21 analysis above for a description of similar shadow activity and characteristics for times during an equinox event.
- *December 21*. In the morning, shadow lengths cast by the proposed building in the project area would cover more than two city blocks to the northwest, which would cover the tops of the buildings on the south side of 15th Street and a segment of 15th Street between Webster Street and Broadway. The shadow would extend beyond the Broadway and Telegraph Avenue intersection and partially cover a portion of the east-facing façade of the Rotunda Building at 300 Frank H. Ogawa Plaza. At noon, the shadow of the proposed building would shorten and move north to cover the eastern half of a segment of 15th Street between Webster and Franklin streets, as well as the western half of the YWCA Building at 1515 Webster Street. In the late afternoon, the shadow of the proposed building would lengthen, swing to the northeast to cover the eastern half of the YWCA Building, and extend beyond to 17th Street.

Solar Collectors. The Hugo Muller Building at 1436-1460 Webster Street contains 8,145ft^2 of roof-mounted solar panels. The solar collectors are tilted approximately 20 degrees from horizontal and face southwest. The study determined that during October to February the proposed building would cast no shadows on this building. During the remaining months of the year, shadows at sunset would fall on a portion of the building. The cumulative loss of solar exposure would reduce yearly photo-voltaic generation by 0.85 percent. The study did not identify any other buildings with solar panels in the vicinity of the project area (Appendix D).

Conclusion. New shadows cast by the proposed project would not materially impair the historical significance of adjacent historical resources by materially altering those physical characteristics that convey their historical significance and that justify their inclusion on national, state or local registers. The ornamentation and architectural details of adjacent historical resources, particularly the Oakland YWCA and the Mrs. A.E. White buildings, would be somewhat muted without direct exposure to sunlight. However, neither building would be shadowed throughout the entire day, and, therefore, the new shadow would not significantly obscure historical architectural details that contribute to their respective significance. As such, the new shadow cast by the proposed project would have a less-than-significant impact on adjacent historical resources.

6.4.2 Wind

Wind is an important factor for the project area because Oakland is located on the eastern shore of the San Francisco Bay, and as such, is almost constantly subject to sea-to-land breezes. The Pedestrian Wind Review prepared by RWDI utilized long-term meteorological date for Oakland, three-dimensional graphics for the proposed Project, and software modeling to provide a screening-level estimation of the potential wind conditions during various scenarios (see Appendix E).

Winds from the west average over 20 miles per hour (mph) and are not necessarily the strongest winds experiences in Oakland throughout the year, but they are the most frequently experienced. Three significant wind directions: southeast, west, and west-northwest, were simulated in the assessment with predictions of resulting wind conditions. Overall, ground-level wind conditions become slightly windier following construction of the proposed building. However the majority of locations remain acceptable for pedestrians. Higher wind speeds at the entrances and uncomfortable conditions at the northern and northeastern corners of the proposed building are predicted for less frequent southeastern winds. Recommendations to lower ground-level wind speeds include redirecting winds via installing overhead canopies along the east, Webster Street façade and then wrapping around the northeast building corner onto the 15th Street façade. No ground level locations around the proposed development are expected to exceed the wind safety criteria.

6.4.3 Conclusion

As previously described, the proposed project would not cast a shadow on existing solar collectors or cast a prolonged, day-long shadow on any adjacent historical resources, thereby materially altering those physical characteristics that convey their historical significance and that justify their inclusion on national, state, or local registers (Appendix D). The project would not result in uncomfortable ground-level wind speeds for pedestrians near the Webster and 15th streets intersection (Appendix E).

7.0 CONCLUSION

Background research and field survey identified two buildings in the project area at 1433 Webster Street and 351-359 15th Street. These resources, commercial buildings of reinforced concrete and masonry built in 1914 and 1938, respectively, originally housed a garage and commercial shops. They are associated with the early-to-mid 20th century commercial development of Oakland and Alameda County.

Despite their prior uses, these buildings' specific associations with these patterns of events are not prominent or important. The building at 1433 Webster Street possesses several general characteristics of vernacular utilitarian architecture of the early-20th century; however, subsequent alterations completely removed the original main, street-facing façade. Interior alterations also removed the concrete garage ramp. The building at 351-359 15th Street possesses several general characteristics of Modern architecture of the late 1930s; however, these characteristics when evaluated together do not create any significant or notable style, but rather reflect the restrained use of ornamentation in building design during the Depression era. Alterations to the buildings (such as changes to window, doors, and cladding), when taken together with overall changes to the surrounding neighborhood, have diminished these buildings' integrity of workmanship, design, materials.

For the reasons stated above, LSA concludes that due to their lack of historical significance and integrity, the buildings at 1433 Webster Street and 351-359 15th Street do not appear eligible for inclusion in the CRHR, nor do they qualify for listing in the Oakland Register as candidates for City of Oakland Landmarks, Heritage Properties, or included in an S-7 or S-20 Preservation Combining Zone. For these reasons, these buildings do not appear to qualify as historical resources for the purposes of CEQA (as defined at Public Resources Code §21084.1).

Table E: Resource Status Summary

Resource	Oakland City Landmark?	Within an S-7 or S-20 Preservation Zone?	Preservation Study List/Heritage Property?	CEQA Historical Resource?
1433 Webster Street	No	No	No	No
351-359 15th Street	No	No	No	No

The proposed project would demolish two buildings in the project area and redevelop the area with a 29-story, mixed-use building. No new construction would occur on adjacent parcels and no historical resources are located within the project area. Much of the overall design complies with the Secretary's Standards and applicable City preservation requirements. However, LSA recommends that certain measures presented be adopted implemented to address effects on setting and feeling. The introduction of a building that increases density has the potential to impact integrity of setting and feeling of this area of downtown Oakland. However, the impact would not be adverse, as the design would not introduce a visual impact that deviates from general land use patterns and development in Downtown Oakland over the last 30 years. To diminish impacts to the contextual integrity of the adjacent historical resources, the proposed design will provide a clear interruption or break in the overall massing between the bottom four stories and the upper 25 stories to harmonize with the earlier pattern of four-story maximum building height.

Although the overall building would be 353 feet tall and contain 29 stories, the interruption of massing near the ground will diminish or lessen the overwhelming height or monolithic appearance of the proposed building. It is recommended that the base or podium portion of the new building reference the basic three-part articulation consisting of an articulated base, shaft, and overhanging cornice; use of materials that reference but not replicate the architectural and design qualities of adjacent historical resources, such as the Oakland YWCA and the Mrs. A.E. White buildings and would still clearly be discernable as new construction. Examples of appropriate materials include: buff or light-colored wall brick cladding, minimal terra cotta, marble, or stucco ornamentation, with ornamental accents of terra cotta, cement, or plaster. Other materials such as premanufactured lintels and cornices and painted stucco, a traditional building material common to the area, would also be compatible with the adjacent historical resources. Should that compliance be achieved, the project would not result in a substantial adverse change in the significance of historical resources adjacent to the project area and would avoid creating a significant impact to a historical resource under CEQA.

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APPENDIX A

California Department of Parks and Recreation 523 Series Form Records

1433 Webster Street, Oakland, Alameda County

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code: 6Z

Other Listings F3 (Oakland Cultural Heritage Survey)
Review Code **Reviewer** Oakland Cultural Heritage Survey **Date** 9/30/94

 Resource Name: 1433 Webster Street

P1. **Other Identifier:** *Imperial Garage and Supply Company*; *Swords to Plowshares*
P2. **Location** ☐ **Not for Publication** ☒ **Unrestricted:**
- **a.** **County:** Alameda
- **b.** **USGS 7.5' Quad:** *Oakland West, Calif.* **Date:** 1993; **T**1S/**R**3W**;** *San Antonio* (V. and D. Peralta)**;** M.D.B.L.
- **c.** **Address:** 1433 Webster Street **City** Oakland **Zip** 94612
- **d.** **UTM:** Zone 10S; 564371**mE**/4184343**mN**
- **e.** **Other Locational Data:** APN 008-0624-036

P3a. **Description:** This building is a two-story former garage built in 1914 and constructed of reinforced concrete. It rests on a concrete slab foundation, and is clad in non-original stucco. The walls of this building are of reinforced concrete or masonry construction. The east-facing façade is segmented by evenly spaced full-length stucco-clad vertical elements that shelter a recessed entry way and street-level windows. A set of metal security bars encloses the recessed ground-floor entry areas. Fenestration consists of large steel-framed sash windows set in anodized aluminum frames. The building has one main entrance consisting of a replacement door at the far right side of the eastern, street-facing façade. Landscaping consists of two young street trees lining the sidewalk. This building is in fair condition, and contains offices.

P3b. Resource Attributes: (HP6) 1-3 story commercial building
P4. Resources Present: ☒ Building
P5a. **Photograph:**

P5b. Description of Photo: 1433 Webster Street. South and east façades, view to the northwest (3/3/16).

P6. Date Constructed/Age and Source: ☒ Historic, Built 1914; ParcelQuest; City of Oakland Building Permit #35603, issued 6/29/14.

P7. Owner and Address:
Fred, Beth, and Leslie Karren
22 Battery Street #503
San Francisco, California 94111

P8. Recorded by:
Michael Hibma and Angelique Theriot
LSA
157 Park Place
Point Richmond, California 94801

P9. Date recorded: 3/16/16

P10. Survey Type: Intensive

P11. Report Citation: Hibma, Michael and Angelique Theriot, 2016. *Historical Resources Evaluation of 1433 Webster Street and 351-359 15th Street, Oakland, Alameda County, California.* LSA, Point Richmond, California.

Attachments: ☒ **Location Map** ☒ **Continuation Sheet(s)** ☒ **Building, Structure, and Object Record**

State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI#**
BUILDING, STRUCTURE, AND OBJECT RECORD

NRHP Status Code: 6Z
Resource Name: 1433 Webster Street

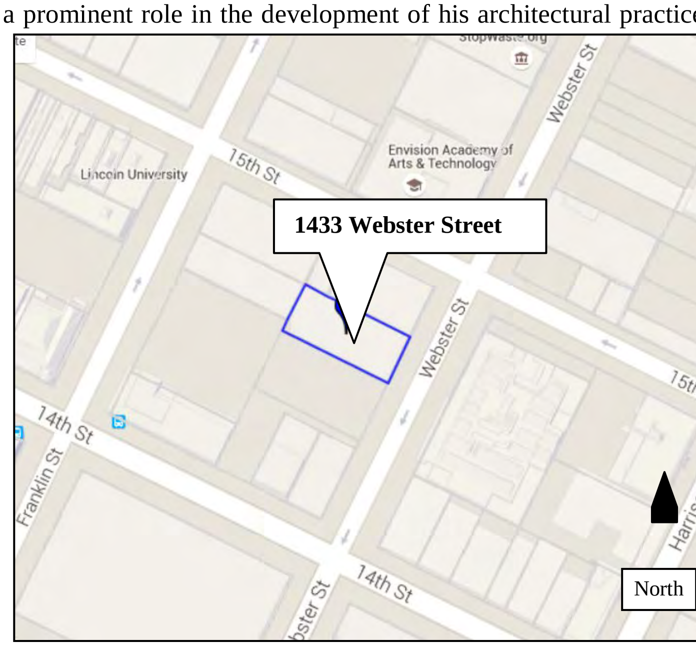
B1. **Historic Name:** *Imperial Garage and Supply Company*; *Swords to Plowshares*
B2. **Common Name:** Service Employees International Union
B3. **Original Use:** Public auto garage
B4. **Present Use:** Vacant
B5. **Architectural Style:** Vernacular
B6. Construction History: According to information on file at the Oakland Cultural Heritage Survey (OCHS), this building was constructed in 1914. Subsequent alterations include the alteration of the east facade, removal of skylights, removal of the interior concrete ramp, and interior renovations. According to building permit information on file with the Oakland Planning and Building Department, this garage was converted into an office building in 1980-1987. A veterans' assistance organization, Swords to Plowshares moved its office to the building in 2006. The building is currently vacant.

B7. **Moved?** No
B8. **Related Features:** None
B9. **a. Architect:** Charles W. McCall
b. Builder: Unknown

B10. **Theme:** Commercial development **Area:** Downtown Oakland, Alameda County

Period of Significance: N/A **Property Type:** Commercial **Applicable Criteria:** N/A

This resource consists of a two-story, commercial building built in 1914 at 1433 Webster Street that completely covers the 9,750-square-foot, rectangular parcel in an urban setting. Information at OCHS indicates that is not located in an official historic district. Research indicates that this building was originally a public auto garage. Research indicates that the building at 1433 Webster Street is associated with the industrial and commercial growth of Oakland in the early 20th century, as well as with the growth of automobile culture. Its construction is tied to the expansion of the city's downtown east of Broadway, as well as the rise of automobile culture as one of many public garages in the area. The 1950 Sanborn map of the project area shows a similar public garage located across the street from the project area. No evidence was identified to elevate this particular building in associative stature, however. It does not possess specific, important associations with this context that distinguish it from other buildings with similar, design, construction, history, and use. The building at 1433 Webster Street is not significant under Criterion 1. Research into records on file at the OCHS indicates that the building at 1433 Webster Street is associated with local architect Charles W. McCall and the Imperial Garage and Supply Company. Charles McCall designed hundreds of buildings throughout the Bay Area. The building did not contain McCall's offices, and did not play a prominent role in the development of his architectural practice. The Imperial Garage and Supply Company, owned by C.W. Broderick, was one of several such public garages operating in Oakland by 1914. The building at 1433 Webster Street is not significant under Criterion 2.



B11. **Additional Resource Attributes:** None

B12. **References:** (see continuation sheets 7-9 of 13).

American Society of Civil Engineers
1977 *Historic Civil Engineering Landmarks of San Francisco and Northern California*. American Society of Civil Engineers, San Francisco Section. Pacific Gas and Electric Company, San Francisco, California.

Bagwell, Beth
1996 *Oakland: The Story of a City*. Oakland Heritage Alliance, Oakland.

B13. **Remarks:** None

B14. **Evaluator:** Michael Hibma and Angelique Theriot
LSA
157 Park Place,
Point Richmond, California 94801

Date of Evaluation: 3/16/16

(This space reserved for official comments.)

B10. (continued)

This building at 1433 Webster Street reflects the style and method of construction typical of other public garages constructed during the early 20th century. It possesses no strong or vibrant artistic values, and is highly utilitarian in nature. It does not possess any elements which make it a notable example of any of these characteristics, however. While this building was designed by noted architect Charles W. McCall, the building is not a notable example of his work during the period, and was completely remodeled in 1980-1981. Better examples of McCall's work that retain the character defining features of his design are located in other commercial and residential areas of the East Bay and San Francisco. The building's façade and interior were significantly altered in 1980-1981. The building at 1433 Street is not significant under Criterion 3. This criterion is usually used to evaluate the potential of archaeological deposits to contain information important in understanding the past lifeways of Oakland's early historic-period and pre-contact inhabitants. Its application to architecture is less common in eligibility assessments due to the prevalence of multiple media that thoroughly otherwise document the form, materials, and design of a given building type. Consequently, information about vernacular design and construction techniques, as represented by 1433 Webster Street, is well documented in literature describing architectural forms and designs for industrial properties, which has been extensively published and is widely available to the public. For these reasons, the building at 1433 Webster Street will not yield information important to the history of the local area, California, or the nation. The building at 1433 Webster Street is not significant under Criterion 4.

Integrity. The building at 1433 Webster Street has not been moved and retains integrity of *location and* retains integrity of *association* with the commercial development in Oakland, Alameda County, California, and nationwide. However background research did not indicate that this building did not have an important association with that pattern of events. The building at 1433 Webster Street does not retain integrity of *setting* and *feeling.* Changes to setting and feeling are reflected in the gradual transformation of the surrounding neighborhood from 1914 through today. This change has altered the once residential character of the area into a commercial corridor and the extension of Downtown Oakland. The building also predates the extension of 15th and 17th streets. Many dwellings were demolished to accommodate the street extension. The building does not retain integrity of *workmanship*, *design*, or *materials*. The building's façade is clad in non-original stucco, and includes replacement windows. Skylights were removed from the building's roof, and an interior concrete ramp was removed during the building's conversion from a garage to offices in 1980-1981.

Conclusion. The building at 1433 Webster Street is a two-story commercial building built in 1914. The building was designed by noted local architect Charles W. McCall. In the 1950s, it was converted into a brake repair and tire sales/service facility, and in 1980-1981 it was converted into a multi-suite office building. It was one of many similar buildings also associated with commercial development in downtown Oakland in the early 20th century, and therefore it does not represent a unique example of this association. It lacks sufficient integrity of *design*, *workmanship*, *materials*, and *feeling* to convey its significance under any criteria. Based on background research and field survey, this property does not appear eligible for inclusion in neither the CRHR nor the Oakland Register, and does not qualify as a historical resource for the purposes of CEQA (PRC Section 21084.1).

B12. References (Continued)

California Digital Library

2016 *Calisphere*. The Regents of the University of California. Electronic document, http://www.calisphere.universityofcalifornia.edu, accessed February 17, 2016.

2016 *The Online Archive of California*. The Regents of the University of California. Electronic document, http://www.oac.cdlib.org, accessed February 17, 2016.

California Office of Historic Preservation

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1992 *California Points of Historical Interest*. California Department of Parks and Recreation, Sacramento.

1996 *California Historical Landmarks*. California Department of Parks and Recreation, Sacramento.

2001 *California Environmental Quality Act (CEQA) and Historical Resources*. California Department of Parks and Recreation, Sacramento.

2016 *California Historical Landmarks: Alameda*. Electronic document http://ohp.parks.ca.gov/?page_id=21388, accessed February 17, 2016.

2012 *Directory of Properties in the Historic Property Data File for Alameda County*, February 17, 2016. California Department of Parks and Recreation, Sacramento.

B10. (continued)

The following describes the historical context of the project area, property-specific development of 1433 Webster Street.

Oakland

The San Francisco Bay was home to several tribal groups prior to the arrival of Europeans. These groups included the Wintun and the Coast Miwok, as well as the Costanoans who inhabited what would become the city of Oakland. The project area is entirely within the former *Rancho San Antonio* land grant, originally granted by Spain to Luis Maria Peralta on August 3, 1820, in appreciation of his forty years of military service. His 43,000-acre rancho included what are now the cities of Oakland, Berkeley, Alameda, Albany, El Cerrito, Emeryville, and parts of San Leandro and Piedmont. Peralta's land grant was re-confirmed by the Mexican government in 1822. When the United Sates annexed California in 1848, the Treaty of Guadalupe-Hidalgo stipulated that existing land grants be reviewed and confirmed to the grantees. Peralta's grant was reviewed and honored by the U.S. Land Commission after California became a state in 1850. Despite legal ownership, squatters moved in and overwhelmed the Peraltas. Cattle were stolen and slaughtered, and trees logged (Hoover, et al. 1990:18-19). When Luis Peralta died in San José in 1851, San Antonio was divided amongst his sons Ignacio, José Domingo, Antonio María, and José Vicente. The land that was to become Oakland was given to José Vicente. Peralta Hacienda Historical Park, on 34th Avenue, preserves the headquarters of Rancho San Antonio.

In 1849, a squatter named Moses Chase pitched a tent at what would become the foot of Broadway and hunted game (Munro-Fraser 1883:485). A year later, Andrew Moon, Horace W. Carpentier, and Edson Adams illegally built a house on Peralta's property at the foot of Broadway, near the banks of the Oakland-Alameda Estuary. This house site is in what is now Jack London Square. José Vicente Peralta sought eviction of the group, but eventually relented and allowed them to lease the land with the stipulation of not platting a town. Moon, Carpentier, and Adams violated this agreement and hired Julius Kellersberger, a Swiss engineer, to survey the land and plat the town; formerly known as *Encinal de Temescal* ("oak grove by the sweathouse"), it eventually became known as Oakland (Gudde 1998:266). During the Gold Rush, the small town of Oakland first developed along its waterfront at the foot of Broadway, which was called Main Street at the time, with development limited only by the available modes of transportation (Bagwell 1996).

The state legislature was persuaded by Carpentier to incorporate Oakland in 1852. Carpentier then promptly ran for Mayor in 1853 and won. The state deeded all waterfront property to the City of Oakland, which in turn passed an ordinance giving control of the land, over 10,000 acres, to Carpentier in exchange for a new school house, a wharf, and $20,000. Carpentier, however, maintained control of the wharf and charged whatever fees he desired for its use (Bagwell 1996). He went on to serve as an Assemblyman, convincing the Legislature to create Alameda County out of southern Contra Costa County. Many saw Carpentier's actions as a grab for more land and power. Through his busy law practice, many political connections, and vast personal wealth and property, Carpentier prospered handsomely. His total control of the wharf resulted in a 20-year monopoly on San Francisco ferry service and the railroad service connecting the ferry terminal with downtown. Carpentier died in 1918 worth approximately $20 million (Bagwell 1996). Carpentier's steam ferry service to San Francisco prospered, and on October 30, 1869, the first horse-car service followed a route from the estuary up Broadway to Telegraph Avenue at 36th Street. Nine days later the transcontinental railroad's inaugural west bound train rolled into Oakland to the Central Pacific Railroad's (CPRR) new 7th Street Station.

In 1860, only 1,543 people resided in Oakland, ten years later the city was home to over 10,500 and trebled by 1880, surpassing Sacramento as California's second largest city after San Francisco. By 1891, Oakland's first electric street car line connected Oakland's waterfront with the City of Berkeley along Telegraph Avenue (Sappers 2007; Bagwell 1996). The selection of Oakland as the CPRR western terminus paved the way for a population explosion. Infrastructure supporting the population boom and transcontinental transportation service included vast railroad yards, repair shops, and a wharf extending two-miles into San Francisco Bay. Oakland acquired a reputation as an upright family town known as the "bedroom of San Francisco," as Oakland residents commuted on ferries back and forth to San Francisco. After the 1906 earthquake and fire, refugees from San Francisco lived for months in a tent community set up by the U.S. Army in Lakeside Park on the shores of Lake Merritt at Adams Point (Bagwell 1996; Fradkin 2005). The influx of people to Oakland escaping the 1906 devastation prompted the development of new residential areas in Oakland to accommodate many of the displaced San Franciscans who had moved to Oakland. Older neighborhoods grew more densely populated as new apartment buildings and related growth became part of Oakland's residential fabric (Woodbridge 1984).

B10. Significance: (continued)

During this time, Oakland acquired a reputation as an upright family town and soon was known as the "bedroom of San Francisco" as Oakland residents commuted on ferries back and forth to San Francisco. After the 1906 earthquake and fire, refugees from San Francisco lived for months in a tent community set up by the U.S. Army in Lakeside Park on the shores of Lake Merritt at Adams Point (Bagwell 1982:178; Fradkin 2005:181). The influx of people to Oakland escaping the 1906 devastation prompted the development of new residential areas in Oakland to accommodate many of the displaced San Franciscans who had moved to Oakland. Older neighborhoods grew more densely populated as new apartment buildings and related growth became part of Oakland's residential fabric (Woodbridge 1984:11-12).

Commercial enterprises and industrial development, particularly the Port of Oakland and the Oakland Municipal Airport, propelled Oakland's growth in the 20th century. During World War II, the Port provided land and facilities to the Army and Navy. By 1943, Oakland had become the largest shipping center for the Pacific Theater of Operations; within two decades it was the largest container terminal on the West Coast. As suburbs grew outward during the 1950s, the inner core of the City began to decline as residents left for the outlying areas made accessible via new freeways. Typifying older U.S. cities that clung to an industrial base, Oakland soon lagged behind cities such as Long Beach, Sunnyvale, San Leandro, San Francisco, and Orange County in attracting jobs. The main factor driving the exodus of industry was the cost of land, as the price was higher in the city core than in outlying areas such as southern Alameda County. Factories were incentivized to relocate rather than expand as operating expenses increased and profitability declined. Between 1960 and 1966, over 10,000 jobs relocated to outlying areas in southern Alameda County (Self 2003). The loss of jobs reduced the tax base while simultaneously creating more demands for city services for those who did not or could not leave for the suburbs. This began a perception of Oakland, as with many large American, industrial-based cities during the 1960s and 1970s, of a city with a neglected urban core, high unemployment, cyclical racial and ethnic tension, and reduced economic opportunity (Bagwell 1996). This trend began to reverse in the 1980s as reinvestment and redevelopment helped to invigorate the City's image and prospects. In 1995, California's "Golden Triangle," which included Oakland, San Jose, and San Francisco, was named by *Fortune Magazine* as the best place to do business in the United States.

The loss of jobs reduced the tax base while simultaneously creating more demands for city services for those who did not or could not leave for the suburbs. This began a perception of Oakland, as with many large American, industrial-based cities during the 1960s and 1970s, of a city with a neglected urban core, high unemployment, cyclical racial and ethnic tension, and reduced economic opportunity (Bagwell 1982:251). This trend began to reverse in the 1980s as reinvestment and redevelopment helped to invigorate the City's image and prospects. In 1995, California's "Golden Triangle," which included Oakland, San Jose, and San Francisco, was named by *Fortune Magazine* as the best place to do business in the United States.

Downtown Oakland

The area around Downtown Oakland developed in the 1890s due to the expansion of electric streetcar lines linking downtown with its surrounding suburbs. Downtown development expanded northward along Broadway to 14th Street by the beginning of the 20th Century, and the area became an upscale commercial center. This new commercial center attracted residents from surrounding Oakland suburbs, as well as from Berkeley and Alameda. In 1903, Oakland's residential streetcar lines were consolidated into the Key System, and service was expanded outward from downtown toward the Oakland Hills. Following the 1906 Earthquake and Fire, Oakland experienced a commercial post-earthquake boom, as San Francisco residents moved from their damaged city to Oakland. Many businesses displaced by the disaster also relocated to downtown Oakland, an area which retained much of its building stock. By 1915, architects began to use steel frame construction to build Downtown, which allowed for taller buildings. Services in the area diversified as well, with many banks and government buildings constructed in the area between 1905 and 1920 (Oakland Cultural Heritage Survey 1998).

In 1915, the Oakland Chamber of Commerce and other local business interests conducted a study of the effect of long city blocks and dead-end streets on urban development. The study found that non-through streets in downtown Oakland, such as 15th and 17th Streets, discouraged development by cutting off and diverting traffic (Hegemann 1915). In 1921, 15th Street was extended through Webster Street, connecting Franklin Street to Harrison Street, requiring demolition of many single-family residential dwellings near Lake Merritt. The lots were then re-subdivided, and reoriented from narrow north-south lots to east-west lots. It also increased traffic through an area that had been primarily residential and further encouraged commercial development. Residents opposed extending the streets, which lowered their property values (Oakland Cultural Heritage Survey 1985:4).

Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

B10. Significance: (continued)

Downtown development in the 20th century can be characterized by several distinct concentrations of businesses types. The area near Broadway and 14th Street became a financial services and office building corridor by the end of the 1920s. Developers replaced wooden buildings in the area with two-story to three-story masonry buildings. Banks, insurance agencies, and real estate companies continued to move to newly-constructed office buildings in the area until the Great Depression of the 1930s. Ornamentation typically consisted of simple paneling with elements of Renaissance Revival, Baroque, Art Nouveau and Art Deco styles, with Chicago-style horizontal windows (Oakland Cultural Heritage Survey 1985). During the Depression, new commercial construction slowed, but many business owners continued to invest in their properties by renovating building façades in an attempt to modernize their buildings and reengage customers. Civic building construction during the 1930s shifted eastward from downtown toward areas near Lake Merritt. These buildings include the Alameda County Courthouse, the Main Branch Post Office and Federal Building, and the Main Branch of the Oakland Public Library (Oakland Cultural Heritage Survey 1998). Following the end of the World War II, commercial and office development resumed in downtown Oakland east of Broadway near 14th Street.

In the 1950s and 1960s, many historic buildings in Oakland were demolished in favor of urban redevelopment. The Oakland Redevelopment Agency formed in 1956 with the authority to designate which areas would be targeted by renewal efforts. In 1966, the Oakland Planning Commission received federal redevelopment funds, but focused redevelopment plans largely in West Oakland. Although much of downtown Oakland's historic building stock was spared demolition, the area still struggled through urban disinvestment in the 1960s and 1970s. Several large-scale redevelopment projects proposed for downtown Oakland in the 1980s failed to make it past the planning stages. Downtown vacancy rates in the 1980s remained around 15%. Following the 1989 earthquake, Oakland planners made decisions on whether or not to renovate or demolish downtown buildings on a case-by-case basis, and many buildings constructed in the early-20th century received extensive upgrades. Downtown Oakland began to experience reinvestment as many businesses relocated to more affordable downtown properties in the 1990s and 200s (Oakland Planning History 2016).

1433 Webster Street

As Oakland's central business district grew in the early-to-mid-20th century, developers looked to residential areas along the western shore of Lake Merritt to expand the street grid and workers traveling into downtown or resided nearby but lacked personal garage space required facilities to store their personal vehicles. The building at 1433 Webster was built to serve those needs and the subsequent alterations and changes in use reflect the later-20th century changes in Oakland and the East Bay as workers moved away from Oakland to suburban areas and the area later became desirable as professional office space.

Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

B12. References (Continued)

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2015 *Designated Landmarks, Heritage Properties, and Preservation Districts*. Oakland Planning and Building Department. Electronic document, http://www2.oaklandnet.com/Government/o/PBN/OurServices/Historic/DOWD009012, accessed February 17, 2016.

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Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

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1959 *Oakland West, Calif.*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

1968 *Oakland West, Calif.*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

B12. References (Continued)

U.S. Geological Survey (continued)

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1980 *Oakland West, Calif.*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

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Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

P5a. Photograph (continued)

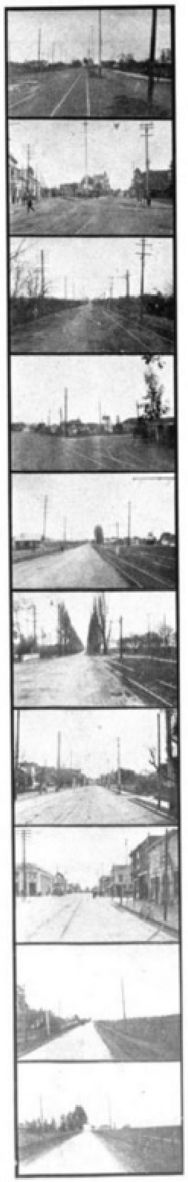
1433 Webster Street, east and south façades. View to the northwest. 3/3/16.

1433 Webster Street, east façade. View to the southwest. 3/3/16.

Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

P5a. Photograph (Continued)

182 PICTORIAL MILEAGE ROAD BOOK



Stonehurst

San Leandro Turn Left to Hayward

9 mi. from Oakland

Turn Right for Irvington

11 mi. from Oakland

12 mi. from Oakland

Entering Hayward

Hayward

14 mi. from Oakland

Cemetery on Left

Phone Oak. 5420

THE
IMPERIAL GARAGE AND SUPPLY COMPANY, Inc.

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(Near Fourteenth)

C. W. BRODERICK, Pres.
L. H. HERLING, Sec'y.

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Source: *1915 Pictorial Mileage Road Book*, Motogram Company, Richmond, California.

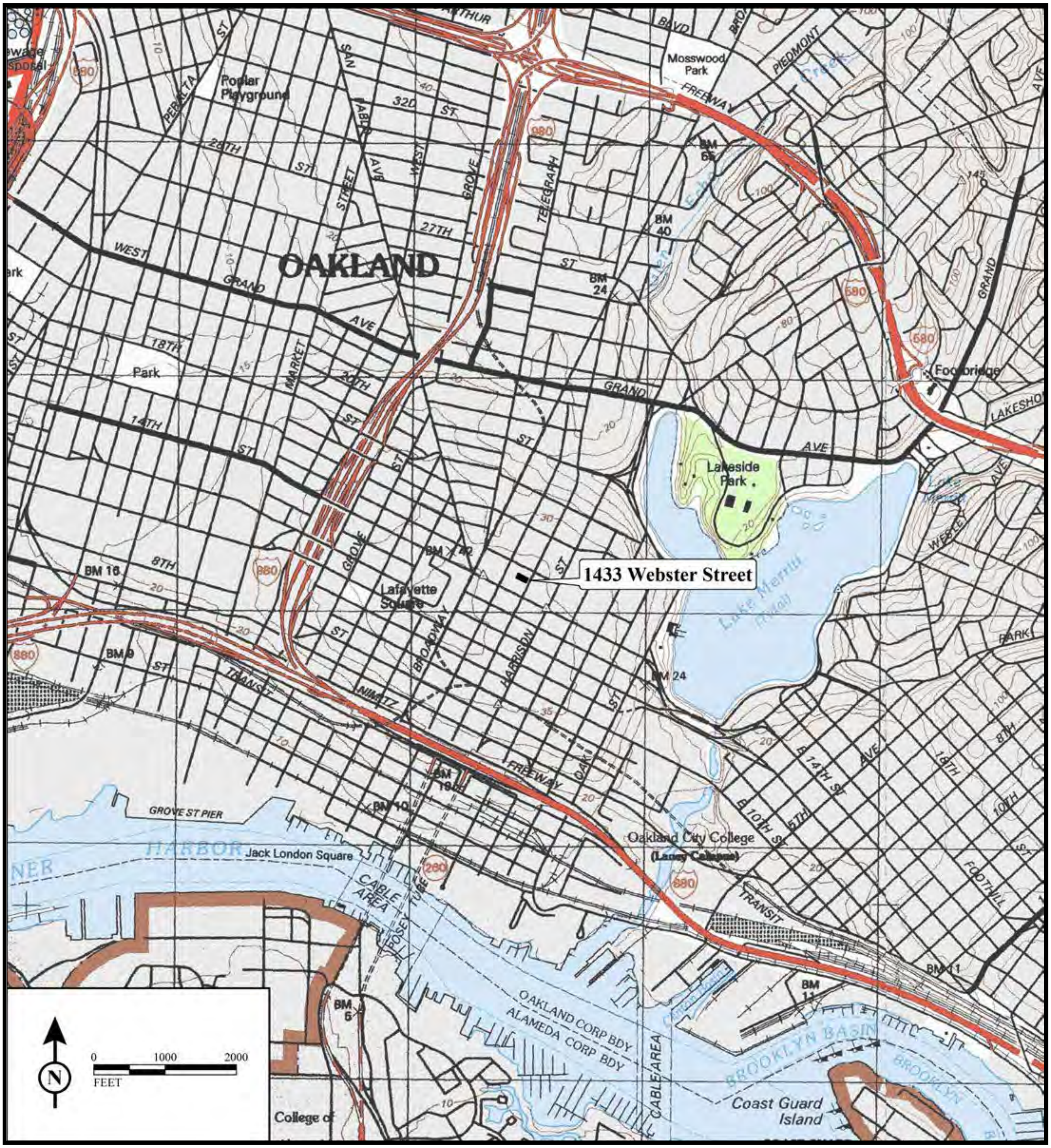
Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

P5a. Photograph (Continued)

1433 Webster Street, east façade detail. View to the north. 3/3/16.

Resource Name: 1433 Webster Street

Map Name: USGS 7.5-minute *Oakland West, Calif.* **Scale:** 1:24,000 **Date of Map:** 1993



351-359 15th Street, Oakland, Alameda County

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code: 6Z

Other Listings Ed2 (Oakland Cultural Heritage Survey)
Review Code **Reviewer** Oakland Cultural Heritage Survey **Date** 9/30/94

P1. **Other Identifier:** *S.S. Herrick Store*; *International Contact, Inc.*

P2. **Location** ☐ **Not for Publication** ☒ **Unrestricted:**

- **a.** **County:** Alameda
- **b.** **USGS 7.5' Quad:** *Oakland West, Calif.* **Date:** 1993; **T**1S/**R**3W**;** *San Antonio* (V. and D. Peralta)**;** M.D.B.L.
- **c.** **Address:** 351-359 15th Street **City** Oakland **Zip** 94612
- **d.** **UTM:** Zone 10S; 564391**mE**/4184353**mN**
- **e.** **Other Locational Data:** APN 008-0624-035

P3a. **Description:** This property is a two-story commercial building of reinforced concrete and masonry construction built in 1938. The walls of this building are of reinforced concrete or masonry construction. The north and east-facing façades feature a ribbon of equal-spaced replacement windows along the ground level set in anodized aluminum frames. Above the windows is a narrow band of textured stucco with “International Contact, Inc.” lettering displayed. Above that is a taller band of pre-cast, rough-textured brown stucco or pre-cast masonry panels which in turn are topped by a narrow band of plated or painted metal. The building has two entrances. The main entrance is located under a recessed entry area at the northeast corner of the building (which faces the 15th and Webster streets intersection) and a secondary entrance is near the middle of the north-facing 15th Street façade and consists of a replacement, metal framed glass doors. Landscaping consists of two young street trees lining the city sidewalk. This building is in fair condition and is currently vacant.

P3b. Resource Attributes: (HP6) 1-3 story commercial building

P4. Resources Present: ☒ Building

P5a. **Photograph:**

P5b. Description of Photo:
351-359 15th Street. North and east façades, view to the southwest (3/3/16).

P6. Date Constructed/Age and Source: ☒ Historic
Built 1938; ParcelQuest.com; City of Oakland Building Permit #A73555, issued 7/2/38.

P7. Owner and Address:
Carla Itzkowich
359 15th Street
Oakland, California 94612

P8. Recorded by:
Michael Hibma and Angelique Theriot
LSA
157 Park Place
Point Richmond, California 94801

P9. Date recorded: 3/16/16

P10. Survey Type: Intensive

P11. Report Citation: Hibma, Michael and Angelique Theriot, 2016. *Historical Resources Evaluation of 1433 Webster Street and 351-359 15th Street, Oakland, Alameda County, California*. LSA, Point Richmond, California.

Attachments: ☒ **Location Map** ☒ **Continuation Sheet(s)** ☒ **Building, Structure, and Object Record**

NRHP Status Code: 6Z
Resource Name: 351-359 15th Street

B1. Historic Name: S.S. Herrick Store
B2. Common Name: International Contact, Inc.
B3. Original Use: Commercial shops
B4. Present Use: Vacant
B5. Architectural Style: Modern

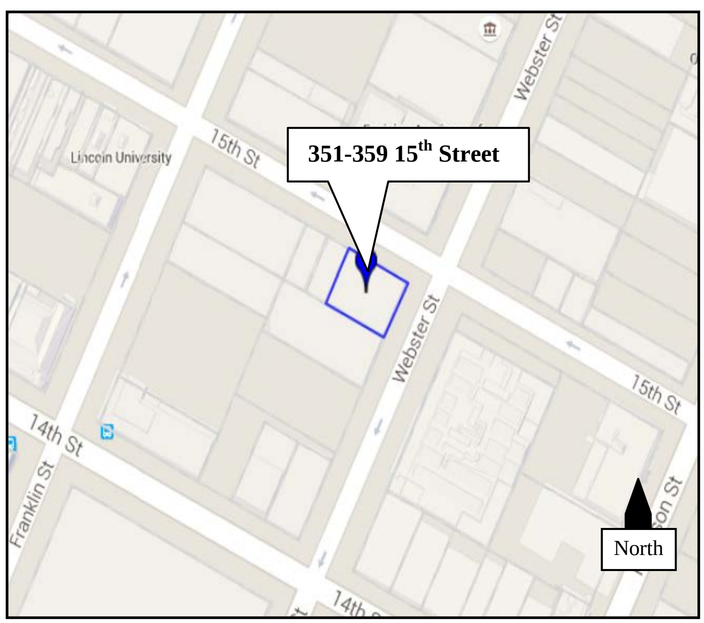
B6. Construction History: According to information on file at the Oakland Cultural Heritage Survey (OCHS), this building was constructed in 1938. Subsequent alterations include the conversion of six shops into office spaces, the construction of a second story over 1/3 of the building, interior renovations, the addition of non-original cladding, and replacement windows. According to building permit information on file with the Oakland Planning and Building Department, the building was converted into offices in 1958. Today, this building is vacant.

B7. Moved? No
B8. Related Features: None
B9. a. Architect: Chester Miller and Carl Wernecke
b. Builder: E.T. Leiter and Sons

B10. Significance: Theme: commercial development **Area:** Downtown Oakland, Alameda County

Period of Significance: N/A **Property Type:** Commercial **Applicable Criteria:** N/A

This resource consists of a two-story, commercial building built in 1938 at 351-359 15th Street completely covers the 6,146-square-foot, rectangular parcel in an urban setting. Information at OCHS indicates that it is not located within an official historic district. Research indicates that the building at 351-359 15th Street is associated with the commercial growth of Oakland in the early 20th century. Its construction is tied to the expansion of the city's downtown east of Broadway. The 1950 Sanborn map of the project area shows seven other similar commercial buildings on Block 2010, and dozens of others in the surrounding area (Sanborn-Perris Map Co., Ltd 1950:153). No evidence was identified to elevate this particular building in associative stature, however. It does not possess specific, important associations with this context that distinguish it from other buildings with similar, design, construction, history, and use. The building at 351-359 15th Street is not significant under Criterion 1. Research into records on file at the OCHS indicates that the building at 351-359 15th Street was designed by local architects Chester Miller and Carl Warnecke. Miller and Warnecke were prolific architects who designed numerous buildings throughout the Bay Area. The building did not contain their offices, and did not play a prominent role in the development of their architectural practice. The building was constructed for Stephen S. Herrick, owner of Herrick Iron Works, as an investment property (OCHS 1995). The offices of Herrick Iron Works were not located within the building. The building at 351-359 15th Street is not significant under Criterion 2 (see continuation sheet).



B11. Additional Resource Attributes: None

B12. References: (see continuation sheets 7-9 of 13).

American Society of Civil Engineers
1977 *Historic Civil Engineering Landmarks of San Francisco and Northern California*. American Society of Civil Engineers, San Francisco Section. Pacific Gas and Electric Company, San Francisco, California.

Bagwell, Beth
1996 *Oakland: The Story of a City*. Oakland Heritage Alliance, Oakland.

B13. Remarks: None

B14. Evaluator: Michael Hibma and Angelique Theriot
LSA
157 Park Place,
Point Richmond, California 94801

Date of Evaluation: 3/16/16

(This space reserved for official comments.)

B10. (continued)

This building does embody the style, type, and method of construction typical of other commercial buildings constructed in the Modern style within the same time period. It possesses no strong or vibrant artistic values, and does not possess any elements which make it a notable example of a Modern style building. While this building was designed by acclaimed architects Miller and Warnecke, the building is not a notable example of their work. Better examples of Miller and Wernecke's work that retain the character defining features of their designs are located elsewhere throughout downtown Oakland, as well as other commercial and residential areas in East Bay. The building at 351-359 15th Street is not significant under Criterion 3. This criterion is usually used to evaluate the potential of archaeological deposits to contain information important in understanding the past lifeways of Oakland's early historic-period and pre-contact inhabitants. Its application to architecture is less common in eligibility assessments due to the prevalence of multiple media that thoroughly document the form, materials, and design of a given building type. Information about Modern design and construction techniques, as represented by 351-359 15th Street, is well documented in literature describing architectural forms and designs for industrial properties, which has been extensively published and is widely available to the public. For these reasons, the building at 351-359 15th Street will not yield information important to the history of the local area, California, or the nation. The building at 351-359 15th Street is not significant under Criterion 4.

Integrity. The building at 351-359 15th Street has not been moved and retains integrity of *location.* The building at 351-359 15th Street retains integrity of *setting* and *feeling.* The area's commercial character remains intact. The building at 351-359 15th Street does not retain integrity of *workmanship*, *design*, or *materials*. The building's use has changed over time from a six-unit commercial building into an office building. The building received several renovations in 1951, 1955, and 1958. Alterations to the façade include the replacement of windows and doors, and stucco cladding. A second story was added over 33% of the building's interior in 1955. The building at 351-359 15th Street does retain integrity of *association* with early-20th century commercial development in Oakland, Alameda County, California, and nationwide.

Conclusion. The building at 351-359 15th Street is a two-story commercial building built in 1938. In the 1950s, it was converted from a six-unit commercial space into offices. This building played a minor role in the development of downtown Oakland, and therefor does not appear eligible under Criterion 1. It is associated with architects Chester Miller and Carl Wernecke, but lacks the integrity necessary convey this association under Criterion 2. The building lacks the *workmanship*, *design*, and *materials* integrity necessary to convey this association. The building was one of many similar commercial buildings built in the Modern style, and has subsequently undergone both interior and exterior alterations. Therefore it does not represent a unique example of this style, and does not appear eligible under Criterion 3. Information about Modern design and construction techniques, as represented by 351-359 15th Street, is well documented in literature describing architectural forms and designs for industrial properties, which has been extensively published and is widely available to the public. Therefore, the building does not appear eligible under Criterion 4. Based on background research and field survey, this property does not appear eligible for inclusion in neither the CRHR nor the Oakland Register, and does not qualify as a historical resource for the purposes of CEQA (PRC Section 21084.1).

B12. References (Continued)

California Digital Library

2016 *Calisphere*. The Regents of the University of California. Electronic document, http://www.calisphere.universityofcalifornia.edu, accessed February 17, 2016.

2016 *The Online Archive of California*. The Regents of the University of California. Electronic document, http://www.oac.cdlib.org, accessed February 17, 2016.

California Office of Historic Preservation

1988 *Five Views: An Ethnic Historic Site Survey for California*. California Department of Parks and Recreation, Sacramento.

1992 *California Points of Historical Interest*. California Department of Parks and Recreation, Sacramento.

1996 *California Historical Landmarks*. California Department of Parks and Recreation, Sacramento.

2001 *California Environmental Quality Act (CEQA) and Historical Resources*. California Department of Parks and Recreation, Sacramento.

2016 *California Historical Landmarks: Alameda*. Electronic document http://ohp.parks.ca.gov/?page_id=21388, accessed February 17, 2016.

B10. Significance (continued)

The following describes the historical context of the project area, property-specific development of 351-359 15th Street.

Oakland

The San Francisco Bay was home to several tribal groups prior to the arrival of Europeans. These groups included the Wintun and the Coast Miwok, as well as the *Costanoan* who inhabited what would become the city of Oakland. The project area is entirely within the former *Rancho San Antonio* land grant, originally granted by Spain to Luis Maria Peralta on August 3, 1820, in appreciation of his forty years of military service. His 43,000-acre rancho included what are now the cities of Oakland, Berkeley, Alameda, Albany, El Cerrito, Emeryville, and parts of San Leandro and Piedmont. Peralta's land grant was re-confirmed by the Mexican government in 1822. When the United Sates annexed California in 1848, the Treaty of Guadalupe-Hidalgo stipulated that existing land grants be reviewed and confirmed to the grantees. Peralta's grant was reviewed and honored by the U.S. Land Commission after California became a state in 1850. Despite legal ownership, squatters moved in and overwhelmed the Peraltas. Cattle were stolen and slaughtered, and trees logged (Hoover, et al. 1990:18-19). When Luis Peralta died in San José in 1851, San Antonio was divided amongst his sons Ignacio, José Domingo, Antonio María, and José Vicente. The land that was to become Oakland was given to José Vicente. Peralta Hacienda Historical Park, on 34th Avenue, preserves the headquarters of Rancho San Antonio.

In 1849, a squatter named Moses Chase pitched a tent at what would become the foot of Broadway and hunted game (Munro-Fraser 1883:485). A year later, Andrew Moon, Horace W. Carpentier, and Edson Adams illegally built a house on Peralta's property at the foot of Broadway, near the banks of the Oakland-Alameda Estuary. This house site is in what is now Jack London Square. José Vicente Peralta sought eviction of the group, but eventually relented and allowed them to lease the land with the stipulation of not platting a town. Moon, Carpentier, and Adams violated this agreement and hired Julius Kellersberger, a Swiss engineer, to survey the land and plat the town; formerly known as *Encinal de Temescal* ("oak grove by the sweathouse"), it eventually became known as Oakland (Gudde 1998:266). During the Gold Rush, the small town of Oakland first developed along its waterfront at the foot of Broadway, which was called Main Street at the time, with development limited only by the available modes of transportation (Bagwell 1996).

The state legislature was persuaded by Carpentier to incorporate Oakland in 1852. Carpentier then won election as Mayor a year later. The state deeded all waterfront property to the City of Oakland, which in turn passed an ordinance giving control of the land, over 10,000 acres, to Carpentier in exchange for a new school house, a wharf, and $20,000. Carpentier, however, maintained control of the wharf and charged whatever fees he desired for its use (Bagwell 1996). He went on to serve as an Assemblyman, convincing the Legislature to create Alameda County out of southern Contra Costa County. Many saw Carpentier's actions as a grab for more land and power. Through his busy law practice, many political connections, and vast personal wealth and property, Carpentier prospered handsomely. His total control of the wharf resulted in a 20-year monopoly on San Francisco ferry service and the railroad service connecting the ferry terminal with downtown. Carpentier died in 1918 worth approximately $20 million (Bagwell 1996). Carpentier's steam ferry service to San Francisco prospered, and on October 30, 1869, the first horse-car service followed a route from the estuary up Broadway to Telegraph Avenue at 36th Street. Nine days later the transcontinental railroad's inaugural west bound train rolled into Oakland to the Central Pacific Railroad's (CPRR) new 7th Street Station.

In 1860, only 1,543 people resided in Oakland, ten years later the city was home to over 10,500 and trebled by 1880, surpassing Sacramento as California's second largest city after San Francisco. By 1891, Oakland's first electric street car line connected Oakland's waterfront with the City of Berkeley along Telegraph Avenue (Sappers 2007; Bagwell 1996). The selection of Oakland as the CPRR western terminus paved the way for a population explosion. Infrastructure supporting the population boom and transcontinental transportation service included vast railroad yards, repair shops, and a wharf extending two-miles into San Francisco Bay. Oakland acquired a reputation as an upright family town known as the "bedroom of San Francisco," as Oakland residents commuted on ferries back and forth to San Francisco. After the 1906 earthquake and fire, refugees from San Francisco lived for months in a tent community set up by the U.S. Army in Lakeside Park on the shores of Lake Merritt at Adams Point (Bagwell 1996; Fradkin 2005). The influx of people to Oakland escaping the 1906 devastation prompted the development of new residential areas in Oakland to accommodate many of the displaced San Franciscans who had moved to Oakland. Older neighborhoods grew more densely populated as new apartment buildings and related growth became part of Oakland's residential fabric (Woodbridge 1984).

B10. Significance (continued)

During this time, Oakland acquired a reputation as an upright family town and soon was known as the "bedroom of San Francisco" as Oakland residents commuted on ferries back and forth to San Francisco. After the 1906 earthquake and fire, refugees from San Francisco lived for months in a tent community set up by the U.S. Army in Lakeside Park on the shores of Lake Merritt at Adams Point (Bagwell 1982:178; Fradkin 2005:181). The influx of people to Oakland escaping the 1906 devastation prompted the development of new residential areas in Oakland to accommodate many of the displaced San Franciscans who had moved to Oakland. Older neighborhoods grew more densely populated as new apartment buildings and related growth became part of Oakland's residential fabric (Woodbridge 1984:11-12).

Commercial enterprises and industrial development, particularly the Port of Oakland and the Oakland Municipal Airport, propelled Oakland's growth in the 20th century. During World War II, the Port provided land and facilities to the Army and Navy. By 1943, Oakland had become the largest shipping center for the Pacific Theater of Operations; within two decades it was the largest container terminal on the West Coast. As suburbs grew outward during the 1950s, the inner core of the City began to decline as residents left for the outlying areas made accessible via new freeways. Typifying older U.S. cities that clung to an industrial base, Oakland soon lagged behind cities such as Long Beach, Sunnyvale, San Leandro, San Francisco, and Orange County in attracting jobs. The main factor driving the exodus of industry was the cost of land, as the price was higher in the city core than in outlying areas such as southern Alameda County. Factories were incentivized to relocate rather than expand as operating expenses increased and profitability declined. Between 1960 and 1966, over 10,000 jobs relocated to outlying areas in southern Alameda County (Self 2003). The loss of jobs reduced the tax base while simultaneously creating more demands for city services for those who did not or could not leave for the suburbs. This began a perception of Oakland, as with many large American, industrial-based cities during the 1960s and 1970s, of a city with a neglected urban core, high unemployment, cyclical racial and ethnic tension, and reduced economic opportunity (Bagwell 1996). This trend began to reverse in the 1980s as reinvestment and redevelopment helped to invigorate the City's image and prospects. In 1995, California's "Golden Triangle," which included Oakland, San Jose, and San Francisco, was named by *Fortune Magazine* as the best place to do business in the United States.

The loss of jobs reduced the tax base while simultaneously creating more demands for city services for those who did not or could not leave for the suburbs. This began a perception of Oakland, as with many large American, industrial-based cities during the 1960s and 1970s, of a city with a neglected urban core, high unemployment, cyclical racial and ethnic tension, and reduced economic opportunity (Bagwell 1982:251). This trend began to reverse in the 1980s as reinvestment and redevelopment helped to invigorate the City's image and prospects. In 1995, California's "Golden Triangle," which included Oakland, San Jose, and San Francisco, was named by *Fortune Magazine* as the best place to do business in the United States.

Downtown Oakland

The area around Downtown Oakland developed in the 1890s due to the expansion of electric streetcar lines linking downtown with its surrounding suburbs. Downtown development expanded northward along Broadway to 14th Street by the beginning of the 20th Century, and the area became an upscale commercial center. This new commercial center attracted residents from surrounding Oakland suburbs, as well as from Berkeley and Alameda. In 1903, Oakland's residential streetcar lines were consolidated into the Key System, and service was expanded outward from downtown toward the Oakland Hills. Following the 1906 Earthquake and Fire, Oakland experienced a commercial post-earthquake boom, as San Francisco residents moved from their damaged city to Oakland. Many businesses displaced by the disaster also relocated to downtown Oakland, an area which retained much of its building stock. By 1915, architects began to use steel frame construction to build Downtown, which allowed for taller buildings. Services in the area diversified as well, with many banks and government buildings constructed in the area between 1905 and 1920 (Oakland Cultural Heritage Survey 1998).

In 1915, the Oakland Chamber of Commerce and other local business interests conducted a study of the effect of long city blocks and dead-end streets on urban development. The study found that non-through streets in downtown Oakland, such as 15th and 17th Streets, discouraged development by cutting off and diverting traffic (Hegemann 1915). In 1921, 15th Street was extended through Webster Street, connecting Franklin Street to Harrison Street, requiring demolition of many single-family residential dwellings near Lake Merritt. The lots were then re-subdivided, and reoriented from narrow north-south lots to east-west lots. It also increased traffic through an area that had been primarily residential and further encouraged commercial development. Residents opposed extending the streets, which lowered their property values (Oakland Cultural Heritage Survey 1985:4).

Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

B10. (continued)

Downtown development in the 20th century can be characterized by several distinct concentrations of businesses types. The area near Broadway and 14th Street became a financial services and office building corridor by the end of the 1920s. Developers replaced wooden buildings in the area with two-story to three-story masonry buildings. Banks, insurance agencies, and real estate companies continued to move to newly-constructed office buildings in the area until the Great Depression of the 1930s. Ornamentation typically consisted of simple paneling with elements of Renaissance Revival, Baroque, Art Nouveau and Art Deco styles, with Chicago-style horizontal windows (Oakland Cultural Heritage Survey 1985). During the Depression, new commercial construction slowed, but many business owners continued to invest in their properties by renovating building façades in an attempt to modernize their buildings and reengage customers. Civic building construction during the 1930s shifted eastward from downtown toward areas near Lake Merritt. These buildings include the Alameda County Courthouse, the Main Branch Post Office and Federal Building, and the Main Branch of the Oakland Public Library (Oakland Cultural Heritage Survey 1998). Following the end of the World War II, commercial and office development resumed in downtown Oakland east of Broadway near 14th Street.

In the 1950s and 1960s, many historic buildings in Oakland were demolished in favor of urban redevelopment. The Oakland Redevelopment Agency formed in 1956 with the authority to designate which areas would be targeted by renewal efforts. In 1966, the Oakland Planning Commission received federal redevelopment funds, but focused redevelopment plans largely in West Oakland. Although much of downtown Oakland's historic building stock was spared demolition, the area still struggled through urban disinvestment in the 1960s and 1970s. Several large-scale redevelopment projects proposed for downtown Oakland in the 1980s failed to make it past the planning stages. Downtown vacancy rates in the 1980s remained around 15%. Following the 1989 earthquake, Oakland planners made decisions on whether or not to renovate or demolish downtown buildings on a case-by-case basis, and many buildings constructed in the early-20th century received extensive upgrades. Downtown Oakland began to experience reinvestment as many businesses relocated to more affordable downtown properties in the 1990s and 200s (Oakland Planning History 2016).

351-359 15th Street

The project area contains a former six-unit commercial building converted into office in the 1950s. The building was designed by prominent local architects Chester Miller and Carl Wernecke in 1938 for Stephen S. Herrick. Herrick owned S.S. Herrick Iron Works, and built the 351-359 15th Street as an investment property.

Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

B12. References (Continued)

2012 *Directory of Properties in the Historic Property Data File for Alameda County*, February 17, 2016. California Department of Parks and Recreation, Sacramento.

City of Oakland
2015 *Designated Landmarks, Heritage Properties, and Preservation Districts*. Oakland Planning and Building Department. Electronic document, http://www2.oaklandnet.com/Government/o/PBN/OurServices/Historic/DOWD009012, accessed February 17, 2016.

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2010 *Van Ness Auto Row Support Structures*. Electronic document, http://ohp.parks.ca.gov/pages/1054/files/van%20ness%20auto%20row.pdf., accessed March 14, 2016.

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Munro-Fraser, J.P.
1883 *History of Alameda County, California*. M.W. Wood, Publisher, Oakland, California, reprinted 1969, Holmes Book Company, Oakland, California.

Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

B12. References (Continued)

1994 *OCHS Survey Identification Form, 1433 Webster Street*. On-file at OCHS, Oakland, California.

1995 *Department of Parks and Recreation 523 Form, 351-359 15th Street*. On-file at OCHS, Oakland, California.

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2016 "Chester Herbert Miller." Electronic document, http://pcad.lib.washington.edu/person/1656/, accessed March 14, 2016.

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1889 *Oakland, Alameda County, California: Sheet 8*. Sanborn Map and Publishing Company, Pelham, New York

1903 *Oakland, Alameda County, California: Sheet 140*. Sanborn Map and Publishing Company, Pelham, New York.

1912 *Oakland, Alameda County, California: Sheet 153*. Sanborn Map and Publishing Company, Pelham, New York.

1950 *Oakland, Alameda County, California: Sheet 153*. Sanborn Map and Publishing Company, Pelham, New York.

1952 *Oakland, Alameda County, California: Sheet 153*. Sanborn Map and Publishing Company, Pelham, New York.

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U.S. Geological Survey
1949 *Oakland West, Calif.*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

1959 *Oakland West, Calif.*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

1968 *Oakland West, Calif.*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

1973 *Oakland West, Calif.*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

1980 *Oakland West, Calif.*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

1992 *Oakland West, Calif.*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

1993 *Oakland West, Calif.*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

B12. References (Continued)

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Woodbridge, Sally.
1984 "Historical and Architectural Resources." *Oakland Central District Development Program*. City of Oakland Planning Department, Oakland, California.

Resource Name: 351-359 15th Street

Recorded by: Michael Hibma and Angelique Theriot

Date: March 16, 2016

P5a. Photograph (continued)

351-359 15th Street, north and east façades. View to the southwest. 3/3/16.

351-359 15th Street, north façade. View to the southeast. 3/3/16.

Recorded by: Michael Hibma and Angelique Theriot **Date:** March 16, 2016

P5a. Photograph (Continued)

351-359 15th Street, north façade detail. View to the west. 3/3/16.

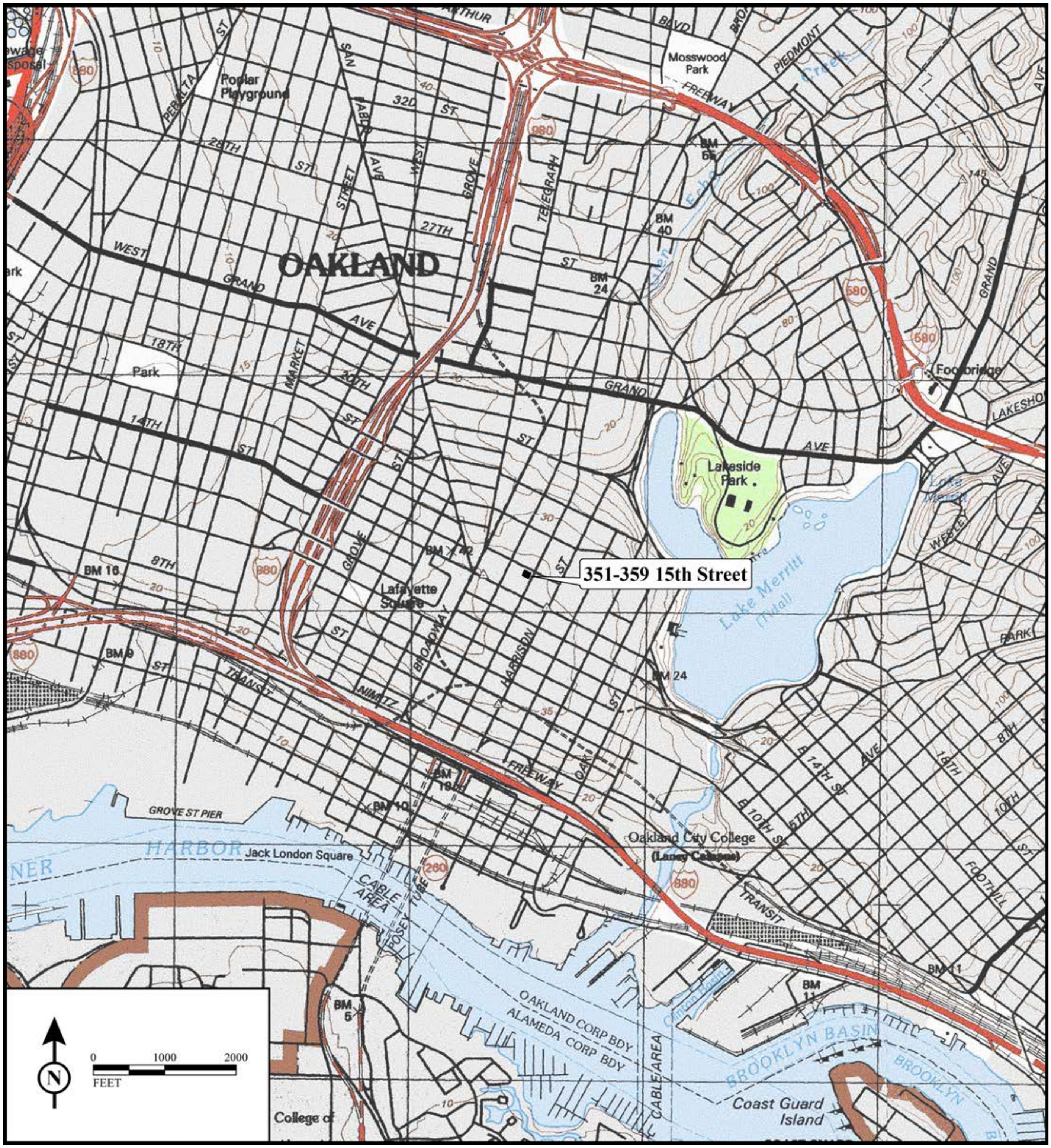
351-359 15th Street, north façade detail. View to the southwest. 3/3/16.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary #
HRI#
Trinomial

Resource Name: 351-359 15th Street

Map Name: USGS 7.5-minute *Oakland West, Calif*. **Scale:** 1:24,000 **Date of Map:** 1993



APPENDIX B

Historical Organization Correspondence

LSA | LSA ASSOCIATES, INC.
157 PARK PLACE
PT. RICHMOND, CALIFORNIA 94801
510.236.6810 TEL
510.236.3480 FAX
BERKELEY
CARLSBAD
FRESNO
IRVINE
PALM SPRINGS
RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

February 19, 2016

Oakland Cultural Heritage Survey
250 Frank H. Ogawa Plaza, Suite 3315
Oakland, California 94612

ATTN: Betty Marvin, Historic Preservation Planner

Subject: Architectural Eligibility Evaluation of 1433 Webster Street and 351-359 15th Street, Oakland, Alameda County, California (LSA Project #NAU1601).

Dear Betty:

The project proponent, Nautilus Group, Inc., is proposing to demolish two; two-story commercial buildings one built in 1920 at 1433 Webster Street and a neighboring building built in 1948 at 351-359 15th Street in the City of Oakland and redevelop the property with a 25-story mixed-use residential building. LSA Associates, Inc., is conducting a study to determine if the project might affect cultural resources. The project area is located at 1433 Webster and 351-359 15th streets, Oakland, in unsectioned lands of the *San Antonio (A.M. Peralta)* land grant, Township 1 South/Range 4 West, Mount Diablo Base Line and Meridian, as depicted on the accompanying portion of the USGS, *Oakland West, Calif.,* 7.5' topographic map.

Please notify us if your organization has any information or concerns about historical sites in the project area. This is not a request for research; it is solely a request for public input for any concerns that your organization may have. If you have any questions, please contact me at the address and phone number above or via email (michael.hibma@lsa-assoc.com). We look forward to hearing from you. Thank you.

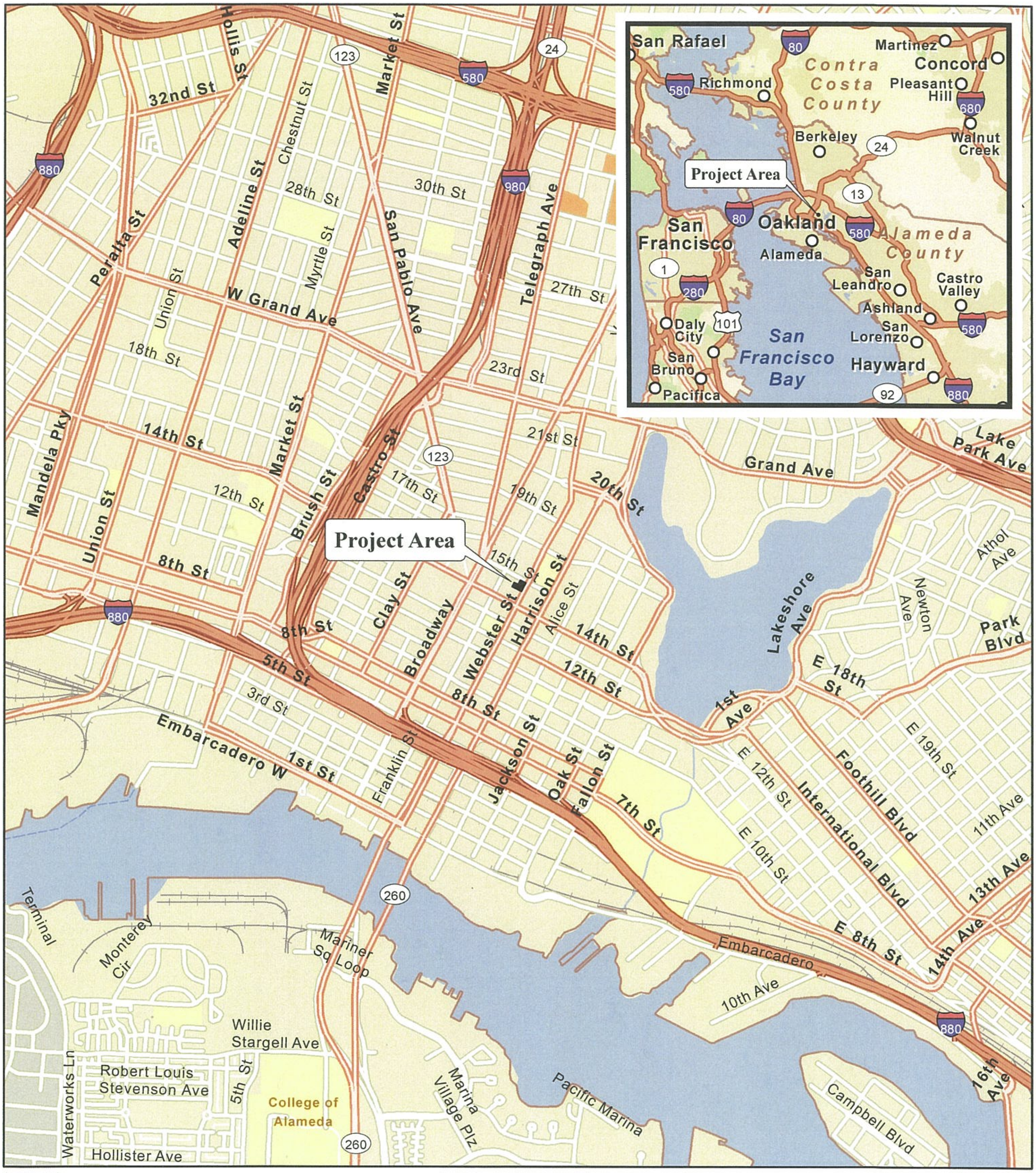
Sincerely,

LSA ASSOCIATES, INC.

Michael Hibma

Michael Hibma, M.A., RPH #603
Historian/Architectural Historian
Senior Cultural Resources Manager
Cultural Resources Group

enc. project area maps



LSA

FIGURE 1

N

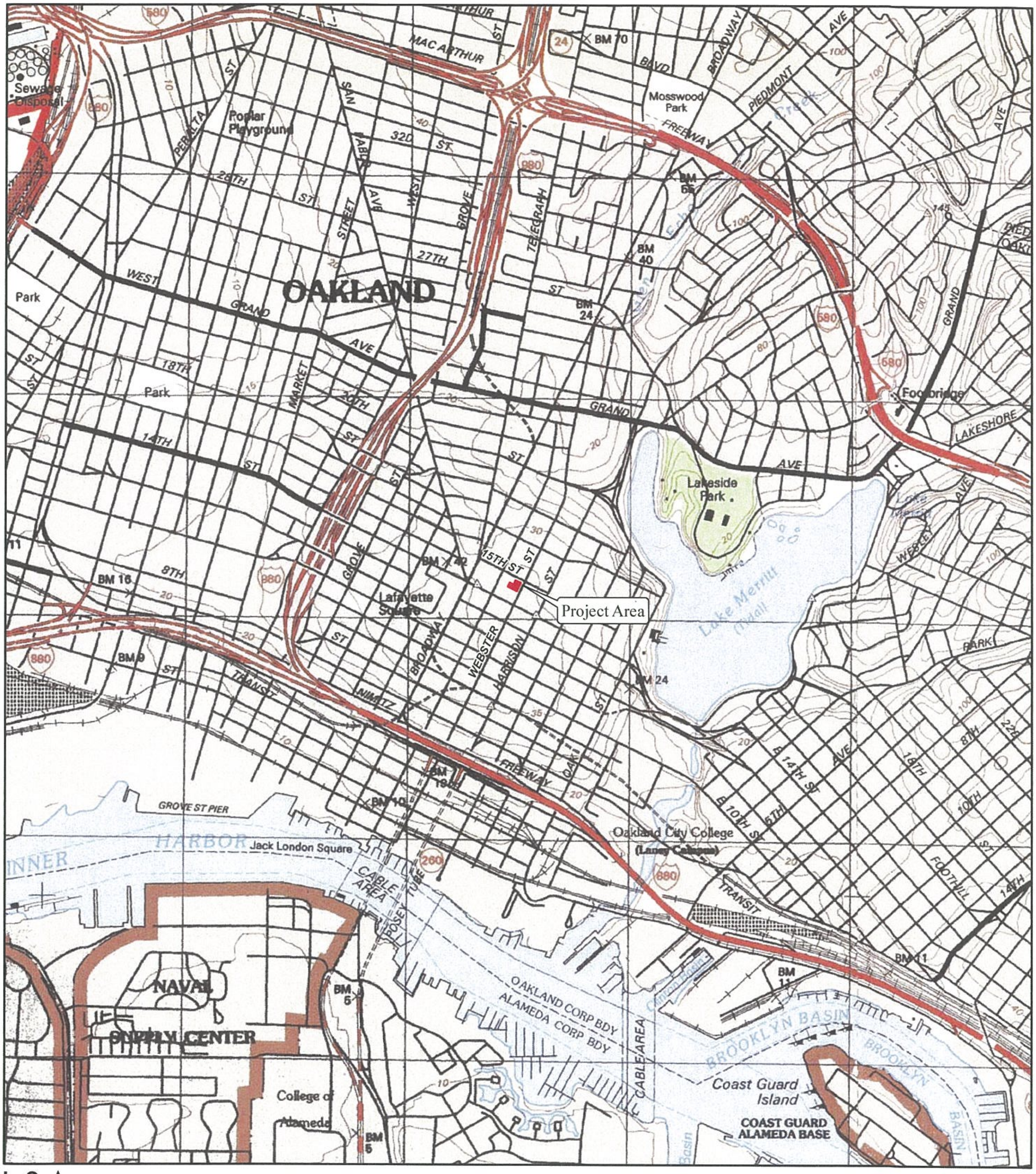
0 1000 2000
FEET

Architectural Eligibility Evaluation of
1433 Webster Street and 351-359 15th Street
Oakland, Alameda County, California

Regional Location and Project Area

SOURCE: ESRI StreetMap North America (2012).

I:\NAU1601\GIS\Maps\Cultural\Figure 1_Regional Location and Project Area.mxd (2/19/2016)



LSA

FIGURE 2

0 1000 2000
FEET

SOURCE: USGS 7.5-minute Topo Quads - *Oakland West, Calif.* (1980) and *Oakland East, Calif.* (1980).

Architectural Eligibility Evaluation of
1433 Webster Street and 351-359 15th Street
Oakland, Alameda County, California

Project Area

I:\NAU1601\GIS\Maps\Cultural\Figure 2_Project Area.mxd (2/19/2016)

LSA

LSA ASSOCIATES, INC.
157 PARK PLACE
PT. RICHMOND, CALIFORNIA 94801
510.236.6810 TEL
510.236.3480 FAX

BERKELEY
CARLSBAD
FRESNO
IRVINE
PALM SPRINGS
RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

February 19, 2016

Oakland Heritage Alliance
446 17th Street, Suite 301
Oakland, California 94612

Subject: Architectural Eligibility Evaluation of 1433 Webster Street and 351-359 15th Street, Oakland, Alameda County, California (LSA Project #NAU1601).

Dear Oakland Heritage Alliance:

The project proponent, Nautilus Group, Inc., is proposing to demolish two; two-story commercial buildings one built in 1920 at 1433 Webster Street and a neighboring building built in 1948 at 351-359 15th Street in the City of Oakland and redevelop the property with a 25-story mixed-use residential building. LSA Associates, Inc., is conducting a study to determine if the project might affect cultural resources. The project area is located at 1433 Webster and 351-359 15th streets, Oakland, in unsectioned lands of the *San Antonio (A.M. Peralta)* land grant, Township 1 South/Range 4 West, Mount Diablo Base Line and Meridian, as depicted on the accompanying portion of the USGS, *Oakland West, Calif.,* 7.5' topographic map.

Please notify us if your organization has any information or concerns about historical sites in the project area. This is not a request for research; it is solely a request for public input for any concerns that your organization may have. If you have any questions, please contact me at the address and phone number above or via email (michael.hibma@lsa-assoc.com). We look forward to hearing from you. Thank you.

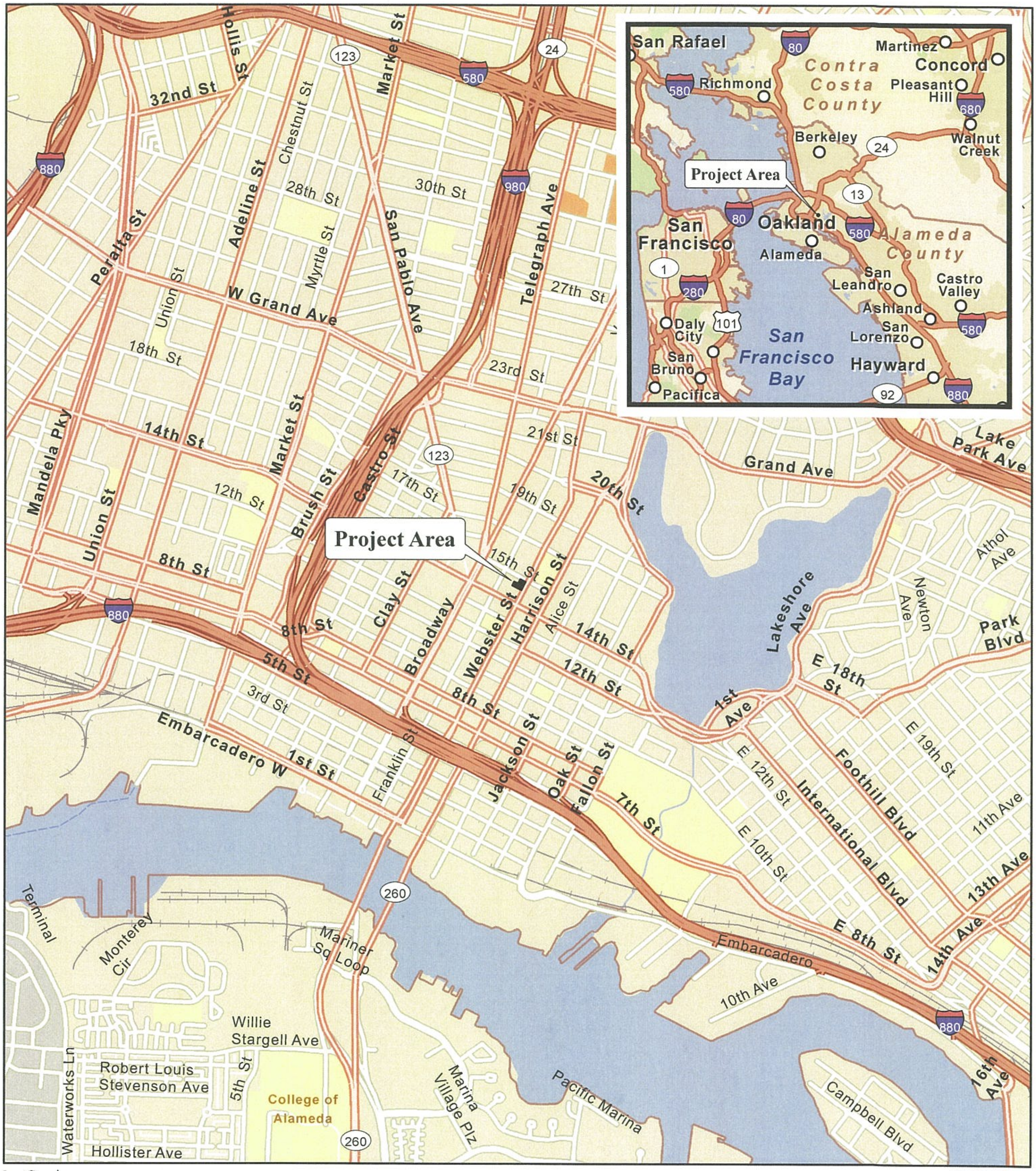
Sincerely,

LSA ASSOCIATES, INC.

Michael Hibma

Michael Hibma, M.A., RPH #603
Historian/Architectural Historian
Senior Cultural Resources Manager
Cultural Resources Group

enc. project area maps



LSA

FIGURE 1

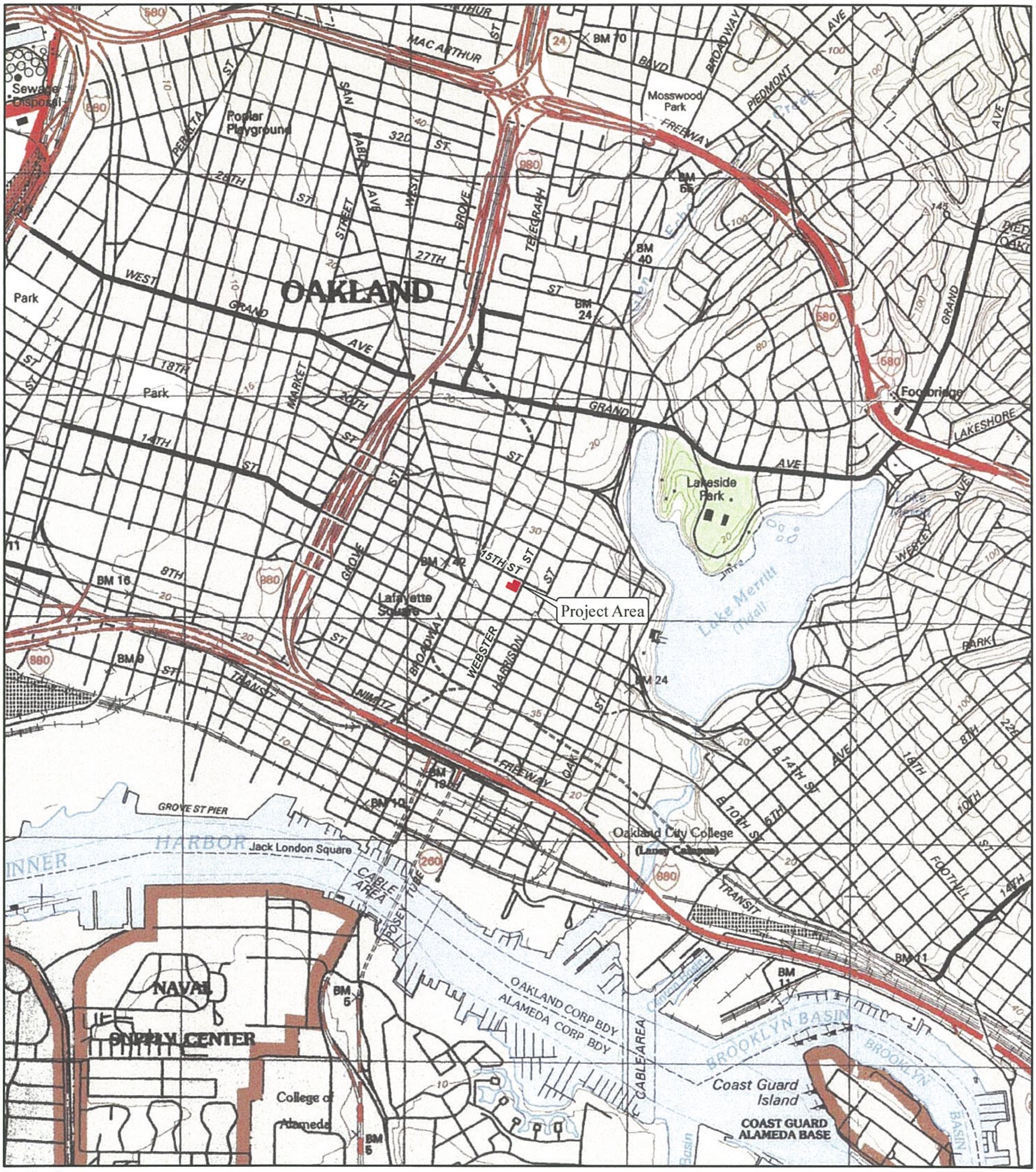
0 1000 2000
FEET

SOURCE: ESRI StreetMap North America (2012).

I:\NAU1601\GIS\Maps\Cultural\Figure 1_Regional Location and Project Area.mxd (2/19/2016)

Architectural Eligibility Evaluation of 1433 Webster Street and 351-359 15th Street Oakland, Alameda County, California

Regional Location and Project Area



LSA

FIGURE 2

N

0 1000 2000

FEET

SOURCE: USGS 7.5-minute Topo Quads - *Oakland West, Calif.* (1980) and *Oakland East, Calif.* (1980).

Architectural Eligibility Evaluation of 1433 Webster Street and 351-359 15th Street Oakland, Alameda County, California

Project Area

I:\NAU1601\GIS\Maps\Cultural\Figure 2_Project Area.mxd (2/19/2016)

OAKLAND HERITAGE ALLIANCE

February 23, 2016

Attn: Michael Hibma
LSA Associates, Inc.
157 Park Place
PT Richmond CA 94801

Dear Michael Hibma and LSA Associates, Inc.:

Oakland Heritage Alliance thanks you for the opportunity to comment on the proposed evaluation.

We would request study of the following issues:

a) What is underneath the modern cladding of the two buildings proposed for removal or alteration? Is there salvageable or reusable historic material?

b) Are there other culturally or historically important features that should also be considered?

c) We are extremely concerned about impacts on the Julia Morgan YWCA, the White Building, and the commercial buildings along 15th street to the west of the site. How can the design be sensitive to these key historic resources?

d) Can the materials on the proposed project be of the highest quality?

e) Massing studies should include consideration of:

1. views of the adjoining historic buildings
2. view corridors into the National Register District downtown
3. shadow and wind effects, in particular shadows upon the YWCA, which houses a school and living quarters

f) Circulation studies should take into consideration the presence of school students.

g) 15th Street has recently been reviving, with a friendly pedestrian scale and rehabilitation of historic buildings. The reopening of Latham Square (another historic resource) should further this. Can the project build upon historic pedestrian-friendliness, rather than intruding upon it?

h) Oakland Heritage Alliance is on record as supporting affordable housing as one way to preserve the cultural heritage of our city. What measures will be taken to incorporate affordable units into the project?

Sincerely,

Alison Finlay

Alison Finlay
President of the Board of Directors
Oakland Heritage Alliance

APPENDIX C

Project Plans
(November 18, 2016)

1433 WEBSTER ST.

NOVEMBER 18, 2016 RAD/SDG

View of the 2016 Oakland Skyline from the Lake Merritt Pier


MENLO
TRIBUNE


CAFE OAKLAND
ENVISION
ACADEMY
OF
ARTS
&
TECHNOLOGY
ONE WAY

An expression of art is located in the deep recess on 15th street to pull the Oakland Art Walk up into the building.

A wood clad canopy compresses the sidewalk along 15th street to establish a building base at the scale of the existing retail corridor


OAKLAND
NO PARKING
3:00 AM TO
6:00 AM
TUE THUR SAT
Franklin
6UWA534

BAY WINDOWS

The “White Building” uses projected bay windows to break up the long horizontal massing. Our proposal offers a modern interpretation of these bay windows

TWO-TONE + FRAME

Julia Morgan’s facade is defined by the use of two colors which contrast the smooth building surface from the thickened frame elements at the building corners and fenestrations. Our proposal uses this same logic in its color scheme and frame articulation.

DEFINED BASE

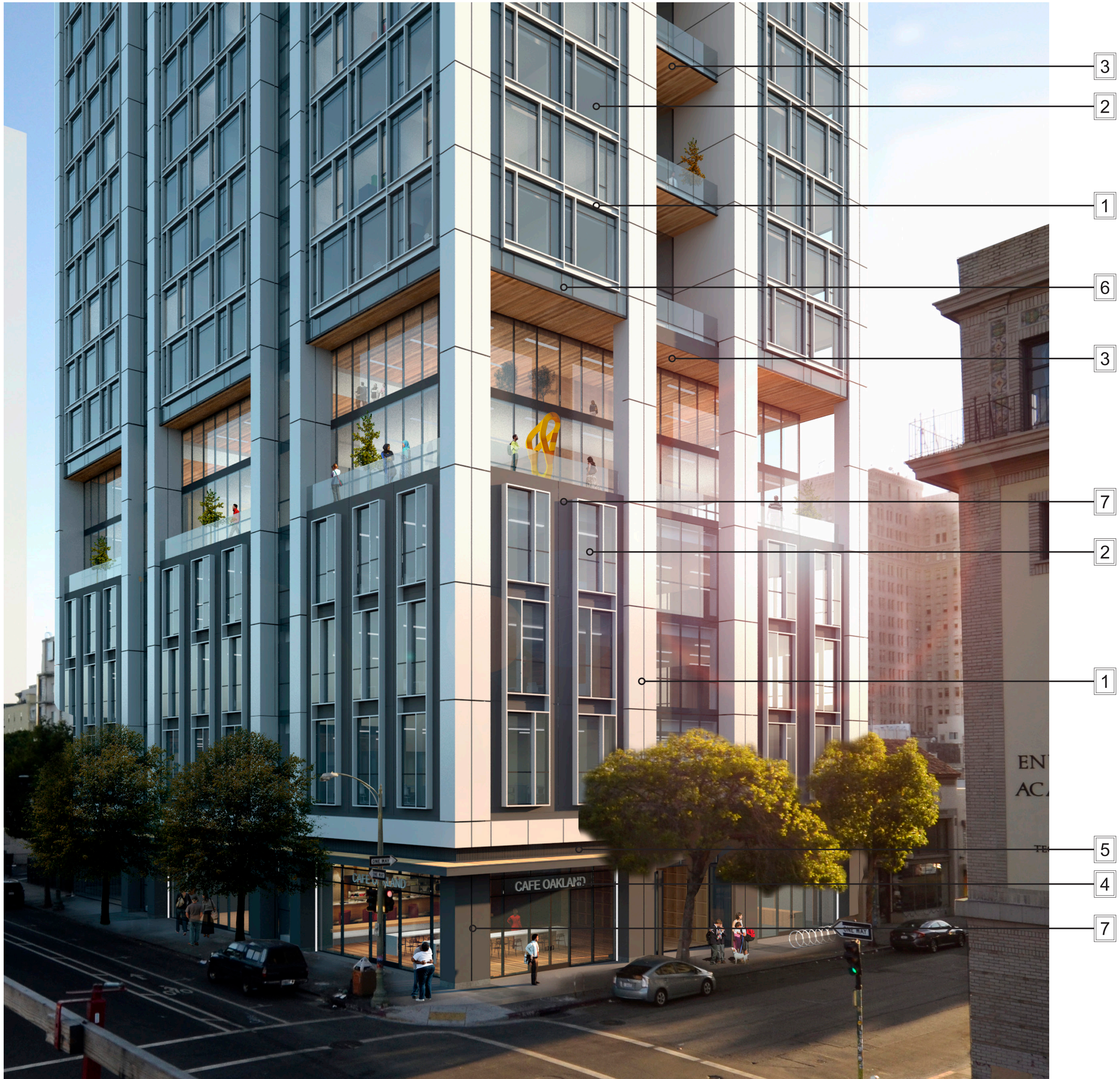
The “White Building” and WYMCA use a one-story base to define the pedestrian scale at the sidewalk. Our proposal follows this established pattern by defining a base with color, canopies and clear storefront.

SOUTH FACADE

Lot line condition. A 16 foot wide balcony seperates the two vertical masses. 15% glazing is provided as four vertical windows per floor. The metal panel is detailed to express joint lines and recesses to further break down the scale.

NORTH FACADE

Not a lot line. The facade is defined by staggered mullions and operable windows.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2
1
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2
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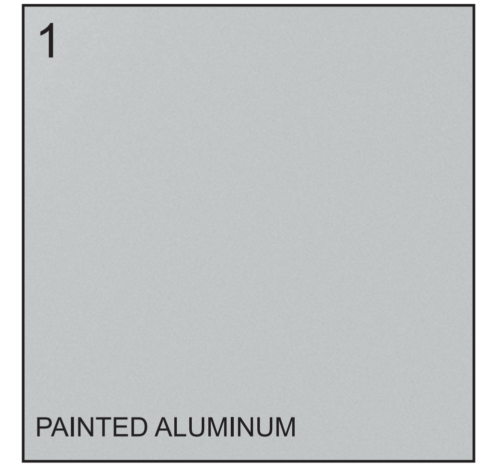
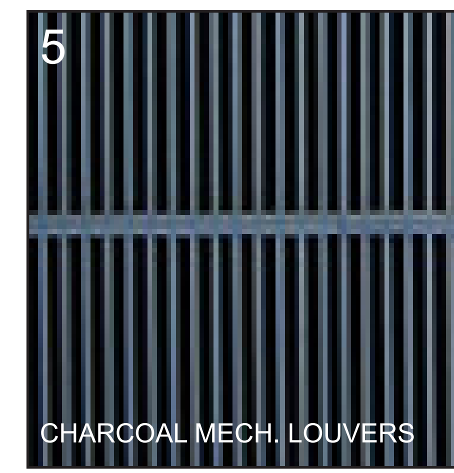
CAFE OAKLAND


1
PAINTED ALUMINUM


2
EXTRUDED ALUMINUM & GLASS WINDOWS


3
WOOD SIDING


4
ALUMINUM SIGNAGE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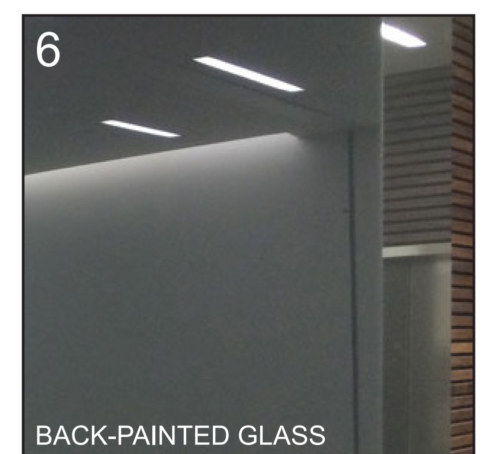
CHARCOAL MECH. LOUVERS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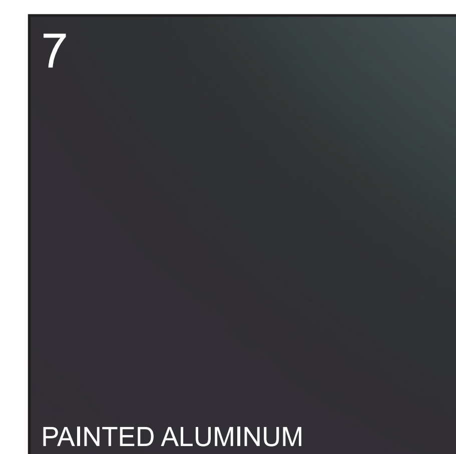
BACK-PAINTED GLASS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PAINTED ALUMINUM

* Future project locations and statistics obtained through the following sources:

- "www.arcgis.com" under "Major Projects - September 2016
- City of Oakland Bureau of Planning "List of Active Major Development Projects / Fall 2016

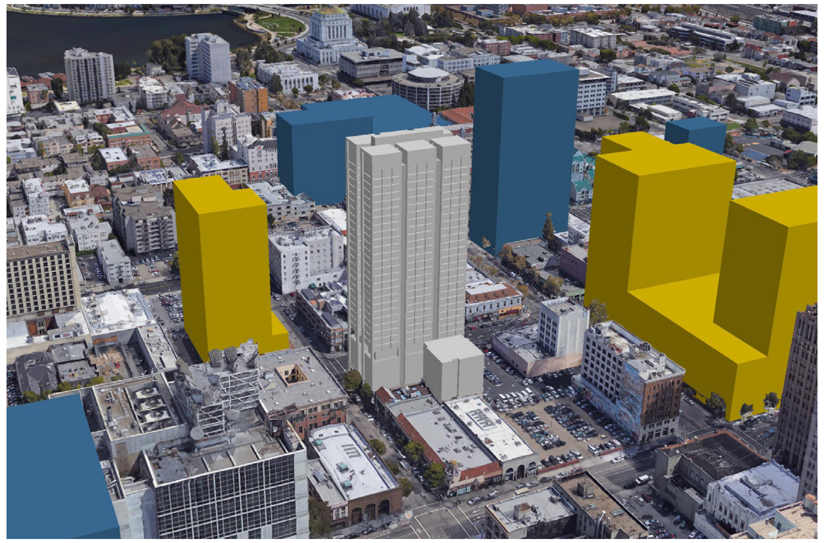
APPLICATION APPROVED

PRE-APPLICATION REVIEW

1433 WEBSTER

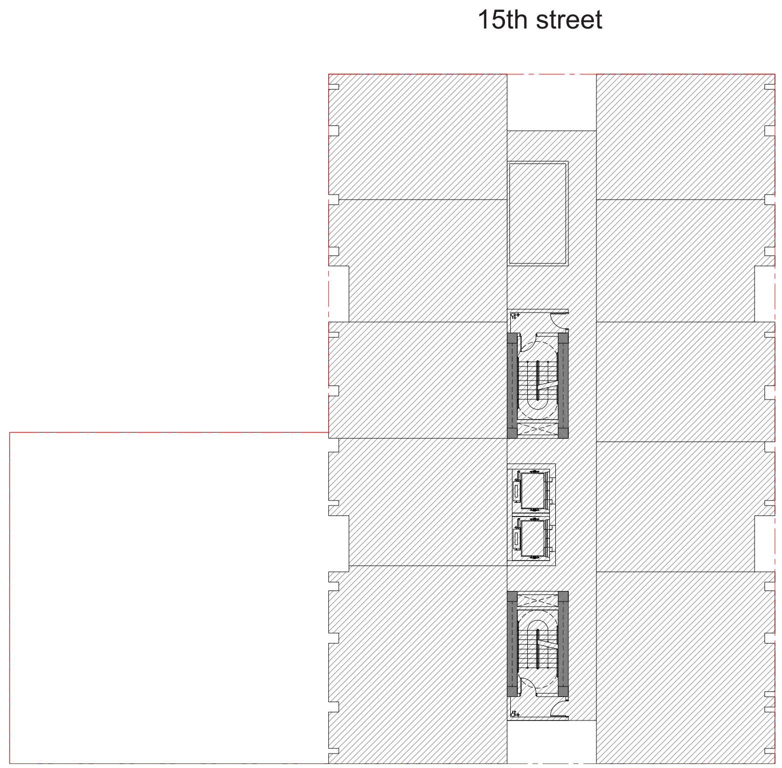
SKYLINE LOOKING NORTH WEST

SITE PLAN



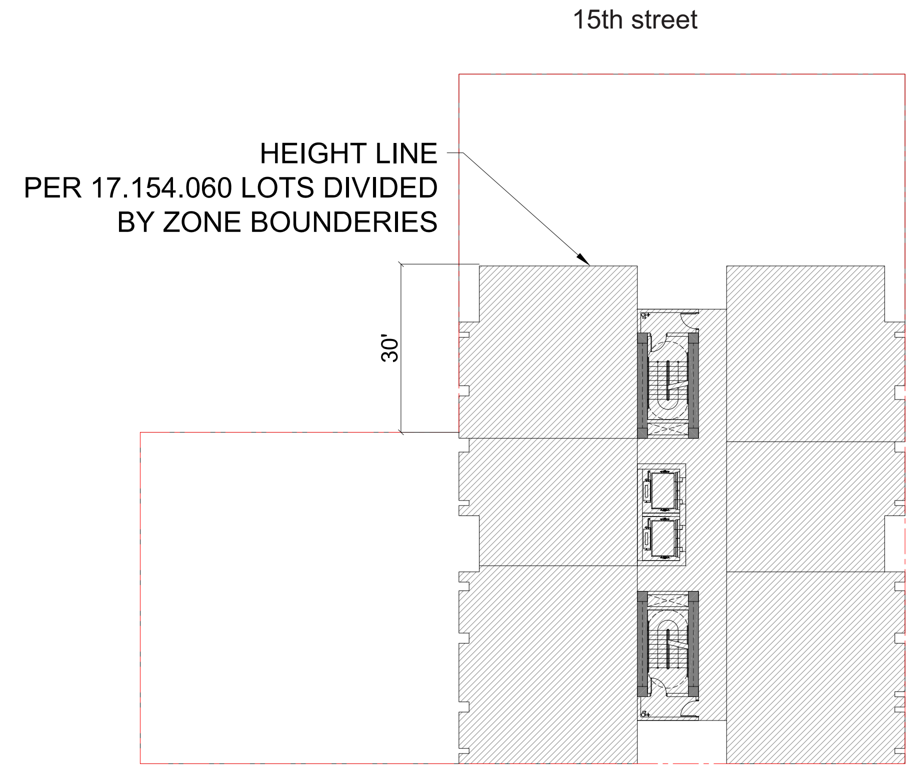
SKYLINE LOOKING SOUTH EAST

SKYLINE LOOKING WEST

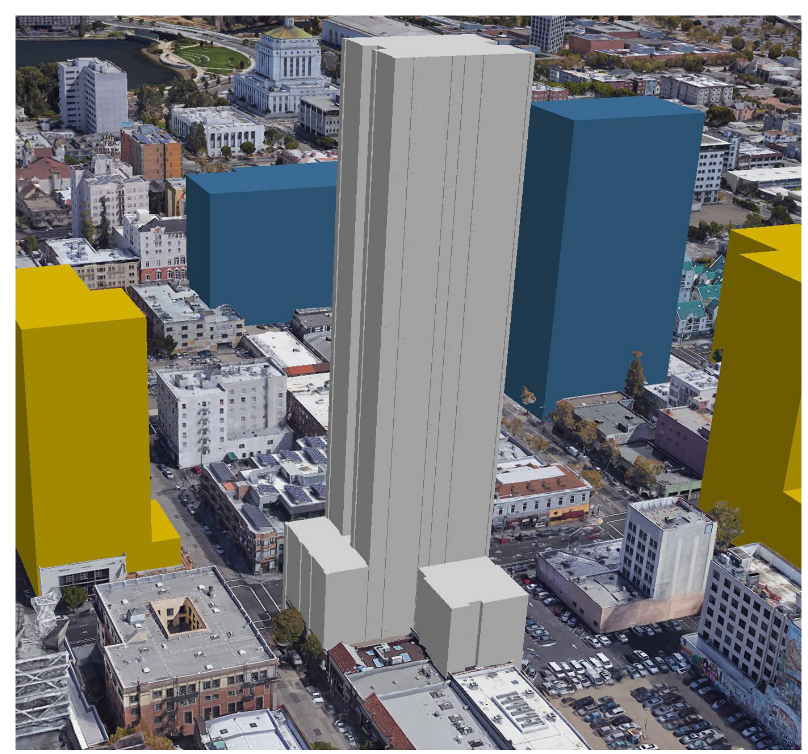


- 353’-0” TOTAL HEIGHT
- 179 RESIDENTIAL UNITS

OPTION 1



- 460’-0” TOTAL HEIGHT
- 179 RESIDENTIAL UNITS



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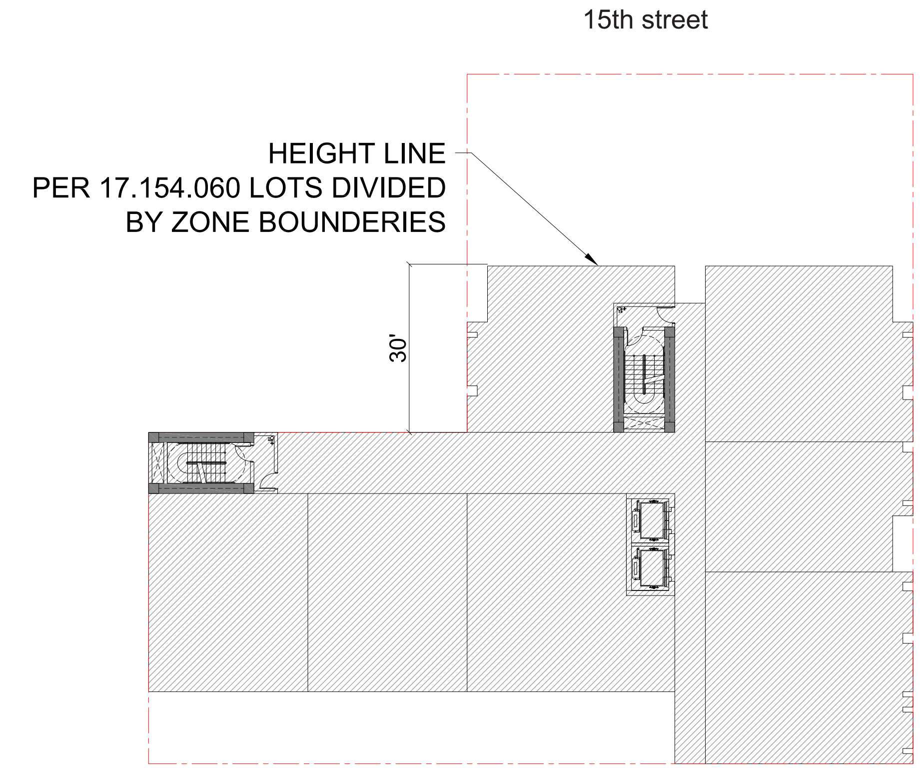
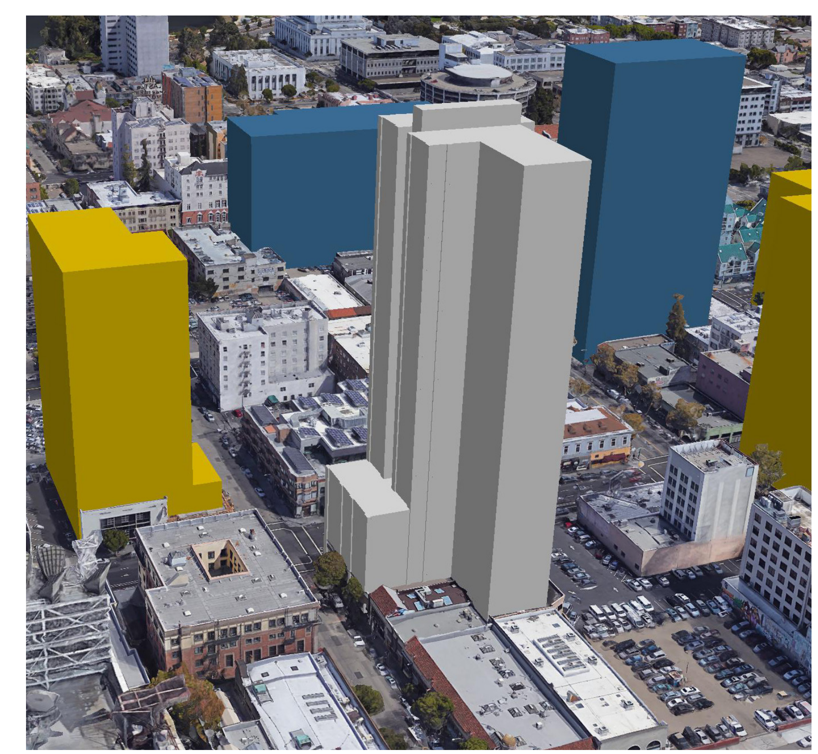
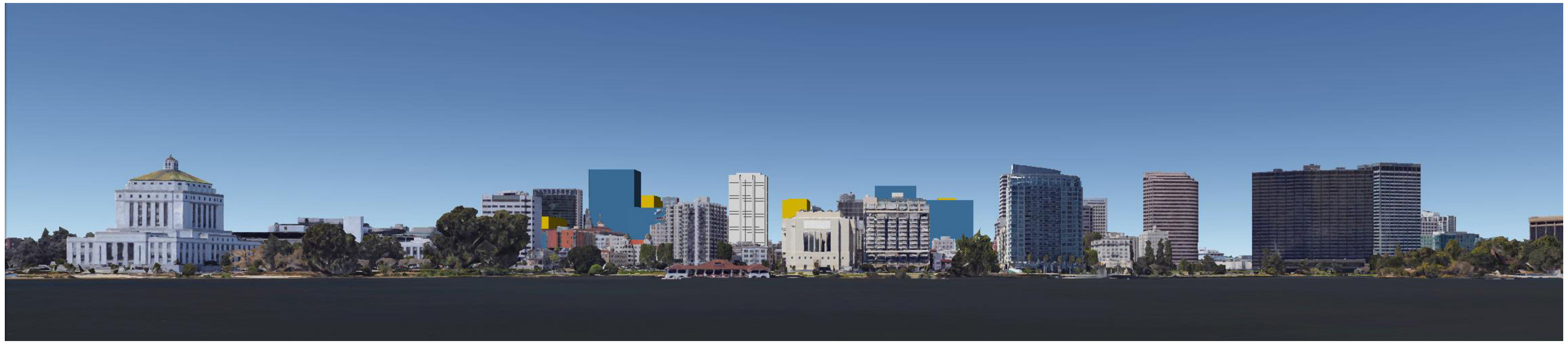
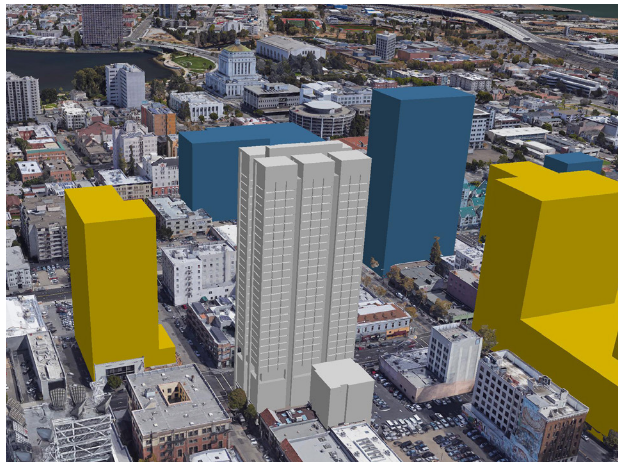


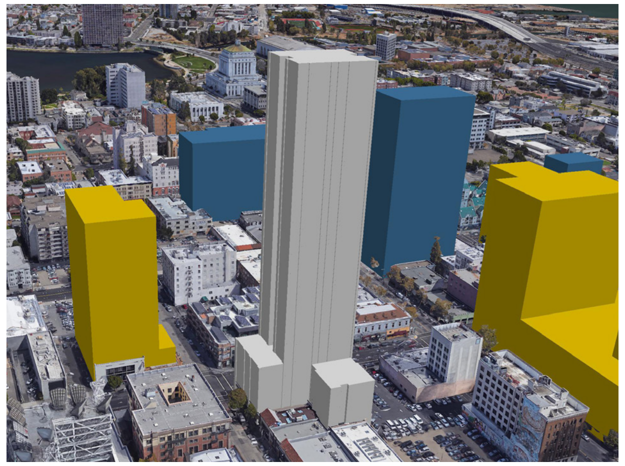
- 383’-0” TOTAL HEIGHT
- 179 RESIDENTIAL UNITS



OPTION 3

OPTION 1

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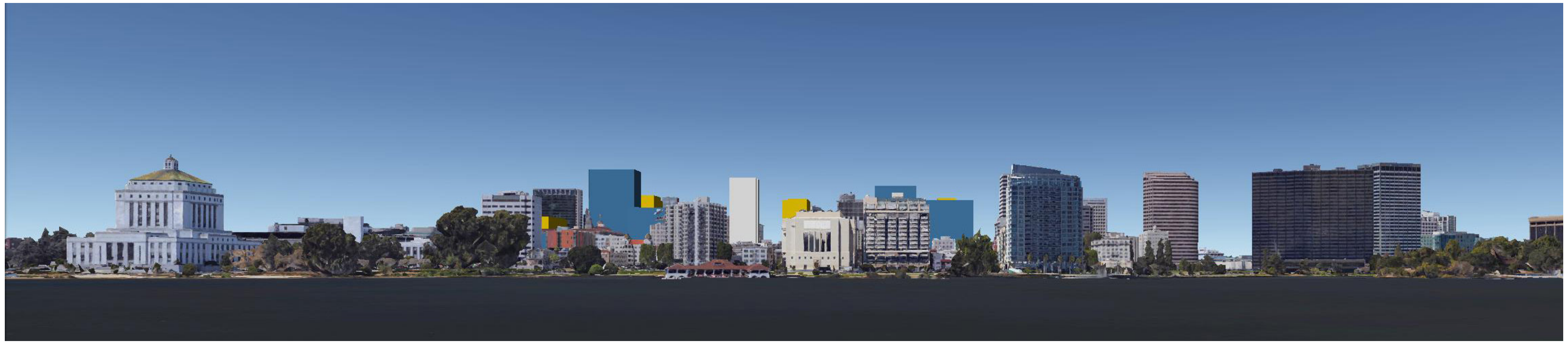
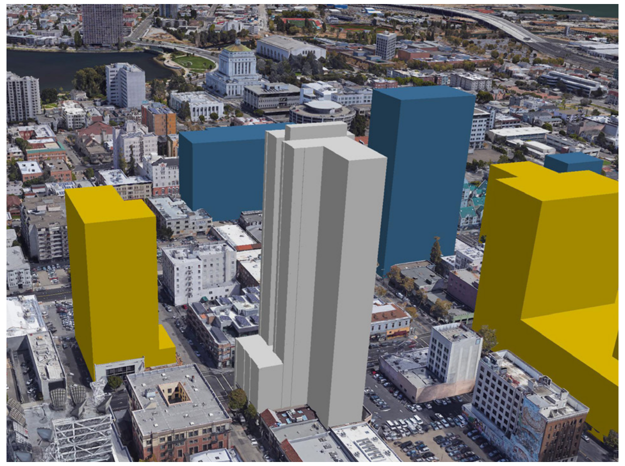

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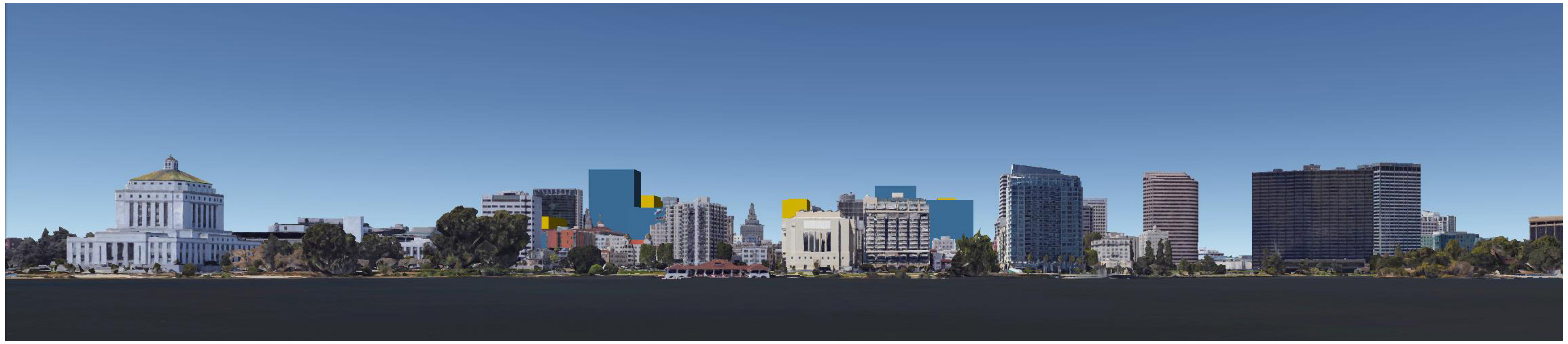
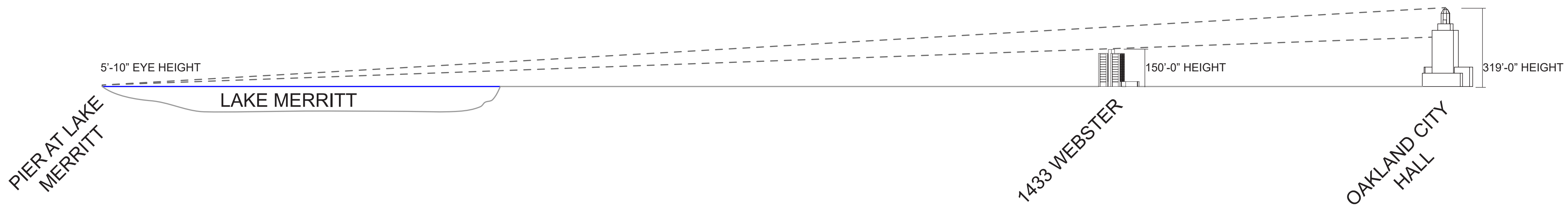
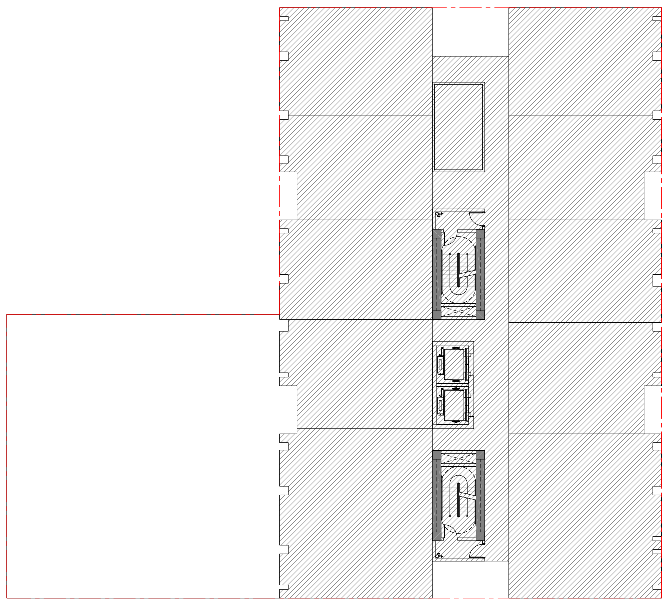


SKYLINE



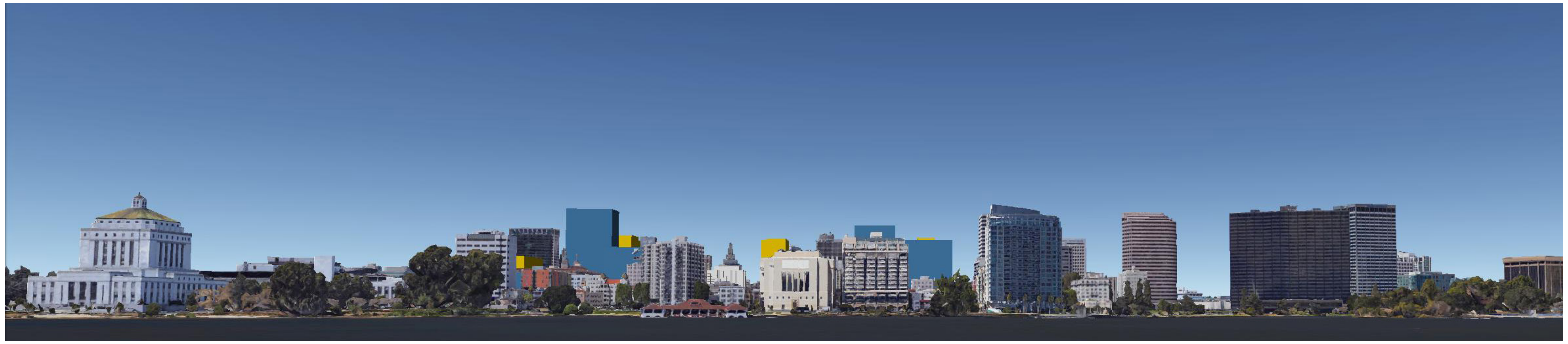
SITE SECTION

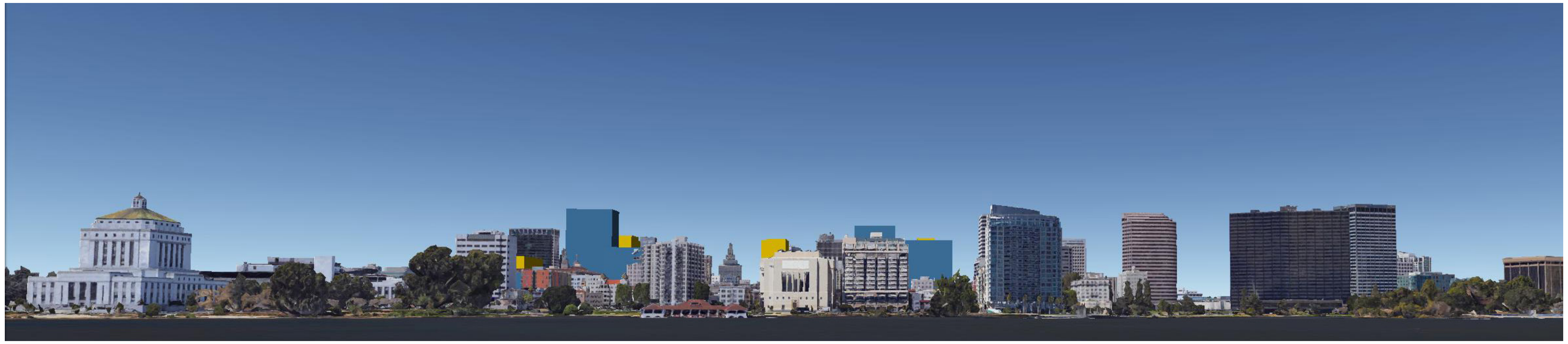
VIEW CORRIDOR MASSING STUDY.
Max building height 150 feet to preserve view of city hall dome.



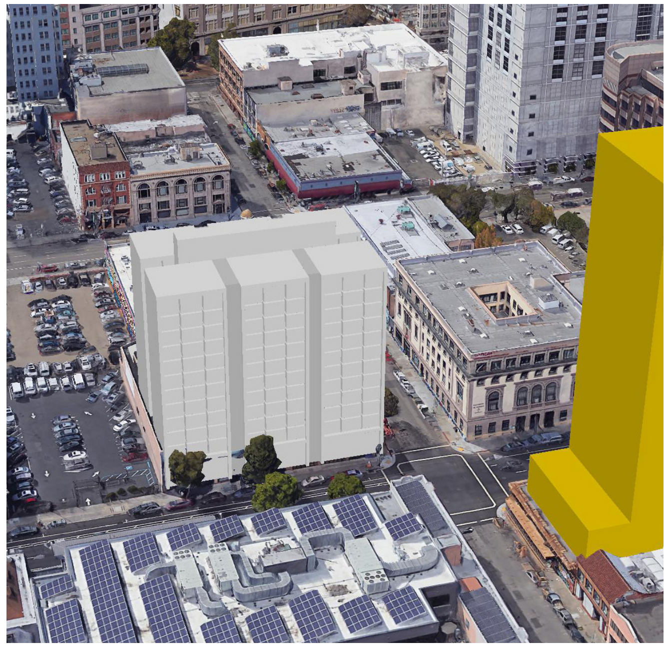
- 150'-0" TOTAL HEIGHT
- 88 RESIDENTIAL UNITS
- NET LOSS OF 91 UNITS FROM HEIGHT REDUCTION

150 FOOT MASSING





SKYLINE



WHITE PANEL WITH BLACK MULLIONS

BLACK PANEL WITH WHITE MULLIONS

WHITE PANEL WITH WHITE MULLIONS (PROPOSED)

APPENDIX D

Shadow Study
RAD Design | SDG
(September 2016)

1433 WEBSTER STREET

SHADOW STUDY

RAD | SDG

SEPTEMBER 13, 2016

OBJECTIVE

The objectives of this study were to illustrate the sun and shadow patterns for various times and dates and to determine the potential exposure to sunlight and shadow on and around the study site of 1433 Webster Street and 359 15th Street, Oakland, CA

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

BUILDING AND SITE INFORMATION

The proposed development would be located on the corner Webster Street and 15th Street, in Oakland, California. The development would be a 29-story tower, that includes a five-story podium, rising to a height of approximately 353.5 ft.

Image 1: 3D model of the project.

Image 2: An aerial view of the site and its immediate surroundings. Currently the site at 1433 Webster and 359 15th street both contain 2 story buildings each 30 feet tall.

IMAGE 1

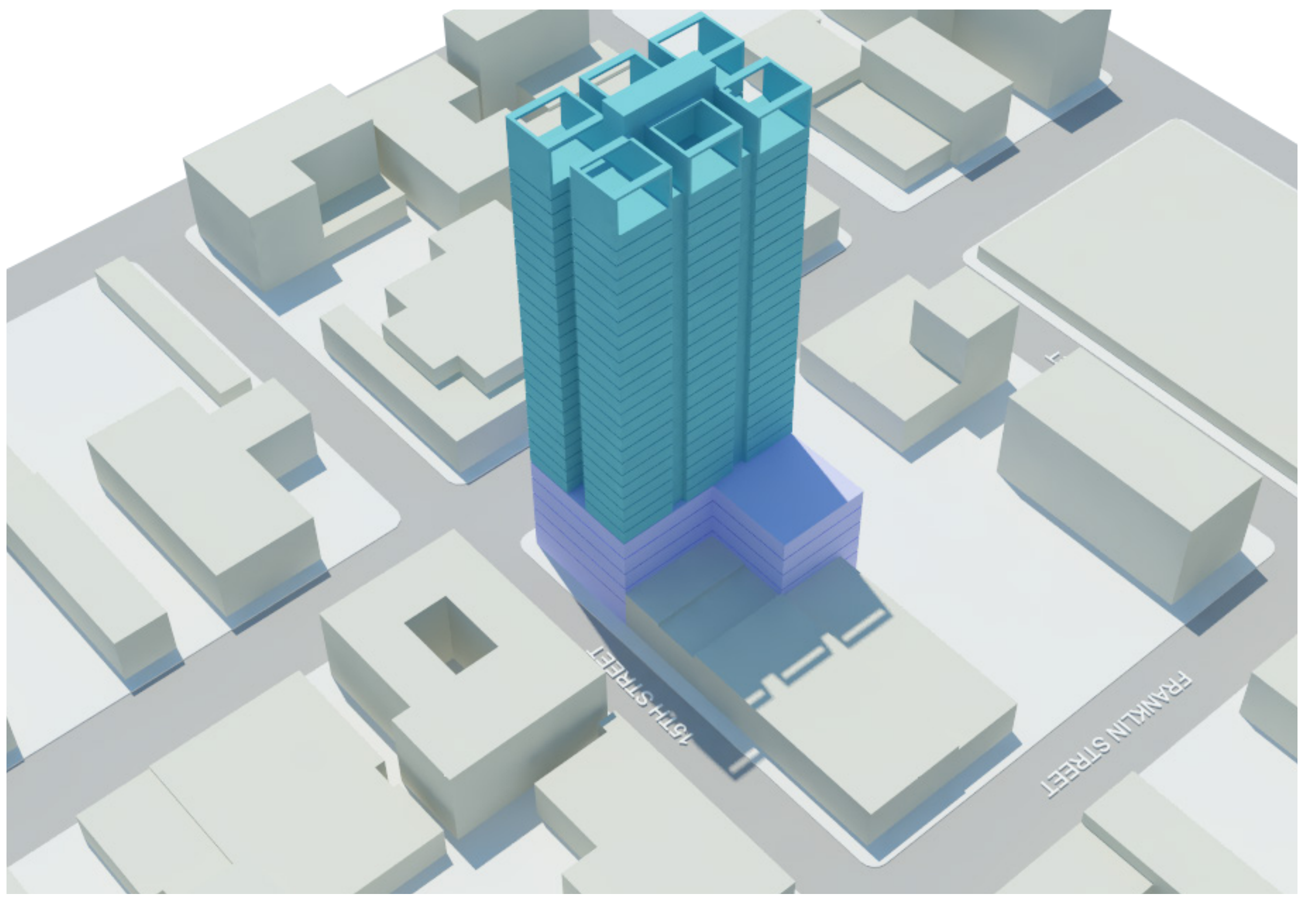


Image 1: 3d-model of the proposed project-view from northwest

IMAGE 2

Image 2: Aerial View of site and Surroundings

METHODOLOGY

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

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

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

Table 1: Dates and Times Studied

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

Table 2: Approximate Sunrise and Sunset Times

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

HISTORIC BUILDING

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

The building across 15th street- the YWCA, designed by Julia Morgan - is a City of Oakland Historic Landmark. The building contains a primary front facade with building entrance on Webster Street and a secondary facade on 15th street with no entrance. The building is designed with no light dependant feature such as stained glass windows or occupiable balconies.

Since the proposed project is located south of the YWCA, no shadows will directly impact the YWCA's primary front facade on Webster street.

The proposed project will directly cast a shadow on the side facade of the YWCA for 3-4 hours in the afternoon each day. However, considering the simple design of the YWCA facade, these shadows will not materially impair any of the physical characteristics of the building.

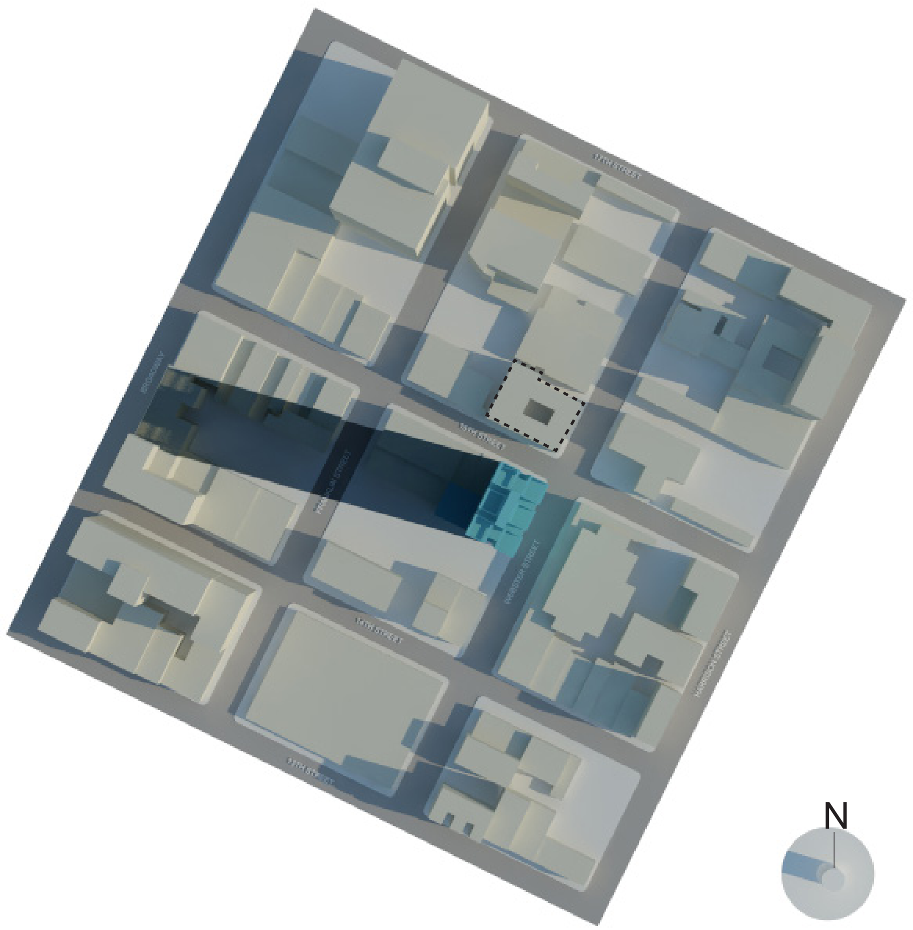
SIDE FACADE: South Facing

The shadow study shows that the proposed project will cast a shadow on the YWCA building for 3-4 hours in the afternoon during all days of the year.

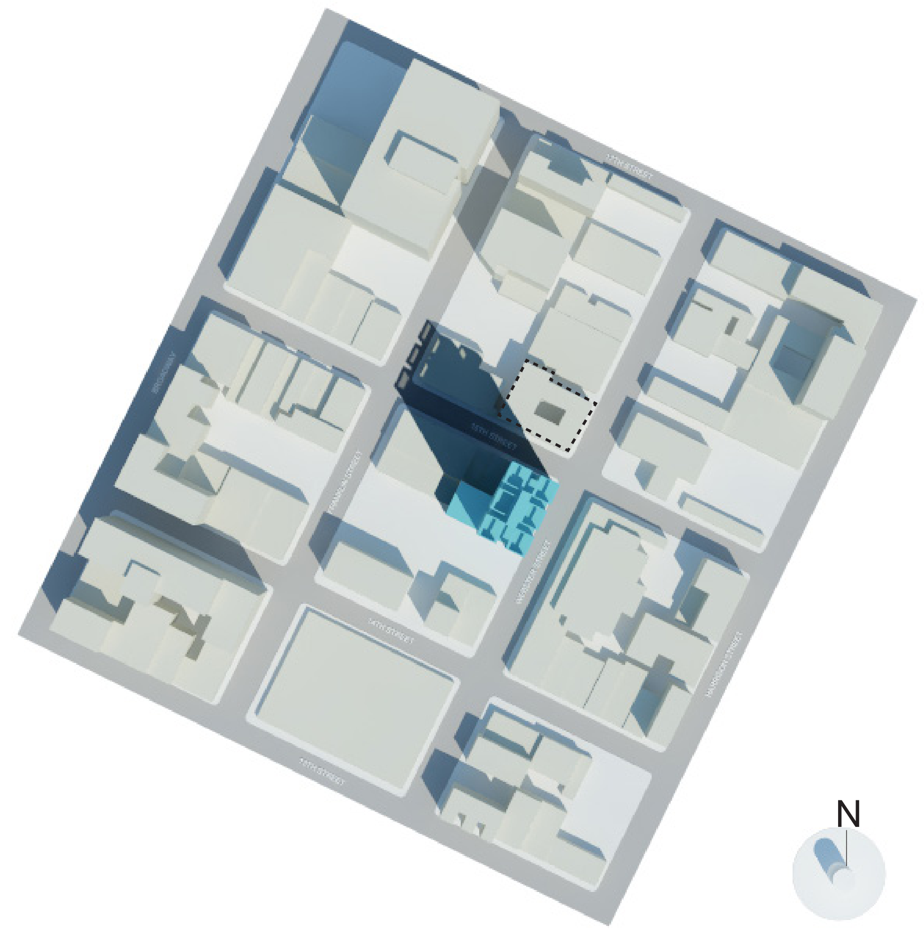
FRONT FACADE: East Facing

The proposed project will have no impact on direct light hiting the primary front facade of the YWCA building.

01 MARCH 21st (PDT) *Spring Equinox*



9:00 am (PDT)



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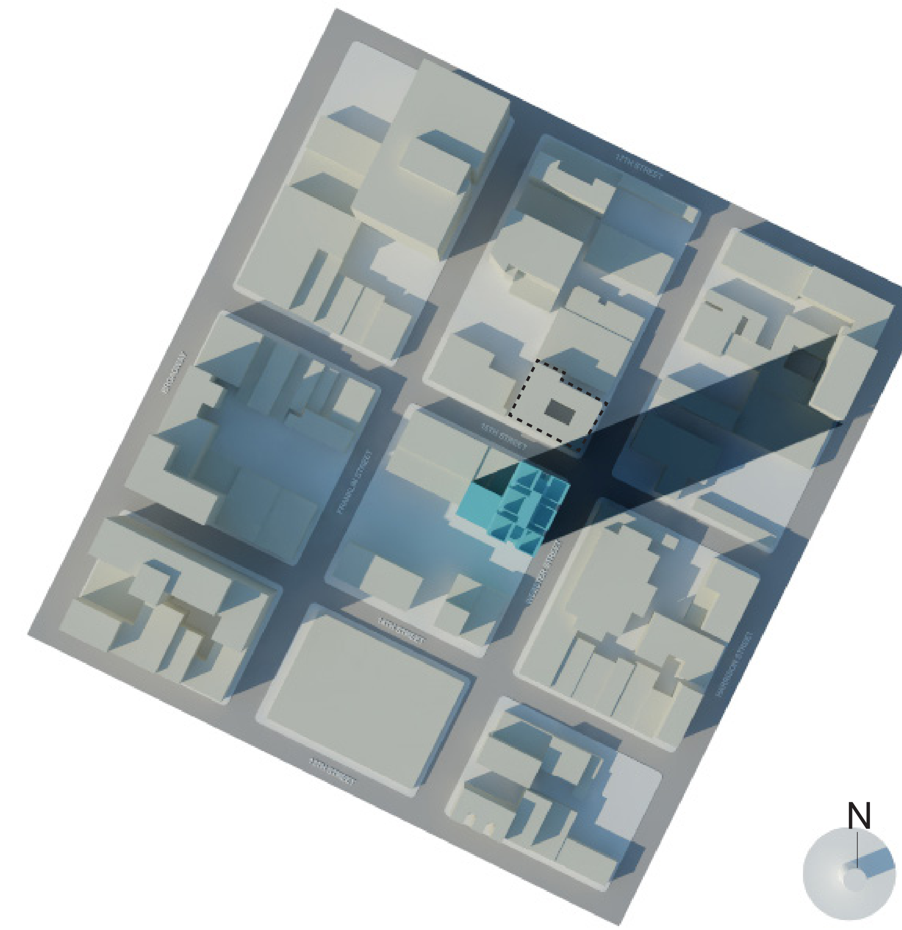


5:00 pm (PDT)

Project Massing

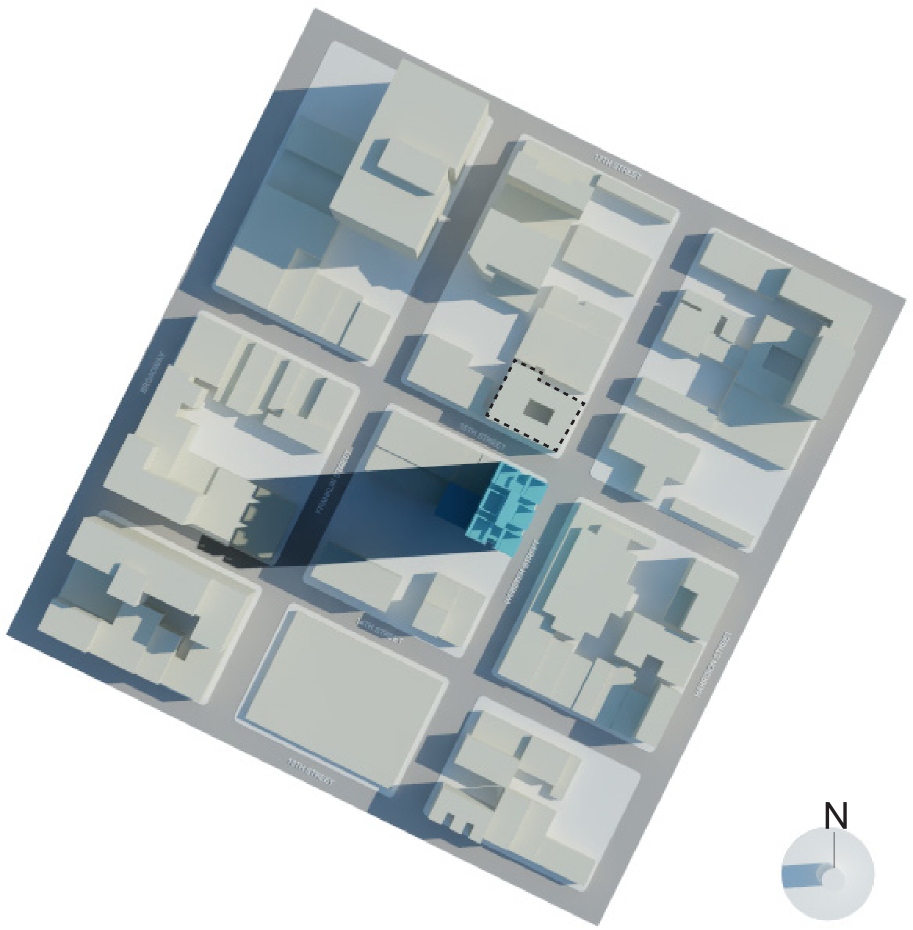
Context Massing

Project Net-New Shadow

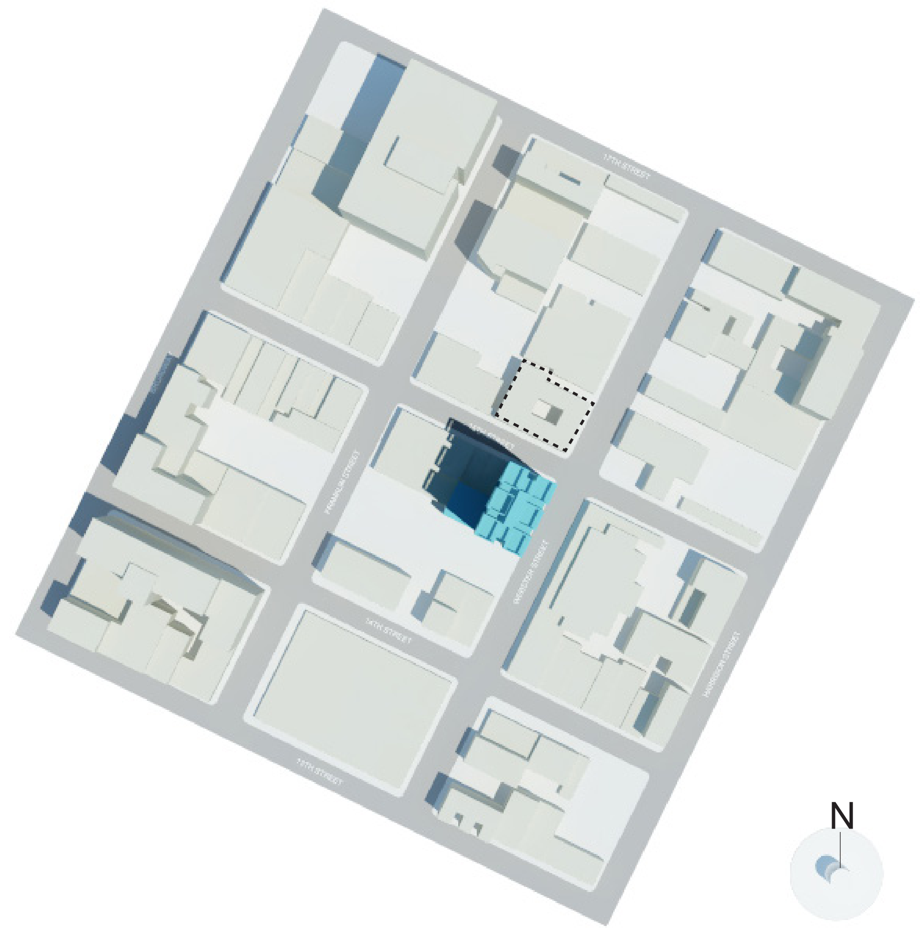
Context Shadow

Historic Resource

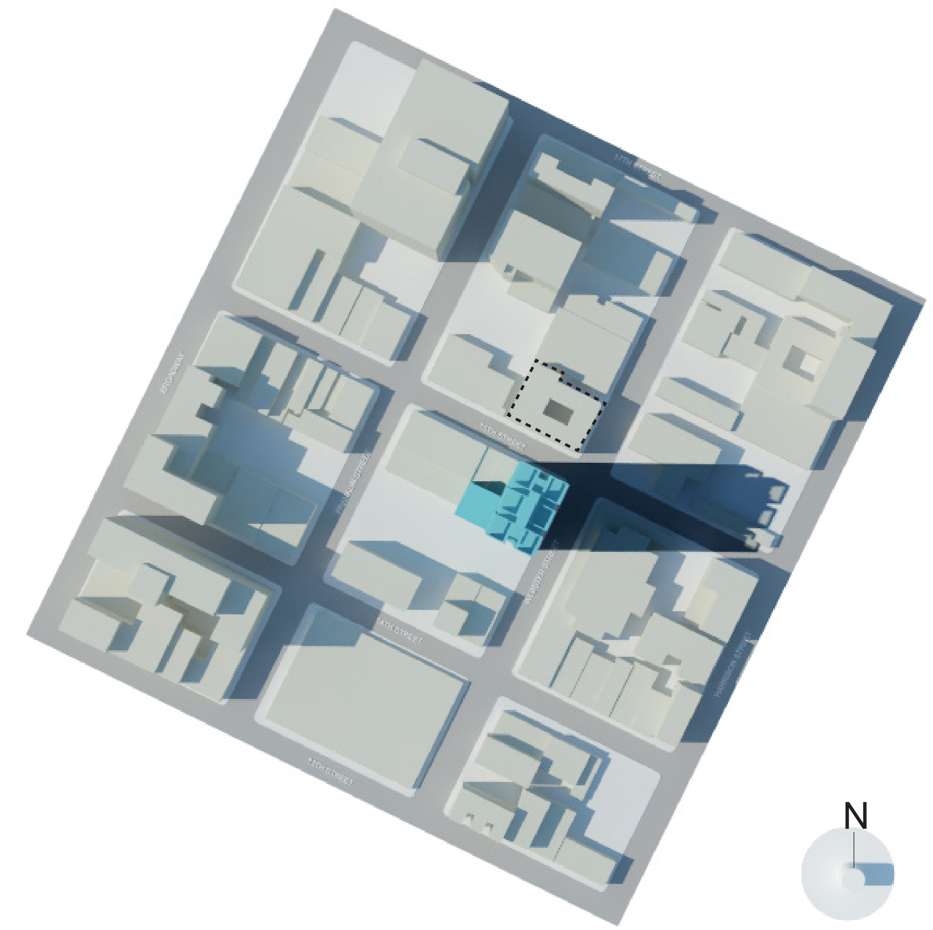
02 JUNE 21st (PDT) *Summer Solstice*



9:00 am (PDT)



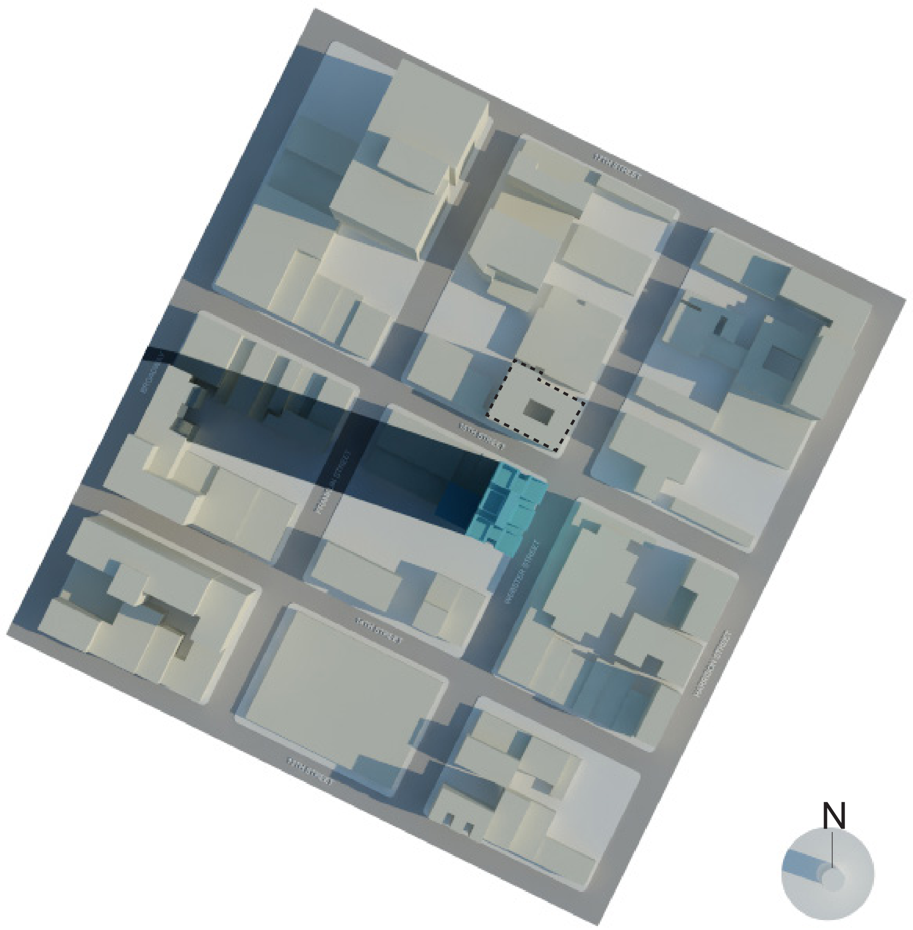
12:00 pm (PDT)



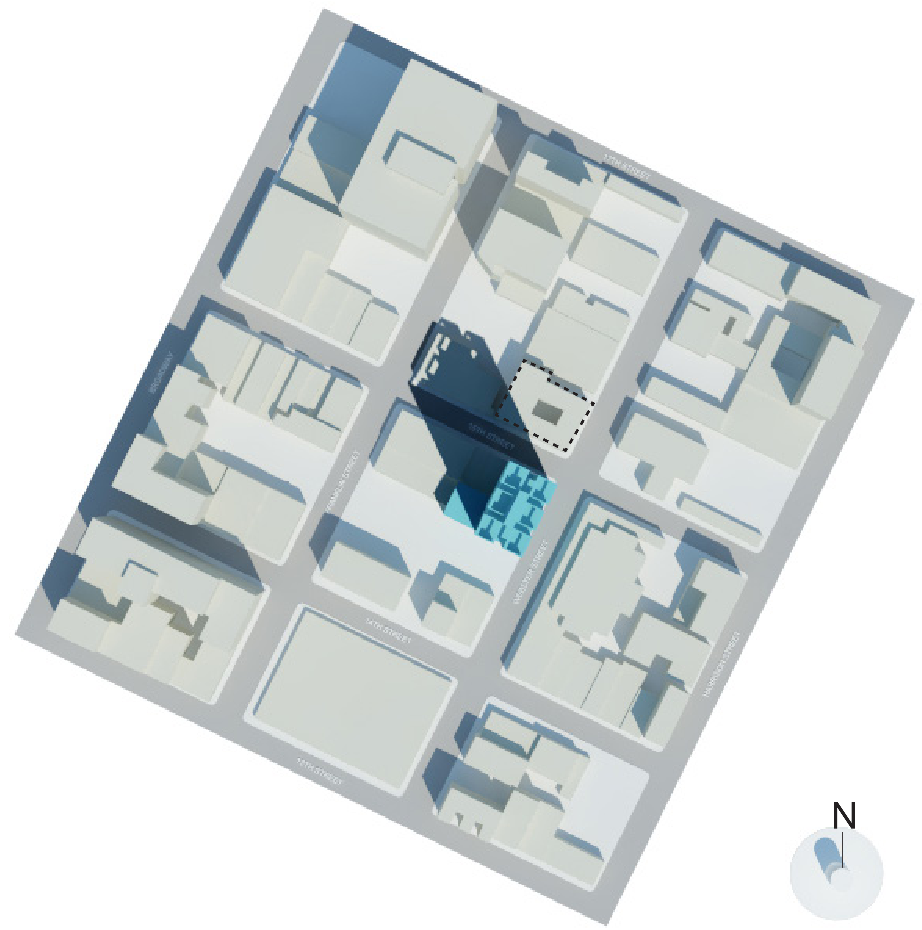
5:00 pm (PDT)

Project Massing	Project Net-New Shadow
Context Massing	Context Shadow
Historic Resource	

03 SEPTEMBER 21st (PDT) *Autumnal Equinox*



9:00 am (PDT)



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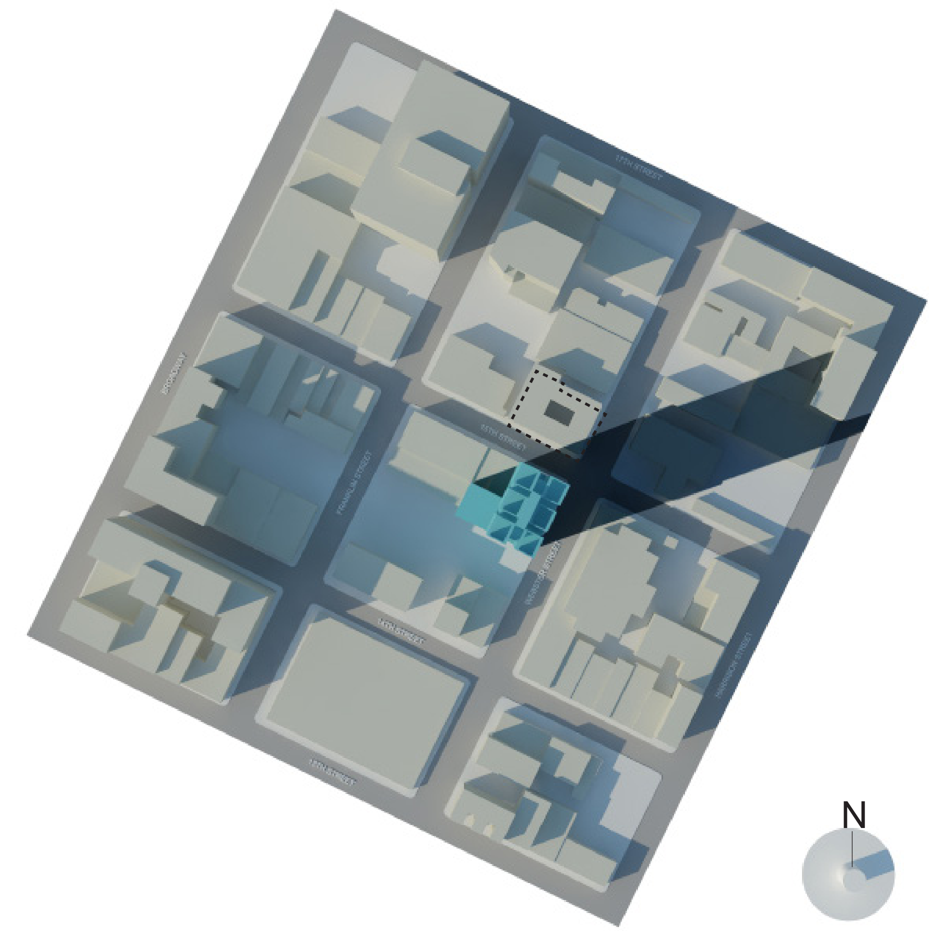
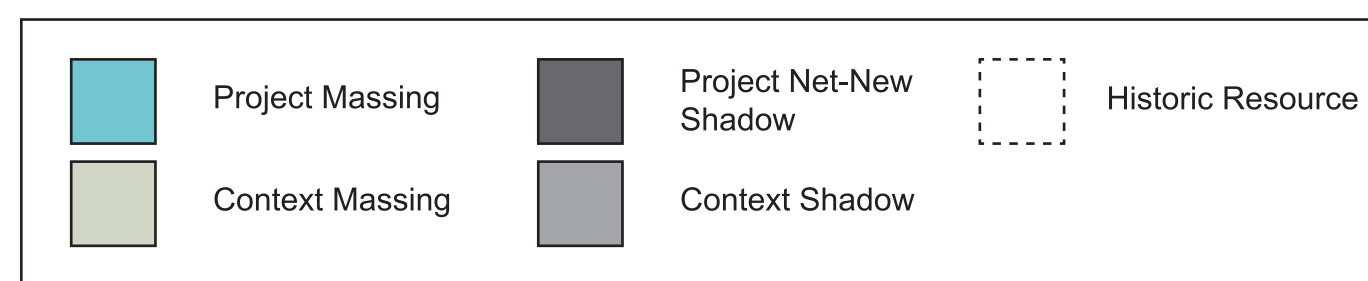
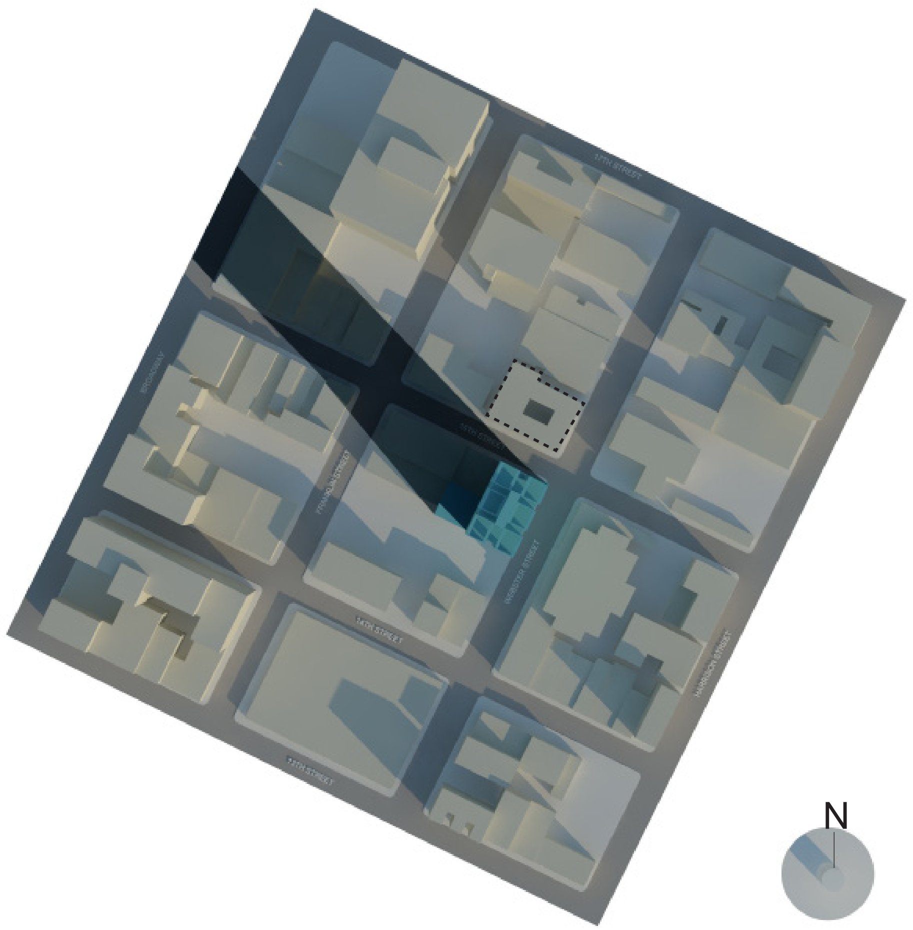


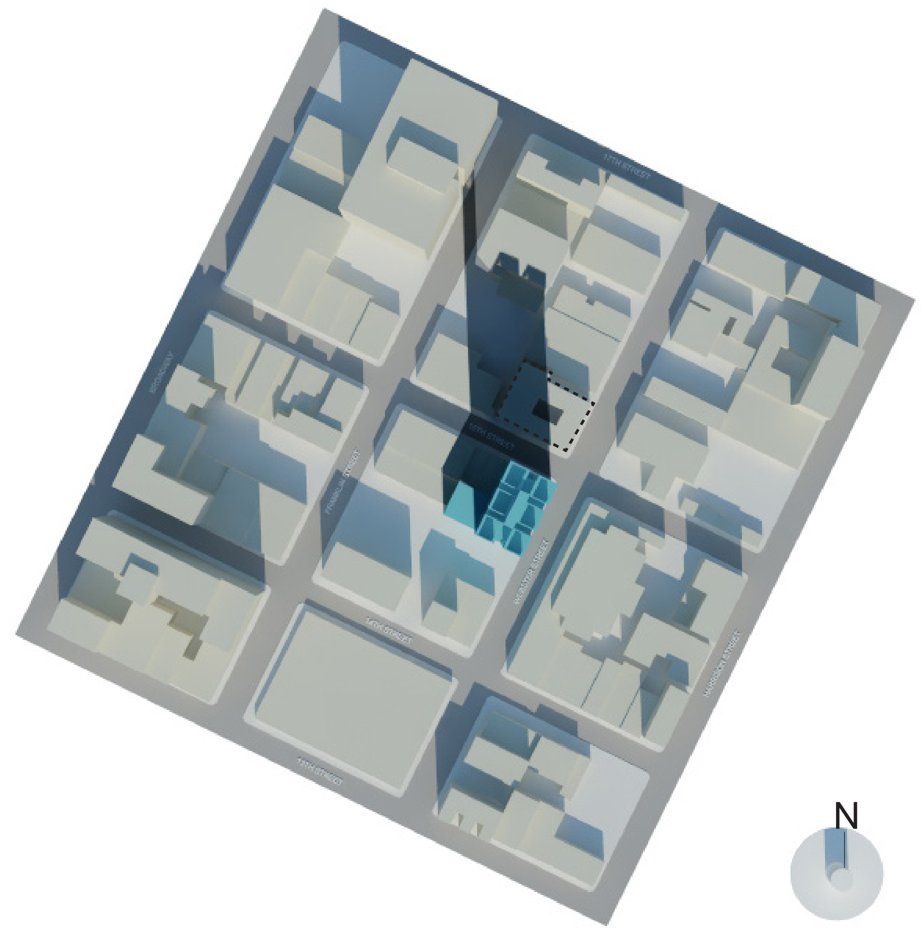
5:00 pm (PDT)



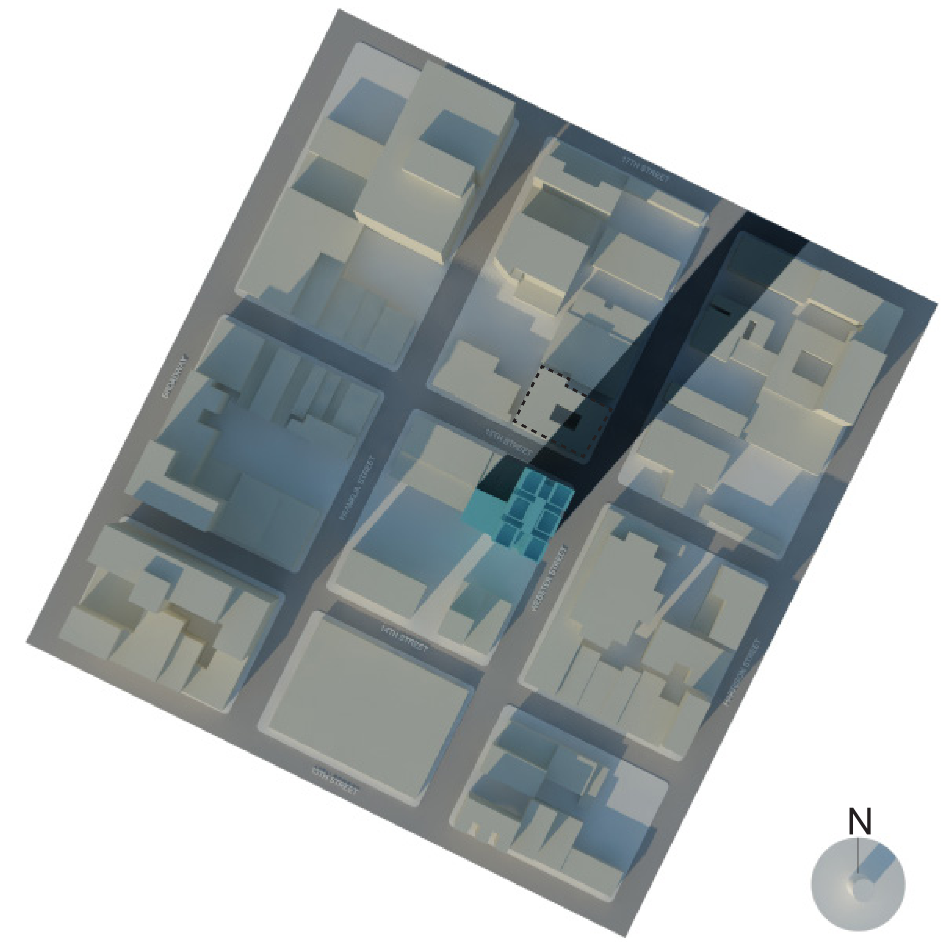
04 DECEMBER 21st (PST) *Winter Solstice*



9:00 am (PST)



12:00 pm (PST)



3:00 pm (PST)

- Project Massing
- Context Massing
- Project Net-New Shadow
- Context Shadow
- Historic Resource

1433 WEBSTER STREET

SOLAR COLLECTOR IMPACT STUDY

RAD | SDG

SEPTEMBER 13, 2016

01 SHADOW IMPACT ON SOLAR COLLECTORS

The building at 1438 Webster Street contains 8,145 sq. ft. of roof mounted solar collectors. The solar collectors are tilted approx. 20 degrees from horizontal and face south west.

A shadow study was conducted that focused on the time of day a shadow from the proposed 29 story project would cast a shadow on the solar collectors. During the months of January, February, September, October, November, and December, the proposed building will cast no shadows on the solar collectors during hours of production. During the remaining months of the year, a shadow will be cast on a portion of the solar collectors for approximately 1-3 hrs. daily in the early evening.

Data was collected and analyzed to determine that the proposed development will reduce the yearly PV output by .85%.

Current Output (wh)	163,228,630
Reduced Output (wh)	161,844,881
output reduction (wh)	1,383,749
output reduction (kwh)	1,384
output reduction ($), @ $0.14/kWh	$193.72
output reduction (%)	0.85%

The proposed project will have an .85% reduction in yearly output of the solar array located to the projects east.

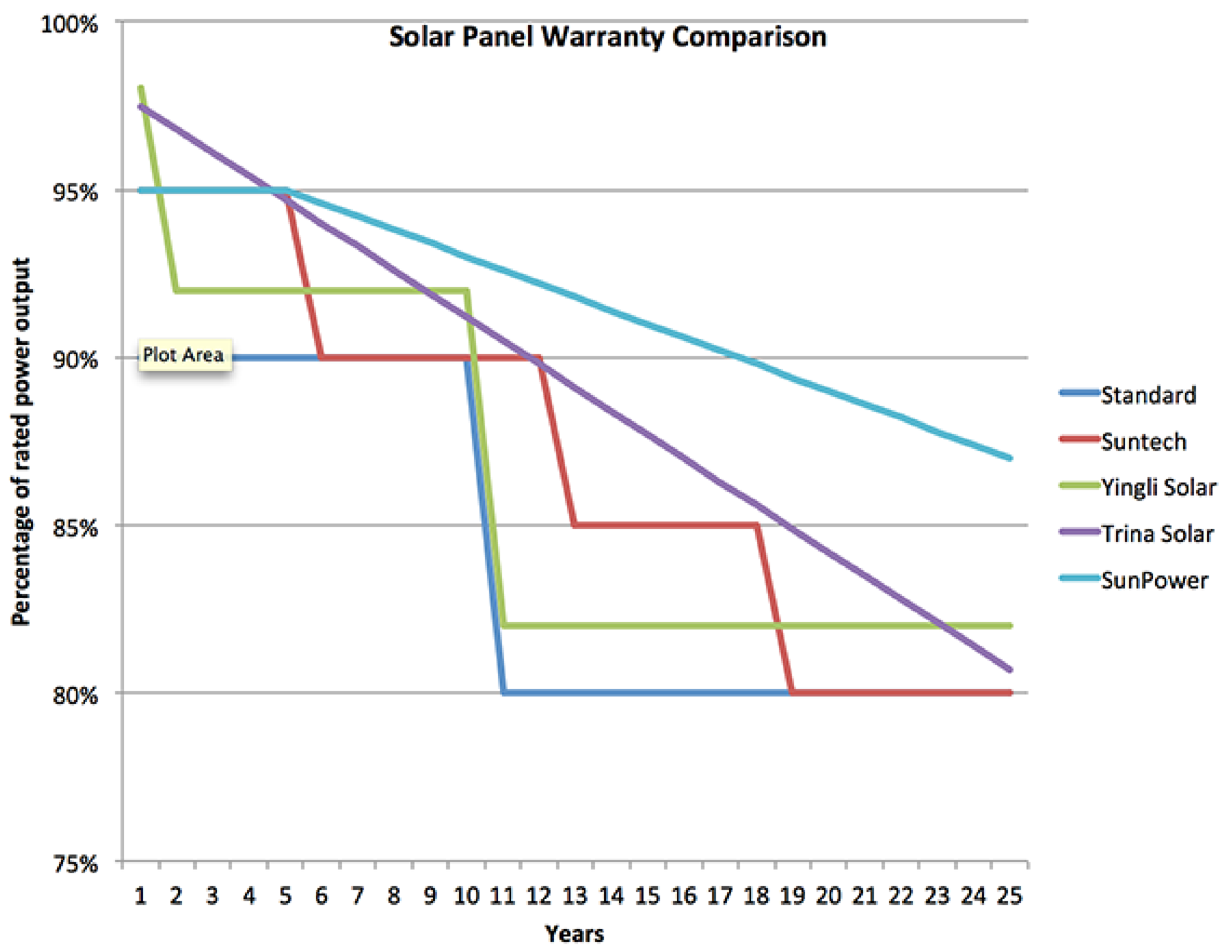
02 SOLAR COLLECTOR DATA

1438 Webster

Solar Array Installed in 2008

8145 sf of panels

Expect 92.5% of rated power output based on age of panels



http://energyinformative.org/lifespan-solar-panels/

Assume module with 16% initial PV efficiency.

Corresponds to 14.9 w/ft^2

At 8 years old corresponds to 13.8 w/ft

Assume array size of 112kW DC at age 8

5/20/2016 PVWatts Calculator

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at http://sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

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The energy output range is based on analysis of 30 years of historical weather data for nearby , and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

163,229 kWh per Year *

System output may range from 156,846 to 166,004kWh per year near this location.

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Energy Value ($)
January	2.73	7,700	1,084
February	3.13	7,970	1,122
March	3.72	10,416	1,467
April	6.60	17,576	2,475
May	6.75	18,524	2,608
June	7.68	20,310	2,860
July	6.98	19,176	2,700
August	6.54	17,767	2,502
September	6.12	15,972	2,249
October	4.21	11,617	1,636
November	3.33	8,890	1,252
December	2.61	7,309	1,029
Annual	5.03	163,227	$ 22,984

Location and Station Identification

Requested Location	1438 Webster St, Oakland, CA
Weather Data Source	(TMY3) OAKLAND METROPOLITAN ARPT, CA 6.6 mi
Latitude	37.72° N
Longitude	122.22° W

PV System Specifications *(Commercial)*

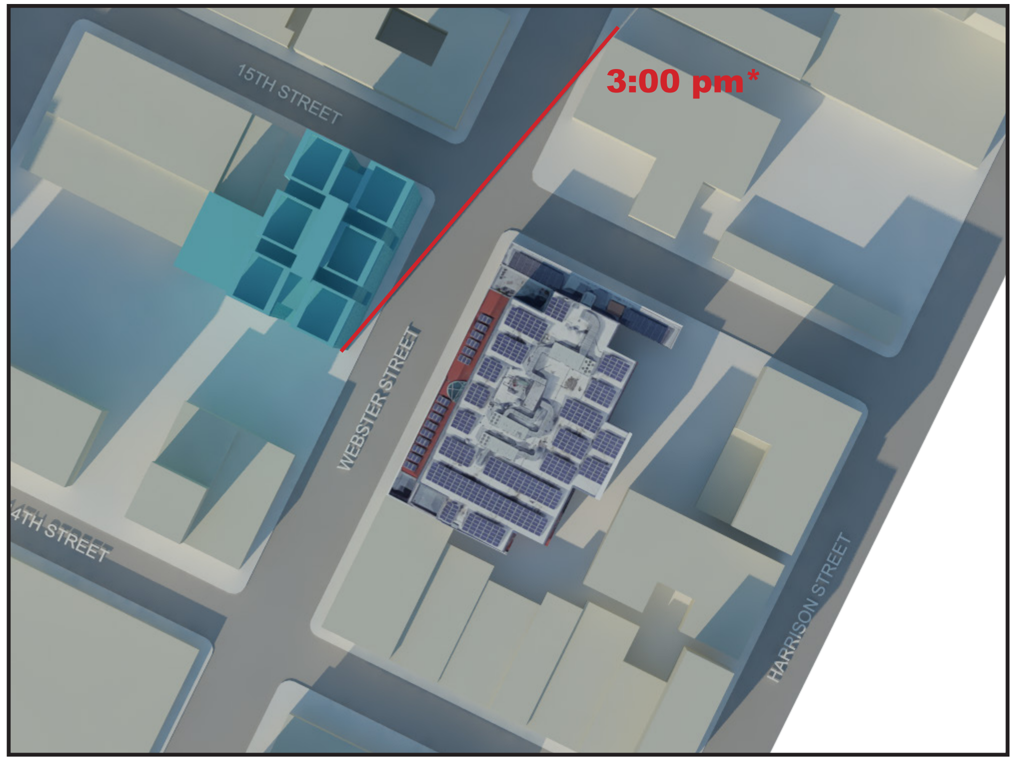
DC System Size	112 kW
Module Type	Standard
Array Type	Fixed (open rack)
Array Tilt	20°
Array Azimuth	225°
System Losses	14%
Inverter Efficiency	96%
DC to AC Size Ratio	1.1

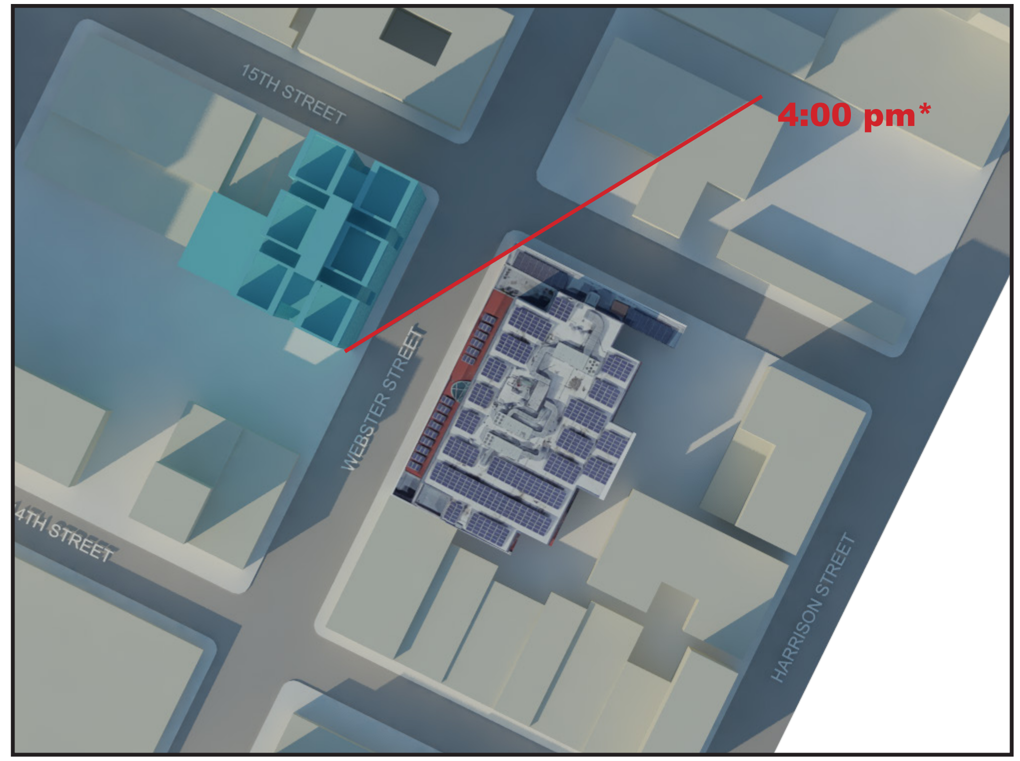
Initial Economic Comparison

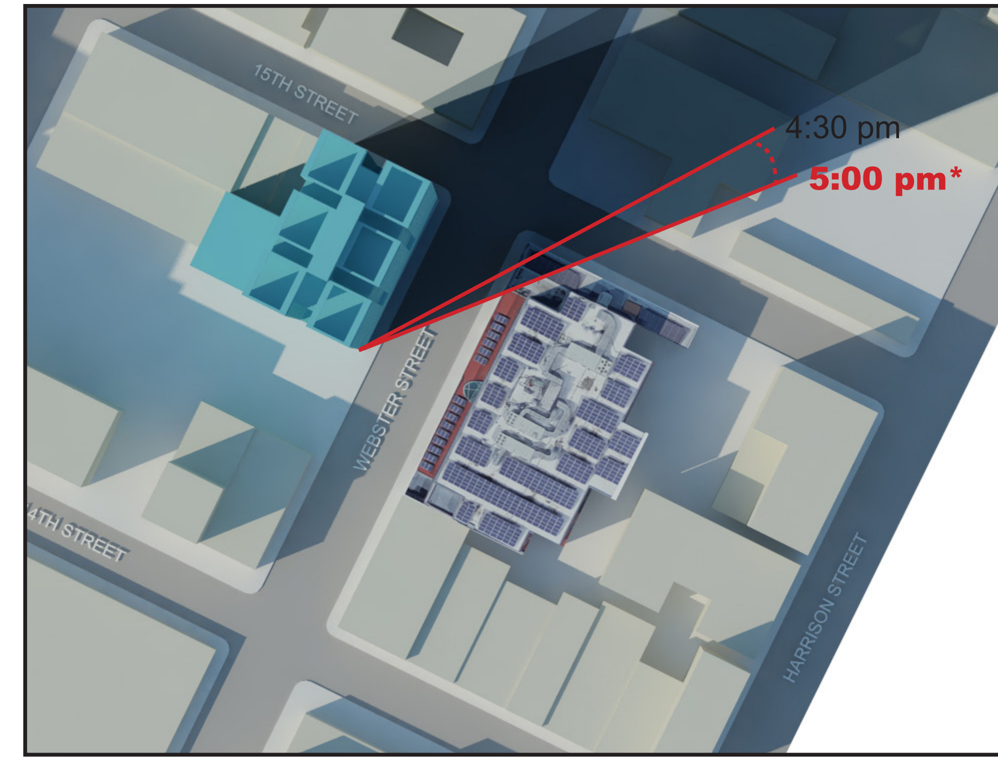
Average Cost of Electricity Purchased from Utility	0.14 $/kWh

http://pvwatts.nrel.gov/pvwatts.php 1/1

03 SHADOW IMPACT ON SOLAR COLLECTORS







JANUARY 21st

Sunset 4:51 pm

* Last hour of PV output: 3:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
1	21	0	0	0	0	0
1	21	1	0	0	0	0
1	21	2	0	0	0	0
1	21	3	0	0	0	0
1	21	4	0	0	0	0
1	21	5	0	0	0	0
1	21	6	0	0	0	0
1	21	7	207.796	0	0	0
1	21	8	8231.258	7449.555	0	7449.555
1	21	9	14236.114	13325.888	0	13325.888
1	21	10	12478.273	11606.807	0	11606.807
1	21	11	54269.5	52221.988	0	52221.988
1	21	12	33028.75	31645.391	0	31645.391
1	21	13	50072.25	48166.863	0	48166.863
1	21	14	23040.604	21922.092	0	21922.092
1	21	15	19404.684	18375.045	0	18375.045
1	21	16	12667.508	11791.913	0	11791.913
1	21	17	0	0	0	0
1	21	18	0	0	0	0
1	21	19	0	0	0	0
1	21	20	0	0	0	0
1	21	21	0	0	0	0
1	21	22	0	0	0	0
1	21	23	0	0	0	0

FEBRUARY 21st

Sunset 5:30 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
2	21	0	0	0	0	0
2	21	1	0	0	0	0
2	21	2	0	0	0	0
2	21	3	0	0	0	0
2	21	4	0	0	0	0
2	21	5	0	0	0	0
2	21	6	0	0	0	0
2	21	7	3808.324	3114.27	0	3114.27
2	21	8	14538.129	13621.148	0	13621.148
2	21	9	31872.598	30521.449	0	30521.449
2	21	10	49319.625	47439.156	0	47439.156
2	21	11	57050.902	54906.258	0	54906.258
2	21	12	59015.305	56800.637	0	56800.637
2	21	13	68050.945	65499.074	0	65499.074
2	21	14	63384.918	61010.285	0	61010.285
2	21	15	43235.98	41550.598	0	41550.598
2	21	16	23667.186	22532.953	0	22532.953
2	21	17	3803.679	3109.714	0	3109.714
2	21	18	0	0	0	0
2	21	19	0	0	0	0
2	21	20	0	0	0	0
2	21	21	0	0	0	0
2	21	22	0	0	0	0
2	21	23	0	0	0	0

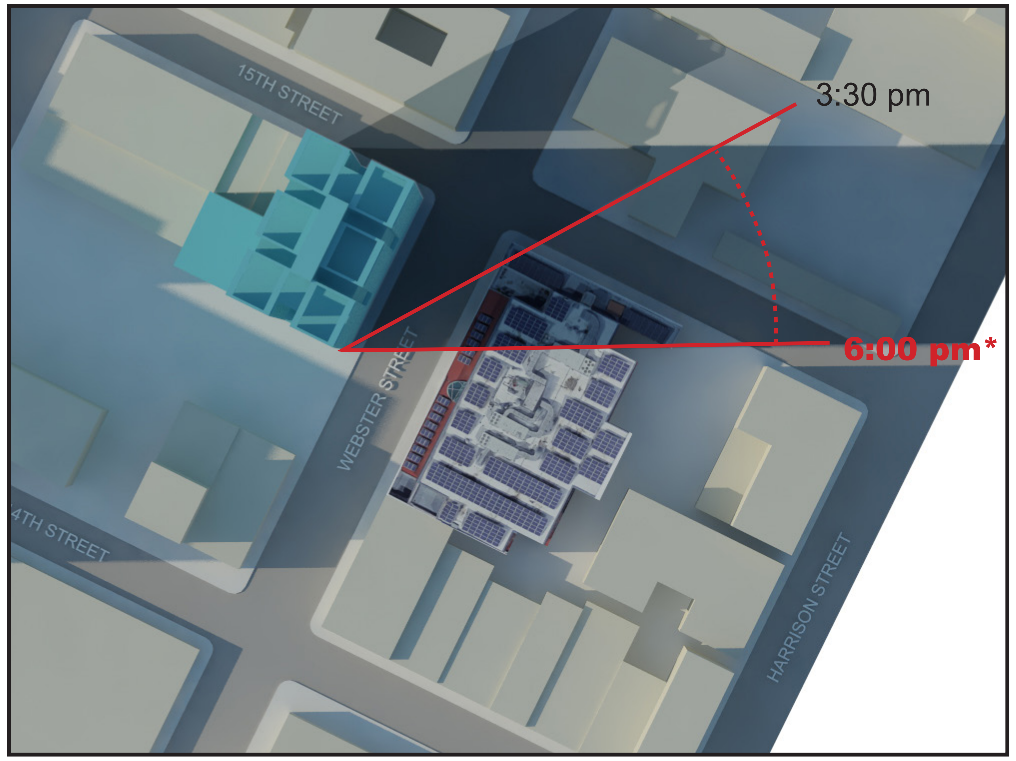
MARCH 21st

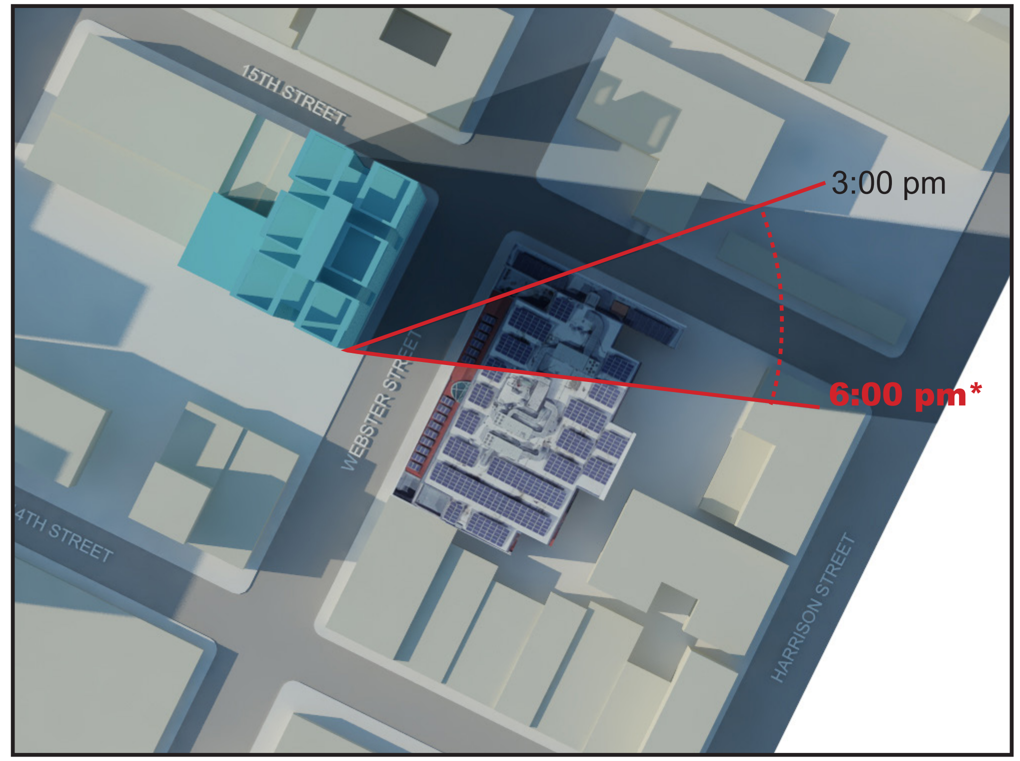
Sunset 7:04 pm

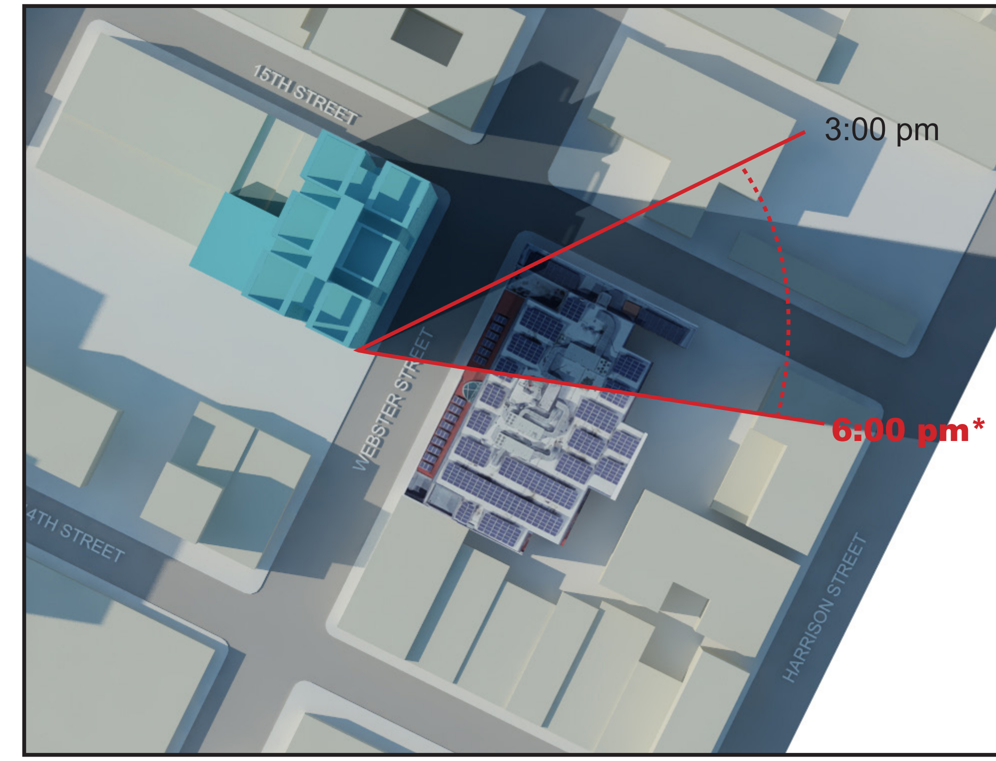
* Last hour of PV output: 5:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
3	21	0	0	0	0	0
3	21	1	0	0	0	0
3	21	2	0	0	0	0
3	21	3	0	0	0	0
3	21	4	0	0	0	0
3	21	5	0	0	0	0
3	21	6	1874.011	1216.418	0	1216.418
3	21	7	7598.856	6830.051	0	6830.051
3	21	8	24559.33	23402.504	0	23402.504
3	21	9	16179.048	15224.886	0	15224.886
3	21	10	58965.961	56753.066	0	56753.066
3	21	11	36899.738	35405.574	0	35405.574
3	21	12	43804.008	42100.887	0	42100.887
3	21	13	21231.227	20157.445	0	20157.445
3	21	14	22714.711	21604.328	0	21604.328
3	21	15	28714.67	27449.428	0	27449.428
3	21	16	12387.458	11517.968	0.08	10596.5306
3	21	17	10984.865	10145.589	0.16022099	8520.05264
3	21	18	201.475	0	0	0
3	21	19	0	0	0	0
3	21	20	0	0	0	0
3	21	21	0	0	0	0
3	21	22	0	0	0	0
3	21	23	0	0	0	0

04 SHADOW IMPACT ON SOLAR COLLECTORS







APRIL 21st

Sunset 7:39 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
4	21	0	0	0	0	0
4	21	1	0	0	0	0
4	21	2	0	0	0	0
4	21	3	0	0	0	0
4	21	4	0	0	0	0
4	21	5	90.479	0	0	0
4	21	6	5223.912	4502.454	0	4502.454
4	21	7	17158.521	16181.776	0	16181.776
4	21	8	34413.738	32991.258	0	32991.258
4	21	9	56825.332	54688.648	0	54688.648
4	21	10	76086.313	73213.703	0	73213.703
4	21	11	89589.672	86133.805	0	86133.805
4	21	12	96027.953	92274.453	0	92274.453
4	21	13	96177.203	92416.664	0	92416.664
4	21	14	69234.555	66636.68	0	66636.68
4	21	15	60673.25	58398.57	0	58398.57
4	21	16	46223.336	44443.566	0.12	39110.3381
4	21	17	29551.418	28263.709	0.23585022	21597.7072
4	21	18	4941.591	4225.646	0.35	2746.6699
4	21	19	0	0	0	0
4	21	20	0	0	0	0
4	21	21	0	0	0	0
4	21	22	0	0	0	0
4	21	23	0	0	0	0

MAY 21st

Sunset 8:10 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
5	21	0	0	0	0	0
5	21	1	0	0	0	0
5	21	2	0	0	0	0
5	21	3	0	0	0	0
5	21	4	0	0	0	0
5	21	5	1898.225	1240.183	0	1240.183
5	21	6	5586.348	4857.775	0	4857.775
5	21	7	18861.121	17844.424	0	17844.424
5	21	8	38763.582	37214.438	0	37214.438
5	21	9	55894.574	53790.598	0	53790.598
5	21	10	68677.617	66101.445	0	66101.445
5	21	11	79427.281	76415.531	0	76415.531
5	21	12	83498.805	80312.891	0	80312.891
5	21	13	85407.172	82137.891	0	82137.891
5	21	14	79668.234	76646.32	0	76646.32
5	21	15	69264.945	66665.875	0	66665.875
5	21	16	53537.43	51515.094	0.12	45333.2827
5	21	17	31765.236	30417.059	0.23585022	23243.1891
5	21	18	0	0	0.35	0
5	21	19	0	0	0	0
5	21	20	0	0	0	0
5	21	21	0	0	0	0
5	21	22	0	0	0	0
5	21	23	0	0	0	0

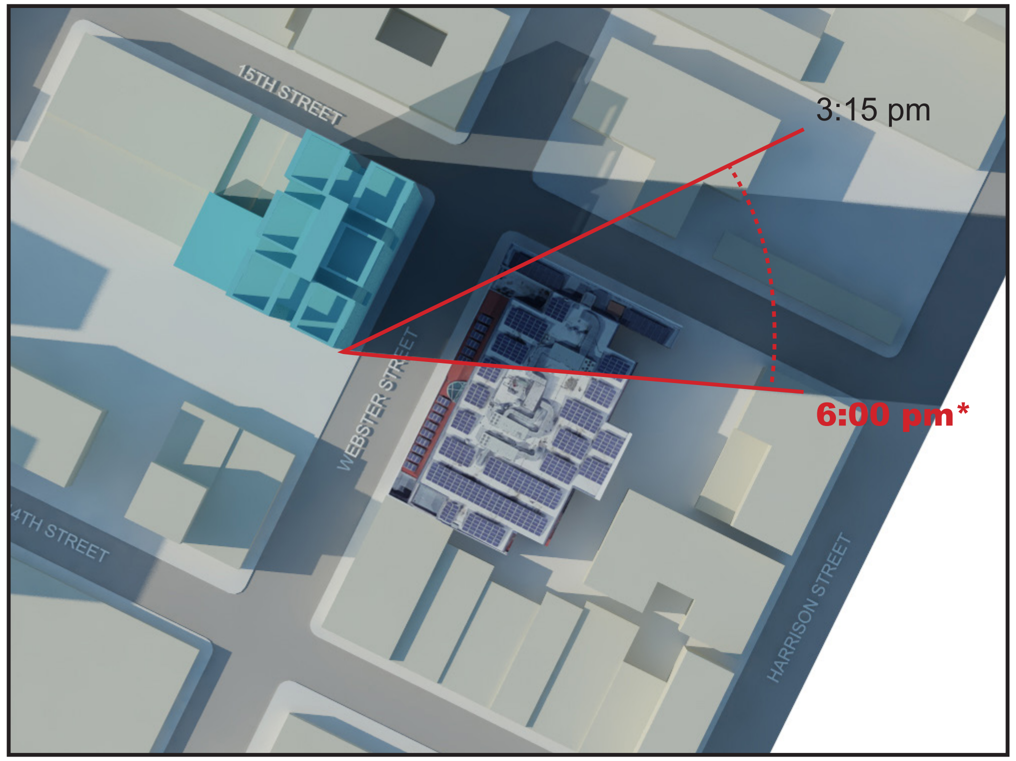
JUNE 21st

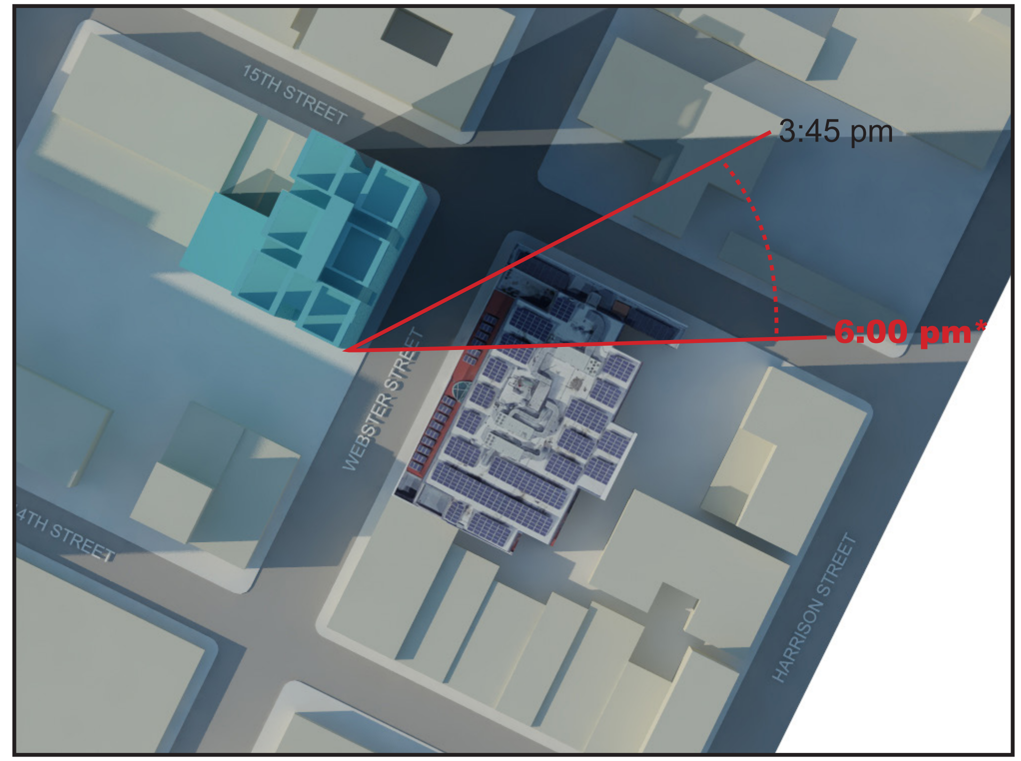
Sunset 8:35 pm

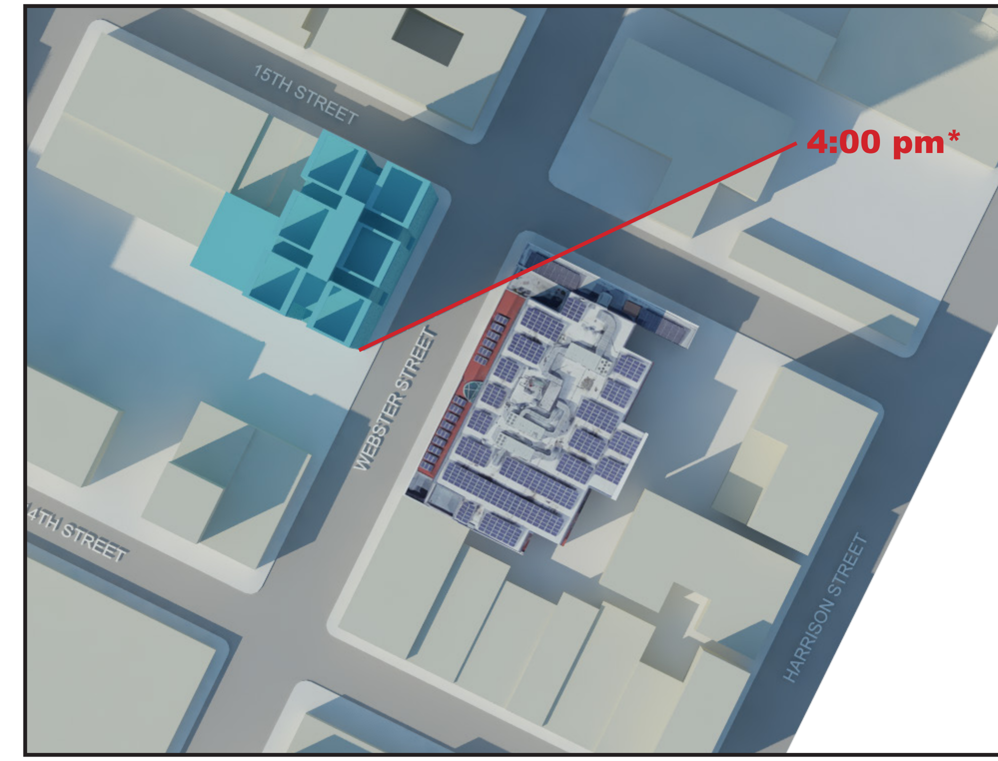
* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
6	21	0	0	0	0	0
6	21	1	0	0	0	0
6	21	2	0	0	0	0
6	21	3	0	0	0	0
6	21	4	0	0	0	0
6	21	5	1641.73	988.438	0	988.438
6	21	6	6679.67	5929.394	0	5929.394
6	21	7	13852.792	12951.098	0	12951.098
6	21	8	26392.168	25188.17	0	25188.17
6	21	9	43978.328	42269.746	0	42269.746
6	21	10	72896.578	70153.641	0	70153.641
6	21	11	84712.688	81473.875	0	81473.875
6	21	12	90116.055	86636.328	0	86636.328
6	21	13	93730.867	90085.008	0	90085.008
6	21	14	87338.766	83983.977	0	83983.977
6	21	15	69820.539	67199.727	0	67199.727
6	21	16	57364.152	55208.418	0.12	48583.4078
6	21	17	36079.125	34608.832	0.23585022	26446.3315
6	21	18	12489.798	11618.08	0.35	7551.752
6	21	19	197.402	0	0	0
6	21	20	0	0	0	0
6	21	21	0	0	0	0
6	21	22	0	0	0	0
6	21	23	0	0	0	0

05 SHADOW IMPACT ON SOLAR COLLECTORS







JULY 21st

Sunset 8:19 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
7	21	0	0	0	0	0
7	21	1	0	0	0	0
7	21	2	0	0	0	0
7	21	3	0	0	0	0
7	21	4	0	0	0	0
7	21	5	1159.826	515.407	0	515.407
7	21	6	8041.697	7263.874	0	7263.874
7	21	7	12437.765	11567.18	0	11567.18
7	21	8	16899.51	15928.765	0	15928.765
7	21	9	37867.328	36344.754	0	36344.754
7	21	10	31636.838	30292.209	0	30292.209
7	21	11	71590.805	68900.063	0	68900.063
7	21	12	85372.188	82104.445	0	82104.445
7	21	13	92905.719	89298.133	0	89298.133
7	21	14	87049.133	83707.242	0	83707.242
7	21	15	77045.742	74133.523	0	74133.523
7	21	16	58666.156	56464.02	0.05	53640.819
7	21	17	37307.359	35801.262	0.20798036	28355.3028
7	21	18	14478.104	13562.469	0.4	8137.4814
7	21	19	0	0	0	0
7	21	20	0	0	0	0
7	21	21	0	0	0	0
7	21	22	0	0	0	0
7	21	23	0	0	0	0

AUGUST 21st

Sunset 7:41 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
8	21	0	0	0	0	0
8	21	1	0	0	0	0
8	21	2	0	0	0	0
8	21	3	0	0	0	0
8	21	4	0	0	0	0
8	21	5	0	0	0	0
8	21	6	4639.901	3929.823	0	3929.823
8	21	7	15055.977	14127.351	0	14127.351
8	21	8	31265.299	29930.906	0	29930.906
8	21	9	53480.402	51460.02	0	51460.02
8	21	10	70189.094	67553.797	0	67553.797
8	21	11	82762.336	79608.305	0	79608.305
8	21	12	88983.461	85554.969	0	85554.969
8	21	13	89579.094	86123.703	0	86123.703
8	21	14	79555.938	76538.758	0	76538.758
8	21	15	69853.352	67231.25	0	67231.25
8	21	16	41516.184	39883.91	0	39883.91
8	21	17	22453.201	21349.32	0.10362185	19137.0639
8	21	18	3356.13	2670.702	0.2	2136.5616
8	21	19	0	0	0	0
8	21	20	0	0	0	0
8	21	21	0	0	0	0
8	21	22	0	0	0	0
8	21	23	0	0	0	0

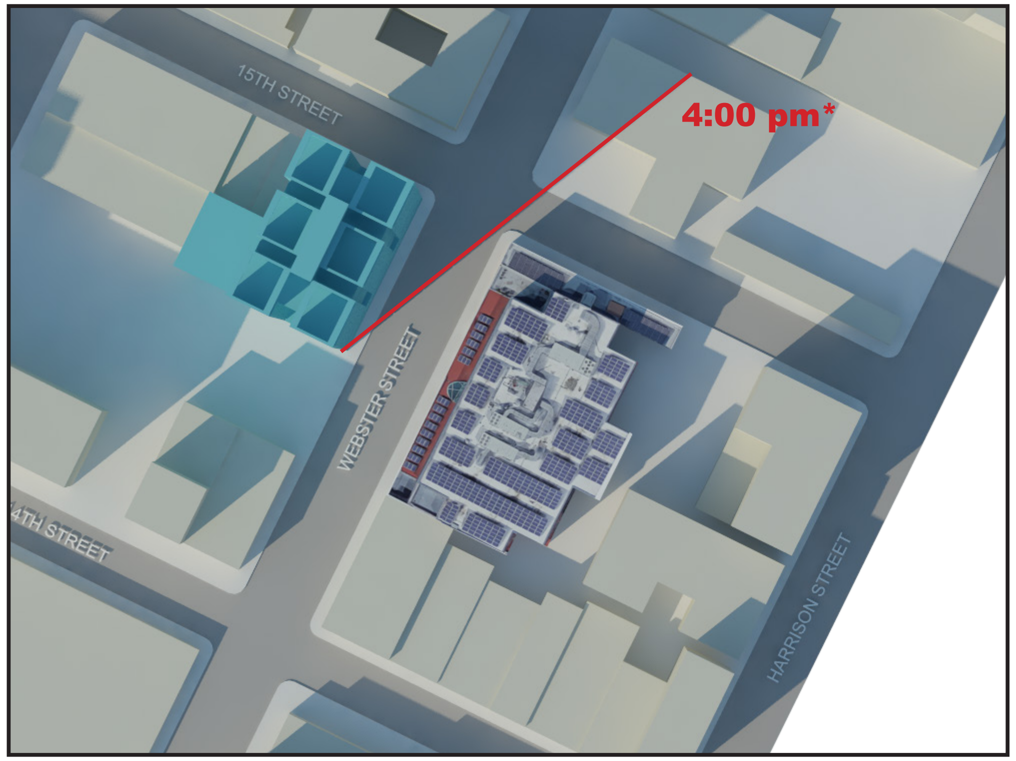
SEPTEMBER 21st

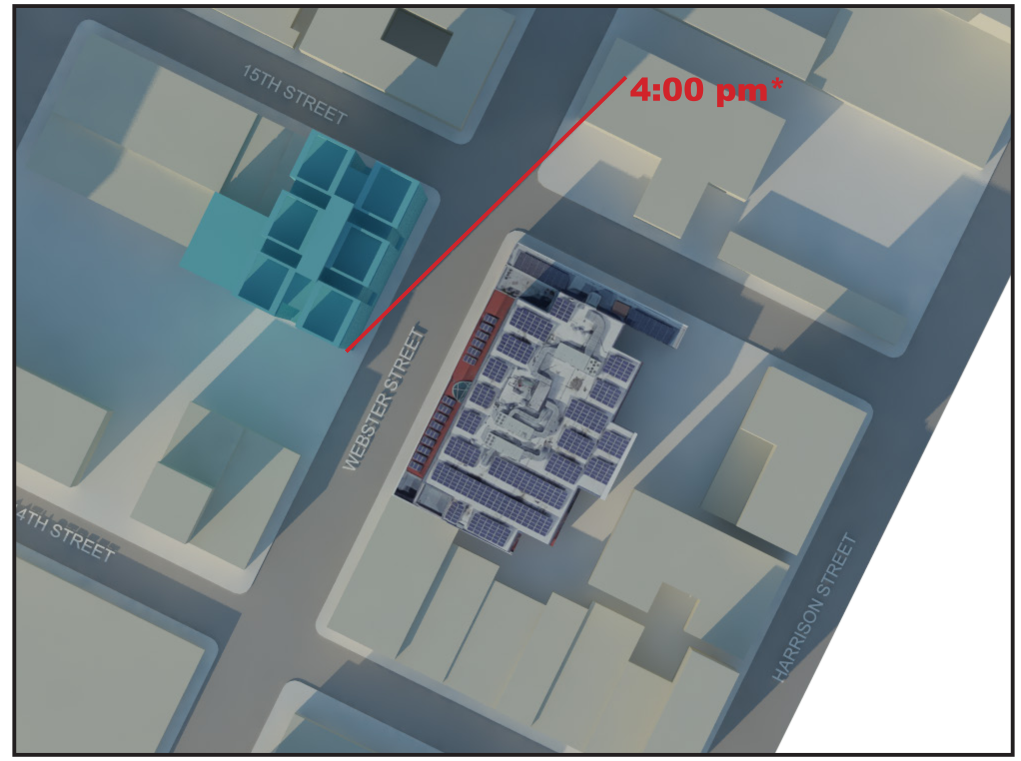
Sunset 6:49 pm

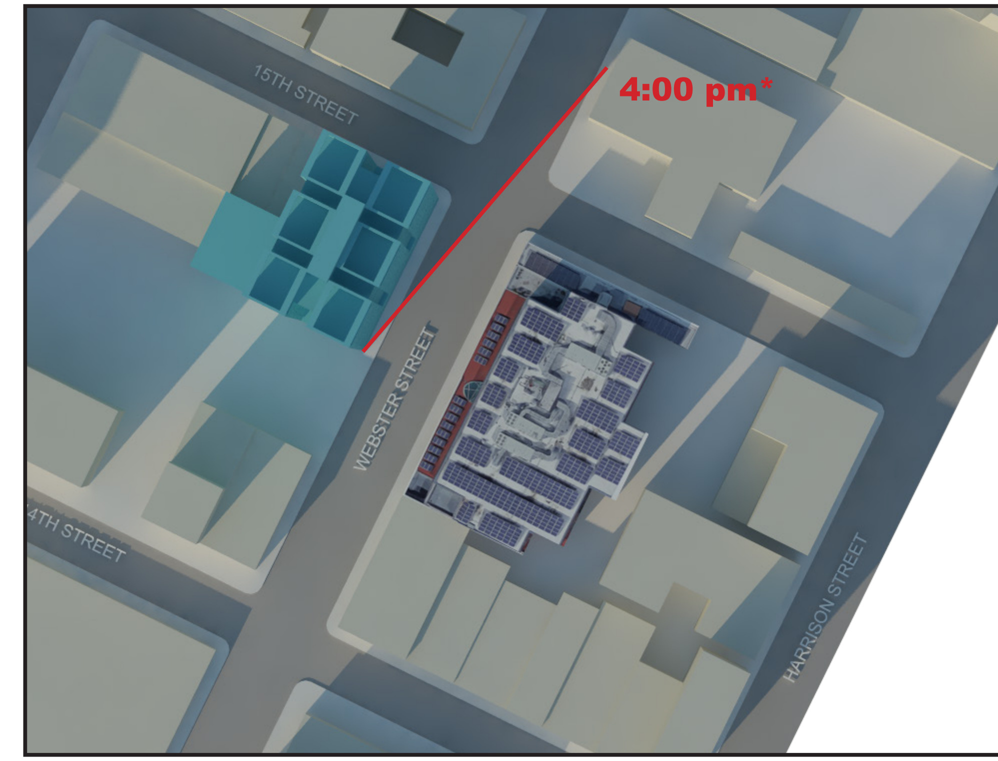
* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
9	21	0	0	0	0	0
9	21	1	0	0	0	0
9	21	2	0	0	0	0
9	21	3	0	0	0	0
9	21	4	0	0	0	0
9	21	5	0	0	0	0
9	21	6	1976.607	1317.109	0	1317.109
9	21	7	9512.285	8704.085	0	8704.085
9	21	8	28910.914	27640.422	0	27640.422
9	21	9	46738.988	44942.648	0	44942.648
9	21	10	60672.902	58398.234	0	58398.234
9	21	11	67224.18	64704.195	0	64704.195
9	21	12	83025.32	79859.922	0	79859.922
9	21	13	75838.18	72975.766	0	72975.766
9	21	14	71948.18	69243.203	0	69243.203
9	21	15	56701.789	54569.465	0	54569.465
9	21	16	34694.828	33264.336	0	33264.336
9	21	17	0	0	0	0
9	21	18	0	0	0	0
9	21	19	0	0	0	0
9	21	20	0	0	0	0
9	21	21	0	0	0	0
9	21	22	0	0	0	0
9	21	23	0	0	0	0

06 SHADOW IMPACT ON SOLAR COLLECTORS







OCTOBER 21st

Sunset 5:59 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
10	21	0	0	0	0	0
10	21	1	0	0	0	0
10	21	2	0	0	0	0
10	21	3	0	0	0	0
10	21	4	0	0	0	0
10	21	5	0	0	0	0
10	21	6	180.653	0	0	0
10	21	7	5549.477	4821.629	0	4821.629
10	21	8	23575.004	22443.092	0	22443.092
10	21	9	44898.109	43160.543	0	43160.543
10	21	10	61425.754	59123.563	0	59123.563
10	21	11	72414.031	69690.445	0	69690.445
10	21	12	73277.5	70519.242	0	70519.242
10	21	13	74736.594	71919.234	0	71919.234
10	21	14	61467.461	59163.734	0	59163.734
10	21	15	43958.332	42250.375	0	42250.375
10	21	16	22049.561	20955.672	0	20955.672
10	21	17	0	0	0	0
10	21	18	0	0	0	0
10	21	19	0	0	0	0
10	21	20	0	0	0	0
10	21	21	0	0	0	0
10	21	22	0	0	0	0
10	21	23	0	0	0	0

NOVEMBER 21st

Sunset 4:25 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
11	21	0	0	0	0	0
11	21	1	0	0	0	0
11	21	2	0	0	0	0
11	21	3	0	0	0	0
11	21	4	0	0	0	0
11	21	5	0	0	0	0
11	21	6	0	0	0	0
11	21	7	1956.338	1297.216	0	1297.216
11	21	8	14738.856	13817.372	0	13817.372
11	21	9	32984.059	31601.951	0	31601.951
11	21	10	50783.387	48854.297	0	48854.297
11	21	11	61047.488	58759.145	0	58759.145
11	21	12	63132.539	60767.301	0	60767.301
11	21	13	60294.348	58033.457	0	58033.457
11	21	14	47404.844	45586.992	0	45586.992
11	21	15	33387.746	31994.303	0	31994.303
11	21	16	9331.991	8527.551	0	8527.551
11	21	17	0	0	0	0
11	21	18	0	0	0	0
11	21	19	0	0	0	0
11	21	20	0	0	0	0
11	21	21	0	0	0	0
11	21	22	0	0	0	0
11	21	23	0	0	0	0

DECEMBER 21st

Sunset 4:23 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
12	21	0	0	0	0	0
12	21	1	0	0	0	0
12	21	2	0	0	0	0
12	21	3	0	0	0	0
12	21	4	0	0	0	0
12	21	5	0	0	0	0
12	21	6	0	0	0	0
12	21	7	216.302	0	0	0
12	21	8	8743.941	7951.694	0	7951.694
12	21	9	26534.066	25326.373	0	25326.373
12	21	10	41519.52	39887.145	0	39887.145
12	21	11	54968.516	52896.816	0	52896.816
12	21	12	58998.16	56784.105	0	56784.105
12	21	13	58449.816	56255.426	0	56255.426
12	21	14	51784.988	49822.254	0	49822.254
12	21	15	35053.258	33612.516	0	33612.516
12	21	16	10376.662	9550.301	0	9550.301
12	21	17	0	0	0	0
12	21	18	0	0	0	0
12	21	19	0	0	0	0
12	21	20	0	0	0	0
12	21	21	0	0	0	0
12	21	22	0	0	0	0
12	21	23	0	0	0	0

APPENDIX E

Pedestrian Wind Study
RWDI, Inc.
(April 2016)

1433 Webster Street

Oakland, CA

Pedestrian Wind Review

RWDI # 1601573
April 20, 2016

SUBMITTED TO

Thor Hoskins
Nautilus Group Inc.
350 Frank Ogawa Plaza
Suite 310
Oakland, CA 94612
thoskins@nautilusgrp.com

SUBMITTED BY

Rowan Williams Davies & Irwin Inc.
650 Woodlawn Road West
Guelph, Ontario, Canada N1K 1B8
T: 519.823.1311

Tomi Odunbaku, BSc.
Project Engineer
Tomi.Odunbaku@rwdi.com

Saba Saneinejad, Ph.D
Technical Coordinator
Saba.Saneinejad@rwdi.com

Frank Kriksic, BES, CET, LEED AP, CDir
Senior Project Manager / Principal
Frank.Kriksic@rwdi.com

1. Introduction

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by Nautilus Group Inc. to assess the pedestrian wind comfort and safety conditions for the proposed 1433 Webster Street development in Oakland, California. The objective of this qualitative analysis was to estimate the pedestrian wind conditions around the proposed development. This assessment is based on the following:

- a review of regional long-term meteorological data for the Oakland area;
- the 3D model of the proposed development received by RWDI on February 29, 2016;
- our engineering judgment and knowledge of wind flows around buildings [1] [2];
- use of software developed by RWDI (*WindEstimator*[2]) for estimating the potential wind comfort conditions around generalized building forms;
- our experience of wind tunnel modelling of other building projects in Oakland;
- The use of RWDI's proprietary Computational Fluid Dynamics (CFD) software *Virtualwind*™ for visualizing wind flow patterns.

Prior to wind tunnel testing, this qualitative approach provides a screening-level estimation of potential wind conditions and identifies anticipated areas of accelerated wind speeds or areas of relative calm. Note that other wind issues, such as those relating to cladding and structural wind loads, door pressures, stack effect, exhaust re-entrainment, etc. are not considered in the scope of this assessment.

[1] C.J. Williams, H. Wu, W.F. Waechter and H.A. Baker (1999). "Experience with Remedial Solutions to Control Pedestrian Wind Problems". *10th International Conference on Wind Engineering*. Copenhagen, Denmark.
[2] H. Wu, C.J. Williams, H.A. Baker and W.F. Waechter (2004). "Knowledge-based Desk-Top Analysis of Pedestrian Wind Conditions". ASCE Structure Congress 2004. Nashville, Tennessee.

2. Building and Site Information

The project site, currently occupied by a 2-story building, is located in Central Oakland at the southeast corner of intersection of 15th Street and Webster Street (see Image 1). The site is immediately surrounded by low to mid-rise buildings in all directions. Beyond the immediate surroundings, high-rise buildings are located to the west and north, mid and low-rise buildings are located to the east and south and a lake is located about 0.5 miles to the east of the project site.

The 1433 Webster Street development will consist of a 20-storey (278 ft tall) multi-family residential building with a retail component and onsite parking garage. Please note that "Project North" is approximately 22° off "True North" as shown in the aerial view below. Hereafter references to wind directions will be based on True North and building features will be referred with respect to Project North.

Pedestrian areas on and around the development include building entrances, drop-off areas, sidewalks, lower roof amenity deck and roof terraces.

Image 1 - Aerial View of Site (highlighted in yellow) *(Courtesy of GoogleEarth™)*

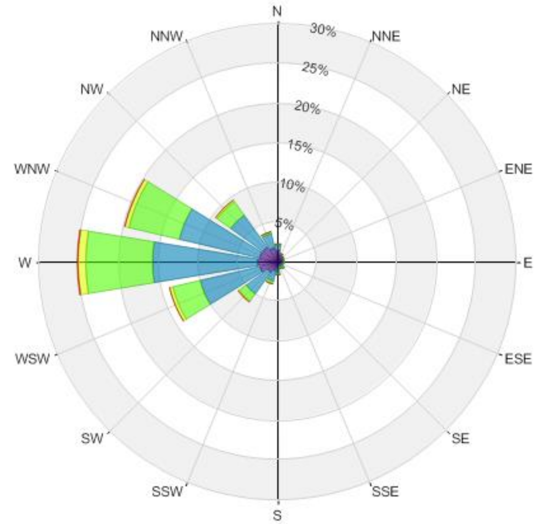
3. Meteorological Data

Meteorological data from Oakland International Airport for the period of 1982 to 2012 were used as reference for wind conditions in the region.

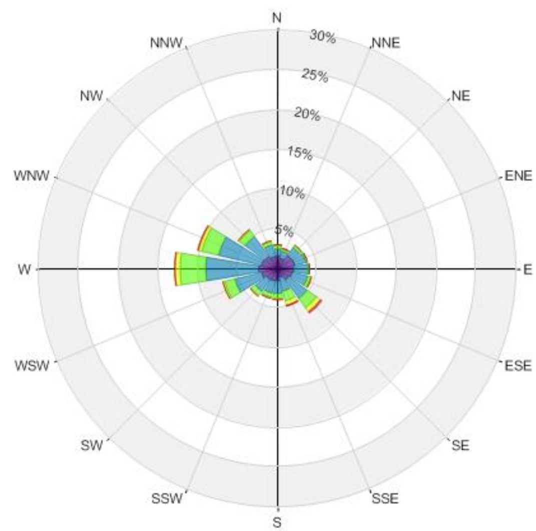
The distributions of wind frequency and directionality for summer (May through October) and winter (November through April) seasons are shown in the wind roses to the right. Winds from the west and west-northwest directions are predominant in both seasons, with secondary winds from the south-east also prevalent during the winter. Strong winds of a mean speed greater than 20 mph measured at the airport (red bands) occur more often in the winter (3.4%) than the summer (1.9%) and are predominantly from the westerly directions. These strong winds could potentially be the source of uncomfortable or even severe wind conditions, depending upon the site exposure or development design.

Based on the local wind directionality and the orientation of the buildings and streets in the area, winds from the **southeast, west and west-northwest** were selected for the *Virtualwind*™ simulations. Simulating these wind directions will provide the most representative wind impacts on pedestrian areas.

Wind Speed (mph)	Probability (%) Summer	Winter
Calm	8.2	14.5
1-5	9.2	14.2
6-10	39.1	40.9
11-15	32.0	20.0
16-20	9.7	7.0
>20	1.9	3.4



Summer Winds
(May – October)



Winter Winds
(November – April)

Image 2 - Directional Distribution (%) of Winds (Blowing From)
Metropolitan Oakland International Airport (1982– 2012**)**

4. Computer Model

Wind flows around the proposed development and its surroundings were simulated using *Virtualwind*™, which is a proprietary software developed by RWDI for the qualitative assessment of pedestrian wind conditions. The prevailing winds from the west and west-northwest, as well as secondary winds from the southeast were simulated for the 1433 Webster Street project.

Two configurations of the study site and surroundings were simulated:

1) Existing Configuration: with existing surroundings, in the absence of the Proposed Development (see Image 3); and

2) Project Configuration: with the existing surrounding and the proposed 1433 Webster Street development (see Image 4)

In both Configurations, the nearby relevant surrounding buildings were modeled with sufficient massing details that would affect wind flows in the area; however landscaping was not considered at this stage of the assessment.

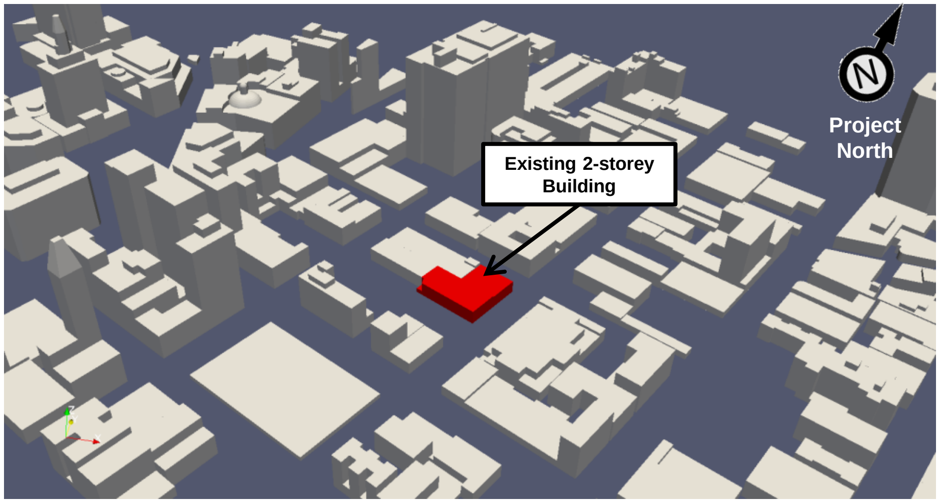


Image 3 – Computer model of the Existing Configuration: Existing Project Site (red) and Surroundings

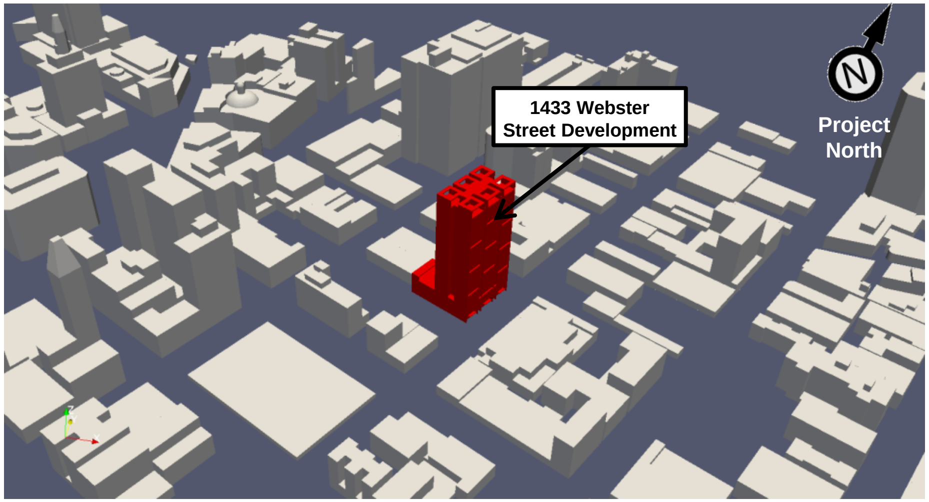


Image 4 - Computer model of the Project Configuration: Proposed Project (red) and Existing Surroundings

5. RWDI Wind Comfort Criteria

The RWDI wind comfort criteria deal with both pedestrian safety and comfort, as they relate to the force of the wind. Thermal effects (e.g., temperature, humidity, sun/shade, wind chill in cold regions, etc.) are not considered in these comfort criteria. These criteria, developed by RWDI through research and consulting practice since 1974, have been published in numerous academic journals and conference proceedings. They have also been widely accepted by municipal authorities as well as by the building design and city planning community. RWDI's criteria have been used in over 2500 pedestrian wind projects and adopted as part of environmental planning guidelines by several major cities around the world. The pedestrian wind comfort criteria used in this assessment are categorized by four typical pedestrian activities:

Sitting: Calm or light breezes desired for outdoor restaurants and seating areas where one can read a paper without having it blown away.

Standing: Gentle breezes suitable for main building entrances and bus stops.

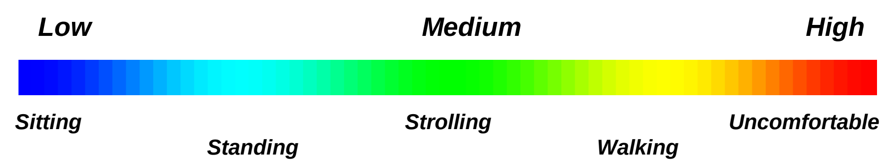
Strolling: Moderate winds that would be appropriate for window shopping and strolling along a downtown street, plaza or park.

Walking: Relatively high speeds that can be tolerated if one's objective is to walk, run or cycle without lingering.

Wind conditions are considered suitable for sitting, standing, strolling or walking if the appropriate wind speeds are expected for at least four out of five days (80% of the time). An **uncomfortable** designation means that the criterion for walking is not satisfied.

Safety is also considered by the criteria and is associated with excessive gust wind speeds that can adversely affect a pedestrian's balance and footing. If winds sufficient to affect a person's balance occur more than 0.1% of the time, the wind conditions are considered severe. Wind control measures are typically required at locations where winds are rated as uncomfortable or they exceed the wind safety criterion.

In the *Virtualwind*™ simulations, the color of dark or light blue represents low wind speed areas comfortable for sitting or standing; green indicates medium wind speeds comfortable for strolling, and yellow regions are associated with higher winds speeds comfortable for walking. The red regions are associated with the highest wind speed that may not be suitable for pedestrian usage.



These comfort conditions are approximate and intended for reference; to determine overall wind comfort for an area, all wind directions need to be taken into consideration.

Winds approaching from the southeast, west and west-northwest were simulated in *Virtualwind*™ for this study. The results of the CFD simulations are presented in the following images and provide a qualitative depiction of the mean wind speeds, representative of the overall wind comfort. The images are taken on a horizontal plane that is 5 ft above the concerned level (ground floor or roof terrace level). The effect of wind flows on pedestrian comfort are described and conceptual mitigation measures are suggested, where necessary.

6. Results of Assessment – Overall Mean Wind Speeds

6.1 Existing Configuration

6.1.1 Grade Level Areas

West Wind Direction

When winds are approaching from the west direction, wind conditions on and around the project site are generally expected to be suitable for sitting (dark blue) or standing (light blue) (see Image 5). Areas with slightly higher wind speed, suitable for strolling (green), are expected along 14th Street. These conditions are suitable for the intended use of the grade level areas.

West-northwest Wind Direction

When winds are approaching from the west-northwest direction (see Image 6), slightly higher wind speeds, comfortable for walking (yellow) or strolling (green) are expected along 15th Street and Franklin Street, as well as along 14th Street. These wind conditions are appropriate for active pedestrian usage along sidewalks.

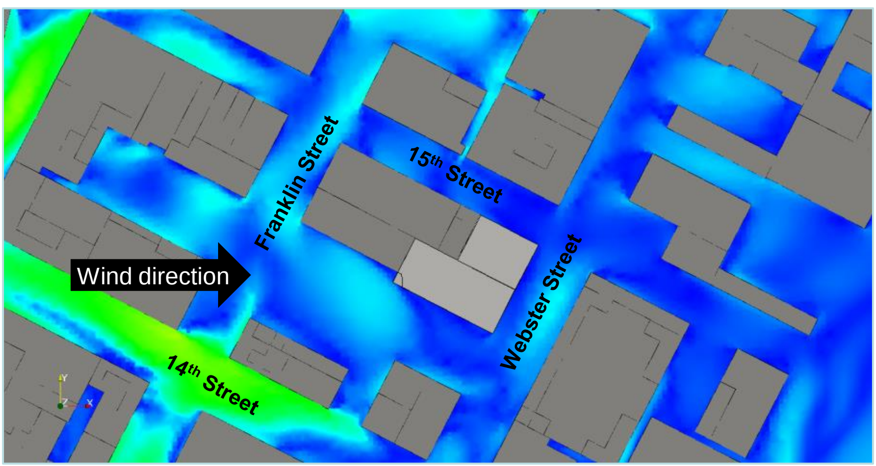
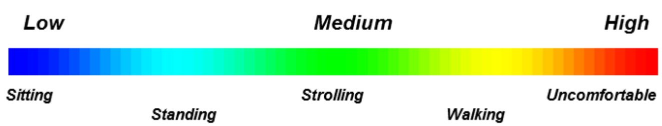


Image 5 - Winds Approaching From West Direction



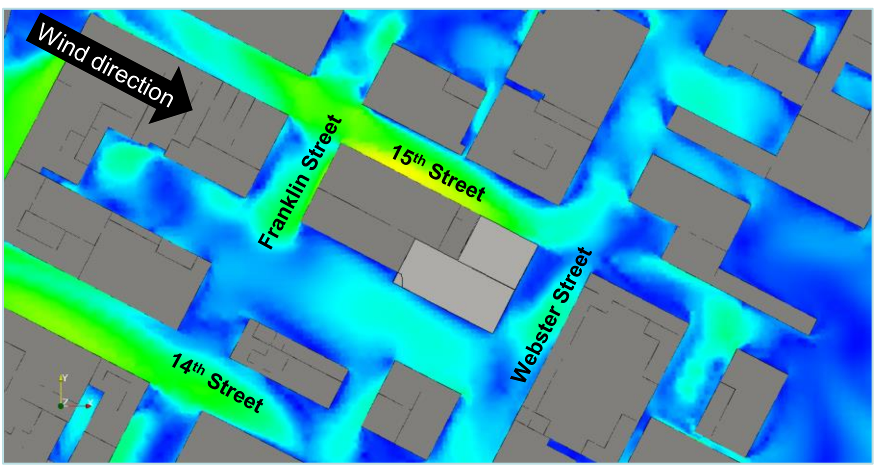


Image 6 - Winds Approaching From West-northwest Direction

6. Results of Assessment – Overall Mean Wind Speeds (Continued)

Southeast Wind Direction

When winds are approaching from the southeast direction, wind conditions on and around the site range from comfortable for sitting (dark blue) to strolling (green), which is suitable for pedestrian usage (see Image 7). On windy days, uncomfortable wind conditions are expected along 14th Street to the west of Franklin Street. It should be noted that winds from the southeast direction occur during the winter and are less frequent than the westerly and west-northwesterly winds (see wind roses in Image 2).

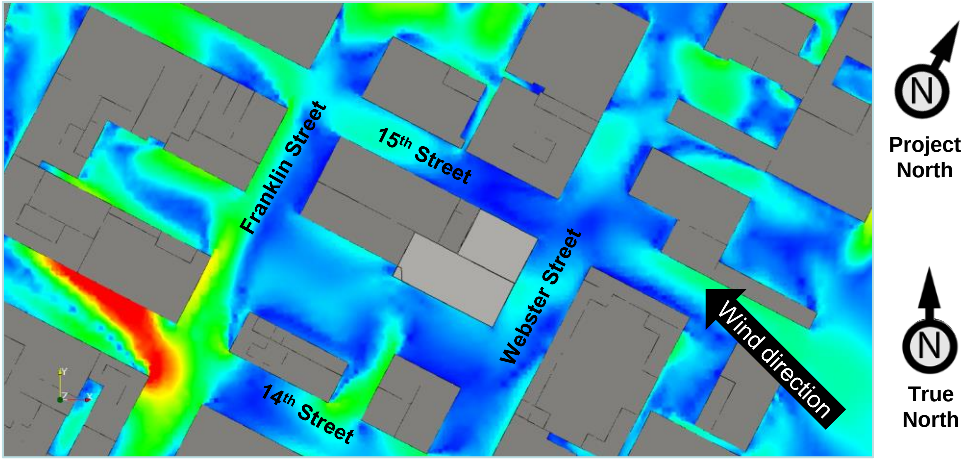
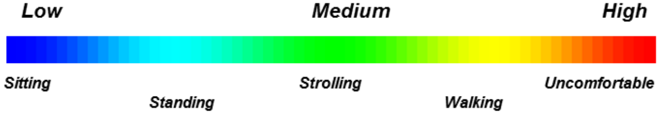


Image 7 - Winds Approaching From Southeast Direction



6. Results of Assessment – Overall Mean Wind Speeds (Continued)

6.2 Project Configuration

6.2.1 Grade Level Areas

West Wind Direction

With the introduction of the proposed project, when winds are approaching from the west direction, winds immediately around the project are predicted to increase slightly. This is due to the presence of a taller building among relatively lower surroundings. Winds suitable for strolling are expected at the intersection of 15th Street and Webster Street. Wind conditions at the main building entrances along the east façade (marked by red triangles in Image 8) are generally expected to be suitable for sitting or standing which is appropriate (see Image 8).

West-northwest Wind Direction

When winds are approaching from the west-northwest direction (see Image 9), winds immediately around the project are predicted to increase slightly. Winds comfortable for strolling or walking are at the intersection of 15th Street and Webster Street (at the corner of the existing building to the north) as well as to the south and east of the proposed development. These wind conditions are appropriate for active pedestrian usage along sidewalks. Wind conditions at all entrances along the east facade are still expected to be comfortable for sitting or standing, which is ideal for the intended use.

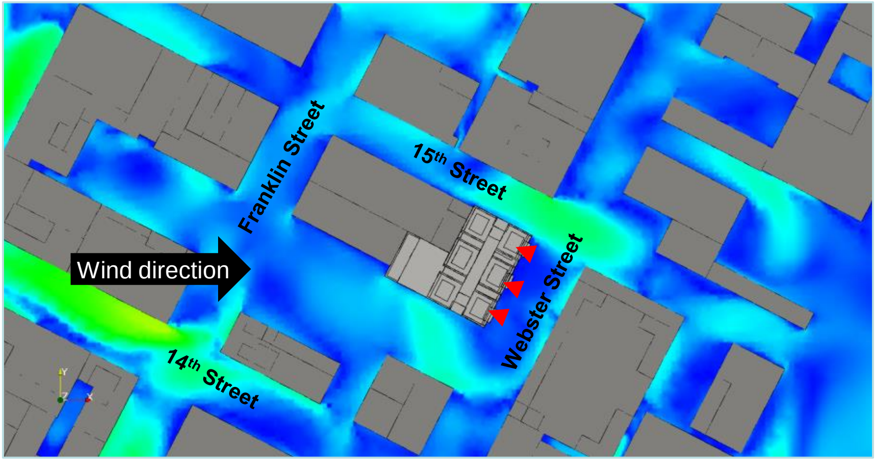


Image 8 - Winds Approaching From West Direction

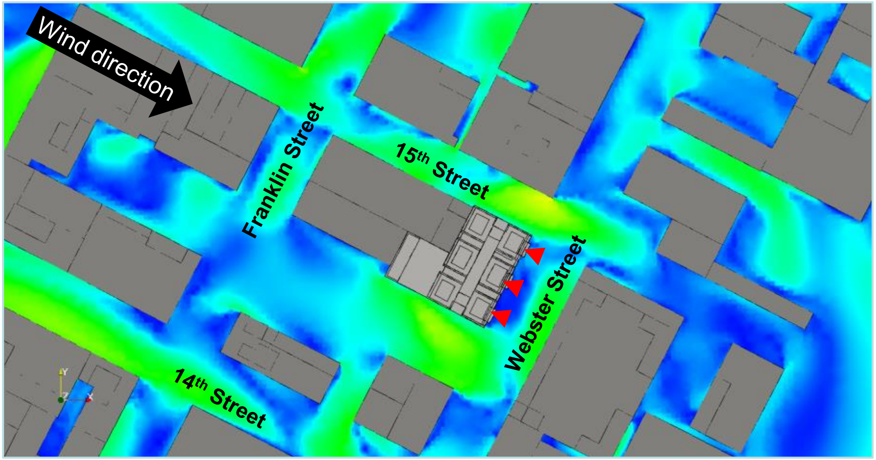
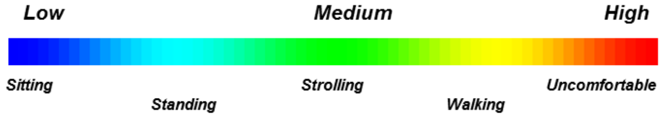


Image 9 - Winds Approaching From West-northwest Direction



6. Results of Assessment – Overall Mean Wind Speeds (Continued)

Southeast Wind Direction

When winds are approaching from the southeast direction, higher wind speeds are predicted at the areas to the north, east and south of the proposed development, compared to the existing conditions (see Image 10). Uncomfortable wind conditions are expected to the north of the project site, along 15th Street as well as at the northeast corner of the proposed development. These wind conditions, which were not present in the existing configuration, are a result of southeasterly winds downwashing off the tall east building façade and accelerating around the northeast building corner (see Image 11). No locations at the grade level on and around the proposed development are expected to exceed the wind safety criteria. Wind conditions at the entrances along the east building facade (marked by red triangles in Image 10) are expected to be comfortable for sitting to strolling. Strolling conditions are slightly higher than desired for a main entrance where pedestrian are apt to linger. It should be noted that winds from the southeast direction occur during the winter season and are less frequent than the westerly and west-northwesterly winds (see wind roses in Image 2).

The existing building at the northwest corner of intersection of 15th and Webster St is a historic building "Envision Academy" (see Image 12). The main entrances to this building are along Webster St. therefore the uncomfortable wind conditions along 15th St are not expected to negatively impact this building. Slightly higher wind speeds compared to the existing conditions, comfortable for strolling or walking, are expected at the location of the entrances on Webster St. These conditions are slightly higher than desired for an entrance area where people are apt to linger. However; since they are caused by infrequent southeasterly winds which occur during the winter months, when limited prolonged pedestrian activities are expected at the entrances, these conditions are considered acceptable.

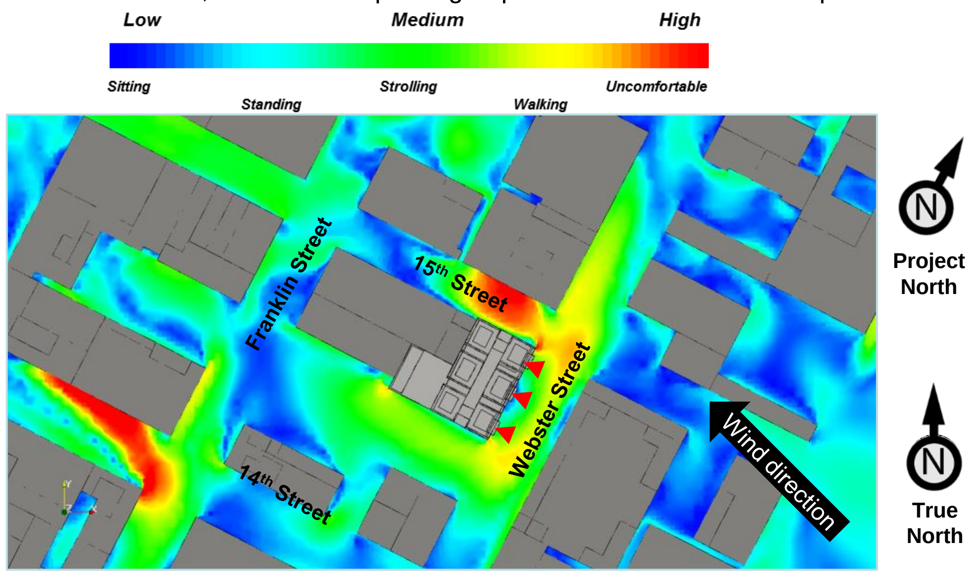


Image 10 - Winds Approaching From Southeast Direction

6. Results of Assessment – Overall Mean Wind Speeds (Continued)

Southeast Wind Direction (Continued)

It is noted that canopies over the main entrances of the building are already considered as part of the proposed development (see Image 13 below). These canopies are positive design features which protect the entrances by redirecting the winds downwashing off the east facade away from the entrance locations. However, their effect can be improved by making these a continuous canopy along the entire east façade and wrapping it around the northeast building corner. This modification is also expected to improve the uncomfortable wind conditions at the northeast building corner. Examples of this mitigation measure are shown in Image 20 on page 16.

Downwashing Flow occurs when tall buildings intercept the stronger winds at higher elevations and redirect them toward ground level.

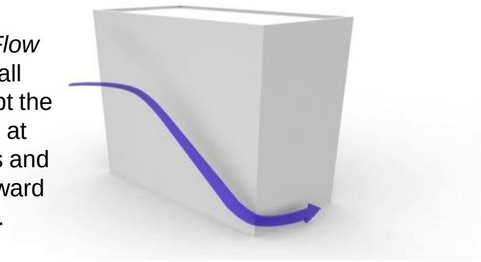


Image 11 - Downwashing Flow

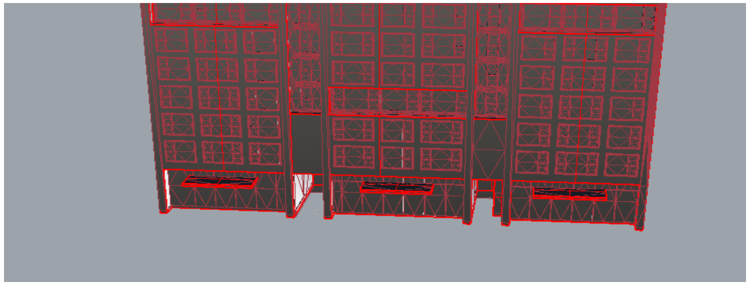


Image 13 – Proposed Canopies over main entrances facing Webster Street

Image 12– Historic Building "Envision Academy" at the Northwest Corner of Intersection of 15th and Webster St. (*Courtesy of Design Team)*

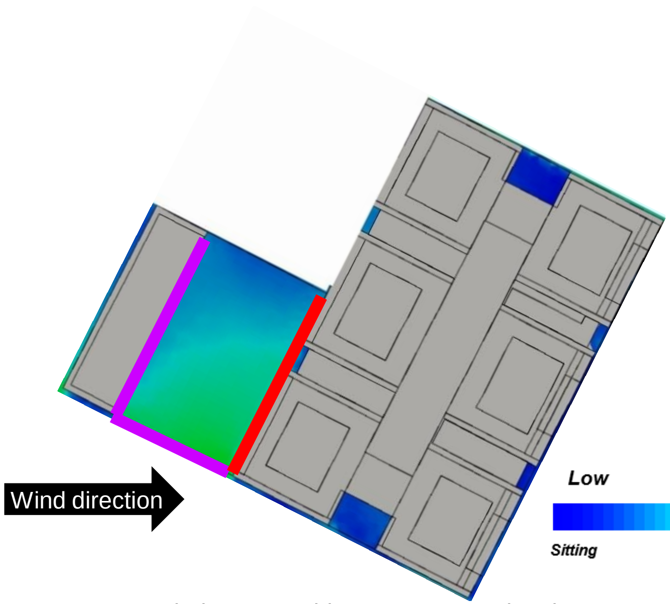
6. Results of Assessment – Overall Mean Wind Speeds (Continued)

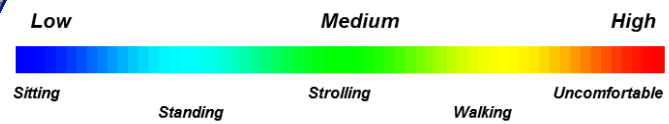
6.2.2 Lower Roof Amenity Deck Level

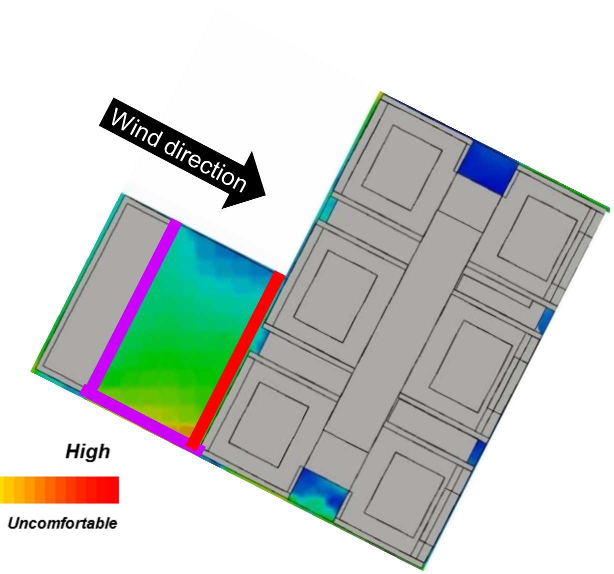
This sections describes the wind conditions at the lower roof amenity deck, located to the west of the Proposed Development. Ideally, sitting or standing conditions would be desired on terraces and elevated amenity spaces.

West and West-northwest Wind Direction

When winds are approaching from the west and west-northwest directions, conditions suitable for sitting or standing are anticipated in the northern part of the podium terrace area, whereas higher wind speeds, comfortable for strolling or walking are expected along the southern part of the terrace (see Images 14 and 15). Occasional uncomfortable conditions are also predicted at the southern part of this area when wind approach from the west-northwest direction (see Image 15). Strolling and walking wind conditions at this level are higher than desired for the intended amenity use where prolonged pedestrian activities are expected. These conditions are caused when the prevailing winds are redirected down the tall west building façade, and approach the podium (see Image 11). If improved wind comfort is desired in this area, it is recommended to install canopies or trellises along the west building façade, to help redirecting winds away from the podium (located indicated by red in Image 14 and 15). Additionally, installing tall porous parapets (6-8ft tall and 20-30% porous) along the west and south edge of the terrace (as shown by the purple line in Images 14 and 15) are expected to help to improve the conditions. Examples of these mitigation measures are shown in Image 20 on page 16.







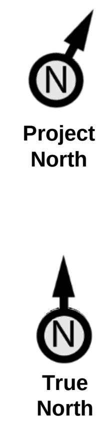


Image 14 - Winds Approaching From West Direction

Image 15 - Winds Approaching From West-northwest Direction

6. Results of Assessment – Overall Mean Wind Speeds (Continued)

Southeast Wind Direction

When winds are approaching from the southeast direction, sitting to strolling conditions are expected to be experienced throughout most of the terrace area, while higher wind speeds comfortable for walking or occasionally uncomfortable are expected at the southwest corner of the terrace area (see Image 16). These higher wind speeds are the results of acceleration of the southeasterly winds round the southwest corner of the tower. These winds mainly occur during the winter months and are less frequent than the westerly and west-northwesterly winds, therefore these high wind speeds are not expected to occur frequently and won't typically be experienced during the summer months when these areas will be more frequently used. If more comfortable conditions during the winter months are desired, we recommend installing tall porous parapets (6-8ft tall and 20-30% porous) along the south-facing edge of the terrace (purple line in Image 16 below). Examples are shown on page 16.

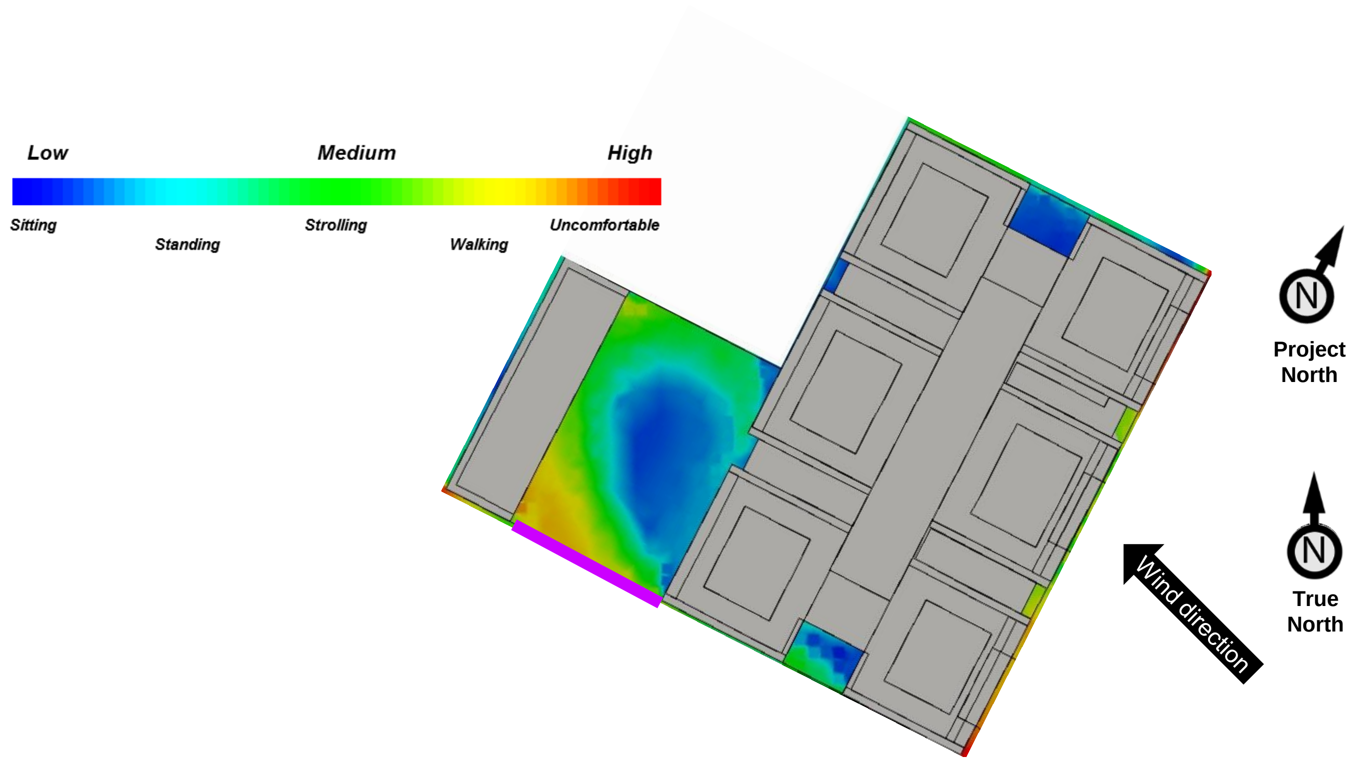


Image 16 - Winds Approaching From Southeast Direction

6. Results of Assessment – Overall Mean Wind Speeds (Continued)

6.2.3 Level 20 Roof Terrace

This sections describes the wind conditions at Level 20 roof terraces. Ideally, sitting or standing conditions would be desired on terraces and elevated amenity spaces.

West and West-northwest Wind Directions

Wind conditions for when winds are approaching from the west and west-northwest directions are shown in Images 17 and 18 respectively. For both wind directions, wind conditions are expected to be suitable for sitting and standing at the middle east terrace while higher wind speeds comfortable for standing to walking with localized areas of uncomfortable conditions, are predicted at other terraces. These conditions are due to exposure of the terraces to the prevailing westerly and west-northwesterly winds. Strolling or walking conditions are higher than desired for a roof terrace where prolonged pedestrian activities are expected. In order to improve the conditions at these terraces, we recommend installing tall porous parapets (6-8ft tall and 20-30% porous) along the west edges of the west terraces (purple lines in Images 17 and 18). Additionally, tall planters and wind screens can be placed around the areas where sitting activities are expected to provide zones of localized wind protection. Examples of these mitigation measures are shown in Image 20 on page 16.

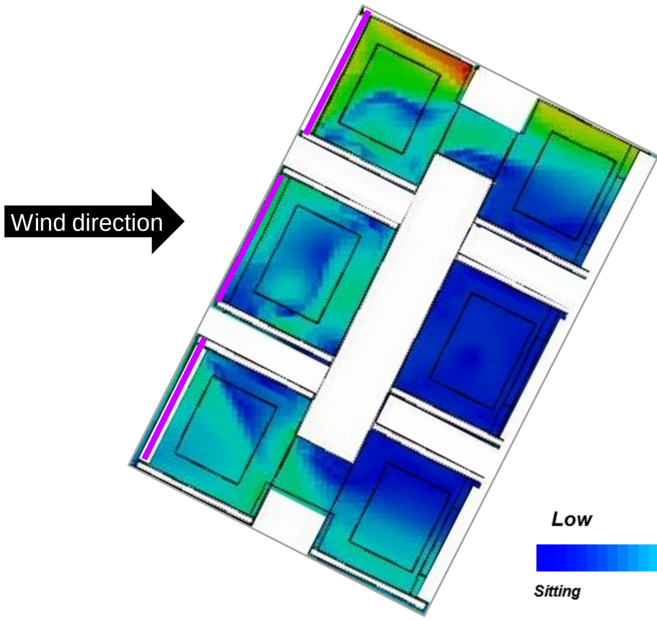
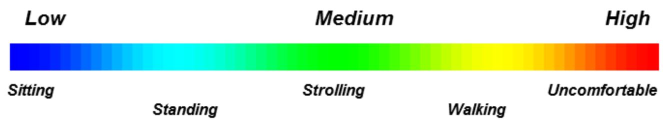


Image 17 - Winds Approaching From West Direction



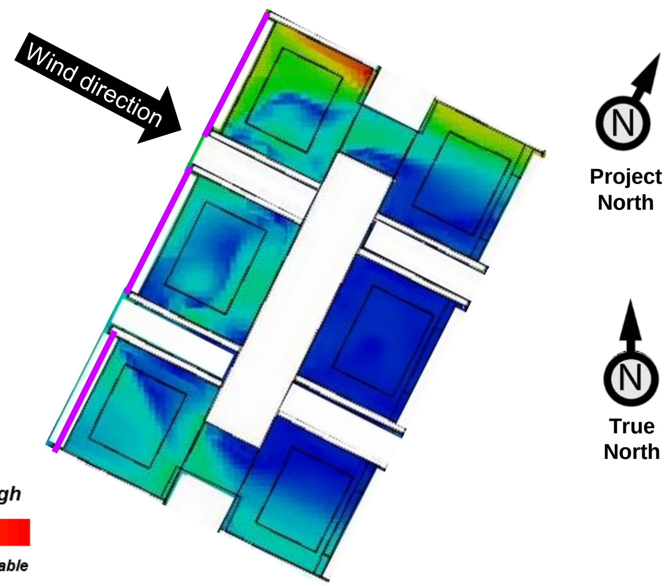


Image 18 - Winds Approaching From West-northwest Direction

RWDI
CONSULTING ENGINEERS & SCIENTISTS

6. Results of Assessment – Overall Mean Wind Speeds (Continued)

Southeast Wind Direction

When winds are approaching from the southeast direction, sitting and standing conditions are expected at the west and northwest terraces, while higher wind speeds comfortable for strolling or walking as well as localized uncomfortable areas are expected at the south and east terraces (see Image 19). The safety criteria is also expected to exceed at localized areas where uncomfortable conditions are predicted.

The high wind speeds at the east and south terraces are due to exposure of these areas to the strong southeasterly winds. These winds mainly occur during the winter months and are less frequent than the westerly and west-northwesterly winds, therefore these high wind speeds are not expected to occur frequently and won’t typically be experienced during the summer months when these areas will be more frequently used. However if more comfortable wind conditions at these areas are desired during the winter, we recommend to install tall porous parapets (6-8ft tall and 20-30% porous) along the south and east edges of these terraces (purple lines in Image 19) . Additionally, tall planters and wind screens can be placed around the areas where sitting activities are expected to provide zones of localized wind protection. Examples are shown on page 16.

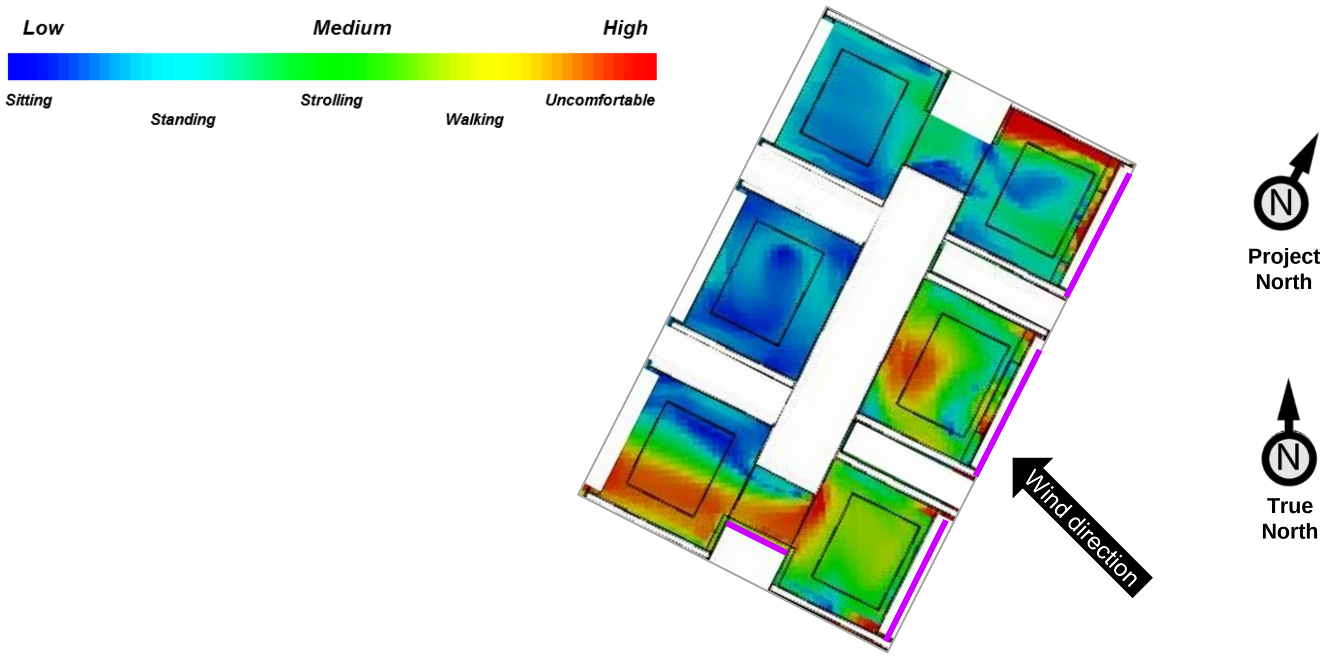


Image 19 - Winds Approaching From Southeast Direction

6. Results of Assessment – Overall Mean Wind Speeds (Continued)

6.3 Updated 1433 Webster Street Geometry

RWDI received adjusted building envelope geometry for the 1433 Webster Street Project on March 31st 2016.

The new geometry is approximately 27 ft taller than the geometry used for the current report (305 ft tall for the new geometry vs 278 ft tall for the old geometry).

It is our opinion that this increase in building height will not significantly alter the results and conclusions presented in this report.

7. Summary

A qualitative analysis was conducted to estimate the pedestrian wind conditions within and around the proposed 1433 Webster Street development. Three significant wind directions, southeast, west and west-northwest, were simulated in this assessment and the resulting wind conditions were predicted.

Overall, wind conditions at grade level become slightly windier with the introduction of the proposed development. However the majority of locations remain suitable for the intended pedestrian usage. Higher wind speeds at the entrance locations and uncomfortable conditions to the north and at the northeast corner of the proposed development are predicted for the less frequent southeast direction. If lower wind speeds are desired, we recommend installing overhead canopies along the east building façade, wrapping around the northeast building corner to redirect winds away from the grade level. No locations at the grade level on and around the proposed development are expected to exceed the wind safety criteria.

Conditions at the lower amenity deck level are anticipated to be windier than desired for the intended terrace amenity space, with localised areas of walking or uncomfortable conditions. Wind mitigation measures such as canopies and tall porous parapets at this level are suggested.

Wind speeds are expected to be higher than desired on the Level 20 roof terrace, with uncomfortable or potentially unsafe conditions observed at localized areas. Wind control measures are recommended for these areas in the form of tall parapets, landscaping and vertical wind screens.

8. Applicability of Results

In the event of further significant changes to the design, construction or operation of the building or addition of surroundings in the future, RWDI could provide an assessment of their impact on the design considered in this report. It is the responsibility of others to contact RWDI to initiate this process.

Image 20 - Examples of wind control measures

Attachment F:
Air Quality, GHG and Health Risk Analysis

1433 WEBSTER STREET MIXED USE DEVELOPMENT AIR QUALITY ASSESSMENT

Oakland, California

December 15th, 2016
Updated January 2018

Prepared for:

Nathaniel Taylor
Lamphier-Gregory
1944 Embarcadero
Oakland, California 95126

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: 16-251

Introduction

The purpose of this report is to address air quality and greenhouse gas (GHG) impacts associated with the mixed-use development located at 1433 Webster Street in Oakland. The project site is currently developed with two commercial buildings. The project proposes to demolish the existing structures and construct a 29-story mixed-use facility. The proposed development would include 179 dwelling units, 1,398 square feet (sf) of ground floor and mezzanine retail space, and 57,860 sf of office space. The seventh to twenty ninth floors would be residential, and the second to fifth floors would be commercial space. The project would provide 91 puzzle lift parking spaces.

*Note that, as of January 2018, the project has been modified slightly since the analysis that was performed in late 2016. The proposed development would still include 179 dwelling units, but **1,132** sf (instead of 1,398 sf) of ground floor and mezzanine retail space, and **approximately 60,000** sf office space (instead of 57,860 sf). The seventh to twenty ninth floors would be residential, and the second to fifth floors would be commercial space. The project would provide **86** puzzle lift parking spaces (instead of 91 spaces). These differences are minor and would have no effect on this air quality analysis.*

Air pollutant and GHG emissions associated with construction and operation of the project were modeled. In addition, the potential 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 (PM_{10}), 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 (NOx). 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 (PM_{10}) and fine particulate matter where particles have a diameter of

2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} 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.

[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.

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 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 receptor to the project site includes the Envision Academy of Science and Technology just north of the project site. Additional multi-family residences are located further north and southwest of the project site.

Greenhouse Gases

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

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

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

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

Significance Thresholds

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

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

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

Table 1. Air Quality Significance Thresholds

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

City of Oakland- Standard Conditions of Approval for Air Quality

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

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

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

Basic Control Measures

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

Enhanced Control Measures

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

k. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

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

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

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

o. Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.

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

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

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

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

t. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.

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

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

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

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

y. Post a publicly-visible large on-site sign that includes the contact name and phone number for the project complaint manager responsible for responding to dust complaints and the telephone numbers of the City's Code Enforcement unit and the Bay Area Air Quality Management District. When contacted, the project complaint manager shall respond and take corrective action within 48 hours.

<u>SCA 20: Exposure to Air Pollution (Toxic Air Contaminants)</u>

The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants. The project applicant chooses to either conduct a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents/occupants/users to air pollutants or incorporate health risk reduction measures into the project that are reviewed and approved by the City. Since there are sources of TACs near the project, a screening health risk assessment was conducted.

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

The Project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to on-site stationary sources of toxic air contaminants. The project would include a diesel engine to power an emergency generator, so the requirements of SCA 21 would apply to the project.

SCA 38: Greenhouse Gas (GHG) Reduction Plan

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

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

Applicable SCAs to the project are contained in *Attachment 2*.

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 with application of SCA 19.***

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

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

Construction period emissions

CalEEMod 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. A construction build-out scenario, including equipment list and schedule, was based on information provided by the project applicant. The proposed project land uses were input into CalEEMod, which included: 179 dwelling units entered as “Apartment High Rise,” 91 spaces entered as “Enclosed Parking with Elevator,” 1,398 sf entered as “Strip Mall”, and 57,860 sf entered as “General Office Building” on a 0.41-acre site.

Approximately 18,000 cubic yards (cy) of soil export is anticipated and was entered into the model. Demolition of 25,631 sf of buildings and 25 tons of pavement is anticipated and was entered into the model. Temporary line power is planned on-site and, therefore, no generators were assumed to be used. Additionally, hauling of 50 cy of asphalt is expected during paving and was entered into the model. Inputs of 750 cement truck trips during the building construction phase were input to the model. Modeling assumed 16 cy/truck and 20 tons/truck.

The construction schedule assumes that the project would be built out over a period of approximately 16 months beginning in September 2017, or an estimated 352 construction workdays (assuming an average of 22 construction days per month).[3] Average daily emissions were computed by dividing the total construction emissions by the number of construction days. Table 2 shows average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 2, predicted the construction period emissions would not exceed the BAAQMD significance thresholds.

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

[3] The construction schedule reports an eight-month gap between the trenching and building construction phases. The duration of the construction period has been adjusted by eliminating these months where no construction activity occurred.

Table 2. Unmitigated Construction Period Emissions

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total construction emissions (tons)	2.49 tons	3.40 tons	0.15 tons	0.14 tons
Average daily emissions (pounds)[1]	14.1 lbs.	19.3 lbs.	0.85 lbs.	0.80 lbs.
BAAQMD Thresholds (pounds per day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	**No**	**No**	**No**	**No**
Notes: [1]Assumes 352 workdays.				

Operational Period Emissions

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

Land Uses

The project land uses were input to CalEEMod, as described above. An additional CalEEMod run was set up to compute the emissions from the existing land use. The land use entered was 25,145 sf as “General office Building”.

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year the build-out project could possibly be constructed and begin operating would be 2019. Emissions associated with build-out later than 2019 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.

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

Table 3. Operational Emissions

Scenario	**ROG**	**NOx**	**PM_{10}**	**$PM_{2.5}$**
Project Operational Emissions	1.99 tons	3.22 tons	1.15 tons	0.34 tons
Existing Emissions	0.19 tons	0.49 tons	0.19 tons	0.06 tons
Net Project Emissions	1.80 tons	2.73 tons	0.96 tons	0.28 tons
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	***No***	***No***	**No**	**No**
Average Daily Net Project Operational Emissions (pounds)[1]	9.9 lbs.	15.0 lbs.	5.3 lbs.	1.5 lbs.
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	**No**	**No**	**No**	**No**
[1] Assumes 365-day operation.				

Impact: Expose sensitive receptors to substantial pollutant concentrations? ***Less than significant with application of SCA 19.***

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

Project Construction Activity

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

Operational Community Risk Impacts

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 did not identify any substantial sources of mobile TAC emissions. 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. As mentioned above, the project would also include a backup generator. Community risk impacts from these sources upon the project are reported in Table 4.

<u>Off-Site Stationary Sources</u>

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 2011 screening values obtained from the Google Earth tool were adjusted using the OEHHA adjustment factor of 1.3744.[4] Sources with screening risk of zero are not included below.

- Plant 18912, which is a generator located at 427 14th Street operated by Paetec, is about 420 feet southwest of the project site. At BAAQMD's direction, risk and $PM_{2.5}$ concentrations from the facility were adjusted based on BAAQMD's *Distance Adjustment Multiplier Tool for 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 0.3 per million, HI of less than 0.001, and no $PM_{2.5}$ concentration, all of which would be below BAAQMD thresholds of significance.
- Plant 14742, which is a generator located at 393 13th Street operated by County of Alameda-GSA, is about 555 feet south of the project site. The risk and $PM_{2.5}$ concentration from the facility were adjusted using the *Distance Adjustment Multiplier Tool for Internal Combustion Engines and* OEHHA adjustment factor. Having adjusted

[4] Email Correspondence with Alison Kirk, November 15th, 2016.

for an approximate distance of 555 feet, the cancer risk was found to be 0.8 in a million, zero HI and no $PM_{2.5}$ concentration.

- Plant 19039, which is a generator located at 270 13th Street operated by Hotel Oakland, is about 555 feet southeast of the project site. The risk and $PM_{2.5}$ concentration from the facility were adjusted using the *Distance Adjustment Multiplier Tool for Internal Combustion Engines and* OEHHA adjustment factor. Having adjusted for an approximate distance of 555 feet, the cancer risk was found to be 1.0 in a million, zero HI and no $PM_{2.5}$ concentration.
- Plant 13494, which are four emergency back-up generators located at 1587 Franklin Street operated by Pacific Bell/AT&T adjacent to the project site. At BAAQMD's direction, risk and $PM_{2.5}$ 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.
- Plant 14532, which are three emergency back-up generators located at 1600 Franklin Street operated by AC Transit about 250 feet east of the project site. At BAAQMD's direction, risk and $PM_{2.5}$ 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.
- Plant 14607, which is an emergency back-up generator located at 300 frank Ogawa Plaza operated by Rotunda Partners II, is about 650 feet west of the project site. The risk and $PM_{2.5}$ concentration from the facility were adjusted using the *Distance Adjustment Multiplier Tool for Internal Combustion Engines and* OEHHA adjustment factor. Having adjusted for an approximate distance of 650 feet, the cancer risk was found to be 3.7 in a million, zero HI and a $PM_{2.5}$ concentration of less than 0.001 $\mu g/m^3$.

Modeling of the emergency back-up generators at 1587 Franklin Street (Plant 13494) and 1600 Franklin Street (Plant 14532) was conducted to assess cancer risks and annual $PM_{2.5}$ concentrations at residential receptor locations in the proposed project building. Figure 2 shows the locations of these buildings relative to the project site and the on-site project receptors used to represent locations of future project residents. Based on the BAAQMD emission inventory data the daily $PM_{2.5}$ and DPM emissions from the diesel engines are 0.0463 pounds per day (16.9 pounds per year) at 1587 Franklin Street and 0.0091 pounds per day (3.31 pounds per year) at 1600 Franklin Street.[5]

To obtain an estimate of potential excess cancer risks to future project residents from these sources, the AERMOD dispersion model was used. This modeling included the use of a five-

[5] Correspondence between Joshua Carman, Illingworth & Rodkin, and Alison Kirk, BAAQMD, July 20 and 29, 2015.

year data set (2009-2013) of hourly meteorological data from the Oakland International Airport, prepared for use with the AERMOD model by CARB. Since there are a number of tall buildings, including the buildings with the emission sources, in close proximity to the project building, the effects of building downwash on the diesel engine exhaust plumes were included in the modeling analysis. The AERMOD model computed DPM concentrations at locations of future residential units. Because the actual locations of the emission sources are unknown, the emergency generators were modeled for two cases; one where the generators are located at roof level of each building, and the other where the generators were assumed to be located at ground level near each building. The case with highest resulting concentrations was then used in evaluating impacts.

Potential impacts at the proposed building were evaluated at seventeen of the twenty-two residential floor levels to identify where maximum impacts would occur from each emission source. Receptors for modeling were placed at intervals of 6 meters (about 20 feet) at each of the residential floor levels evaluated (see Figure 1). 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 generators in the modeling.

The maximum modeled concentrations occurred for the case of the generators located at ground level near the source buildings. The maximum annual average DPM concentration from 1587 Franklin Street occurred on the project's first residential level (seventh floor building level) at a concentration of 0.0007 $\mu g/m^3$. The maximum annual average DPM concentration from 1600 Franklin Street also occurred on the project's first residential level at a concentration of 0.0002 $\mu g/m^3$. Using BAAQMD cancer risk calculation methods the maximum estimated increased residential cancer risks would be 0.5 and 0.1 in one million for the 1587 and 1600 Franklin Street generators, respectively. Cancer risks at other floor levels would be less than the maximum risks. The cancer risks from the generators at 1587 and 1600 Franklin Street would be lower than the BAAQMD cancer risk significance threshold of greater than 10.0 in one million and would be considered a *less-than-significant* impact.

The maximum modeled annual $PM_{2.5}$ concentrations were less than 0.001 $\mu g/m^3$ from the generators and the maximum Hazard Index would be less than 0.0002. $PM_{2.5}$ concentrations and Hazard Indexes at other floor levels would be lower than the maximum values. The maximum $PM_{2.5}$ concentration and Hazard Index would be below BAAQMD significance thresholds of 0.3 $\mu g/m^3$ for $PM_{2.5}$ and 1.0 for a Hazard Index and would be considered a *less-than-significant* impact. Details of the modeling and risk calculations are included in *Attachment 3*.

<u>On –Site Stationary Source- Project Generator</u>

The project proposes an emergency back-up diesel generator located in the mechanical room area on the sixth floor building level. The proposed generator would be a Caterpillar 1,000 kilowatt (kW) emergency generator. Operation of the generator is limited to 50 hours per year of non-emergency use (i.e. testing and maintenance) by the State's Air Toxic Control Measure for

Stationary Compression Ignition Engines.[6] Actual hours of operation of the generator for non-emergency operation for testing and maintenance purposes are typically less than 50 hour per year. However, for purposes of estimating emissions and potential air quality impacts from the generator engine, it was assumed that each engine could be operated for 50 hours per year (maximum operation hours allowed by the State's Air Toxic Control Measure and BAAQMD for testing and maintenance) at near full load. It was also assumed that operation of the generator would take place between 8 a.m. to 5 p.m.

To obtain an estimate of potential cancer risks from the proposed generator the AERMOD dispersion model was used to estimate the maximum annual DPM concentration at on-site residential receptor locations within the proposed project residential areas (see Figure 2) and at off-site sensitive receptor locations (school and residences). Building downwash effects of the proposed building on the generator exhaust plume were included in the modeling. Generator exhaust DPM and $PM_{2.5}$ emissions were calculated based on manufacturer emission factors and assuming 50 hours per year of operation. The exhaust stack from the generator engine was assumed to discharge horizontally through a 12-inch diameter stack from the east side of the mechanical room area on the sixth floor level. Stack parameters for modeling (exhaust flow rate and exhaust gas temperature) were based on manufacturer data.

The maximum modeled DPM and $PM_{2.5}$ concentrations occurred at the new on-site residential receptors at the seventh floor level. The maximum annual DPM and $PM_{2.5}$ concentrations were 0.0039 and 0.0037 $\mu g/m^3$, respectively. Based on the maximum DPM concentration the maximum on-site residential cancer risk would be 2.9 in one million. The maximum on-site residential HI would be less than 0.001.

Health risk impacts from operation of the project generator were also evaluated for off-site residences and at the Envision Academy. The maximum cancer risk for an off-site residential receptor was 0.1 in one million and the maximum annual $PM_{2.5}$ concentration was 0.0002 $\mu g/m^3$. The maximum school student cancer risk at the Envision Academy was 0.2 in one million and the maximum annual $PM_{2.5}$ concentration at the Envision Academy was 0.0022 $\mu g/m^3$. The maximum HIs at both the off-site residential receptors and the Envision Academy would be less than less than 0.001. The increased cancer risks, $PM_{2.5}$ concentrations, and HIs at all sensitive receptors from operation of the project emergency generator would all be well below BAAQMD significance thresholds. Since the project generator has less than significant health risk effects (or community risk), the requirements of the City's SCA 21 do not apply. Generator modeling information and risk calculations are included in *Attachment 3.*

Cumulative Sources – New Residences

Cumulative TAC impacts are assessed by estimating the combined community risk impacts to the project and nearby sources. Table 4 reports the combination of impacts from all sources within 1,000 feet at the project site. As shown in Table 4, community risk impacts to the project site would be *less than significant.* Since TAC impacts for single- and cumulative TAC sources would not be exceeded at any of the project residences, requirements of SCA 20 would not apply to the project.

[6] Section 93115, title 17, California Code of Regulations

Cumulative Off-Site Risks

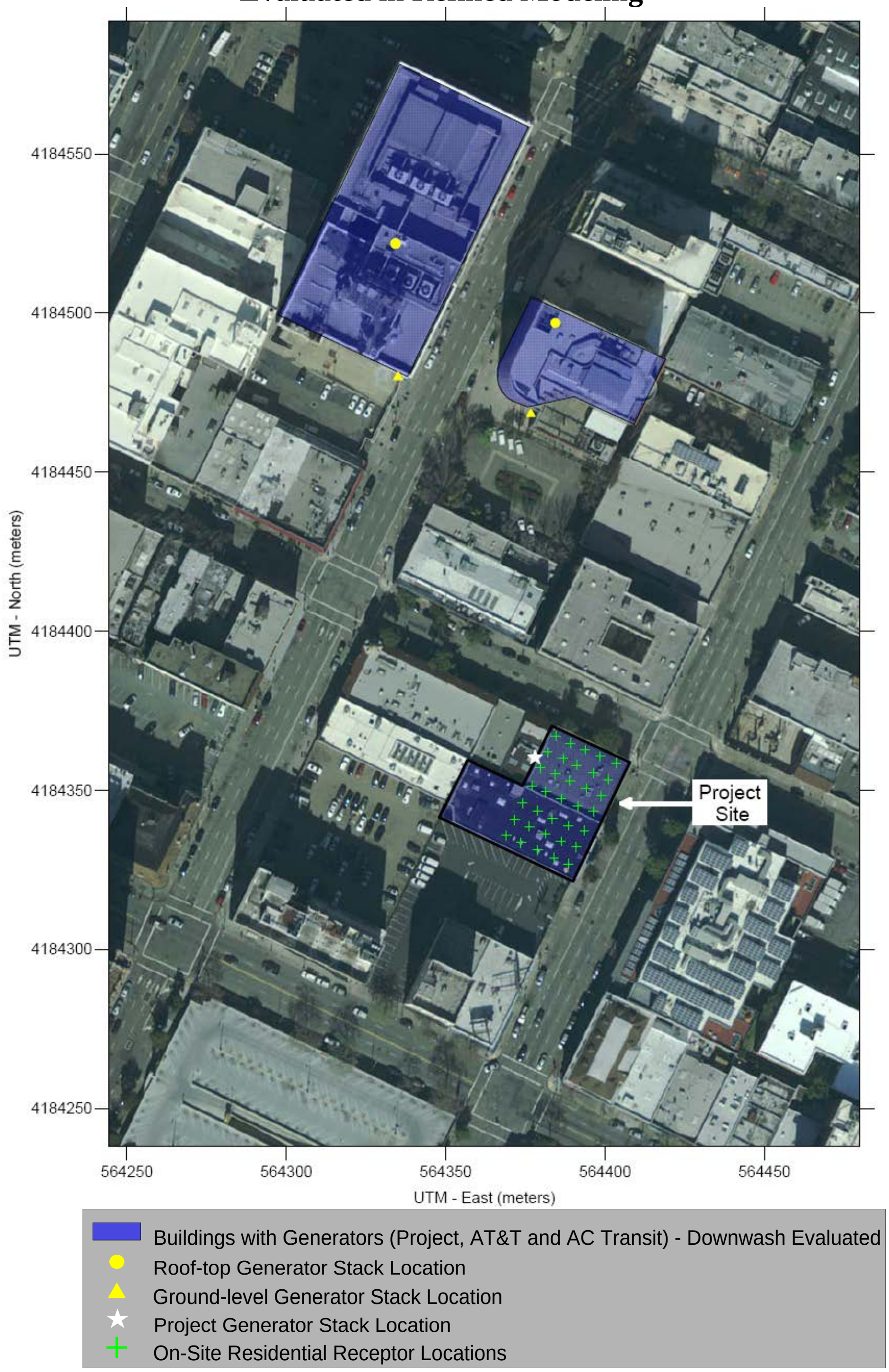
As described above, the maximum impact from the generator at off-site sensitive receptors would be negligible because cancer risk would be less than 1 in one million and annual PM2.5 concentrations would be less than 0.03 µg/m^3 (10 times below the single source threshold). Best available control measures to minimize temporary construction emissions, which result in reduction on the order of 80 percent or greater, would be achieved through application of the City's SCA 19. Since the project generator has less than significant health risk effects (or community risk), the requirements of the City's SCA 21 also do not apply. As a result, cumulative risks to off-site receptors would be considered *less-than-significant*.

Table 4. Community Risk Impacts to New Project Residences

Source	Maximum Cancer Risk (per million)	Maximum Annual $PM_{2.5}$ Concentration (µg/m^3)	Maximum Hazard Index
Plant 18912, Paetec, Generator (*2011 Screening Values*, Internal Combustion Engine distance multiplier) at ~300 feet	0.3	0.0	0.00
Plant 14742, County of Alameda-GSA, Generator (*2011 Screening Values*, Internal Combustion Engine distance multiplier) at ~555 feet	0.8	0.0	0.00
Plant 19039, Hotel Oakland, Generator (*2011 Screening Values*, Internal Combustion Engine distance multiplier) at ~555 feet	1.0	0.0	0.00
Plant 13494, Pacific Bell, Generator (Refined Modeling)	0.5	<0.01	<0.01
Plant 14532, AC Transit General Office, Generator (Refined Modeling)	0.1	<0.01	<0.01
Plant 14607, Rotunda Partners II, Generator, (*2011 Screening Values*, Internal Combustion Engine distance multiplier) at ~650 feet	3.7	0.0	<0.01
Project Generator	2.9	<0.01	<0.01
Cumulative Total	9.3	<0.03	<0.04
BAAQMD Threshold – Cumulative Sources	***>100***	***>0.8***	***>10.0***
Significant?	***No***	***No***	***No***

Note: Since screening risk is predicted at the nearest point on the project site from a given source, actual screening risk at the project MEI would be less than presented for the cumulative total.

Figure 1. Project Site, On-Site Receptor Location, and Nearby Stationary Sources Evaluated in Refined Modeling



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.

<u>CalEEMod Modeling</u>

CalEEMod was used to estimate GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport. CalEEMod output worksheets are included in *Attachment 2*.

CalEEMod has a default rate of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. 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 CO_2e per megawatt of electricity produced.[7]

Service Population Emissions

The project service population efficiency rate is based on the number of future residences plus full-time employees. The number of future residences is estimated at 453 based on the latest US Census data of 2.53 average persons per household for the City of Oakland.[8] The number of future full-time employees is estimated at 235 based on an approximate 2.5 employees per 1,000 sf, of retail and 4 employees per 1000 sf of office space, for a total service population of 688.

<u>Construction Emissions</u>

GHG emissions associated with construction were computed to be 626 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. Neither the City nor BAAQMD have an adopted threshold of significance for construction-related GHG emissions, though BAAQMD recommends quantifying emissions and disclosing that GHG emissions would occur during construction. BAAQMD also encourages the incorporation of best management practices to reduce GHG emissions during construction where feasible and applicable. Best management practices assumed to be incorporated into construction of the proposed project include, but are

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[7] Email correspondence from Wendy Stone of Silicon Valley Power, July 13, 2016.
[8] United States Census Bureau, 2016. *Oakland (city), California QuickFacts, Persons per Household (2011-2015)*. Available online: http://www.census.gov/quickfacts/table/PST045215/0653000. Accessed: December 2nd, 2016.

not limited to: using local building materials of at least 10 percent and recycling or reusing at least 50 percent of construction waste or demolition materials.

Operational Emissions

The CalEEMod model, along with the project vehicle trip generation rates, was used to predict daily emissions associated with operation of the fully-developed site under the proposed project. In 2019 as shown in Table 6, annual emissions resulting from operation of the proposed project are predicted to be 2,096 MT of CO_2e. The annual emissions from operation of the existing buildings are computed as 353 MT of CO2e. The net emissions resulting from the project would be 1,743 MT of CO2e .These emissions would exceed the BAAQMD threshold of 1,100 MT of CO_2e/yr and, therefore, the service population threshold was used to determine the significance of this project. As shown in Table 6, service population emissions would be below the BAAQMD threshold and, therefore, *this would be considered a less-than-significant impact*.

Table 6. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Proposed Project 2019	Existing
Area	25	0
Energy Consumption	508	89
Mobile	1405	239
Solid Waste Generation	69	12
Stationary	26	-
Water Usage	63	13
Total	**2,096**	**353**
Net Project Emissions	**1,743**	
Service Population Emissions[2]	***3.04***	
BAAQMD Threshold	***4.6***	

Notes: [1] Based on a service population of 688.

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

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

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

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 MMT of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 MMT of CO_2e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were included, further reducing the baseline inventory to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

The proposed project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan. The project would comply with requirements of the Green Building Code. 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.

Attachment 1: City of Oakland SCAs and Health Risk Calculation Methodology

Applicable City of Oakland SCAs

AIR QUALITY

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

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

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

[BASIC CONTROLS (apply to ALL construction sites)]

z. Water all exposed surfaces of active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever feasible.

aa. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).

bb. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

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

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

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

ff. Idling times on all diesel-fueled commercial vehicles over 10,000 lbs. shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations). Clear signage to this effect shall be provided for construction workers at all access points.

gg. Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes and fleet operators must develop a written policy as required by Title 23, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations").

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

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

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

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

All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

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

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

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

Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.

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

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

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

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

Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.

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

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

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

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

Post a publicly-visible large on-site sign that includes the contact name and phone number for the project complaint manager responsible for responding to dust complaints and the telephone numbers of the City's Code Enforcement unit and the Bay Area Air Quality Management District. When contacted, the project complaint manager shall respond and take corrective action within 48 hours.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

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

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

- **i. Residential uses (new dwelling units); or**
- **ii. New or expanded schools, daycare centers, parks, nursing homes, or medical facilities; and**

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

- **i. Freeway;**
- **ii. Roadway with significant traffic (at least 10,000 vehicles/day);**
- **iii. Rail line (except BART) with over 30 trains per day;**
- **iv. Distribution center that accomodates more than 100 trucks per day, more than 40 trucks with operating Transportation Refrigeration Units (TRU) per day, or where the TRU unit operations exceed 300 hours per week;**
- **v. Major rail or truck yard (such as the Union Pacific rail yard adjacent to the Port of Oakland);**
- **vi. Ferry terminal;**
- **vii. Stationary pollutant source requiring a permit from BAAQMD (such as a diesel generator);**
- **viii. Within 0.5 miles of the Port of Oakland or Oakland Airport;**
- **ix. Within 300 feet of a gas station; or**
- **x. Within 300 feet of a dry cleaner with a machine using PERC (or within 500 feet of a dry cleaner with two or more machines using PERC); and**

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

20 Exposure to Air Pollution (Toxic Air Contaminants)

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

Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants. The project applicant shall choose one of the following methods:

i. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents/occupants/users to air pollutants. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes that the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

\- or -

ii. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:

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

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

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

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

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

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

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

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

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

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

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

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

Prohibiting trucks from idling for more than two minutes.

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

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

Maintenance of Health Risk Reduction Measures

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

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

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

21 Stationary Sources of Air Pollution (Toxic Air Contaminants)

Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to on-site stationary sources of toxic air contaminants. The project applicant shall choose one of the following methods:

kk. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk associated with proposed stationary sources of pollution in the project. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

- or -

The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:

i. Installation of non-diesel fueled generators, if feasible, or;

ii. Installation of diesel generators with an EPA-certified Tier 4 engine or engines that are retrofitted with a CARB Level 3 Verified Diesel Emissions Control Strategy, if feasible.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

GREENHOUSE GAS EMISSIONS / GLOBAL CLIMATE CHANGE

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

b. Scenario A: Projects which (a) involve a land use development (i.e., a project that does not require a permit from the Bay Area Air Quality Management District [BAAQMD] to operate), (b) exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines,[9] and (c) after a GHG analysis is prepared would produce total GHG emissions of more than 1,100 metric tons of CO2e annually and more than 4.6 metric tons of CO2e per service population annually (with "service population" defined as the total number of employees and residents of the project).

Scenario B: Projects which (a) involve a land use development, (b) exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines,[10] (c) after a GHG analysis is prepared would exceed at least one of the BAAQMD Thresholds of

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

[10] See footnote #1 above.

Significance (more than 1,100 metric tons of CO2e annually OR more than 4.6 metric tons of CO2e per service population annually), and (d) are considered to be "Very Large Projects."[11]

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

38 Greenhouse Gas (GHG) Reduction Plan

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

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

The goal of the GHG Reduction Plan shall be to increase energy efficiency and reduce GHG emissions to below [INCLUDE THIS LANGUAGE IF SCENARIO A OR B:] at least one of the Bay Area Quality Management District's (BAAQMD's) CEQA Thresholds of Significance (1,100 metric tons of CO_2e per year or 4.6 metric tons of CO_2e per year per service population) [INCLUDE THIS LANGUAGE IF SCENARIO C:] the Bay Area Quality Management District's (BAAQMD's) CEQA Thresholds of Significance (10,000 metric tons of CO_2e per year) [INCLUDE THIS LANGUAGE IF SCENARIO B] AND to reduce GHG emissions by 36 percent below the project's "adjusted" baseline GHG emissions (as explained below) to help achieve the City's goal of reducing GHG emissions. The GHG Reduction Plan shall include, at a minimum, (a) a detailed GHG emissions inventory for the project under a "business-as-usual" scenario with no consideration of project design features, or other energy efficiencies, (b) an "adjusted" baseline GHG emissions inventory for the project, taking into consideration energy efficiencies included as part of the project (including the City's Standard Conditions of Approval, proposed mitigation measures, project design features, and other City requirements), (c) a comprehensive set of quantified additional GHG reduction measures available to further reduce GHG emissions beyond the adjusted GHG emissions, and (d) requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. If the

[11] A "Very Large Project" is defined as any of the following:
(A) Residential development of more than 500 dwelling units;
(B) Shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space;
(C) Commercial office building employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space;
(D) Hotel/motel development of more than 500 rooms;
(E) Industrial, manufacturing, processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or encompassing more than 650,000 square feet of floor area; or
(F) Any combination of smaller versions of the above that when combined result in equivalent annual GHG emissions as the above.

project is to be constructed in phases, the GHG Reduction Plan shall provide GHG emission scenarios by phase.

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

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

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

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

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

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: N/A

GHG Reduction Plan Implementation During Construction

Requirement: The project applicant shall implement the GHG Reduction Plan during construction of the project. For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be implemented during construction. For physical GHG reduction measures to be incorporated into off-site projects, the project applicant shall obtain all necessary permits/approvals and the measures shall be included on drawings and submitted to the City Planning Director or his/her designee for review and approval. These off-site improvements shall be installed prior to completion of the subject project (or prior to completion of the project phase for phased projects). For GHG reduction measures involving the purchase of carbon credits, evidence of the payment/purchase shall be submitted to the City for review and approval prior to completion of the project (or prior to completion of the project phase, for phased projects).

When Required: During construction

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

GHG Reduction Plan Implementation After Construction

Requirement: The project applicant shall implement the GHG Reduction Plan after construction of the project (or at the completion of the project phase for phased projects). For operational GHG reduction measures to be incorporated into the project or off-site projects, the measures shall be implemented on an indefinite and ongoing basis.

The project applicant shall satisfy the following requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. The GHG Reduction Plan requires regular periodic evaluation over the life of the project (generally estimated to be at least 40 years) to determine how the Plan is achieving required GHG emissions reductions over time, as well as the efficacy of the specific additional GHG reduction measures identified in the Plan.

Annual Report. Implementation of the GHG reduction measures and related requirements shall be ensured through compliance with Conditions of Approval adopted for the project. Generally, starting two years after the City issues the first Certificate of Occupancy for the project, the project applicant shall prepare each year of the useful life of the project an Annual GHG Emissions Reduction Report ("Annual Report"), for review and approval by the City Planning Director or his/her designee. The Annual Report shall be submitted to an independent reviewer of the City's choosing, to be paid for by the project applicant.

The Annual Report shall summarize the project's implementation of GHG reduction measures over the preceding year, intended upcoming changes, compliance with the conditions of the Plan, and include a brief summary of the previous year's Annual Report results (starting the second year). The Annual Report shall include a comparison of annual project emissions to the baseline emissions reported in the GHG Plan.

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

Corrective Procedure. If the third Annual Report, or any report thereafter, indicates that, in spite of the implementation of the GHG Reduction Plan, the project is not achieving the GHG reduction goal, the project applicant shall prepare a report for City review and approval, which proposes additional or revised GHG measures to better achieve the GHG emissions reduction goals, including without limitation, a discussion on the feasibility and effectiveness of the menu of other additional measures ("Corrective GHG Action Plan"). The project applicant shall then implement the approved Corrective GHG Action Plan.

If, one year after the Corrective GHG Action Plan is implemented, the required GHG emissions reduction target is still not being achieved, or if the project applicant fails to submit a report at the times described above, or if the reports do not meet City requirements outlined above, the City may, in addition to its other remedies, (a) assess the project applicant a financial penalty based upon actual percentage reduction in GHG emissions as compared to the percent reduction in GHG emissions established in the GHG Reduction Plan; or (b) refer the matter to the City Planning Commission for scheduling of a compliance hearing to determine whether the project's approvals should be revoked, altered or additional conditions of approval imposed.

The penalty as described in (a) above shall be determined by the City Planning Director or his/her designee and be commensurate with the percentage GHG emissions reduction not achieved (compared to the applicable numeric significance thresholds) or required percentage reduction from the "adjusted" baseline.

In determining whether a financial penalty or other remedy is appropriate, the City shall not impose a penalty if the project applicant has made a good faith effort to comply with the GHG Reduction Plan.

The City would only have the ability to impose a monetary penalty after a reasonable cure period and in accordance with the enforcement process outlined in Planning Code Chapter 17.152. If a financial penalty is imposed, such penalty sums shall be used by the City solely toward the implementation of the GHG Reduction Plan.

Timeline Discretion and Summary. The City shall have the discretion to reasonably modify the timing of reporting, with reasonable notice and opportunity to comment by the applicant, to coincide with other related monitoring and reporting required for the project.

<u>When Required</u>: Ongoing

<u>Initial Approval</u>: Bureau of Planning

<u>Monitoring/Inspection</u>: Bureau of Planning

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.[12] 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.[13] 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.[14] Exposure parameters from the OEHHA guidelines and newly proposed BAAQMD HRA Guidelines were used in this evaluation.

<u>Cancer Risk</u>

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, 95^{th} percentile breathing rates are used for the third trimester and infant exposures, and 80^{th} percentile breathing rates for child and adult exposures. Additionally, CARB and the BAAQMD

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[12] 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.

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

[14] 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.

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:

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

Where:

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

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

Where:

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

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

Parameter	***Exposure Type →***	**Infant**		**Child**	**Adult**
	Age Range →	**3rd Trimester**	**0<2**	**2 < 16**	**16 - 30**
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		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 ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

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

Attachment 2: Construction Schedule, CalEEMod Output, Health Risk Calculation, Stationary Source Information Form

Construction Schedule

Project Name: **1433 Webster**

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size	**179**	**Dwelling Units**	**0.41 total project acres disturbed**
	252,908	**s.f. residential**	
	1,398	**s.f. retail**	
	57,860	**s.f. office/commercial**	
	26,547	**s.f. other, specify:**	
	23,347	**s.f. parking garage**	**91 spaces**
	0	**s.f. parking lot**	**0 spaces**
Construction Hours	**7**	**am to**	**7 pm**

Qty	Description	HP	Load Factor	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Annual Hours	Comments
	Demolition	**Start Date:**		**9/1/2017**	**Total phase:**	**15**			**Overall Import/Export Volumes**
		End Date:		**9/22/2017**					
1	Concrete/Industrial Saws	81	0.73	0.73	8	15	8	120	**Demolition Volume**
1	Excavators	162	0.38	0.38	8	15	8	120	Square footage of buildings to be demolished
2	Rubber-Tired Dozers	255	0.4	0.4	8	15	8	240	(*or* total tons to be hauled)
2	Tractors/Loaders/Backhoes	97	0.37	0.37	8	15	8	240	_25,631_ square feet *or*
									_?_ Hauling volume (tons)
	Site Preperation	**Start Date:**		**9/25/2017**	**Total phase:**	**1**			Any pavement demolished and hauled? 25 tons
		End Date:		**9/26/2017**					
1	Graders	174	0.41	0.41	8	1	8	8	
1	Rubber Tired Dozers	255	0.4	0.4	8	1	8	8	
1	Tractors/Loaders/Backhoes	97	0.37	0.37	8	1	8	8	
	Grading / Excavation	**Start Date:**		**10/2/2017**	**Total phase:**	**18**			
		End Date:		**10/27/2017**					**Soil Hauling Volume**
3	Excavators	162	0.38	0.38	8	18	8	432	Export volume = _18,000_ cubic yards?
1	Concrete/Industrial Saws	81		0.73	8	18	8		
1	Graders	174	0.41	0.41	8	18	8	144	Import volume = _0_ cubic yards?
1	Rubber Tired Dozers	255	0.4	0.4	8	18	8	144	
2	Tractors/Loaders/Backhoes	97	0.37	0.37	8	18	8	288	
2	*Pumps*	84	0.74	0.74	24	18	24	864	
	Plate Compactors	8	0.43	0.43	8	18			
	Trenching	**Start Date:**		**10/30/2017**	**Total phase:**	**12**			
		End Date:		**11/15/2017**					
1	Tractor/Loader/Backhoe	97	0.37	0.37	8	12	8	96	
1	Excavators	162	0.38	0.38	8	12	8	96	
	Building - Exterior	**Start Date:**		**12/1/2017**	**Total phase:**	**217**			**Cement Trucks? _750_ Total Round-Trips**
		End Date:		**9/30/2018**					
1	Cranes	226	0.29	0.29	8	217	8	1736	Electric? (Y/N) Y Otherwise assumed diesel
2	Forklifts	89	0.2	0.2	4	217	4	1736	Liquid Propane (LPG)? (Y/N) N Otherwise Assumed diesel
0	Generator Sets	84	0.74	0.74	0	217	0	0	Or temporary line power? (Y/N) Y
2	Tractors/Loaders/Backhoes	97	0.37	0.37	5	217	5	2170	
4	Welders	46	0.45	0.45	8	71.61	2.64	2291.52	
	Building - Interior/Architectural Coating	**Start Date:**		**7/1/2018**	**Total phase:**	**131**			
		End Date:		**12/31/2018**					
1	Air Compressors	78	0.48	0.48	8	131	8	1048	
1	Aerial Lift	62	0.31	0.31	8	131	8	1048	
2	Forklifts	89	0.2	0.2	8	71.61	4.3731298	1145.76	
	Paving	**Start Date:**		**12/15/2018**	**Total phase:**	**12**			
		Start Date:		**12/31/2018**					
4	Cement and Mortar Mixers	9	0.56	0.56	8	12	8	384	
1	Pavers	125	0.42	0.42	8	12	8	96	**Asphalt? __50_ cubic yards or ___ round trips?**
1	Paving Equipment	130	0.36	0.36	8	12	8	96	
1	Rollers	80	0.38	0.38	8	12	8	96	
1	Tractors/Loaders/Backhoes	97	0.37	0.37	8	12	8	96	

CalEEMod Output- Criteria and Operational Emissions

1433 Webster Street, 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	57.86	1000sqft	0.00	57,860.00	0
Enclosed Parking with Elevator	91.00	Space	0.00	23,347.00	0
Apartments High Rise	179.00	Dwelling Unit	0.41	252,908.00	512
Strip Mall	1.40	1000sqft	0.00	1,398.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	429.6	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Emission Intensity

Land Use - from construction spreadsheet

Construction Phase - Applicant provided construction schedule

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Trips and VMT - 750 total round trips of cement trucks
Total number of demolition trips= default+(25/20*2)=117+3=120
Paving trips=50/16*2~8

Demolition - 25,631 sf of building demolished

Grading - 18,000 cy of soil exported

Vehicle Trips - Trip rates from revised traffic study

Woodstoves - No wood burning

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	5.00	131.00
tblConstructionPhase	NumDays	100.00	217.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	18.00
tblConstructionPhase	NumDays	5.00	12.00
tblConstructionPhase	PhaseEndDate	3/22/2019	12/31/2018
tblConstructionPhase	PhaseEndDate	9/4/2018	10/1/2018
tblConstructionPhase	PhaseEndDate	10/18/2017	10/25/2017
tblConstructionPhase	PhaseEndDate	9/20/2018	12/31/2018
tblConstructionPhase	PhaseEndDate	9/22/2017	9/25/2017
tblConstructionPhase	PhaseEndDate	11/3/2017	11/14/2017
tblConstructionPhase	PhaseStartDate	9/21/2018	7/1/2018
tblConstructionPhase	PhaseStartDate	11/4/2017	12/1/2017
tblConstructionPhase	PhaseStartDate	9/23/2017	10/2/2017

tblConstructionPhase	PhaseStartDate	9/5/2018	12/14/2018
tblConstructionPhase	PhaseStartDate	9/22/2017	9/25/2017
tblConstructionPhase	PhaseStartDate	10/19/2017	10/30/2017
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	26.85	179.00
tblFireplaces	NumberNoFireplace	7.16	0.00
tblFireplaces	NumberWood	30.43	0.00
tblGrading	MaterialExported	0.00	18,000.00
tblLandUse	BuildingSpaceSquareFeet	36,400.00	23,347.00
tblLandUse	BuildingSpaceSquareFeet	179,000.00	252,908.00
tblLandUse	BuildingSpaceSquareFeet	1,400.00	1,398.00
tblLandUse	LandUseSquareFeet	36,400.00	23,347.00
tblLandUse	LandUseSquareFeet	179,000.00	252,908.00
tblLandUse	LandUseSquareFeet	1,400.00	1,398.00
tblLandUse	LotAcreage	1.33	0.00
tblLandUse	LotAcreage	0.82	0.00
tblLandUse	LotAcreage	2.89	0.41
tblLandUse	LotAcreage	0.03	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	6.00	8.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2018	2019
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	HaulingTripNumber	117.00	120.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,500.00
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblVehicleTrips	ST_TR	4.98	5.89
tblVehicleTrips	ST_TR	2.46	1.47
tblVehicleTrips	ST_TR	42.04	84.14
tblVehicleTrips	SU_TR	3.65	4.32
tblVehicleTrips	SU_TR	1.05	0.63
tblVehicleTrips	SU_TR	20.43	40.89
tblVehicleTrips	WD_TR	4.20	4.97
tblVehicleTrips	WD_TR	11.03	6.60
tblVehicleTrips	WD_TR	44.32	88.70
tblWoodstoves	NumberCatalytic	3.58	0.00
tblWoodstoves	NumberNoncatalytic	3.58	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.1430	1.5788	0.8654	2.4600e-003	0.1243	0.0665	0.1908	0.0470	0.0632	0.1102	0.0000	227.7920	227.7920	0.0295	0.0000	228.5282
2018	2.3469	1.8199	1.7459	4.3600e-003	0.1737	0.0824	0.2560	0.0468	0.0782	0.1250	0.0000	396.0811	396.0811	0.0431	0.0000	397.1597
Maximum	**2.3469**	**1.8199**	**1.7459**	**4.3600e-003**	**0.1737**	**0.0824**	**0.2560**	**0.0470**	**0.0782**	**0.1250**	**0.0000**	**396.0811**	**396.0811**	**0.0431**	**0.0000**	**397.1597**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-2017**	**11-30-2017**	1.4762	1.4762
2	**12-1-2017**	**2-28-2018**	0.5455	0.5455
3	**3-1-2018**	**5-31-2018**	0.5325	0.5325
4	**6-1-2018**	**8-31-2018**	1.3701	1.3701
5	**9-1-2018**	**9-30-2018**	0.5794	0.5794
		Highest	1.4762	1.4762

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	1.4734	0.0348	1.3453	1.9000e-004		8.8800e-003	8.8800e-003		8.8800e-003	8.8800e-003	0.0000	24.5200	24.5200	2.5700e-003	4.1000e-004	24.7062
Energy	0.0171	0.1498	0.0867	9.3000e-004		0.0118	0.0118		0.0118	0.0118	0.0000	504.8473	504.8473	0.0259	7.7900e-003	507.8162
Mobile	0.4463	2.7859	4.8686	0.0153	1.0995	0.0213	1.1208	0.2956	0.0202	0.3158	0.0000	1,403.0969	1,403.0969	0.0682	0.0000	1,404.8030
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	27.9356	0.0000	27.9356	1.6510	0.0000	69.2093

Water						0.0000	0.0000		0.0000	0.0000	6.9954	32.6062	39.6016	0.7207	0.0174	62.8105
Total	**1.9918**	**3.2164**	**6.4408**	**0.0166**	**1.0995**	**0.0501**	**1.1496**	**0.2956**	**0.0490**	**0.3446**	**34.9311**	**1,990.6028**	**2,025.5338**	**2.4719**	**0.0256**	**2,094.9671**

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	9/1/2017	9/21/2017	5	15	
2	Site Preparation	Site Preparation	9/25/2017	9/25/2017	5	1	
3	Grading	Grading	10/2/2017	10/25/2017	5	18	
4	Trenching	Trenching	10/30/2017	11/14/2017	5	12	
5	Building Construction	Building Construction	12/1/2017	10/1/2018	5	217	
6	Paving	Paving	12/14/2018	12/31/2018	5	12	
7	Architectural Coating	Architectural Coating	7/1/2018	12/31/2018	5	131	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 9

Acres of Paving: 0

Residential Indoor: 512,139; Residential Outdoor: 170,713; Non-Residential Indoor: 88,887; Non-Residential Outdoor: 29,629; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	3	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Pumps	2	24.00	84	0.74
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	2	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Building Construction	Welders	4	2.60	46	0.45
Architectural Coating	Aerial Lifts	1	8.00	63	0.31
Architectural Coating	Air Compressors	1	8.00	78	0.48
Architectural Coating	Forklifts	2	4.40	89	0.20
Paving	Cement and Mortar Mixers	4	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	120.00	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	11	28.00	0.00	2,250.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	158.00	33.00	1,500.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Architectural Coating	4	32.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	8.00	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					0.0126	0.0000	0.0126	1.9100e-003	0.0000	1.9100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0302	0.3075	0.1585	2.6000e-004		0.0170	0.0170		0.0158	0.0158	0.0000	23.8478	23.8478	6.4300e-003	0.0000	24.0084
Total	**0.0302**	**0.3075**	**0.1585**	**2.6000e-004**	**0.0126**	**0.0170**	**0.0296**	**1.9100e-003**	**0.0158**	**0.0177**	**0.0000**	**23.8478**	**23.8478**	**6.4300e-003**	**0.0000**	**24.0084**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.6000e-004	0.0212	3.5000e-003	5.0000e-005	1.0200e-003	1.1000e-004	1.1300e-003	2.8000e-004	1.1000e-004	3.9000e-004	0.0000	4.7261	4.7261	2.6000e-004	0.0000	4.7326
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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Worker	5.3000e-004	4.3000e-004	4.2200e-003	1.0000e-005	8.9000e-004	1.0000e-005	9.0000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.8638	0.8638	3.0000e-005	0.0000	0.8646
Total	**1.1900e-003**	**0.0216**	**7.7200e-003**	**6.0000e-005**	**1.9100e-003**	**1.2000e-004**	**2.0300e-003**	**5.2000e-004**	**1.2000e-004**	**6.3000e-004**	**0.0000**	**5.5899**	**5.5899**	**2.9000e-004**	**0.0000**	**5.5971**

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					3.2800e-003	0.0000	3.2800e-003	1.6800e-003	0.0000	1.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0400e-003	0.0119	4.4900e-003	1.0000e-005		5.6000e-004	5.6000e-004		5.2000e-004	5.2000e-004	0.0000	0.8498	0.8498	2.6000e-004	0.0000	0.8563
Total	**1.0400e-003**	**0.0119**	**4.4900e-003**	**1.0000e-005**	**3.2800e-003**	**5.6000e-004**	**3.8400e-003**	**1.6800e-003**	**5.2000e-004**	**2.2000e-003**	**0.0000**	**0.8498**	**0.8498**	**2.6000e-004**	**0.0000**	**0.8563**

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	2.0000e-005	2.0000e-005	1.5000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0307	0.0307	0.0000	0.0000	0.0307
Total	**2.0000e-005**	**2.0000e-005**	**1.5000e-004**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0307**	**0.0307**	**0.0000**	**0.0000**	**0.0307**

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					0.0600	0.0000	0.0600	0.0305	0.0000	0.0305	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0691	0.6335	0.4350	7.5000e-004		0.0372	0.0372		0.0359	0.0359	0.0000	66.4668	66.4668	0.0125	0.0000	66.7801
Total	**0.0691**	**0.6335**	**0.4350**	**7.5000e-004**	**0.0600**	**0.0372**	**0.0972**	**0.0305**	**0.0359**	**0.0663**	**0.0000**	**66.4668**	**66.4668**	**0.0125**	**0.0000**	**66.7801**

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	0.0123	0.3970	0.0657	9.2000e-004	0.0191	2.0900e-003	0.0211	5.2400e-003	2.0000e-003	7.2400e-003	0.0000	88.6134	88.6134	4.8800e-003	0.0000	88.7354
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	1.1900e-003	9.5000e-004	9.4500e-003	2.0000e-005	1.9900e-003	2.0000e-005	2.0100e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.9349	1.9349	7.0000e-005	0.0000	1.9366
Total	**0.0135**	**0.3979**	**0.0751**	**9.4000e-004**	**0.0210**	**2.1100e-003**	**0.0232**	**5.7700e-003**	**2.0100e-003**	**7.7800e-003**	**0.0000**	**90.5483**	**90.5483**	**4.9500e-003**	**0.0000**	**90.6720**

3.6 Building Construction - 2018

Unmitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Off-Road	0.1063	0.6907	0.6418	8.6000e-004		0.0496	0.0496		0.0468	0.0468	0.0000	72.4105	72.4105	0.0197	0.0000	72.9024
Total	**0.1063**	**0.6907**	**0.6418**	**8.6000e-004**		**0.0496**	**0.0496**		**0.0468**	**0.0468**	**0.0000**	**72.4105**	**72.4105**	**0.0197**	**0.0000**	**72.9024**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.4500e-003	0.2214	0.0367	5.5000e-004	0.0124	8.4000e-004	0.0132	3.3800e-003	8.0000e-004	4.1800e-003	0.0000	52.9436	52.9436	2.7900e-003	0.0000	53.0133
Vendor	0.0161	0.4359	0.0996	9.1000e-004	0.0212	3.1100e-003	0.0244	6.1400e-003	2.9800e-003	9.1200e-003	0.0000	86.7360	86.7360	5.5500e-003	0.0000	86.8747
Worker	0.0649	0.0509	0.5084	1.2800e-003	0.1224	8.9000e-004	0.1233	0.0326	8.2000e-004	0.0334	0.0000	115.6869	115.6869	3.6300e-003	0.0000	115.7776
Total	**0.0874**	**0.7083**	**0.6446**	**2.7400e-003**	**0.1561**	**4.8400e-003**	**0.1609**	**0.0421**	**4.6000e-003**	**0.0467**	**0.0000**	**255.3664**	**255.3664**	**0.0120**	**0.0000**	**255.6657**

3.7 Paving - 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	7.9400e-003	0.0772	0.0658	1.0000e-004		4.3300e-003	4.3300e-003		4.0200e-003	4.0200e-003	0.0000	9.0458	9.0458	2.5900e-003	0.0000	9.1105
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total	**7.9400e-003**	**0.0772**	**0.0658**	**1.0000e-004**		**4.3300e-003**	**4.3300e-003**		**4.0200e-003**	**4.0200e-003**	**0.0000**	**9.0458**	**9.0458**	**2.5900e-003**	**0.0000**	**9.1105**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.0000e-005	1.3100e-003	2.2000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.3126	0.3126	2.0000e-005	0.0000	0.3130
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.9000e-004	3.9400e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8966	0.8966	3.0000e-005	0.0000	0.8973
Total	**5.4000e-004**	**1.7000e-003**	**4.1600e-003**	**1.0000e-005**	**1.0200e-003**	**1.0000e-005**	**1.0300e-003**	**2.7000e-004**	**1.0000e-005**	**2.8000e-004**	**0.0000**	**1.2092**	**1.2092**	**5.0000e-005**	**0.0000**	**1.2103**

3.8 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	2.0942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0417	0.3352	0.3207	4.8000e-004		0.0235	0.0235		0.0227	0.0227	0.0000	42.3892	42.3892	8.3700e-003	0.0000	42.5985
Total	**2.1359**	**0.3352**	**0.3207**	**4.8000e-004**		**0.0235**	**0.0235**		**0.0227**	**0.0227**	**0.0000**	**42.3892**	**42.3892**	**8.3700e-003**	**0.0000**	**42.5985**

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	8.7800e-003	6.9000e-003	0.0688	1.7000e-004	0.0166	1.2000e-004	0.0167	4.4100e-003	1.1000e-004	4.5200e-003	0.0000	15.6600	15.6600	4.9000e-004	0.0000	15.6723
Total	**8.7800e-003**	**6.9000e-003**	**0.0688**	**1.7000e-004**	**0.0166**	**1.2000e-004**	**0.0167**	**4.4100e-003**	**1.1000e-004**	**4.5200e-003**	**0.0000**	**15.6600**	**15.6600**	**4.9000e-004**	**0.0000**	**15.6723**

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	0.4463	2.7859	4.8686	0.0153	1.0995	0.0213	1.1208	0.2956	0.0202	0.3158	0.0000	1,403.0969	1,403.0969	0.0682	0.0000	1,404.8030
Unmitigated	0.4463	2.7859	4.8686	0.0153	1.0995	0.0213	1.1208	0.2956	0.0202	0.3158	0.0000	1,403.0969	1,403.0969	0.0682	0.0000	1,404.8030

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	889.63	1,054.31	773.28	2,070,642	2,070,642
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	381.88	85.05	36.45	693,331	693,331
Strip Mall	124.18	117.80	57.25	175,111	175,111
Total	1,395.69	1,257.16	866.98	2,939,084	2,939,084

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
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	0.556416	0.041967	0.190895	0.111485	0.018156	0.005234	0.022193	0.041963	0.002079	0.002948	0.005586	0.000300	0.000779
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
Apartments High Rise	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	335.2686	335.2686	0.0226	4.6800e-003	337.2298
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	335.2686	335.2686	0.0226	4.6800e-003	337.2298
NaturalGas Mitigated	0.0171	0.1498	0.0867	9.3000e-004		0.0118	0.0118		0.0118	0.0118	0.0000	169.5787	169.5787	3.2500e-003	3.1100e-003	170.5864
NaturalGas Unmitigated	0.0171	0.1498	0.0867	9.3000e-004		0.0118	0.0118		0.0118	0.0118	0.0000	169.5787	169.5787	3.2500e-003	3.1100e-003	170.5864

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	2.04768e+006	0.0110	0.0944	0.0402	6.0000e-004		7.6300e-003	7.6300e-003		7.6300e-003	7.6300e-003	0.0000	109.2723	109.2723	2.0900e-003	2.0000e-003	109.9216
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	1.12364e+006	6.0600e-003	0.0551	0.0463	3.3000e-004		4.1900e-003	4.1900e-003		4.1900e-003	4.1900e-003	0.0000	59.9618	59.9618	1.1500e-003	1.1000e-003	60.3181
Strip Mall	6458.76	3.0000e-005	3.2000e-004	2.7000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3447	0.3447	1.0000e-005	1.0000e-005	0.3467
Total		**0.0171**	**0.1498**	**0.0867**	**9.3000e-004**		**0.0118**	**0.0118**		**0.0118**	**0.0118**	**0.0000**	**169.5787**	**169.5787**	**3.2500e-003**	**3.1100e-003**	**170.5864**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	809329	157.7085	0.0107	2.2000e-003	158.6310
Enclosed Parking with Elevator	157359	30.6635	2.0700e-003	4.3000e-004	30.8428
General Office Building	738872	143.9791	9.7200e-003	2.0100e-003	144.8213
Strip Mall	14972.6	2.9176	2.0000e-004	4.0000e-005	2.9347
Total		**335.2686**	**0.0226**	**4.6800e-003**	**337.2298**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	809329	157.7085	0.0107	2.2000e-003	158.6310
Enclosed Parking with Elevator	157359	30.6635	2.0700e-003	4.3000e-004	30.8428
General Office Building	738872	143.9791	9.7200e-003	2.0100e-003	144.8213
Strip Mall	14972.6	2.9176	2.0000e-004	4.0000e-005	2.9347
Total		**335.2686**	**0.0226**	**4.6800e-003**	**337.2298**

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	1.4734	0.0348	1.3453	1.9000e-004		8.8800e-003	8.8800e-003		8.8800e-003	8.8800e-003	0.0000	24.5200	24.5200	2.5700e-003	4.1000e-004	24.7062
Unmitigated	1.4734	0.0348	1.3453	1.9000e-004		8.8800e-003	8.8800e-003		8.8800e-003	8.8800e-003	0.0000	24.5200	24.5200	2.5700e-003	4.1000e-004	24.7062

6.2 Area by SubCategory

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Architectural Coating	0.2094					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.2207					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.2600e-003	0.0193	8.2100e-003	1.2000e-004		1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003	0.0000	22.3462	22.3462	4.3000e-004	4.1000e-004	22.4790
Landscaping	0.0410	0.0155	1.3371	7.0000e-005		7.3200e-003	7.3200e-003		7.3200e-003	7.3200e-003	0.0000	2.1737	2.1737	2.1400e-003	0.0000	2.2272
Total	**1.4734**	**0.0348**	**1.3453**	**1.9000e-004**		**8.8800e-003**	**8.8800e-003**		**8.8800e-003**	**8.8800e-003**	**0.0000**	**24.5200**	**24.5200**	**2.5700e-003**	**4.1000e-004**	**24.7062**

7.0 Water Detail

7.1 Mitigation Measures Water

Category	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	39.6016	0.7207	0.0174	62.8105
Unmitigated	39.6016	0.7207	0.0174	62.8105

7.2 Water by Land Use

Unmitigated

Land Use	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
	Mgal	MT/yr			
Apartments High Rise	11.6626 / 7.35249	21.0116	0.3812	9.2100e-003	33.2875
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.2837 / 6.3029	18.4044	0.3361	8.1200e-003	29.2282
Strip Mall	0.103702 / 0.063559	0.1856	3.3900e-003	8.0000e-005	0.2947
Total		**39.6016**	**0.7207**	**0.0174**	**62.8105**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	27.9356	1.6510	0.0000	69.2093
Unmitigated	27.9356	1.6510	0.0000	69.2093

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	82.34	16.7143	0.9878	0.0000	41.4089
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	53.81	10.9229	0.6455	0.0000	27.0611
Strip Mall	1.47	0.2984	0.0176	0.0000	0.7393
Total		**27.9356**	**1.6510**	**0.0000**	**69.2093**

9.0 Operational Offroad

	ROG	NOx	CO	SO2	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**

1433 Webster Street, Existing
Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	25.15	1000sqft	0.41	25,145.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 63

Climate Zone 5 **Operational Year** 2019

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 429.6 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Emission Intensity

Land Use - From the latest transportation study

Construction Phase -

Off-road Equipment -

Off-road Equipment - Construction Emission zeroed out

Grading -

Vehicle Trips - from the transportation study

Energy Use - Default values used

Table Name	Column Name	Default Value	New Value

tblLandUse	LotAcreage	0.58	0.41
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2018	2019
tblVehicleTrips	WD_TR	11.03	11.02

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	0.1113	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.8000e-004
Energy	2.6300e-003	0.0239	0.0201	1.4000e-004		1.8200e-003	1.8200e-003		1.8200e-003	1.8200e-003	0.0000	88.6293	88.6293	4.7200e-003	1.3500e-003	89.1502
Mobile	0.0737	0.4650	0.8200	2.6000e-003	0.1882	3.6300e-003	0.1919	0.0506	3.4300e-003	0.0540	0.0000	238.9232	238.9232	0.0114	0.0000	239.2083
Waste						0.0000	0.0000		0.0000	0.0000	4.7459	0.0000	4.7459	0.2805	0.0000	11.7578
Water						0.0000	0.0000		0.0000	0.0000	1.4176	6.5791	7.9967	0.1460	3.5300e-003	12.6996
Total	**0.1877**	**0.4889**	**0.8404**	**2.7400e-003**	**0.1882**	**5.4500e-003**	**0.1937**	**0.0506**	**5.2500e-003**	**0.0559**	**6.1635**	**334.1320**	**340.2955**	**0.4426**	**4.8800e-003**	**352.8163**

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	0.0737	0.4650	0.8200	2.6000e-003	0.1882	3.6300e-003	0.1919	0.0506	3.4300e-003	0.0540	0.0000	238.9232	238.9232	0.0114	0.0000	239.2083
Unmitigated	0.0737	0.4650	0.8200	2.6000e-003	0.1882	3.6300e-003	0.1919	0.0506	3.4300e-003	0.0540	0.0000	238.9232	238.9232	0.0114	0.0000	239.2083

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	277.10	61.86	26.40	503,128	503,128
Total	277.10	61.86	26.40	503,128	503,128

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.556416	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	62.5709	62.5709	4.2200e-003	8.7000e-004	62.9369
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	62.5709	62.5709	4.2200e-003	8.7000e-004	62.9369
NaturalGas Mitigated	2.6300e-003	0.0239	0.0201	1.4000e-004		1.8200e-003	1.8200e-003		1.8200e-003	1.8200e-003	0.0000	26.0584	26.0584	5.0000e-004	4.8000e-004	26.2133
NaturalGas Unmitigated	2.6300e-003	0.0239	0.0201	1.4000e-004		1.8200e-003	1.8200e-003		1.8200e-003	1.8200e-003	0.0000	26.0584	26.0584	5.0000e-004	4.8000e-004	26.2133

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	488316	2.6300e-003	0.0239	0.0201	1.4000e-004		1.8200e-003	1.8200e-003		1.8200e-003	1.8200e-003	0.0000	26.0584	26.0584	5.0000e-004	4.8000e-004	26.2133
Total		**2.6300e-003**	**0.0239**	**0.0201**	**1.4000e-004**		**1.8200e-003**	**1.8200e-003**		**1.8200e-003**	**1.8200e-003**	**0.0000**	**26.0584**	**26.0584**	**5.0000e-004**	**4.8000e-004**	**26.2133**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	321102	62.5709	4.2200e-003	8.7000e-004	62.9369
Total		**62.5709**	**4.2200e-003**	**8.7000e-004**	**62.9369**

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	0.1113	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.8000e-004
Unmitigated	0.1113	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.8000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0131					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0982					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping	2.0000e-005	0.0000	2.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	4.5000e-004	4.5000e-004	0.0000	0.0000	4.8000e-004
Total	**0.1113**	**0.0000**	**2.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**4.5000e-004**	**4.5000e-004**	**0.0000**	**0.0000**	**4.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.9967	0.1460	3.5300e-003	12.6996
Unmitigated	7.9967	0.1460	3.5300e-003	12.6996

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	4.46823 / 2.73859	7.9967	0.1460	3.5300e-003	12.6996
Total		**7.9967**	**0.1460**	**3.5300e-003**	**12.6996**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.7459	0.2805	0.0000	11.7578
Unmitigated	4.7459	0.2805	0.0000	11.7578

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	23.38	4.7459	0.2805	0.0000	11.7578
Total		**4.7459**	**0.2805**	**0.0000**	**11.7578**

CalEEMod Output- TAC Emissions

1433 Webster Street, TAC

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	57.86	1000sqft	0.00	57,860.00	0
Enclosed Parking with Elevator	91.00	Space	0.00	23,347.00	0
Apartments High Rise	179.00	Dwelling Unit	0.41	252,908.00	512
Strip Mall	1.40	1000sqft	0.00	1,398.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 63

Climate Zone 5 **Operational Year** 2019

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 429.6 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Emission Intensity

Land Use - from construction spreadsheet

Construction Phase - Applicant provided construction schedule

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Off-road Equipment - Applicant provided equipment list

Trips and VMT - 750 total round trips of cement trucks
Total number of demolition trips= default+(25/20*2)=117+3=120
Paving trips=50/16*2~8

Demolition - 25,631 sf of building demolished

Grading - 18,000 cy of soil exported

Construction Off-road Equipment Mitigation - Best Management Practices
Tier 2 and Tier 4 Portable

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	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
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	5.00	131.00
tblConstructionPhase	NumDays	100.00	217.00
tblConstructionPhase	NumDays	10.00	15.00
tblConstructionPhase	NumDays	2.00	18.00
tblConstructionPhase	NumDays	5.00	12.00
tblConstructionPhase	PhaseEndDate	3/22/2019	12/31/2018
tblConstructionPhase	PhaseEndDate	9/4/2018	10/1/2018
tblConstructionPhase	PhaseEndDate	10/18/2017	10/25/2017
tblConstructionPhase	PhaseEndDate	9/20/2018	12/31/2018
tblConstructionPhase	PhaseEndDate	9/22/2017	9/25/2017
tblConstructionPhase	PhaseStartDate	9/21/2018	7/1/2018
tblConstructionPhase	PhaseStartDate	11/4/2017	12/1/2017
tblConstructionPhase	PhaseStartDate	9/23/2017	10/2/2017
tblConstructionPhase	PhaseStartDate	9/5/2018	12/14/2018
tblConstructionPhase	PhaseStartDate	9/22/2017	9/25/2017
tblGrading	MaterialExported	0.00	18,000.00
tblLandUse	BuildingSpaceSquareFeet	36,400.00	23,347.00

tblLandUse	BuildingSpaceSquareFeet	179,000.00	252,908.00
tblLandUse	BuildingSpaceSquareFeet	1,400.00	1,398.00
tblLandUse	LandUseSquareFeet	36,400.00	23,347.00
tblLandUse	LandUseSquareFeet	179,000.00	252,908.00
tblLandUse	LandUseSquareFeet	1,400.00	1,398.00
tblLandUse	LotAcreage	1.33	0.00
tblLandUse	LotAcreage	0.82	0.00
tblLandUse	LotAcreage	2.89	0.41
tblLandUse	LotAcreage	0.03	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	4.00	8.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	8.00	5.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2018	2019
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	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripNumber	117.00	120.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,500.00
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	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	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
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	0.1247	1.2451	0.7475	1.3500e-003	0.0776	0.0639	0.1415	0.0345	0.0607	0.0953	0.0000	122.2886	122.2886	0.0267	0.0000	122.9563
2018	2.2819	1.4195	1.2339	1.8700e-003	8.5000e-003	0.0780	0.0866	2.3300e-003	0.0741	0.0764	0.0000	164.6633	164.6633	0.0373	0.0000	165.5959

Maximum	**2.2819**	**1.4195**	**1.2339**	**1.8700e-003**	**0.0776**	**0.0780**	**0.1415**	**0.0345**	**0.0741**	**0.0953**	**0.0000**	**164.6633**	**164.6633**	**0.0373**	**0.0000**	**165.5959**

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	0.0398	0.9287	0.7862	1.3500e-003	0.0359	0.0191	0.0549	8.1300e-003	0.0191	0.0272	0.0000	122.2885	122.2885	0.0267	0.0000	122.9562
2018	2.1743	1.2471	1.1902	1.8700e-003	8.5000e-003	0.0346	0.0431	2.3300e-003	0.0345	0.0369	0.0000	164.6631	164.6631	0.0373	0.0000	165.5957
Maximum	**2.1743**	**1.2471**	**1.1902**	**1.8700e-003**	**0.0359**	**0.0346**	**0.0549**	**8.1300e-003**	**0.0345**	**0.0369**	**0.0000**	**164.6631**	**164.6631**	**0.0373**	**0.0000**	**165.5957**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**8.00**	**18.34**	**0.25**	**0.00**	**48.47**	**62.22**	**57.04**	**71.61**	**60.23**	**62.69**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	**Start Date**	**End Date**	**Maximum Unmitigated ROG + NOX (tons/quarter)**	**Maximum Mitigated ROG + NOX (tons/quarter)**
1	**9-1-2017**	**11-30-2017**	1.1876	0.8223
2	**12-1-2017**	**2-28-2018**	0.3855	0.3372
3	**3-1-2018**	**5-31-2018**	0.3836	0.3458
4	**6-1-2018**	**8-31-2018**	1.2218	1.1285
5	**9-1-2018**	**9-30-2018**	0.5305	0.4913
		Highest	1.2218	1.1285

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	9/1/2017	9/21/2017	5	15	

2	Site Preparation	Site Preparation	9/25/2017	9/25/2017	5	1	
3	Grading	Grading	10/2/2017	10/25/2017	5	18	
4	Trenching	Trenching	10/30/2017	11/14/2017	5	12	
5	Building Construction	Building Construction	12/1/2017	10/1/2018	5	217	
6	Architectural Coating	Architectural Coating	7/1/2018	12/31/2018	5	131	
7	Paving	Paving	12/14/2018	12/31/2018	5	12	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 9

Acres of Paving: 0

Residential Indoor: 512,139; Residential Outdoor: 170,713; Non-Residential Indoor: 88,887; Non-Residential Outdoor: 29,629; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	3	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Plate Compactors	1	8.00	8	0.43
Grading	Pumps	2	24.00	84	0.74
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	2	4.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	5.00	97	0.37
Building Construction	Welders	4	2.60	46	0.45
Architectural Coating	Aerial Lifts	1	8.00	63	0.31
Architectural Coating	Air Compressors	1	8.00	78	0.48
Architectural Coating	Forklifts	2	4.40	89	0.20
Paving	Cement and Mortar Mixers	4	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	120.00	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	11	28.00	0.00	2,250.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Trenching	2	5.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Building Construction	8	158.00	33.00	1,500.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Architectural Coating	4	32.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	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					0.0126	0.0000	0.0126	1.9100e-003	0.0000	1.9100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0302	0.3075	0.1585	2.6000e-004		0.0170	0.0170		0.0158	0.0158	0.0000	23.8478	23.8478	6.4300e-003	0.0000	24.0084
Total	**0.0302**	**0.3075**	**0.1585**	**2.6000e-004**	**0.0126**	**0.0170**	**0.0296**	**1.9100e-003**	**0.0158**	**0.0177**	**0.0000**	**23.8478**	**23.8478**	**6.4300e-003**	**0.0000**	**24.0084**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	6.7100e-003	9.3000e-004	1.0000e-005	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.7202	0.7202	1.6000e-004	0.0000	0.7241
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	1.7000e-004	8.0000e-005	1.0100e-003	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0638	0.0638	1.0000e-005	0.0000	0.0640
Total	**3.3000e-004**	**6.7900e-003**	**1.9400e-003**	**1.0000e-005**	**7.0000e-005**	**1.0000e-005**	**8.0000e-005**	**2.0000e-005**	**1.0000e-005**	**3.0000e-005**	**0.0000**	**0.7840**	**0.7840**	**1.7000e-004**	**0.0000**	**0.7881**

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					5.6800e-003	0.0000	5.6800e-003	4.3000e-004	0.0000	4.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6900e-003	0.2034	0.1614	2.6000e-004		5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	23.8477	23.8477	6.4300e-003	0.0000	24.0084
Total	**7.6900e-003**	**0.2034**	**0.1614**	**2.6000e-004**	**5.6800e-003**	**5.2000e-003**	**0.0109**	**4.3000e-004**	**5.2000e-003**	**5.6300e-003**	**0.0000**	**23.8477**	**23.8477**	**6.4300e-003**	**0.0000**	**24.0084**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	6.7100e-003	9.3000e-004	1.0000e-005	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.7202	0.7202	1.6000e-004	0.0000	0.7241
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	1.7000e-004	8.0000e-005	1.0100e-003	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0638	0.0638	1.0000e-005	0.0000	0.0640
Total	**3.3000e-004**	**6.7900e-003**	**1.9400e-003**	**1.0000e-005**	**7.0000e-005**	**1.0000e-005**	**8.0000e-005**	**2.0000e-005**	**1.0000e-005**	**3.0000e-005**	**0.0000**	**0.7840**	**0.7840**	**1.7000e-004**	**0.0000**	**0.7881**

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					3.2800e-003	0.0000	3.2800e-003	1.6800e-003	0.0000	1.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road	1.0400e-003	0.0119	4.4900e-003	1.0000e-005		5.6000e-004	5.6000e-004		5.2000e-004	5.2000e-004	0.0000	0.8498	0.8498	2.6000e-004	0.0000	0.8563
Total	**1.0400e-003**	**0.0119**	**4.4900e-003**	**1.0000e-005**	**3.2800e-003**	**5.6000e-004**	**3.8400e-003**	**1.6800e-003**	**5.2000e-004**	**2.2000e-003**	**0.0000**	**0.8498**	**0.8498**	**2.6000e-004**	**0.0000**	**0.8563**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.2700e-003	2.2700e-003	0.0000	0.0000	2.2700e-003
Total	**1.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.2700e-003**	**2.2700e-003**	**0.0000**	**0.0000**	**2.2700e-003**

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					1.4700e-003	0.0000	1.4700e-003	3.8000e-004	0.0000	3.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6000e-004	7.9200e-003	5.1900e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.8498	0.8498	2.6000e-004	0.0000	0.8563
Total	**2.6000e-004**	**7.9200e-003**	**5.1900e-003**	**1.0000e-005**	**1.4700e-003**	**2.0000e-004**	**1.6700e-003**	**3.8000e-004**	**2.0000e-004**	**5.8000e-004**	**0.0000**	**0.8498**	**0.8498**	**2.6000e-004**	**0.0000**	**0.8563**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	0.0000	4.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2.2700e-003	2.2700e-003	0.0000	0.0000	2.2700e-003
Total	**1.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.2700e-003**	**2.2700e-003**	**0.0000**	**0.0000**	**2.2700e-003**

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					0.0600	0.0000	0.0600	0.0305	0.0000	0.0305	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0691	0.6335	0.4350	7.5000e-004		0.0372	0.0372		0.0359	0.0359	0.0000	66.4668	66.4668	0.0125	0.0000	66.7801
Total	**0.0691**	**0.6335**	**0.4350**	**7.5000e-004**	**0.0600**	**0.0372**	**0.0972**	**0.0305**	**0.0359**	**0.0663**	**0.0000**	**66.4668**	**66.4668**	**0.0125**	**0.0000**	**66.7801**

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	2.9300e-003	0.1258	0.0174	1.4000e-004	5.0000e-004	1.8000e-004	6.8000e-004	1.4000e-004	1.7000e-004	3.1000e-004	0.0000	13.5031	13.5031	2.9600e-003	0.0000	13.5771
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	1.7000e-004	2.2700e-003	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1430	0.1430	1.0000e-005	0.0000	0.1433
Total	**3.3100e-003**	**0.1260**	**0.0197**	**1.4000e-004**	**5.9000e-004**	**1.8000e-004**	**7.8000e-004**	**1.7000e-004**	**1.7000e-004**	**3.4000e-004**	**0.0000**	**13.6461**	**13.6461**	**2.9700e-003**	**0.0000**	**13.7204**

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					0.0270	0.0000	0.0270	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0189	0.4357	0.4741	7.5000e-004		8.8500e-003	8.8500e-003		8.8500e-003	8.8500e-003	0.0000	66.4667	66.4667	0.0125	0.0000	66.7800
Total	**0.0189**	**0.4357**	**0.4741**	**7.5000e-004**	**0.0270**	**8.8500e-003**	**0.0358**	**6.8500e-003**	**8.8500e-003**	**0.0157**	**0.0000**	**66.4667**	**66.4667**	**0.0125**	**0.0000**	**66.7800**

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	2.9300e-003	0.1258	0.0174	1.4000e-004	5.0000e-004	1.8000e-004	6.8000e-004	1.4000e-004	1.7000e-004	3.1000e-004	0.0000	13.5031	13.5031	2.9600e-003	0.0000	13.5771
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	1.7000e-004	2.2700e-003	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1430	0.1430	1.0000e-005	0.0000	0.1433
Total	**3.3100e-003**	**0.1260**	**0.0197**	**1.4000e-004**	**5.9000e-004**	**1.8000e-004**	**7.8000e-004**	**1.7000e-004**	**1.7000e-004**	**3.4000e-004**	**0.0000**	**13.6461**	**13.6461**	**2.9700e-003**	**0.0000**	**13.7204**

3.5 Trenching - 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	4.0200e-003	0.0418	0.0344	5.0000e-005		2.5300e-003	2.5300e-003		2.3300e-003	2.3300e-003	0.0000	4.6058	4.6058	1.4100e-003	0.0000	4.6410
Total	**4.0200e-003**	**0.0418**	**0.0344**	**5.0000e-005**		**2.5300e-003**	**2.5300e-003**		**2.3300e-003**	**2.3300e-003**	**0.0000**	**4.6058**	**4.6058**	**1.4100e-003**	**0.0000**	**4.6410**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	2.0000e-005	2.7000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0170	0.0170	0.0000	0.0000	0.0171
Total	**5.0000e-005**	**2.0000e-005**	**2.7000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0170**	**0.0170**	**0.0000**	**0.0000**	**0.0171**

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	2.0800e-003	0.0445	0.0376	5.0000e-005		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003	0.0000	4.6058	4.6058	1.4100e-003	0.0000	4.6410
Total	**2.0800e-003**	**0.0445**	**0.0376**	**5.0000e-005**		**1.5400e-003**	**1.5400e-003**		**1.5400e-003**	**1.5400e-003**	**0.0000**	**4.6058**	**4.6058**	**1.4100e-003**	**0.0000**	**4.6410**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	2.0000e-005	2.7000e-004	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0170	0.0170	0.0000	0.0000	0.0171
Total	**5.0000e-005**	**2.0000e-005**	**2.7000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0170**	**0.0170**	**0.0000**	**0.0000**	**0.0171**

3.6 Building Construction - 2017

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Off-Road	0.0132	0.0829	0.0706	9.0000e-005		6.3300e-003	6.3300e-003		5.9600e-003	5.9600e-003	0.0000	7.8471	7.8471	2.1700e-003	0.0000	7.9015

Total	**0.0132**	**0.0829**	**0.0706**	**9.0000e-005**		**6.3300e-003**	**6.3300e-003**		**5.9600e-003**	**5.9600e-003**	**0.0000**	**7.8471**	**7.8471**	**2.1700e-003**	**0.0000**	**7.9015**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9000e-004	8.1100e-003	1.1200e-003	1.0000e-005	2.5000e-004	1.0000e-005	2.6000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.8712	0.8712	1.9000e-004	0.0000	0.8759
Vendor	7.6000e-004	0.0255	6.5100e-003	3.0000e-005	1.6000e-004	5.0000e-005	2.2000e-004	5.0000e-005	5.0000e-005	1.0000e-004	0.0000	2.4097	2.4097	5.0000e-004	0.0000	2.4221
Worker	2.5000e-003	1.1500e-003	0.0150	1.0000e-005	6.2000e-004	2.0000e-005	6.4000e-004	1.7000e-004	1.0000e-005	1.8000e-004	0.0000	0.9411	0.9411	8.0000e-005	0.0000	0.9432
Total	**3.4500e-003**	**0.0348**	**0.0226**	**5.0000e-005**	**1.0300e-003**	**8.0000e-005**	**1.1200e-003**	**2.8000e-004**	**7.0000e-005**	**3.5000e-004**	**0.0000**	**4.2220**	**4.2220**	**7.7000e-004**	**0.0000**	**4.2412**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.7200e-003	0.0696	0.0634	9.0000e-005		3.0200e-003	3.0200e-003		3.0200e-003	3.0200e-003	0.0000	7.8471	7.8471	2.1700e-003	0.0000	7.9014
Total	**3.7200e-003**	**0.0696**	**0.0634**	**9.0000e-005**		**3.0200e-003**	**3.0200e-003**		**3.0200e-003**	**3.0200e-003**	**0.0000**	**7.8471**	**7.8471**	**2.1700e-003**	**0.0000**	**7.9014**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9000e-004	8.1100e-003	1.1200e-003	1.0000e-005	2.5000e-004	1.0000e-005	2.6000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.8712	0.8712	1.9000e-004	0.0000	0.8759
Vendor	7.6000e-004	0.0255	6.5100e-003	3.0000e-005	1.6000e-004	5.0000e-005	2.2000e-004	5.0000e-005	5.0000e-005	1.0000e-004	0.0000	2.4097	2.4097	5.0000e-004	0.0000	2.4221
Worker	2.5000e-003	1.1500e-003	0.0150	1.0000e-005	6.2000e-004	2.0000e-005	6.4000e-004	1.7000e-004	1.0000e-005	1.8000e-004	0.0000	0.9411	0.9411	8.0000e-005	0.0000	0.9432
Total	**3.4500e-003**	**0.0348**	**0.0226**	**5.0000e-005**	**1.0300e-003**	**8.0000e-005**	**1.1200e-003**	**2.8000e-004**	**7.0000e-005**	**3.5000e-004**	**0.0000**	**4.2220**	**4.2220**	**7.7000e-004**	**0.0000**	**4.2412**

3.6 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1063	0.6907	0.6418	8.6000e-004		0.0496	0.0496		0.0468	0.0468	0.0000	72.4105	72.4105	0.0197	0.0000	72.9024
Total	**0.1063**	**0.6907**	**0.6418**	**8.6000e-004**		**0.0496**	**0.0496**		**0.0468**	**0.0468**	**0.0000**	**72.4105**	**72.4105**	**0.0197**	**0.0000**	**72.9024**

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					

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling	1.5900e-003	0.0736	9.6900e-003	9.0000e-005	3.2000e-004	7.0000e-005	4.0000e-004	9.0000e-005	7.0000e-005	1.6000e-004	0.0000	8.2553	8.2553	1.6500e-003	0.0000	8.2965
Vendor	6.3400e-003	0.2322	0.0551	2.4000e-004	1.5300e-003	3.9000e-004	1.9200e-003	4.5000e-004	3.7000e-004	8.2000e-004	0.0000	22.7779	22.7779	4.2700e-003	0.0000	22.8847
Worker	0.0209	9.3400e-003	0.1232	1.0000e-004	5.8100e-003	1.4000e-004	5.9500e-003	1.5700e-003	1.3000e-004	1.6900e-003	0.0000	8.5595	8.5595	6.6000e-004	0.0000	8.5759
Total	**0.0288**	**0.3151**	**0.1880**	**4.3000e-004**	**7.6600e-003**	**6.0000e-004**	**8.2700e-003**	**2.1100e-003**	**5.7000e-004**	**2.6700e-003**	**0.0000**	**39.5928**	**39.5928**	**6.5800e-003**	**0.0000**	**39.7571**

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	0.0347	0.6495	0.5914	8.6000e-004		0.0282	0.0282		0.0282	0.0282	0.0000	72.4104	72.4104	0.0197	0.0000	72.9023
Total	**0.0347**	**0.6495**	**0.5914**	**8.6000e-004**		**0.0282**	**0.0282**		**0.0282**	**0.0282**	**0.0000**	**72.4104**	**72.4104**	**0.0197**	**0.0000**	**72.9023**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5900e-003	0.0736	9.6900e-003	9.0000e-005	3.2000e-004	7.0000e-005	4.0000e-004	9.0000e-005	7.0000e-005	1.6000e-004	0.0000	8.2553	8.2553	1.6500e-003	0.0000	8.2965
Vendor	6.3400e-003	0.2322	0.0551	2.4000e-004	1.5300e-003	3.9000e-004	1.9200e-003	4.5000e-004	3.7000e-004	8.2000e-004	0.0000	22.7779	22.7779	4.2700e-003	0.0000	22.8847
Worker	0.0209	9.3400e-003	0.1232	1.0000e-004	5.8100e-003	1.4000e-004	5.9500e-003	1.5700e-003	1.3000e-004	1.6900e-003	0.0000	8.5595	8.5595	6.6000e-004	0.0000	8.5759
Total	**0.0288**	**0.3151**	**0.1880**	**4.3000e-004**	**7.6600e-003**	**6.0000e-004**	**8.2700e-003**	**2.1100e-003**	**5.7000e-004**	**2.6700e-003**	**0.0000**	**39.5928**	**39.5928**	**6.5800e-003**	**0.0000**	**39.7571**

3.7 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	2.0942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0417	0.3352	0.3207	4.8000e-004		0.0235	0.0235		0.0227	0.0227	0.0000	42.3892	42.3892	8.3700e-003	0.0000	42.5985
Total	**2.1359**	**0.3352**	**0.3207**	**4.8000e-004**		**0.0235**	**0.0235**		**0.0227**	**0.0227**	**0.0000**	**42.3892**	**42.3892**	**8.3700e-003**	**0.0000**	**42.5985**

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	2.8300e-003	1.2600e-003	0.0167	1.0000e-005	7.9000e-004	2.0000e-005	8.1000e-004	2.1000e-004	2.0000e-005	2.3000e-004	0.0000	1.1587	1.1587	9.0000e-005	0.0000	1.1609
Total	**2.8300e-003**	**1.2600e-003**	**0.0167**	**1.0000e-005**	**7.9000e-004**	**2.0000e-005**	**8.1000e-004**	**2.1000e-004**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**1.1587**	**1.1587**	**9.0000e-005**	**0.0000**	**1.1609**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0942					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.9500e-003	0.2028	0.3272	4.8000e-004		3.0500e-003	3.0500e-003		3.0500e-003	3.0500e-003	0.0000	42.3891	42.3891	8.3700e-003	0.0000	42.5985
Total	**2.1041**	**0.2028**	**0.3272**	**4.8000e-004**		**3.0500e-003**	**3.0500e-003**		**3.0500e-003**	**3.0500e-003**	**0.0000**	**42.3891**	**42.3891**	**8.3700e-003**	**0.0000**	**42.5985**

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	2.8300e-003	1.2600e-003	0.0167	1.0000e-005	7.9000e-004	2.0000e-005	8.1000e-004	2.1000e-004	2.0000e-005	2.3000e-004	0.0000	1.1587	1.1587	9.0000e-005	0.0000	1.1609
Total	**2.8300e-003**	**1.2600e-003**	**0.0167**	**1.0000e-005**	**7.9000e-004**	**2.0000e-005**	**8.1000e-004**	**2.1000e-004**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**1.1587**	**1.1587**	**9.0000e-005**	**0.0000**	**1.1609**

3.8 Paving - 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	7.9400e-003	0.0772	0.0658	1.0000e-004		4.3300e-003	4.3300e-003		4.0200e-003	4.0200e-003	0.0000	9.0458	9.0458	2.5900e-003	0.0000	9.1105

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.9400e-003**	**0.0772**	**0.0658**	**1.0000e-004**		**4.3300e-003**	**4.3300e-003**		**4.0200e-003**	**4.0200e-003**	**0.0000**	**9.0458**	**9.0458**	**2.5900e-003**	**0.0000**	**9.1105**

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	1.6000e-004	7.0000e-005	9.6000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0663	0.0663	1.0000e-005	0.0000	0.0665
Total	**1.6000e-004**	**7.0000e-005**	**9.6000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0663**	**0.0663**	**1.0000e-005**	**0.0000**	**0.0665**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6700e-003	0.0784	0.0659	1.0000e-004		2.7300e-003	2.7300e-003		2.7300e-003	2.7300e-003	0.0000	9.0458	9.0458	2.5900e-003	0.0000	9.1105
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.6700e-003**	**0.0784**	**0.0659**	**1.0000e-004**		**2.7300e-003**	**2.7300e-003**		**2.7300e-003**	**2.7300e-003**	**0.0000**	**9.0458**	**9.0458**	**2.5900e-003**	**0.0000**	**9.1105**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	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	1.6000e-004	7.0000e-005	9.6000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0663	0.0663	1.0000e-005	0.0000	0.0665
Total	**1.6000e-004**	**7.0000e-005**	**9.6000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0663**	**0.0663**	**1.0000e-005**	**0.0000**	**0.0665**

Emission Summary

DPM Construction Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2017	Construction	0.0639	1_DPM	127.8	0.02918	3.68E-03	1,510	2.44E-06
2018	Construction	0.0780	1_DPM	156.0	0.03562	4.49E-03	1,510	2.97E-06
Total		***0.1419***		***284***	***0.0648***	***0.0082***		

Construction Hours

hr/day =	12	(7am - 7pm)
days/yr =	365	
hours/year =	4380	

PM2.5 Fugitive Dust Construction Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2017	Construction	1_FUG	0.0345	69.0	0.01575	1.98E-03	1,510	1.31E-06
2018	Construction	1_FUG	0.0023	4.7	0.00106	1.34E-04	1,510	8.88E-08
Total			***0.0368***	***73.7***	***0.0168***	***0.0021***		

Construction Hours

hr/day =	12	(7am - 7pm)
days/yr =	365	
hours/year =	4380	

Unmitigated emissions. Emissions reduced by 60 to 80% with Tier 4 equipment required under SCA #19

Health Risk Calculations- Off Site Residences

1433 Webster Street, 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 $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

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

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

Unmitigated emissions. Emissions reduced by 60 to 80% with Tier 4 equipment required under SCA #19. Cancer risk reduced by minimum 60%

Values

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

Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information: DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Infant/Child Cancer Risk (per million)	Adult - Exposure Information: Modeled DPM Conc (ug/m3) Year	Annual	Age Sensitivity Factor	Adult Cancer Risk (per million)	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	-	0.0000	10	-	-	-	-	-		
1	1	0 - 1	2017	0.0618	10	10.15	2017	0.0653	1	0.19	0.0524	0.118
2	1	1 - 2	2018	0.0752	10	12.35	2018	0.1033	1	0.30	0.0036	0.107
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00		
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						**22.5**				**0.48**		

* Third trimester of pregnancy

Health Risk Calculations- Envision Academy of Science and Technology

1433 Webster Street,Oakland, CA - Construction Impacts - Unmitigated Emissions
Maximum DPM Cancer Risk Calculations From Construction
Envision Academy of Science and Technology - 1.5 meters - Child Exposures

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

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

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

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

Unmitigated emissions. Emissions reduced by 60 to 80% with Tier 4 equipment required under SCA #19. Cancer risk reduced by minimum 60%

Values

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

		Student - Exposure Information			Student		
Exposure Year	**Exposure Duration (years)**	**DPM Conc (ug/m3)**		**Age* Sensitivity Factor**	**Cancer Risk (per million)**	**Fugitive PM2.5**	**Total PM2.5**
		Year	**Annual**				
1	1	2017	0.2417	3	6.25	0.2175	0.459
2	1	2018	0.2942	3	7.61	0.0148	0.309
Total Increased Cancer Risk					**13.9**		

* Students assumed to be less than 16 years of age

Maximum Impacts at Off- Site Residences

Construction Year	Unmitigated						
	Maximum Concentrations		Cancer Risk (per million)		Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM2.5/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Child	Adult	(-)	($\mu g/m^3$)
2017	0.0618	0.0524	10.15	0.19	0.012	0.118
2018	0.0752	0.0036	12.35	0.30	0.015	0.107
Total	-	-	**22.5**	**0.5**	-	-
Maximum Annual	0.0752	0.0524	-	-	**0.015**	**0.118**

Unmitigated emissions. Emissions reduced by 60 to 80% with Tier 4 equipment required under SCA #19. **Cancer risk reduced by minimum 60% to 9.0 chances per million or less**

Maximum Impacts at Envision Academy of Science and Technology

Construction Year	Unmitigated				
	Maximum Concentrations		Cancer Risk (per million)	Hazard Index	Maximum Annual PM2.5 Concentration
	Exhaust PM10/DPM ($\mu g/m^3$)	Fugitive PM2.5 ($\mu g/m^3$)	Child	(-)	($\mu g/m^3$)
2017	0.2417	0.2175	6.25	0.048	0.459
2018	0.2942	0.0148	7.61	0.059	0.309
Total	-	-	**13.9**	-	-
Maximum Annual	0.2942	0.2175	-	**0.059**	**0.459**

Unmitigated emissions. Emissions reduced by 60 to 80% with Tier 4 equipment required under SCA #19. **Cancer risk reduced by minimum 60% to 5.6 per million or less**

Attachment 3: Generator Emissions Modeling

Off-Site Generators- On Site Receptors

BAAQMD Plant # 13494

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/m^3)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

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

TAC	CPF
DPM	1.10E+00

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

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

MEI Cancer Risk From: BAAQMD Plant # 13494
5th Floor Receptors

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	0.0007	0.01
2	1 - 2	10	0.0007	0.22
14	3 - 16	3	0.0007	0.25
14	17 - 30	1	0.0007	0.03
Total Increased Cancer Risk				**0.5**

* Third trimester of pregnancy

Maximum Cancer Risk by Floor Level
BAAQMD Plant # 13494

Floor Level	Receptor Height (m)	DPM Annual Conc (ug/m3)	Maximum DPM Cancer Risk (per million)
	30.0	0.00068	0.5
8th	33	0.00067	0.5
9th	36.1	0.00066	0.5
10th	39.1	0.00066	0.5
11th	42.2	0.00066	0.5
12th	45.2	0.00066	0.5
13th	48.3	0.00065	0.5
14th	51.5	0.00064	0.5
15th	54.5	0.00064	0.5
16th	57.6	0.00063	0.5
17th	60.6	0.00063	0.5
18th	63.7	0.00062	0.5
24th	82	0.00059	0.4
25th	85	0.00058	0.4
26th	88.1	0.00058	0.4
27th	91.1	0.00057	0.4
28th	94.2	0.00057	0.424246409

BAAQMD Plant # 13494

DPM Emission Rates			
	Annual	DPM Emissions	
	Operation	Daily*	Annual
Source Type	(hr)	(lb/day)	(lb/yr)
Generator	-	0.0463	16.90

* From BAAQMD permit inventory

Modeling Information		
Model:	AERMOD	
Source	Diesel Engine	
Source Type	Point	
Distance to Residences (ft)	various - minimum distance to generator = 60 feet	
Receptor Spacing	6 meters spacing in residential areas	
Meteorological Data	2009-2013 CARB Metro Oakland Airport Data	
Point Source Stack Parameters		
Generator engine size (hp)	unknown	
Stack Height (ft)	12	
Stack Diameter** (ft)	0.60	
Stack Exit Velocity** (ft/sec)	149	
Exhaust Temperature** (F)	872	
Annual Emission Rate (lb/year)	16.90	from BAAQMD inventory data
Hourly Emission Rate (lb/hr)	1.93E-03	

** BAAQMD default generator parameters

BAAQMD Plant # 13494

Cancer Risk Calculation Method

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

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

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

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

Values

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

TAC	CPF
DPM	1.10E+00

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

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

MEI Cancer Risk From: BAAQMD Plant # 13494
5th Floor Receptors

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	0.0002	0.00
2	1 - 2	10	0.0002	0.08
14	3 - 16	3	0.0002	0.09
14	17 - 30	1	0.0002	0.01
Total Increased Cancer Risk				**0.2**

* Third trimester of pregnancy

Maximum Cancer Risk by Floor Level
BAAQMD Plant # 13494

Floor Level	Receptor Height (m)	DPM Annual Conc (ug/m3)	Maximum DPM Cancer Risk (per million)
7th	30.0	0.00024	0.2
8th	33	0.00024	0.2
9th	36.1	0.00024	0.2
10th	39.1	0.00024	0.2
11th	42.2	0.00024	0.2
12th	45.2	0.00025	0.2
13th	48.3	0.00025	0.2
14th	51.5	0.00025	0.2
15th	54.5	0.00025	0.2
16th	57.6	0.00024	0.2
17th	60.6	0.00024	0.2
18th	63.7	0.00024	0.2
24th	82	0.0002	0.1
25th	85	0.00019	0.1
26th	88.1	0.00019	0.1
27th	91.1	0.00018	0.1
28th	94.2	0.00017	0.126529631

BAAQMD Plant # 13494

DPM Emission Rates			
	Annual	DPM Emissions	
	Operation	Daily*	Annual
Source Type	(hr)	(lb/day)	(lb/yr)
Generator	-	0.0463	16.90

* From BAAQMD permit inventory

Modeling Information		
Model:	AERMOD	
Source	Diesel Engine	
Source Type	Point	
Distance to Residences (ft)	various - minimum distance to generator = 60 feet	
Receptor Spacing	6 meters spacing in residential areas	
Meteorological Data	2009-2013 CARB Metro Oakland Airport Data	
Point Source Stack Parameters		
Generator engine size (hp)	unknown	
Stack Height (ft)	12	
Stack Diameter** (ft)	0.60	
Stack Exit Velocity** (ft/sec)	149	
Exhaust Temperature** (F)	872	
Annual Emission Rate (lb/year)	16.90	from BAAQMD inventory data
Hourly Emission Rate (lb/hr)	1.93E-03	

** BAAQMD default generator parameters

BAAQMD Plant #14532

Cancer Risk Calculation Method

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

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

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

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

Values

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

TAC	CPF
DPM	1.10E+00

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

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

MEI Cancer Risk From: BAAQMD Plant #14532
7th Floor Receptors

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	0.0002	0.00
2	1 - 2	10	0.0002	0.07
14	3 - 16	3	0.0002	0.07
14	17 - 30	1	0.0002	0.01
Total Increased Cancer Risk				**0.1**

* Third trimester of pregnancy

Maximum Cancer Risk by Floor Level
BAAQMD Plant #14532

Floor Level	Receptor Height (m)	DPM Annual Conc (ug/m3)	Maximum DPM Cancer Risk (per million)
7th	30.0	0.0002	0.1
8th	33	0.00019	0.1
9th	36.1	0.00019	0.1
10th	39.1	0.00019	0.1
11th	42.2	0.00018	0.1
12th	45.2	0.00018	0.1
13th	48.3	0.00018	0.1
14th	51.5	0.00018	0.1
15th	54.5	0.00017	0.1
16th	57.6	0.00017	0.1
17th	60.6	0.00017	0.1
18th	63.7	0.00017	0.1
24th	82	0.00014	0.1
25th	85	0.00012	0.1
26th	88.1	0.00012	0.1
27th	91.1	0.00012	0.1
28th	94.2	0.00012	0.1

BAAQMD Plant #14532

DPM Emission Rates			
	Annual	DPM Emissions	
	Operation	Daily*	Annual
Source Type	**(hr)**	**(lb/day)**	**(lb/yr)**
3 Generators and 3 Fire Pumps	-	0.009	3.31

* From BAAQMD permit inventory

Modeling Information		
Model:	AERMOD	
Source	Diesel Engine	
Source Type	Point	
Distance to Residences (ft)	various - minimum distance to generator = 700 feet	
Receptor Spacing	6 meters spacing in residential areas	
Meteorological Data	2009-2013 CARB Metro Oakland Airport Data	
Point Source Stack Parameters		
Generator engine size (hp)	unknown	
Stack Height (ft)	12	
Stack Diameter** (ft)	0.60	
Stack Exit Velocity** (ft/sec)	149	
Exhaust Temperature** (F)	872	
Annual Emission Rate (lb/year)	3.31	from BAAQMD inventory data
Hourly Emission Rate (lb/hr)	3.78E-04	

** BAAQMD default generator parameters

BAAQMD Plant # 14532

Cancer Risk Calculation Method

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

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

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

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

Values

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

TAC	CPF
DPM	1.10E+00

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

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

MEI Cancer Risk From: BAAQMD Plant # 14532
7th Floor Receptors

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	0.0001	0.00
2	1 - 2	10	0.0001	0.03
14	3 - 16	3	0.0001	0.04
14	17 - 30	1	0.0001	0.00
Total Increased Cancer Risk				**0.1**

* Third trimester of pregnancy

Maximum Cancer Risk by Floor Level
BAAQMD Plant # 14532

Floor Level	Receptor Height (m)	DPM Annual Conc (ug/m3)	Maximum DPM Cancer Risk (per million)
7th	30.0	0.0001	0.1
8th	33	0.0001	0.1
9th	36.1	0.0001	0.1
10th	39.1	0.00010	0.1
11th	42.2	0.0001	**0.1**
12th	45.2	0.0001	0.1
13th	48.3	0.00010	0.1
14th	51.5	9.00E-05	0.1
15th	54.5	0.00009	0.1
16th	57.6	0.00008	0.1
17th	60.6	0.00008	0.1
18th	63.7	0.00007	**0.1**
24th	82	0.00003	0.0
25th	85	0.00003	0.0
26th	88.1	0.00003	0.0
27th	91.1	0.00002	0.0
28th	94.2	0.00002	0.0

BAAQMD Plant # 14532

DPM Emission Rates			
	Annual Operation	DPM Emissions	
Source Type	(hr)	Daily* (lb/day)	Annual (lb/yr)
2 Generators and 1 Fire Pump	-	0.0091	3.31

* From BAAQMD permit inventory

Modeling Information		
Model:	AERMOD	
Source	Diesel Engine	
Source Type	Point	
Distance to Residences (ft)	various - minimum distance to generator = 100 feet	
Receptor Spacing	6 meters spacing in residential areas	
Meteorological Data	2009-2013 CARB Metro Oakland Airport Data	
Point Source Stack Parameters		
Generator engine size (hp)	unknown	
Stack Height (ft)	12	
Stack Diameter** (ft)	0.60	
Stack Exit Velocity** (ft/sec)	149	
Exhaust Temperature** (F)	872	
Annual Emission Rate (lb/year)	3.31	from BAAQMD inventory data
Hourly Emission Rate (lb/hr)	3.78E-04	

** BAAQMD default generator parameters

On-Site Generator

1433 Webster, Oakland, CA - Emergency Backup Generator
Emissions From Non-Emergency Generator Operation (50 Hours per Year)

Periodic Generator Load Testing

Manufacturer/Model	**Caterpillar**	**C32 ACERT**
Engine	C32	Tier 2 Engine
Engine Output (hp) at Full Load	1,474	
Generator Output (kW) at Full Load	1,000	
Total No. Units	1	
Engine Load During Testing	73%	
Engine Output (hp) at Load	1,076	
Fuel Use (gal/hr) at Load	56	
Fuel Sulfur Content (%)	0.0015	
PM10 Emission Control Technology	-	
PM10 Reduction	0%	

Emission Testing Information

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

Pollutant	**Emission[1] Factor (g/hp-hr)**	**Emission Rate per Unit (lb/hr)**	**Operational - Total Emissions[2]** Average[4] Daily (lb/day)	**Annual (lb/yr)**	**(ton/yr)**
NOx	4.59	10.89	1.5	544	0.27
HC	0.09	0.21	0.0	11	0.01
CO	0.21	0.50	0.1	25	0.01
PM10	0.04	0.095	0.013	4.74	0.002
PM2.5[3]	0.037	0.089	0.012	4.4	0.002
SOx[1a]	-	0.012	0.002	1	0.000
CO_2[1b]	22.38 lb/gal	1,262	173	63,102	32

Notes:

* Average load during testing from CalEEMod for emergency generators.

1) Based on Caterpillar specification sheet for 1,000 kW diesel generator at 75% engine load (Performance Data DM9933).

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

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

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

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

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

1433 Webster, Oakland, CA - 1,000 kW Emergency Generator
Source Parameters for Emergency Diesel-Fueled Generator

Source	Load	Stack height (ft)	Stack Diam (in)	Temp (F)	Volume Flow (acfm)	Velocity (ft/min)	Velocity (ft/sec)
Generator Stacks	75%	83.00	12	821	6,813	8675	144.6
Source	**Load**	**Stack height (m)**	**Stack Diam (m)**	**Temp (K)**			**Velocity (m/sec)**
Generator Stacks	75%	25.30	0.305	711.5			44.07

C32 Generator Set with Upgradeable Packaging

Electric Power

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

Specifications

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

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

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

Benefits and Features

Cat Generator Set Package

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

ELECTRIC POWER - Technical Spec Sheet
STANDARD

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

Rating Type: STANDBY

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

Image shown may not reflect actual configuration

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

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

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

	Metric	English
Cooling System[1]		
Engine Coolant Capacity	55.0 L	14.5 gal

	Metric	English
Inlet Air		
Combustion Air Inlet Flow Rate	87.6 m^3/min	3094.1 cfm
Max. Allowable Combustion Air Inlet Temp	48 ° C	118 ° F

	Metric	English
Exhaust System		
Exhaust Stack Gas Temperature	476.4 ° C	889.5 ° F
Exhaust Gas Flow Rate	228.4 m^3/min	8065.3 cfm
Exhaust System Backpressure (Maximum Allowable)	N/A	N/A

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

Rating Type: STANDBY

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

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

Alternator[2]	
Motor Starting Capability @ 30% Voltage Dip	2734 skVA
Current	1504 amps
Frame Size	1402
Excitation	IE
Temperature Rise	125 ° C

Emissions (Nominal)[3]		
NOx	2348.6 mg/Nm³	4.9 g/hp-hr
CO	62.1 mg/Nm³	0.1 g/hp-hr
HC	5.5 mg/Nm³	0.0 g/hp-hr
PM	7.2 mg/Nm³	0.0 g/hp-hr

DEFINITIONS AND CONDITIONS

1. For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

2. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.

3. Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

PERFORMANCE DATA[DM9933]

February 16, 2016

Performance Number: DM9933 **Change Level: 03**

SALES MODEL:	C32	**COMBUSTION:**	DI
ENGINE POWER (BHP):	1,474	**ENGINE SPEED (RPM):**	1,800
GEN POWER WITH FAN (EKW):	1,000.0	**HERTZ:**	60
COMPRESSION RATIO:	15.0	**FAN POWER (HP):**	56.3
RATING LEVEL:	STANDBY	**ADDITIONAL PARASITICS (HP):**	1.3
PUMP QUANTITY:	1	**ASPIRATION:**	TA
FUEL TYPE:	DIESEL	**AFTERCOOLER TYPE:**	ATAAC
MANIFOLD TYPE:	DRY	**AFTERCOOLER CIRCUIT TYPE:**	JW+OC, ATAAC
GOVERNOR TYPE:	ADEM4	**INLET MANIFOLD AIR TEMP (F):**	120
ELECTRONICS TYPE:	ADEM4	**JACKET WATER TEMP (F):**	210.2
IGNITION TYPE:	CI	**TURBO CONFIGURATION:**	PARALLEL
INJECTOR TYPE:	EUI	**TURBO QUANTITY:**	2
REF EXH STACK DIAMETER (IN):	8	**TURBOCHARGER MODEL:**	GTB45518BS-52T-1.37
MAX OPERATING ALTITUDE (FT):	997	**CERTIFICATION YEAR:**	2007
		PISTON SPD @ RATED ENG SPD (FT/MIN):	1,913.4

INDUSTRY	SUBINDUSTRY	APPLICATION
OIL AND GAS	LAND PRODUCTION	PACKAGED GENSET
ELECTRIC POWER	STANDARD	PACKAGED GENSET

General Performance Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	BRAKE MEAN EFF PRES (BMEP)	BRAKE SPEC FUEL CONSUMPTN (BSFC)	VOL FUEL CONSUMPTN (VFC)	INLET MFLD PRES	INLET MFLD TEMP	EXH MFLD TEMP	EXH MFLD PRES	ENGINE OUTLET TEMP
EKW	%	BHP	PSI	LB/BHP-HR	GAL/HR	IN-HG	DEG F	DEG F	IN-HG	DEG F
1,000.0	100	1,474	331	0.342	71.9	70.3	118.2	1,209.3	58.1	889.5
900.0	90	1,330	299	0.341	64.7	64.0	111.0	1,150.9	51.9	855.4
800.0	80	1,187	267	0.349	59.2	60.4	106.5	1,116.3	48.6	832.2
750.0	75	1,116	251	0.354	56.4	57.9	103.8	1,100.0	46.6	821.0
700.0	70	1,046	235	0.354	52.9	53.7	99.5	1,077.6	43.2	810.0
600.0	60	905	203	0.353	45.7	43.7	90.1	1,025.8	35.3	788.8
500.0	50	765	172	0.350	38.2	32.9	80.8	964.8	27.0	768.5
400.0	40	628	141	0.351	31.5	23.9	74.7	895.9	20.5	731.2
300.0	30	490	110	0.357	25.0	15.7	70.4	812.1	15.1	676.7
250.0	25	420	94	0.363	21.8	12.0	68.9	764.0	12.7	643.0
200.0	20	350	79	0.374	18.7	8.7	67.9	708.9	10.6	601.8
100.0	10	206	46	0.425	12.5	4.5	67.5	569.8	7.8	489.0

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	COMPRESSOR OUTLET PRES	COMPRESSOR OUTLET TEMP	WET INLET AIR VOL FLOW RATE	ENGINE OUTLET WET EXH GAS VOL FLOW RATE	WET INLET AIR MASS FLOW RATE	WET EXH GAS MASS FLOW RATE	WET EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)	DRY EXH VOL FLOW RATE (32 DEG F AND 29.98 IN HG)
EKW	%	BHP	IN-HG	DEG F	CFM	CFM	LB/HR	LB/HR	FT3/MIN	FT3/MIN
1,000.0	100	1,474	76	422.1	3,094.1	8,065.3	13,465.4	13,968.9	2,939.2	2,688.4
900.0	90	1,330	69	391.5	2,939.0	7,417.0	12,749.0	13,202.3	2,773.0	2,544.8
800.0	80	1,187	65	375.1	2,856.2	7,051.1	12,358.8	12,773.3	2,683.6	2,472.3
750.0	75	1,116	63	363.9	2,783.7	6,813.1	12,021.7	12,415.6	2,615.7	2,413.9
700.0	70	1,046	58	343.3	2,639.5	6,395.9	11,355.9	11,723.5	2,476.8	2,288.3
600.0	60	905	48	302.6	2,355.5	5,576.9	10,061.2	10,377.6	2,196.4	2,033.1
500.0	50	765	37	262.3	2,076.5	4,775.6	8,810.4	9,077.6	1,911.9	1,773.0
400.0	40	628	27	223.0	1,805.8	4,001.6	7,595.0	7,814.6	1,652.1	1,535.9
300.0	30	490	18	183.7	1,537.6	3,237.7	6,435.6	6,610.0	1,400.8	1,306.8
250.0	25	420	14	163.9	1,403.3	2,856.8	5,874.1	6,026.7	1,273.8	1,190.9
200.0	20	350	11	146.2	1,286.2	2,507.0	5,386.7	5,517.7	1,161.2	1,089.1
100.0	10	206	6	122.6	1,147.6	1,981.6	4,797.2	4,885.1	1,027.0	974.3

PERFORMANCE DATA[DM9933]

February 16, 2016

Heat Rejection Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXHUAST RECOVERY TO 350F	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BHP	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN
1,000.0	100	1,474	20,033	7,238	58,206	31,961	8,218	16,385	62,497	154,292	164,360
900.0	90	1,330	18,378	6,464	52,445	28,178	7,400	14,318	56,390	138,929	147,994
800.0	80	1,187	16,891	5,941	48,853	25,916	6,766	13,293	50,345	127,034	135,323
750.0	75	1,116	16,127	6,236	46,672	24,565	6,445	12,521	47,342	121,002	128,897
700.0	70	1,046	15,231	6,920	43,437	22,625	6,051	11,086	44,338	113,600	121,012
600.0	60	905	13,439	6,738	37,282	19,058	5,220	8,561	38,371	97,997	104,392
500.0	50	765	11,741	5,267	31,535	15,862	4,369	6,404	32,440	82,034	87,386
400.0	40	628	10,827	4,384	25,642	12,387	3,599	4,511	26,618	67,572	71,982
300.0	30	490	9,885	3,711	19,869	8,929	2,858	2,920	20,779	53,663	57,165
250.0	25	420	9,298	3,442	17,092	7,276	2,495	2,235	17,832	46,843	49,899
200.0	20	350	8,559	3,149	14,473	5,698	2,136	1,689	14,848	40,103	42,719
100.0	10	206	6,645	2,319	9,873	2,744	1,432	1,058	8,742	26,884	28,638

Emissions Data

RATED SPEED POTENTIAL SITE VARIATION: 1800 RPM

GENSET POWER WITH FAN		EKW	1,000.0	750.0	500.0	250.0	100.0
PERCENT LOAD		%	100	75	50	25	10
ENGINE POWER		BHP	1,474	1,116	765	420	206
TOTAL NOX (AS NO2)		G/HR	8,726	5,093	3,335	2,252	1,328
TOTAL CO		G/HR	356	235	501	819	1,263
TOTAL HC		G/HR	37	104	99	75	153
PART MATTER		G/HR	51.8	39.2	67.6	105.5	83.2
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,841.8	2,105.6	2,041.6	2,429.4	2,417.2
TOTAL CO	(CORR 5% O2)	MG/NM3	116.1	93.7	305.5	894.8	2,570.4
TOTAL HC	(CORR 5% O2)	MG/NM3	10.3	37.8	52.6	69.6	283.1
PART MATTER	(CORR 5% O2)	MG/NM3	14.1	13.5	35.5	106.1	135.6
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,384	1,026	994	1,183	1,177
TOTAL CO	(CORR 5% O2)	PPM	93	75	244	716	2,056
TOTAL HC	(CORR 5% O2)	PPM	19	71	98	130	528
TOTAL NOX (AS NO2)		G/HP-HR	5.97	4.59	4.38	5.37	6.45
TOTAL CO		G/HP-HR	0.24	0.21	0.66	1.95	6.14
TOTAL HC		G/HP-HR	0.03	0.09	0.13	0.18	0.74
PART MATTER		G/HP-HR	0.04	0.04	0.09	0.25	0.40
TOTAL NOX (AS NO2)		LB/HR	19.24	11.23	7.35	4.96	2.93
TOTAL CO		LB/HR	0.79	0.52	1.10	1.81	2.78
TOTAL HC		LB/HR	0.08	0.23	0.22	0.17	0.34
PART MATTER		LB/HR	0.11	0.09	0.15	0.23	0.18

RATED SPEED NOMINAL DATA: 1800 RPM

GENSET POWER WITH FAN		EKW	1,000.0	750.0	500.0	250.0	100.0
PERCENT LOAD		%	100	75	50	25	10
ENGINE POWER		BHP	1,474	1,116	765	420	206
TOTAL NOX (AS NO2)		G/HR	7,212	4,209	2,756	1,861	1,097
TOTAL CO		G/HR	191	126	268	438	676
TOTAL HC		G/HR	19	55	52	40	81
TOTAL CO2		KG/HR	721	564	380	217	124
PART MATTER		G/HR	26.6	20.1	34.7	54.1	42.7
TOTAL NOX (AS NO2)	(CORR 5% O2)	MG/NM3	2,348.6	1,740.1	1,687.3	2,007.8	1,997.7
TOTAL CO	(CORR 5% O2)	MG/NM3	62.1	50.1	163.4	478.5	1,374.6
TOTAL HC	(CORR 5% O2)	MG/NM3	5.5	20.0	27.8	36.8	149.8
PART MATTER	(CORR 5% O2)	MG/NM3	7.2	6.9	18.2	54.4	69.5
TOTAL NOX (AS NO2)	(CORR 5% O2)	PPM	1,144	848	822	978	973
TOTAL CO	(CORR 5% O2)	PPM	50	40	131	383	1,100
TOTAL HC	(CORR 5% O2)	PPM	10	37	52	69	280
TOTAL NOX (AS NO2)		G/HP-HR	4.93	3.79	3.62	4.43	5.33
TOTAL CO		G/HP-HR	0.13	0.11	0.35	1.04	3.28
TOTAL HC		G/HP-HR	0.01	0.05	0.07	0.09	0.39

PERFORMANCE DATA[DM9933]

February 16, 2016

PART MATTER	G/HP-HR	0.02	0.02	0.05	0.13	0.21
TOTAL NOX (AS NO2)	LB/HR	15.90	9.28	6.08	4.10	2.42
TOTAL CO	LB/HR	0.42	0.28	0.59	0.97	1.49
TOTAL HC	LB/HR	0.04	0.12	0.12	0.09	0.18
TOTAL CO2	LB/HR	1,589	1,244	839	478	273
PART MATTER	LB/HR	0.06	0.04	0.08	0.12	0.09
OXYGEN IN EXH	%	10.1	11.5	12.2	13.5	15.7
DRY SMOKE OPACITY	%	0.7	0.7	1.4	3.0	2.2
BOSCH SMOKE NUMBER		0.18	0.16	0.58	1.31	0.99

PERFORMANCE DATA[DM9933]

February 16, 2016

Regulatory Information

EPA TIER 2		2006 - 2010		
GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 89 SUBPART D AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-ROAD REGULATIONS.				
Locality	**Agency**	**Regulation**	**Tier/Stage**	**Max Limits - G/BKW - HR**
U.S. (INCL CALIF)	EPA	NON-ROAD	TIER 2	CO: 3.5 NOx + HC: 6.4 PM: 0.20

EPA EMERGENCY STATIONARY		2011 - ----		
GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 60 SUBPART IIII AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE EMERGENCY STATIONARY REGULATIONS.				
Locality	**Agency**	**Regulation**	**Tier/Stage**	**Max Limits - G/BKW - HR**
U.S. (INCL CALIF)	EPA	STATIONARY	EMERGENCY STATIONARY	CO: 3.5 NOx + HC: 6.4 PM: 0.20

Altitude Derate Data

ALTITUDE CORRECTED POWER CAPABILITY (BHP)

AMBIENT OPERATING TEMP (F)	50	60	70	80	90	100	110	120	130	NORMAL
ALTITUDE (FT)										
0	1,474	1,474	1,474	1,474	1,474	1,468	1,442	1,417	1,393	1,474
1,000	1,474	1,474	1,474	1,466	1,439	1,413	1,388	1,365	1,341	1,474
2,000	1,474	1,465	1,437	1,411	1,385	1,360	1,337	1,313	1,291	1,434
3,000	1,438	1,410	1,383	1,358	1,333	1,309	1,286	1,264	1,242	1,389
4,000	1,383	1,356	1,331	1,306	1,282	1,259	1,237	1,216	1,195	1,345
5,000	1,330	1,304	1,280	1,256	1,233	1,211	1,190	1,169	1,149	1,302
6,000	1,278	1,254	1,230	1,207	1,185	1,164	1,144	1,124	1,105	1,260
7,000	1,228	1,205	1,182	1,160	1,139	1,119	1,099	1,080	1,062	1,220
8,000	1,180	1,157	1,135	1,114	1,094	1,074	1,056	1,037	1,020	1,180
9,000	1,133	1,111	1,090	1,070	1,050	1,032	1,014	996	979	1,141
10,000	1,087	1,066	1,046	1,027	1,008	990	973	956	940	1,103
11,000	1,043	1,023	1,004	985	967	950	933	917	902	1,066
12,000	1,001	981	963	945	928	911	895	880	865	1,029
13,000	959	941	923	906	889	873	858	843	829	994
14,000	919	901	884	868	852	837	822	808	794	959
15,000	880	863	847	831	816	802	788	774	761	926

Cross Reference

Engine Arrangement			
Arrangement Number	**Effective Serial Number**	**Engineering Model**	**Engineering Model Version**
2537557	SYC00001	GS277	-
3208618	JDB00001	GS490	-
3249750	SYC00001	GS277	-
3367659	PRH00001	GS471	-
3801431	PRH00001	GS471	-
4391323	PRH03719	GS471	-
4447558	PRH00001	GS471	-
4447562	PRH00001	GS471	-

Test Specification Data						
Test Spec	**Setting**	**Effective Serial Number**	**Engine Arrangement**	**Governor Type**	**Default Low Idle Speed**	**Default High Idle Speed**
0K8987	PP6050	SYC00001	2537557			
0K7838	GG0346	JDB00001	3208618			
0K8987	PP6050	SYC00001	3249750			
0K8987	PP6050	PRH00001	3367659			
0K8987	PP6050	PRH00001	3801431			
0K8987	PP6050	PRH03719	4391323			
0K8987	PP6050	PRH00001	4447558			
0K8987	PP6050	PRH00001	4447562			

Performance Parameter Reference

1433 Webster Street, Oakland, CA - AERMOD Modeling Parameters
On-Site Project Emergency Generator

DPM Emission Rates			
	Annual	DPM Emissions	
	Operation	Daily	Annual*
Source Type	(hr)	(lb/day)	(lb/yr)
Generator	-	0.0130	4.74

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

Modeling Information	
Model:	AERMOD
Source	Diesel Engine
Source Type	Point
Distance to Residences (ft)	various - minimum distance to generator = 12 feet
Receptor Spacing	6 meters spacing in residential areas
Meteorological Data	2009-2013 CARB Metro Oakland Airport Data
Point Source Stack Parameters	
Generator engine size (hp)	unknown
Stack Height (ft)	6
Stack Diameter** (ft)	1.0
Stack Exit Velocity** (ft/sec)	145
Exhaust Temperature** (F)	821
Annual Emission Rate (lb/year)	4.74
Hourly Emission Rate (lb/hr)	1.44E-03

** BAAQMD default generator parameters

1433 Webster Street, Oakland, CA - DPM Cancer Risks at Project Site
On-Site Project Emergency Generator

Cancer Risk Calculation Method

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

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

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

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

Values

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

TAC	CPF
DPM	1.10E+00

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

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

MEI Cancer Risk From: On-Site Project Emergency Generator
7th Floor Receptors

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	0.0039	0.05
2	1 - 2	10	0.0039	1.28
14	3 - 16	3	0.0039	1.41
14	17 - 30	1	0.0039	0.16
Total Increased Cancer Risk				**2.9**

* Third trimester of pregnancy

Maximum Cancer Risk by Floor Level
On-Site Project Emergency Generator

Floor Level	Receptor Height (m)	DPM Annual Conc (ug/m3)	Maximum DPM Cancer Risk (per million)
7th	30.0	0.0039	2.90
8th	33	0.0038	2.83
9th	36.1	0.00369	2.75
10th	39.1	0.00358	2.66
11th	42.2	0.00347	2.58
12th	45.2	0.00337	2.51
13th	48.3	-	-
14th	51.5	-	-
15th	54.5	-	-
16th	57.6	-	-
17th	60.6	-	-
18th	63.7	-	-
24th	82	-	-
25th	85	-	-
26th	88.1	-	-
27th	91.1	-	-
28th	94.2	-	-

MEI Cancer Risk From: Project Generator
Constaruction 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	0.0002	0.00
2	1 - 2	10	0.0002	0.07
14	3 - 16	3	0.0002	0.07
14	17 - 30	1	0.0002	0.01
Total Increased Cancer Risk				**0.1**

* Third trimester of pregnancy

MEI Cancer Risk From: On-Site Project Emergency Generator
School Child Cancer Risk - 1.5 meter Receptor Height

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0	-0.25 - 0*	10	0.0023	0.00
0	1 - 2	10	0.0023	0.00
4	3 - 16	3	0.0023	0.24
0	17 - 30	1	0.0023	0.00
Total Increased Cancer Risk				**0.2**

* Third trimester of pregnancy

Attachment G:
Shadow Diagrams

1433 WEBSTER STREET

SHADOW STUDY

RAD | SDG

SEPTEMBER 13, 2016

OBJECTIVE

The objectives of this study were to illustrate the sun and shadow patterns for various times and dates and to determine the potential exposure to sunlight and shadow on and around the study site of 1433 Webster Street and 359 15th Street, Oakland, CA

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

BUILDING AND SITE INFORMATION

The proposed development would be located on the corner Webster Street and 15th Street, in Oakland, California. The development would be a 29-story tower, that includes a five-story podium, rising to a height of approximately 360 ft.

Image 1: 3D model of the project.

Image 2: An aerial view of the site and its immediate surroundings. Currently the site at 1433 Webster and 359 15th street both contain 2 story buildings each 30 feet tall.

IMAGE 1

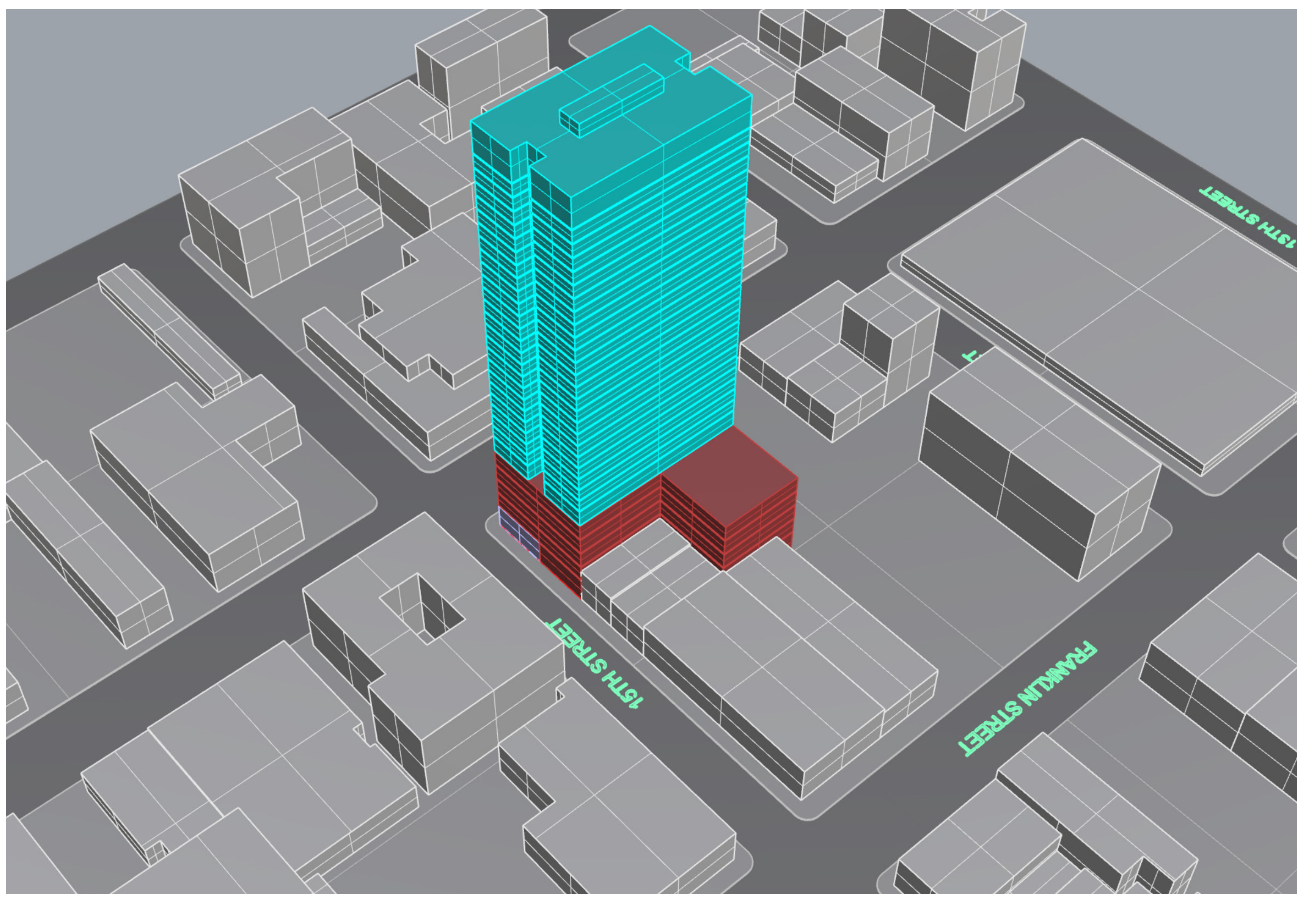


Image 1: 3d-model of the proposed project-view from northwest

IMAGE 2

Image 2: Aerial View of site and Surroundings

METHODOLOGY

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

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

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

Table 1: Dates and Times Studied

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

Table 2: Approximate Sunrise and Sunset Times

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

HISTORIC BUILDING

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

The building across 15th street- the YWCA, designed by Julia Morgan - is a City of Oakland Historic Landmark. The building contains a primary front facade with building entrance on Webster Street and a secondary facade on 15th street with no entrance. The building is designed with no light dependant feature such as stained glass windows or occupiable balconies.

Since the proposed project is located south of the YWCA, no shadows will directly impact the YWCA's primary front facade on Webster street.

The proposed project will directly cast a shadow on the side facade of the YWCA for 3-4 hours in the afternoon each day. However, considering the simple design of the YWCA facade, these shadows will not materially impair any of the physical characteristics of the building.

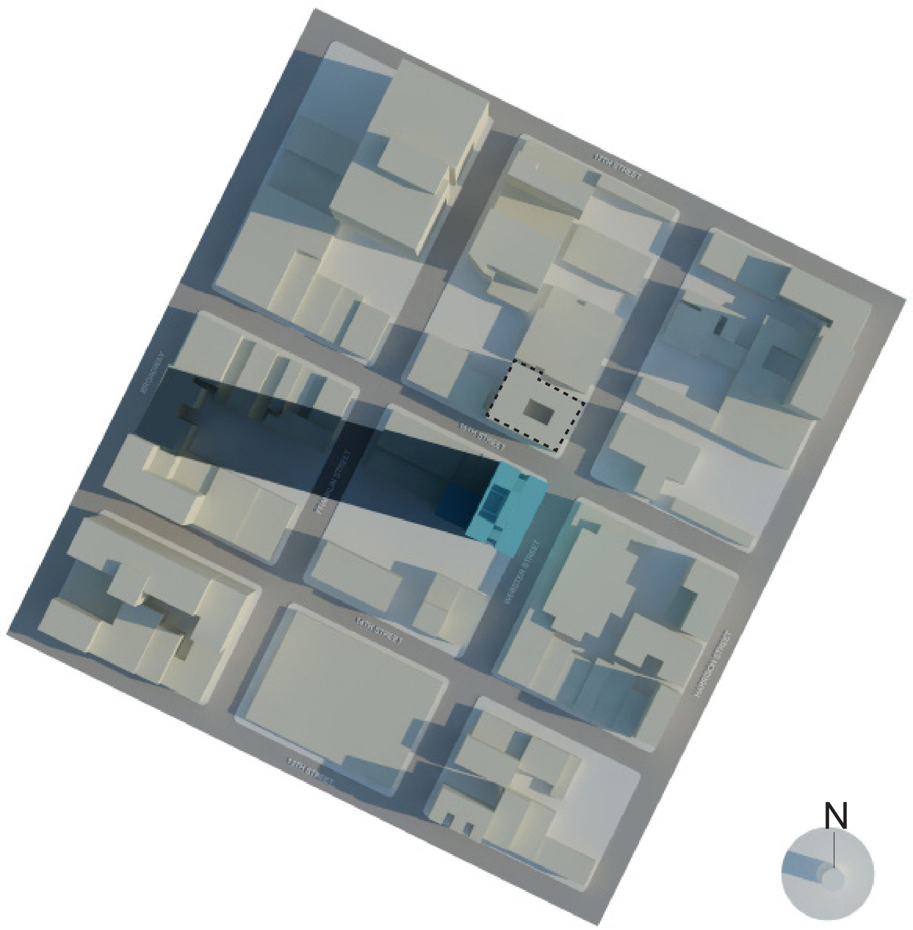
SIDE FACADE: South Facing

The shadow study shows that the proposed project will cast a shadow on the YWCA building for 3-4 hours in the afternoon during all days of the year.

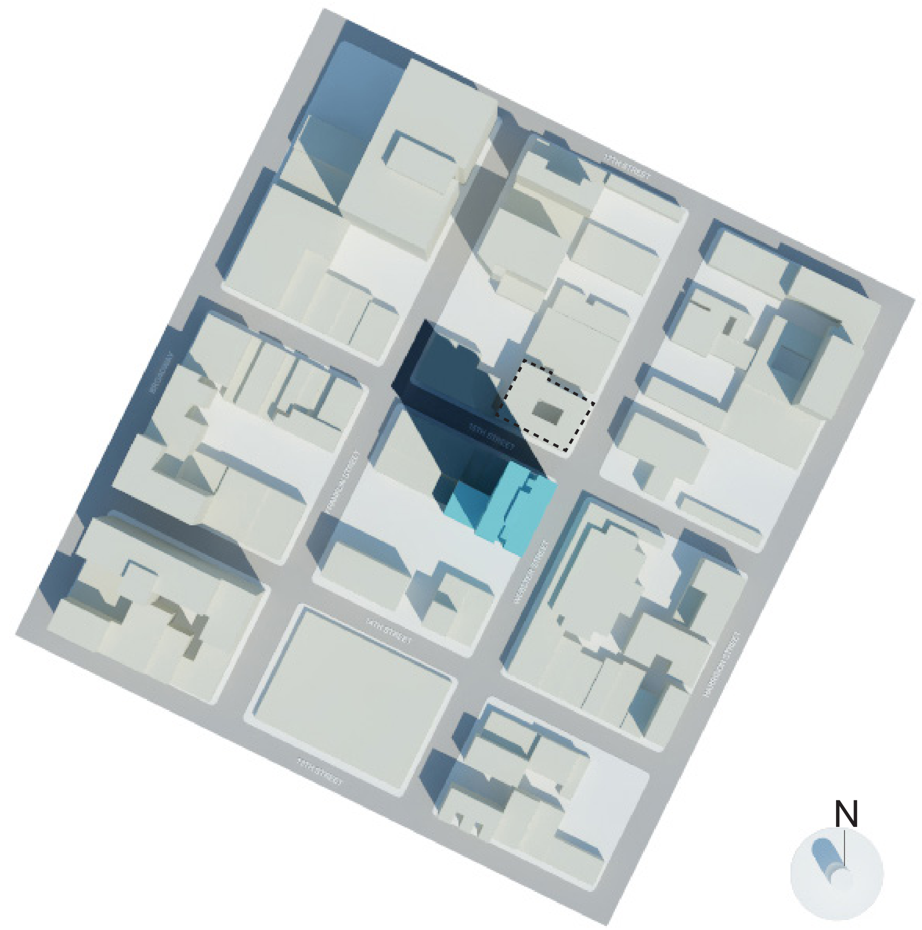
FRONT FACADE: East Facing

The proposed project will have no impact on direct light hiting the primary front facade of the YWCA building.

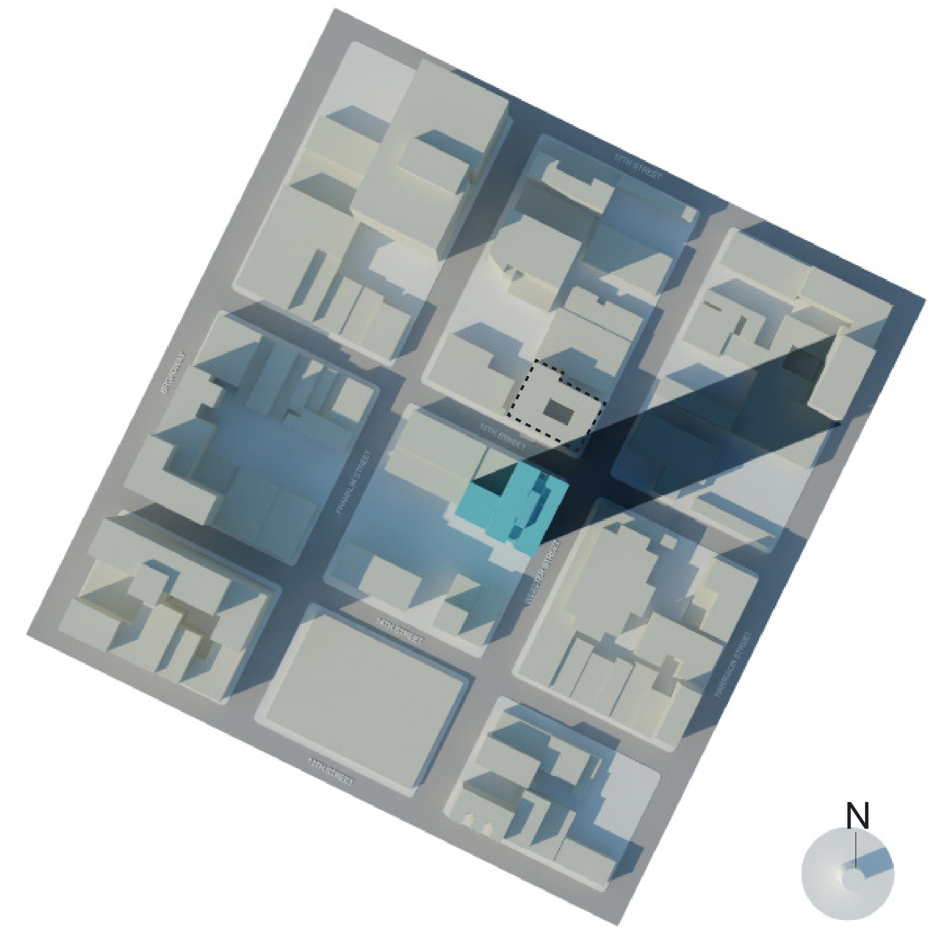
01 MARCH 21st (PDT) *Spring Equinox*



9:00 am (PDT)



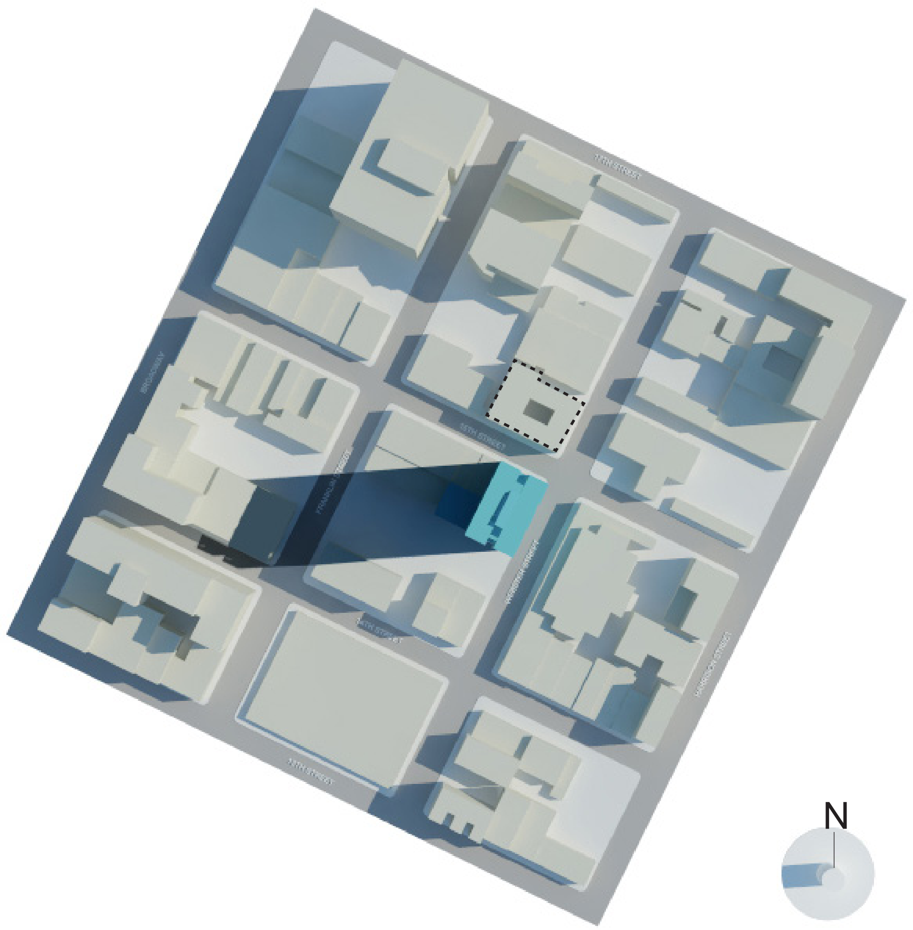
12:00 pm (PDT)



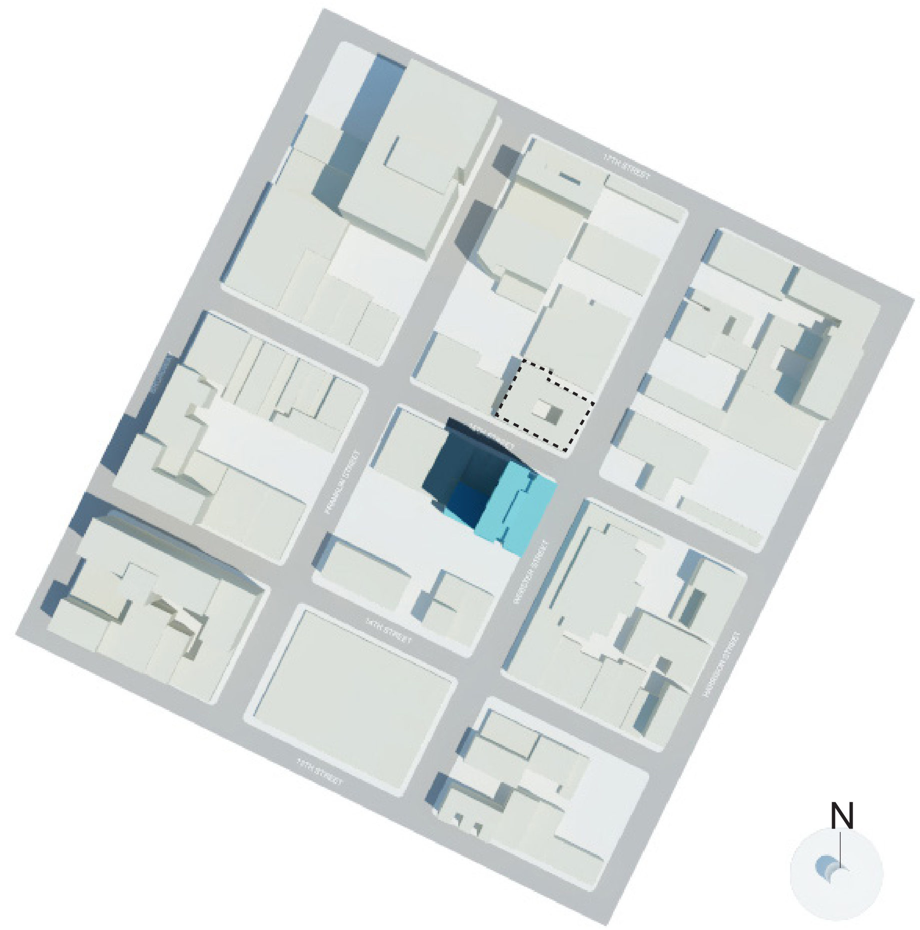
5:00 pm (PDT)

Project Massing	Project Net-New Shadow
Context Massing	Context Shadow
Historic Resource	

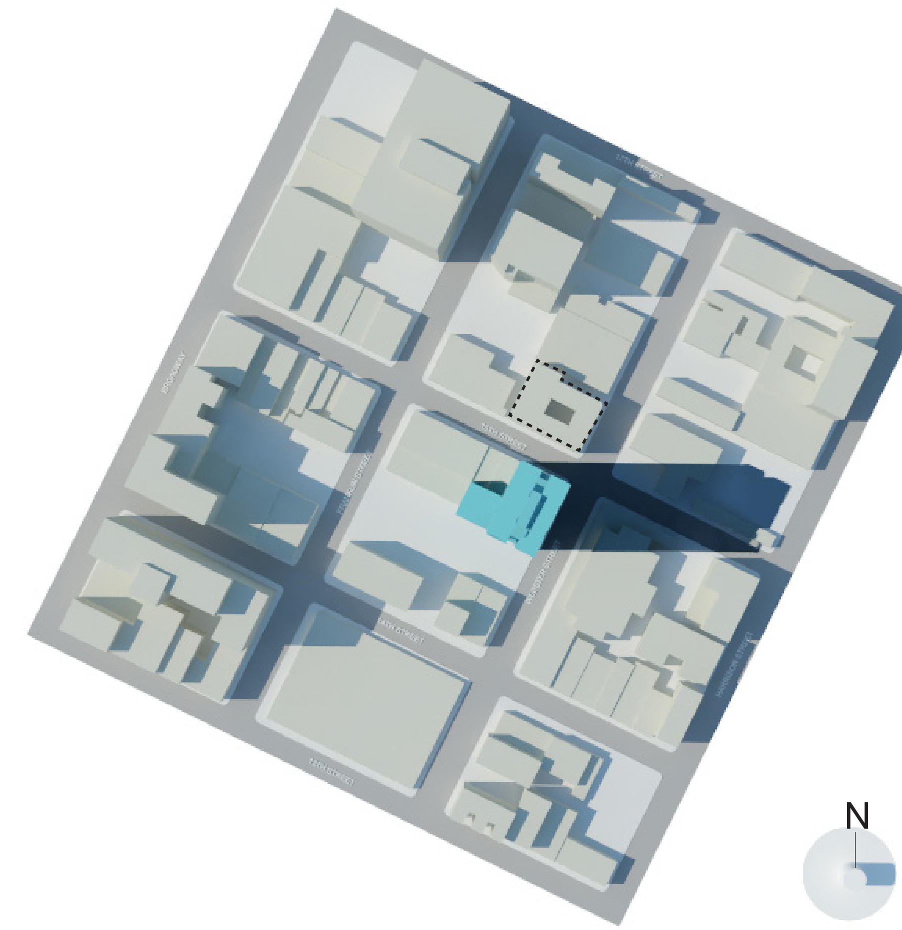
02 JUNE 21st (PDT) *Summer Solstice*



9:00 am (PDT)



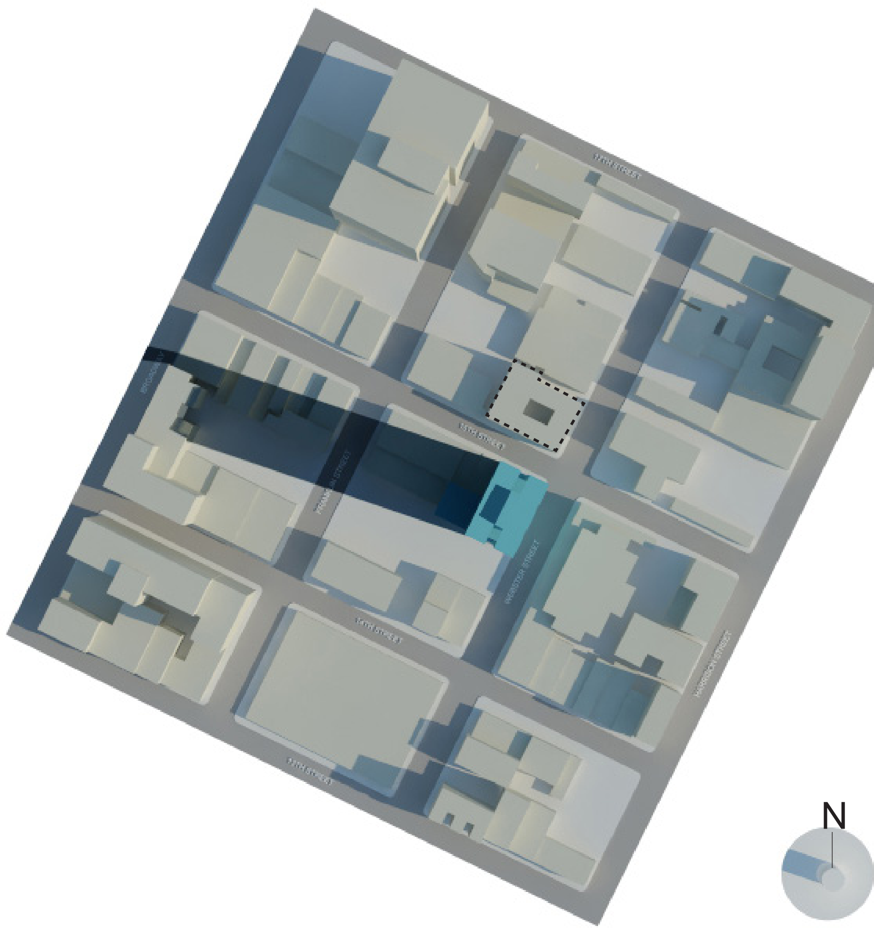
12:00 pm (PDT)



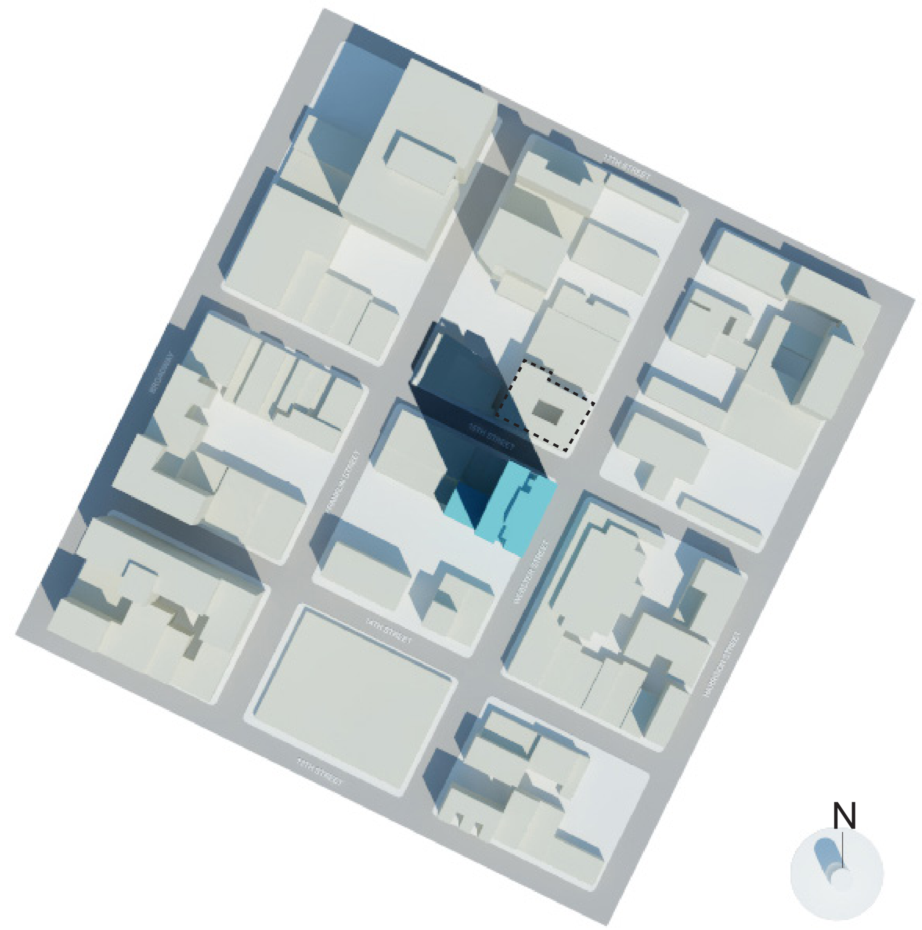
5:00 pm (PDT)

Project Massing	Project Net-New Shadow	Historic Resource
Context Massing	Context Shadow	

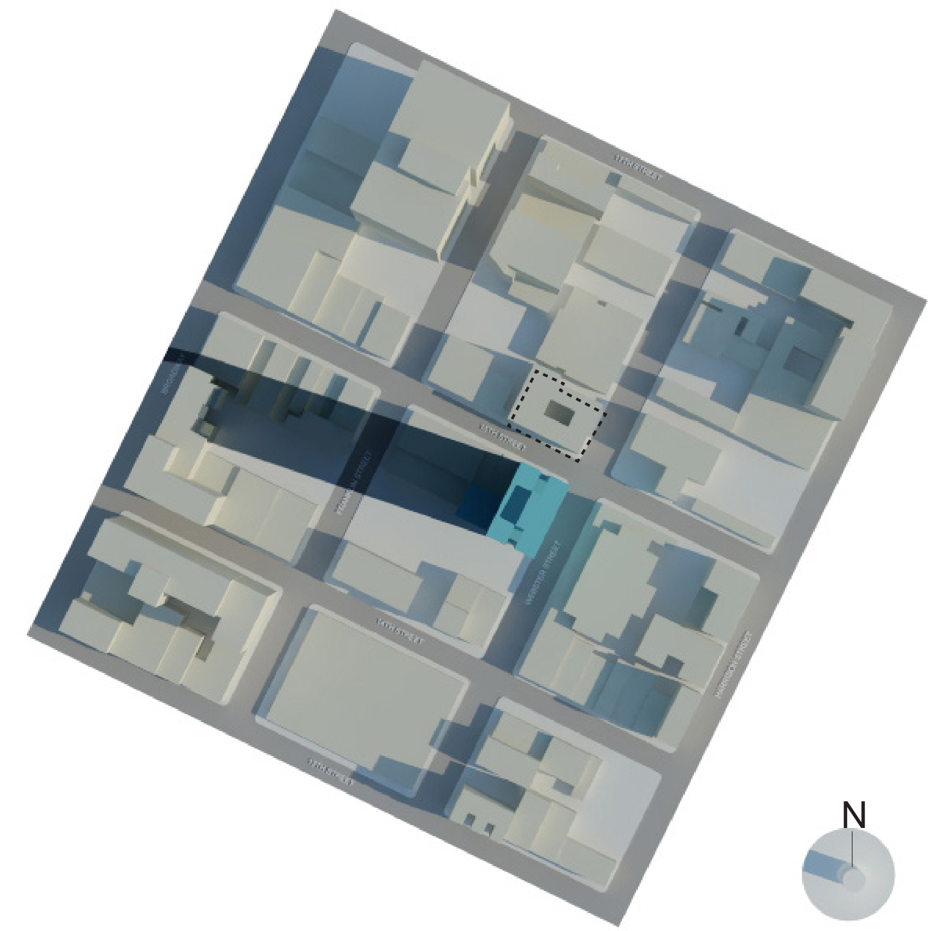
03 SEPTEMBER 21st (PDT) *Autumnal Equinox*



9:00 am (PDT)



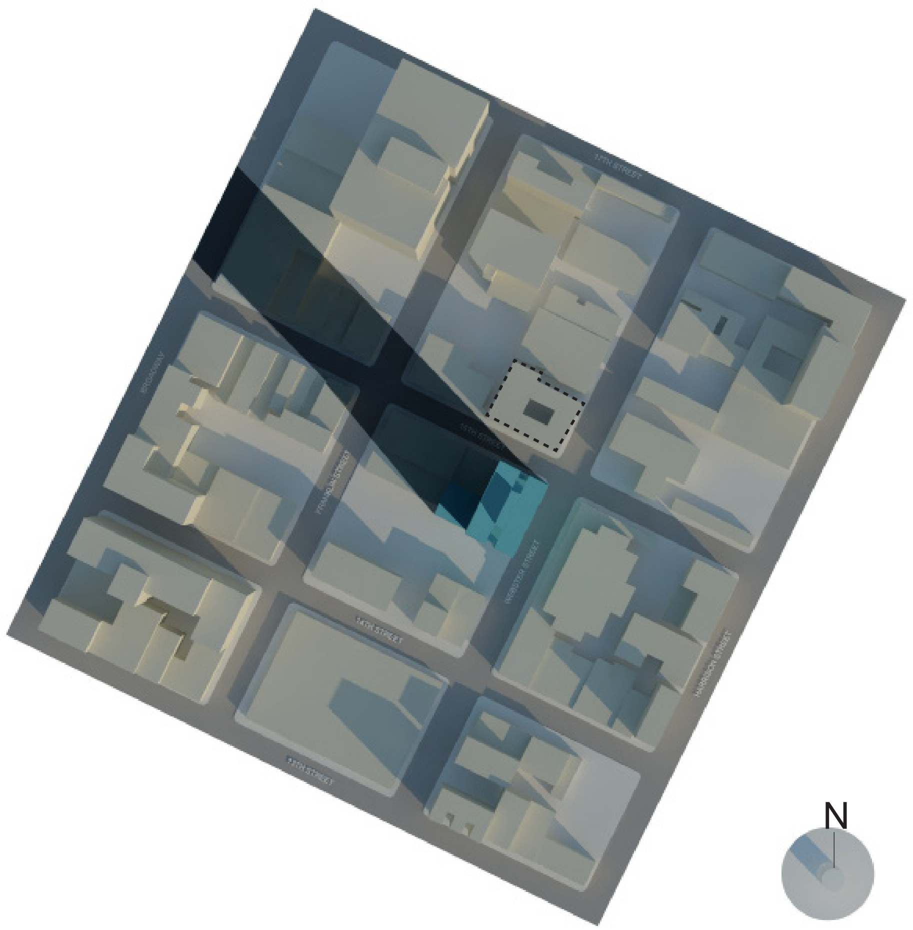
12:00 pm (PDT)



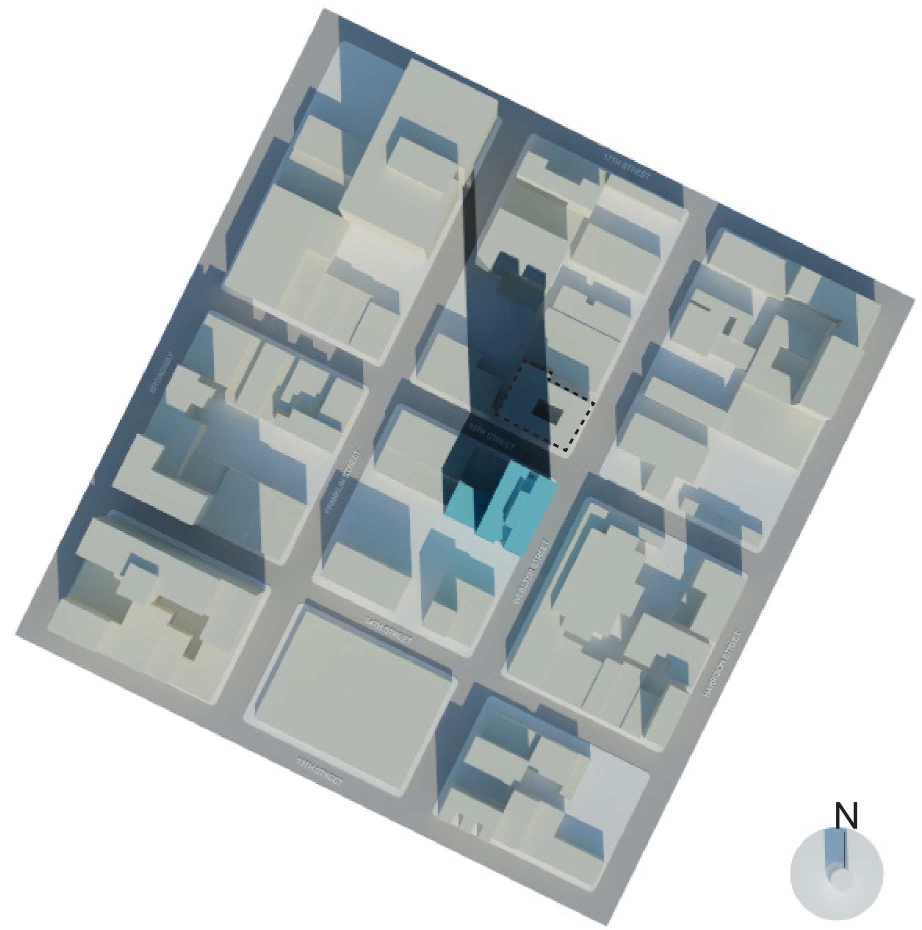
5:00 pm (PDT)

Project Massing	Project Net-New Shadow
Context Massing	Context Shadow
Historic Resource	

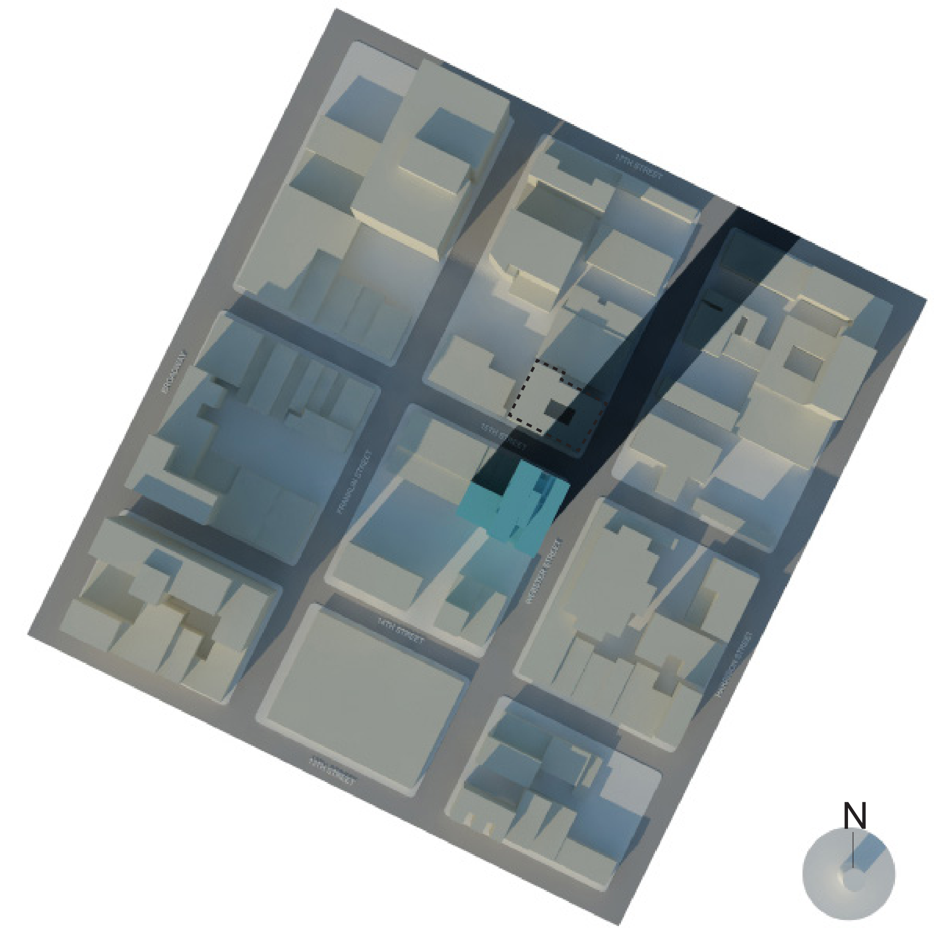
04 DECEMBER 21st (PST) *Winter Solstice*



9:00 am (PST)



12:00 pm (PST)



3:00 pm (PST)

Project Massing	Project Net-New Shadow
Context Massing	Context Shadow
Historic Resource	

1433 WEBSTER STREET

SOLAR COLLECTOR IMPACT STUDY

RAD | SDG

SEPTEMBER 13, 2016

01 SHADOW IMPACT ON SOLAR COLLECTORS

The building at 1438 Webster Street contains 8,145 sq. ft. of roof mounted solar collectors. The solar collectors are tilted approx. 20 degrees from horizontal and face south west.

A shadow study was conducted that focused on the time of day a shadow from the proposed 29 story project would cast a shadow on the solar collectors. During the months of January, February, September, October, November, and December, the proposed building will cast no shadows on the solar collectors during hours of production. During the remaining months of the year, a shadow will be cast on a portion of the solar collectors for approximately 1-3 hrs. daily in the early evening.

Data was collected and analyzed to determine that the proposed development will reduce the yearly PV output by .85%.

Current Output (wh)	163,228,630
Reduced Output (wh)	161,844,881
output reduction (wh)	1,383,749
output reduction (kwh)	1,384
output reduction ($), @ $0.14/kWh	$193.72
output reduction (%)	0.85%

The proposed project will have an .85% reduction in yearly output of the solar array located to the projects east.

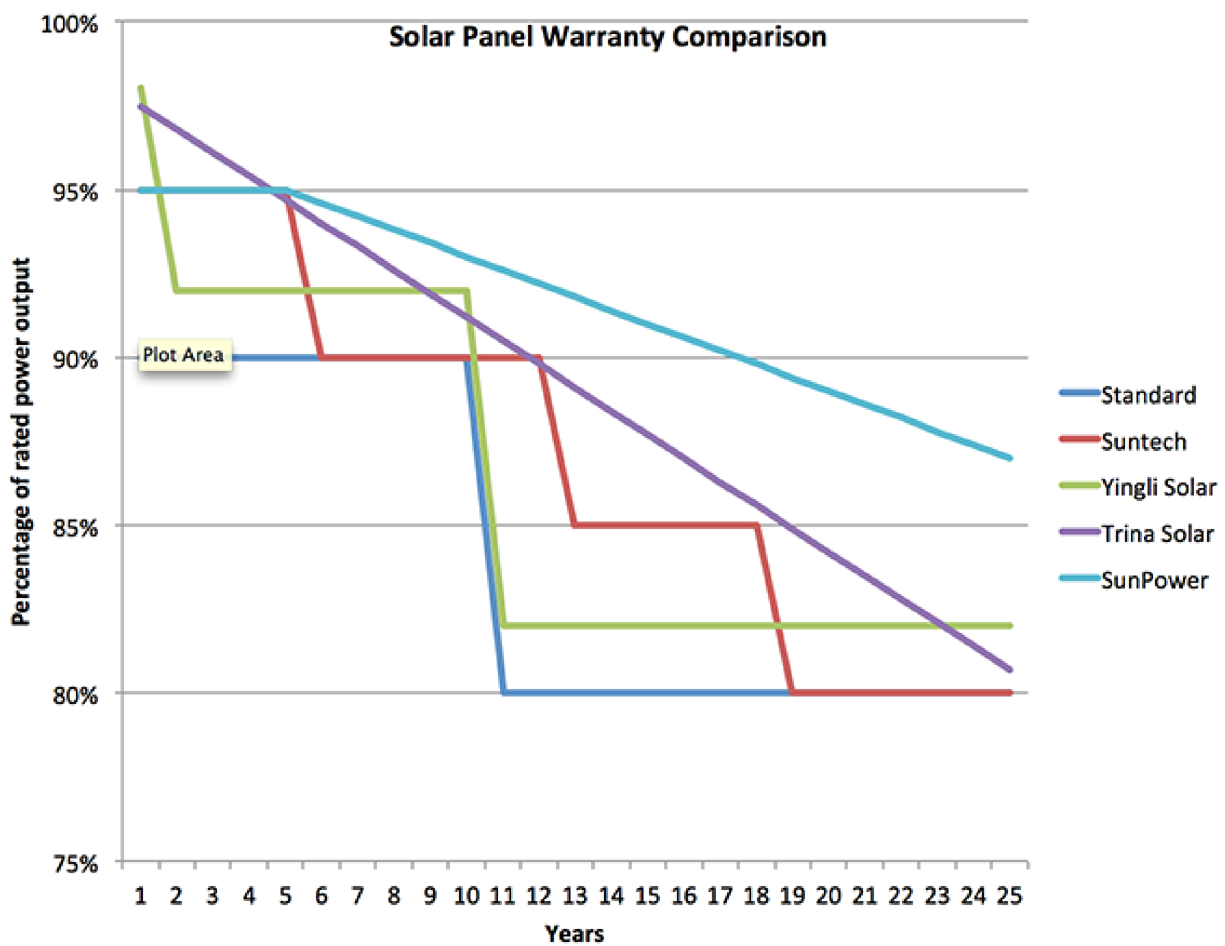
02 SOLAR COLLECTOR DATA

1438 Webster

Solar Array Installed in 2008

8145 sf of panels

Expect 92.5% of rated power output based on age of panels



http://energyinformative.org/lifespan-solar-panels/

Assume module with 16% initial PV efficiency.

Corresponds to 14.9 w/ft^2

At 8 years old corresponds to 13.8 w/ft

Assume array size of 112kW DC at age 8

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at http://sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

The energy output range is based on analysis of 30 years of historical weather data for nearby , and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

163,229 kWh per Year *

System output may range from 156,846 to 166,004kWh per year near this location.

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Energy Value ($)
January	2.73	7,700	1,084
February	3.13	7,970	1,122
March	3.72	10,416	1,467
April	6.60	17,576	2,475
May	6.75	18,524	2,608
June	7.68	20,310	2,860
July	6.98	19,176	2,700
August	6.54	17,767	2,502
September	6.12	15,972	2,249
October	4.21	11,617	1,636
November	3.33	8,890	1,252
December	2.61	7,309	1,029
Annual	**5.03**	**163,227**	**$ 22,984**

Location and Station Identification

Requested Location	1438 Webster St, Oakland, CA
Weather Data Source	(TMY3) OAKLAND METROPOLITAN ARPT, CA 6.6 mi
Latitude	37.72° N
Longitude	122.22° W

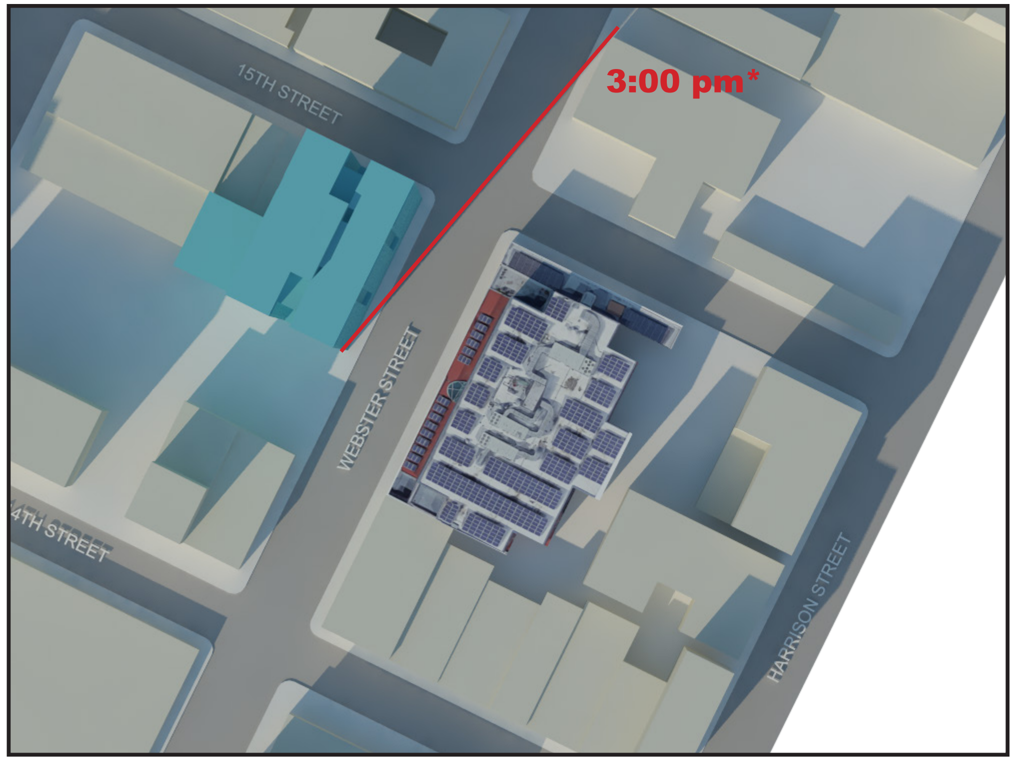
PV System Specifications *(Commercial)*

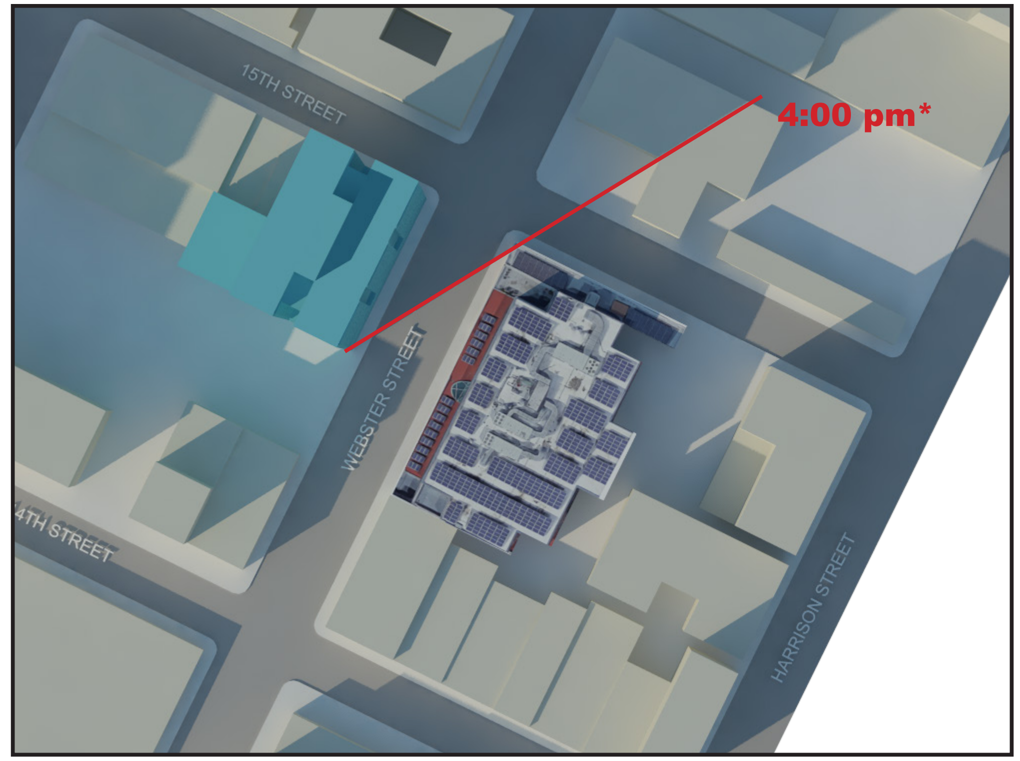
DC System Size	112 kW
Module Type	Standard
Array Type	Fixed (open rack)
Array Tilt	20°
Array Azimuth	225°
System Losses	14%
Inverter Efficiency	96%
DC to AC Size Ratio	1.1

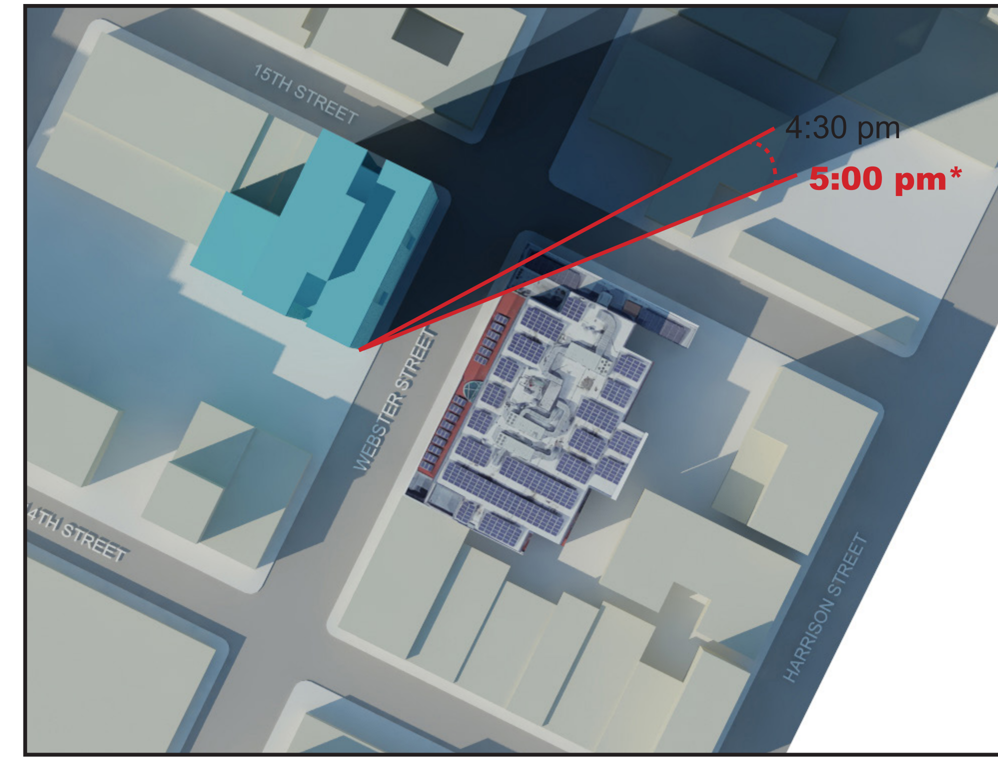
Initial Economic Comparison

Average Cost of Electricity Purchased from Utility	0.14 $/kWh

03 SHADOW IMPACT ON SOLAR COLLECTORS







JANUARY 21st

Sunset 4:51 pm

* Last hour of PV output: 3:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
1	21	0	0	0	0	0
1	21	1	0	0	0	0
1	21	2	0	0	0	0
1	21	3	0	0	0	0
1	21	4	0	0	0	0
1	21	5	0	0	0	0
1	21	6	0	0	0	0
1	21	7	207.796	0	0	0
1	21	8	8231.258	7449.555	0	7449.555
1	21	9	14236.114	13325.888	0	13325.888
1	21	10	12478.273	11606.807	0	11606.807
1	21	11	54269.5	52221.988	0	52221.988
1	21	12	33028.75	31645.391	0	31645.391
1	21	13	50072.25	48166.863	0	48166.863
1	21	14	23040.604	21922.092	0	21922.092
1	21	15	19404.684	18375.045	0	18375.045
1	21	16	12667.508	11791.913	0	11791.913
1	21	17	0	0	0	0
1	21	18	0	0	0	0
1	21	19	0	0	0	0
1	21	20	0	0	0	0
1	21	21	0	0	0	0
1	21	22	0	0	0	0
1	21	23	0	0	0	0

FEBRUARY 21st

Sunset 5:30 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
2	21	0	0	0	0	0
2	21	1	0	0	0	0
2	21	2	0	0	0	0
2	21	3	0	0	0	0
2	21	4	0	0	0	0
2	21	5	0	0	0	0
2	21	6	0	0	0	0
2	21	7	3808.324	3114.27	0	3114.27
2	21	8	14538.129	13621.148	0	13621.148
2	21	9	31872.598	30521.449	0	30521.449
2	21	10	49319.625	47439.156	0	47439.156
2	21	11	57050.902	54906.258	0	54906.258
2	21	12	59015.305	56800.637	0	56800.637
2	21	13	68050.945	65499.074	0	65499.074
2	21	14	63384.918	61010.285	0	61010.285
2	21	15	43235.98	41550.598	0	41550.598
2	21	16	23667.186	22532.953	0	22532.953
2	21	17	3803.679	3109.714	0	3109.714
2	21	18	0	0	0	0
2	21	19	0	0	0	0
2	21	20	0	0	0	0
2	21	21	0	0	0	0
2	21	22	0	0	0	0
2	21	23	0	0	0	0

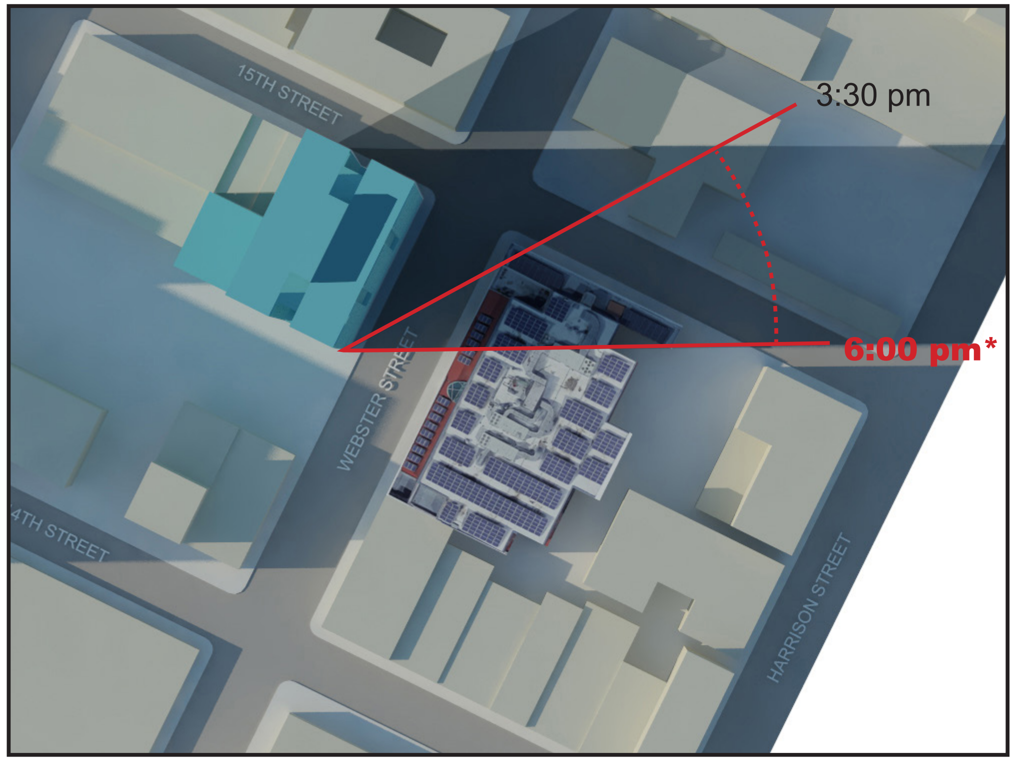
MARCH 21st

Sunset 7:04 pm

* Last hour of PV output: 5:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
3	21	0	0	0	0	0
3	21	1	0	0	0	0
3	21	2	0	0	0	0
3	21	3	0	0	0	0
3	21	4	0	0	0	0
3	21	5	0	0	0	0
3	21	6	1874.011	1216.418	0	1216.418
3	21	7	7598.856	6830.051	0	6830.051
3	21	8	24559.33	23402.504	0	23402.504
3	21	9	16179.048	15224.886	0	15224.886
3	21	10	58965.961	56753.066	0	56753.066
3	21	11	36899.738	35405.574	0	35405.574
3	21	12	43804.008	42100.887	0	42100.887
3	21	13	21231.227	20157.445	0	20157.445
3	21	14	22714.711	21604.328	0	21604.328
3	21	15	28714.67	27449.428	0	27449.428
3	21	16	12387.458	11517.968	0.08	10596.5306
3	21	17	10984.865	10145.589	0.16022099	8520.05264
3	21	18	201.475	0	0	0
3	21	19	0	0	0	0
3	21	20	0	0	0	0
3	21	21	0	0	0	0
3	21	22	0	0	0	0
3	21	23	0	0	0	0

04 SHADOW IMPACT ON SOLAR COLLECTORS

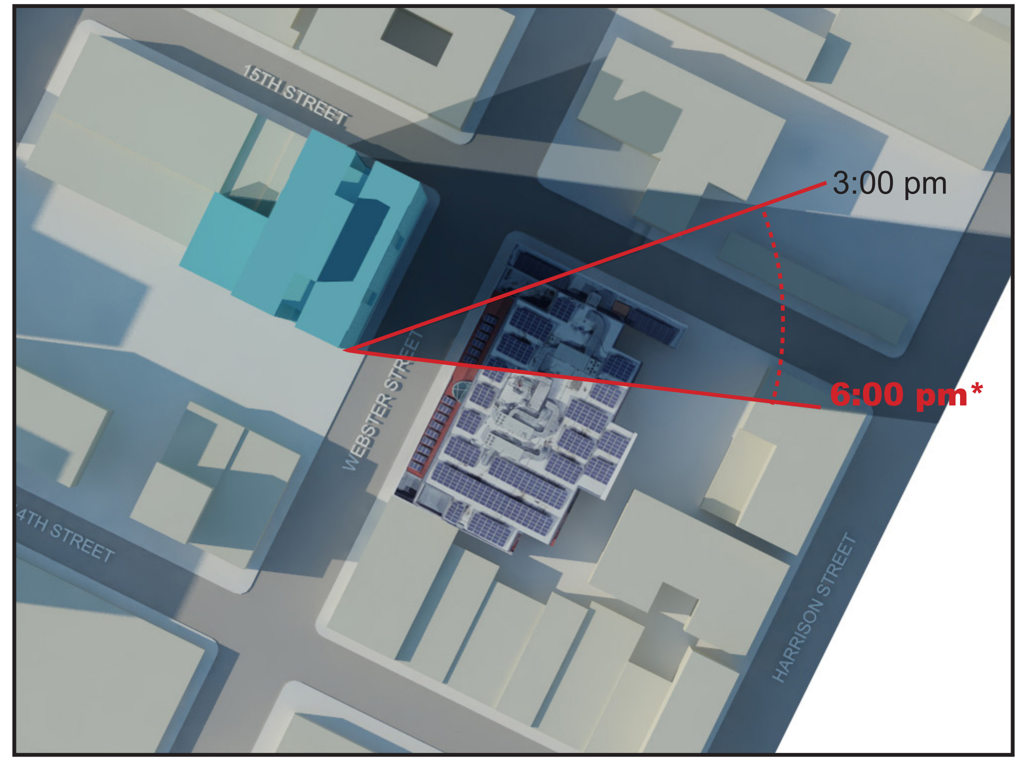


APRIL 21st

Sunset 7:39 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
4	21	0	0	0	0	0
4	21	1	0	0	0	0
4	21	2	0	0	0	0
4	21	3	0	0	0	0
4	21	4	0	0	0	0
4	21	5	90.479	0	0	0
4	21	6	5223.912	4502.454	0	4502.454
4	21	7	17158.521	16181.776	0	16181.776
4	21	8	34413.738	32991.258	0	32991.258
4	21	9	56825.332	54688.648	0	54688.648
4	21	10	76086.313	73213.703	0	73213.703
4	21	11	89589.672	86133.805	0	86133.805
4	21	12	96027.953	92274.453	0	92274.453
4	21	13	96177.203	92416.664	0	92416.664
4	21	14	69234.555	66636.68	0	66636.68
4	21	15	60673.25	58398.57	0	58398.57
4	21	16	46223.336	44443.566	0.12	39110.3381
4	21	17	29551.418	28263.709	0.23585022	21597.7072
4	21	18	4941.591	4225.646	0.35	2746.6699
4	21	19	0	0	0	0
4	21	20	0	0	0	0
4	21	21	0	0	0	0
4	21	22	0	0	0	0
4	21	23	0	0	0	0

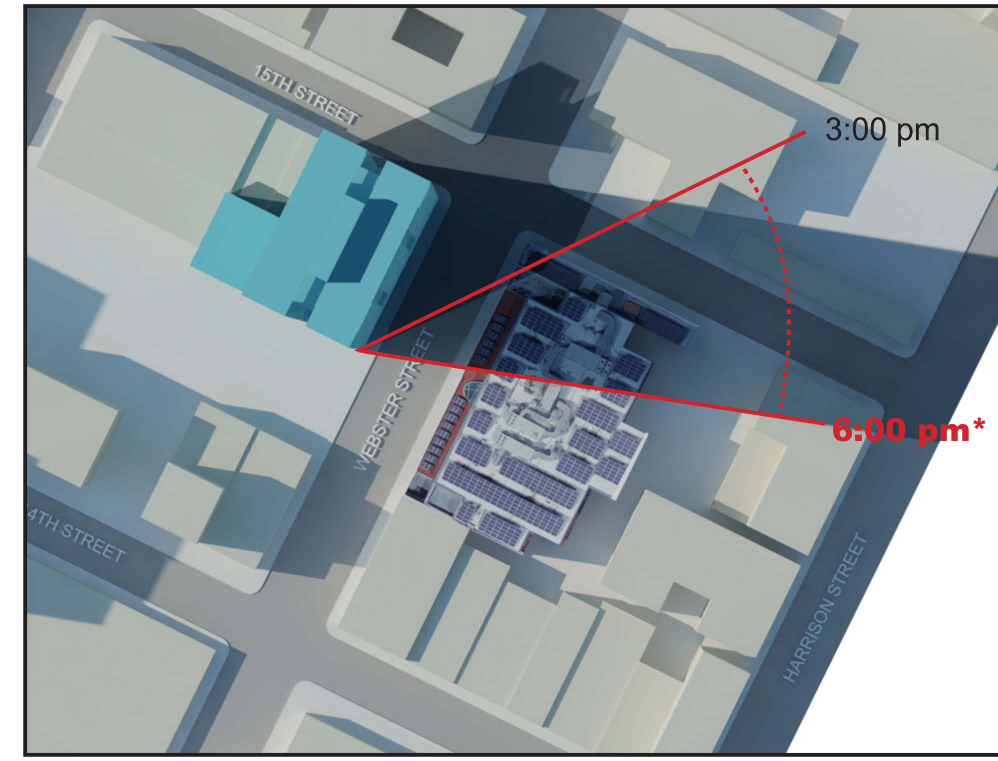


MAY 21st

Sunset 8:10 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
5	21	0	0	0	0	0
5	21	1	0	0	0	0
5	21	2	0	0	0	0
5	21	3	0	0	0	0
5	21	4	0	0	0	0
5	21	5	1898.225	1240.183	0	1240.183
5	21	6	5586.348	4857.775	0	4857.775
5	21	7	18861.121	17844.424	0	17844.424
5	21	8	38763.582	37214.438	0	37214.438
5	21	9	55894.574	53790.598	0	53790.598
5	21	10	68677.617	66101.445	0	66101.445
5	21	11	79427.281	76415.531	0	76415.531
5	21	12	83498.805	80312.891	0	80312.891
5	21	13	85407.172	82137.891	0	82137.891
5	21	14	79668.234	76646.32	0	76646.32
5	21	15	69264.945	66665.875	0	66665.875
5	21	16	53537.43	51515.094	0.12	45333.2827
5	21	17	31765.236	30417.059	0.23585022	23243.1891
5	21	18	0	0	0.35	0
5	21	19	0	0	0	0
5	21	20	0	0	0	0
5	21	21	0	0	0	0
5	21	22	0	0	0	0
5	21	23	0	0	0	0



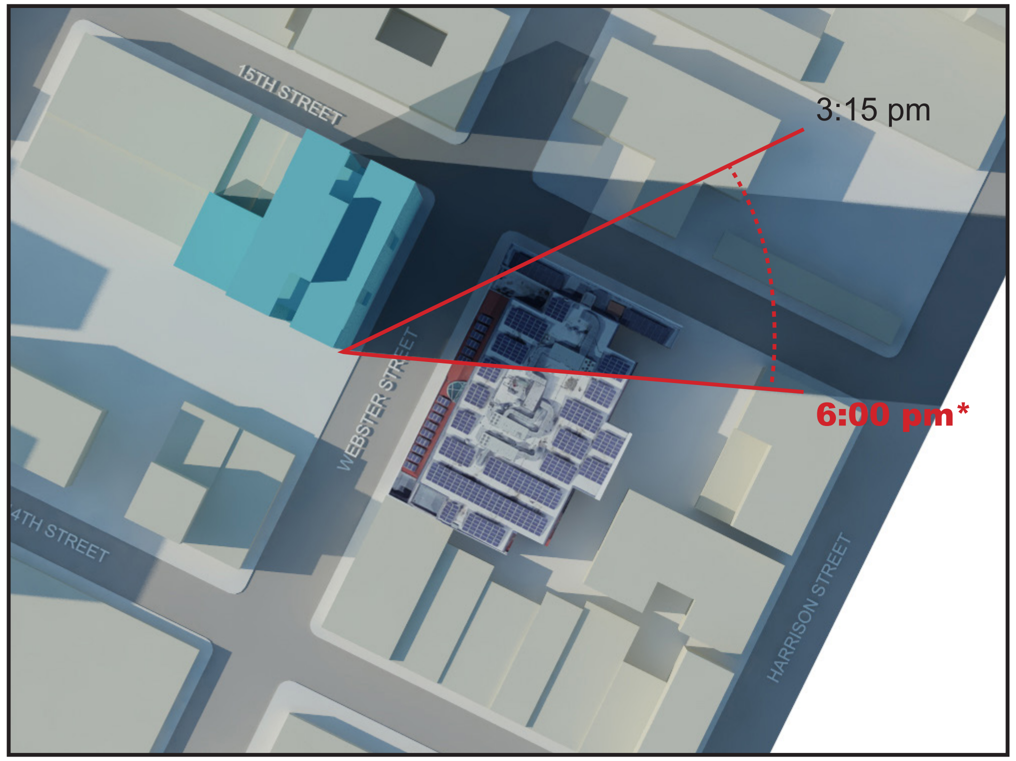
JUNE 21st

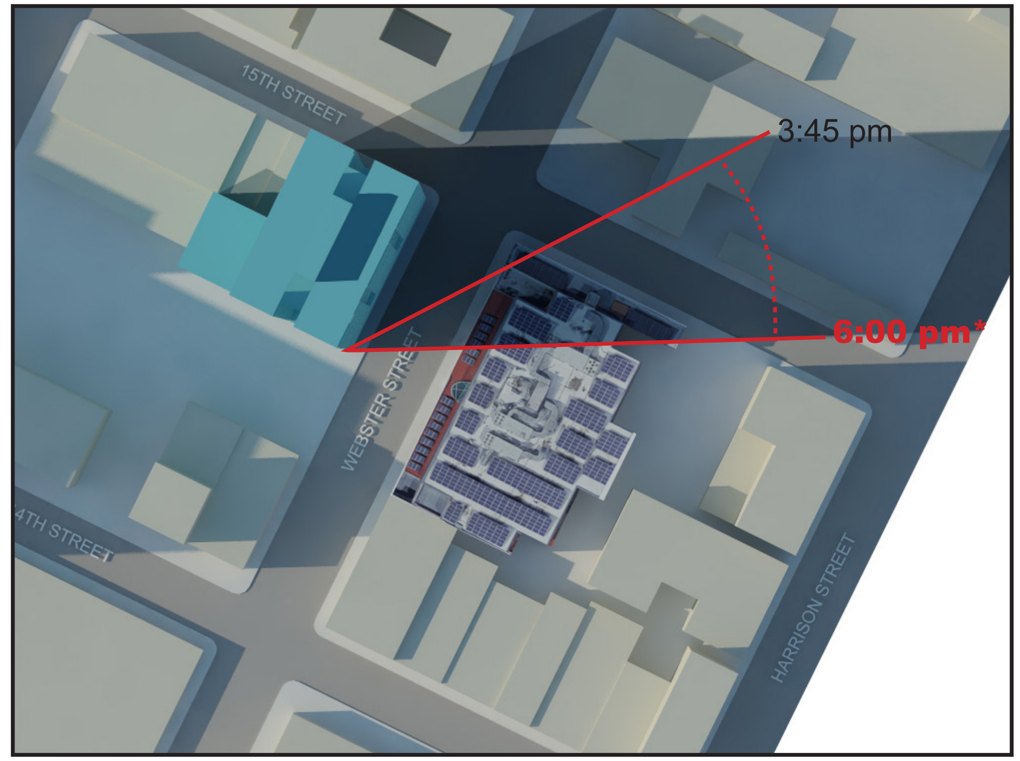
Sunset 8:35 pm

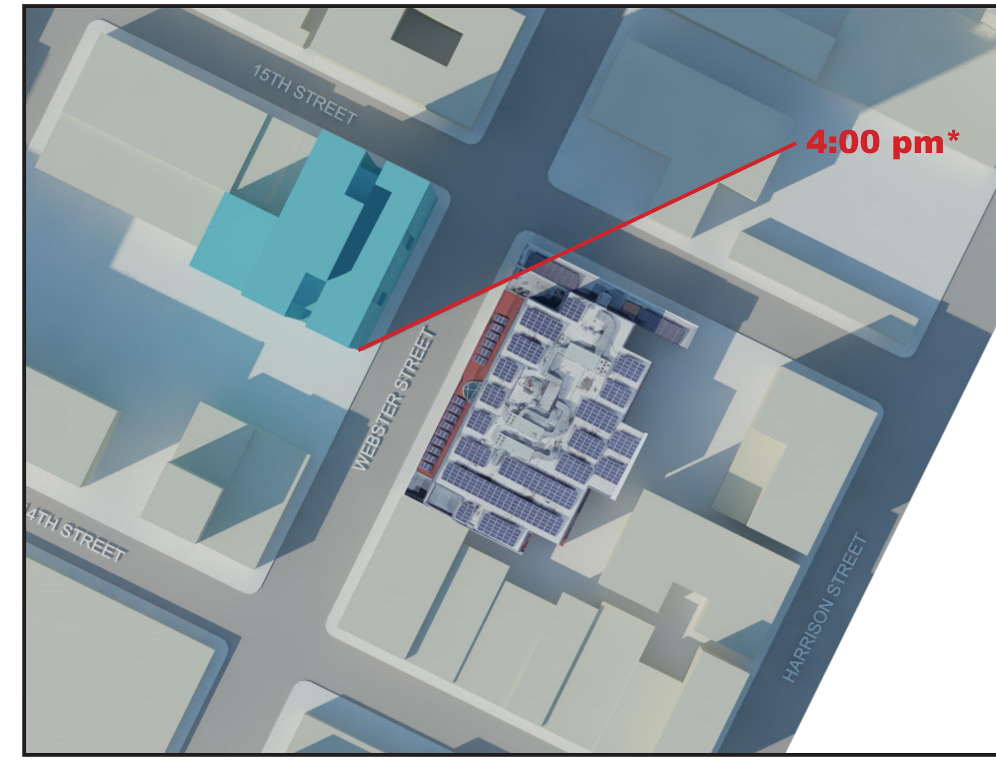
* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
6	21	0	0	0	0	0
6	21	1	0	0	0	0
6	21	2	0	0	0	0
6	21	3	0	0	0	0
6	21	4	0	0	0	0
6	21	5	1641.73	988.438	0	988.438
6	21	6	6679.67	5929.394	0	5929.394
6	21	7	13852.792	12951.098	0	12951.098
6	21	8	26392.168	25188.17	0	25188.17
6	21	9	43978.328	42269.746	0	42269.746
6	21	10	72896.578	70153.641	0	70153.641
6	21	11	84712.688	81473.875	0	81473.875
6	21	12	90116.055	86636.328	0	86636.328
6	21	13	93730.867	90085.008	0	90085.008
6	21	14	87338.766	83983.977	0	83983.977
6	21	15	69820.539	67199.727	0	67199.727
6	21	16	57364.152	55208.418	0.12	48583.4078
6	21	17	36079.125	34608.832	0.23585022	26446.3315
6	21	18	12489.798	11618.08	0.35	7551.752
6	21	19	197.402	0	0	0
6	21	20	0	0	0	0
6	21	21	0	0	0	0
6	21	22	0	0	0	0
6	21	23	0	0	0	0

05 SHADOW IMPACT ON SOLAR COLLECTORS







JULY 21st

Sunset 8:19 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
7	21	0	0	0	0	0
7	21	1	0	0	0	0
7	21	2	0	0	0	0
7	21	3	0	0	0	0
7	21	4	0	0	0	0
7	21	5	1159.826	515.407	0	515.407
7	21	6	8041.697	7263.874	0	7263.874
7	21	7	12437.765	11567.18	0	11567.18
7	21	8	16899.51	15928.765	0	15928.765
7	21	9	37867.328	36344.754	0	36344.754
7	21	10	31636.838	30292.209	0	30292.209
7	21	11	71590.805	68900.063	0	68900.063
7	21	12	85372.188	82104.445	0	82104.445
7	21	13	92905.719	89298.133	0	89298.133
7	21	14	87049.133	83707.242	0	83707.242
7	21	15	77045.742	74133.523	0	74133.523
7	21	16	58666.156	56464.02	0.05	53640.819
7	21	17	37307.359	35801.262	0.20798036	28355.3028
7	21	18	14478.104	13562.469	0.4	8137.4814
7	21	19	0	0	0	0
7	21	20	0	0	0	0
7	21	21	0	0	0	0
7	21	22	0	0	0	0
7	21	23	0	0	0	0

AUGUST 21st

Sunset 7:41 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
8	21	0	0	0	0	0
8	21	1	0	0	0	0
8	21	2	0	0	0	0
8	21	3	0	0	0	0
8	21	4	0	0	0	0
8	21	5	0	0	0	0
8	21	6	4639.901	3929.823	0	3929.823
8	21	7	15055.977	14127.351	0	14127.351
8	21	8	31265.299	29930.906	0	29930.906
8	21	9	53480.402	51460.02	0	51460.02
8	21	10	70189.094	67553.797	0	67553.797
8	21	11	82762.336	79608.305	0	79608.305
8	21	12	88983.461	85554.969	0	85554.969
8	21	13	89579.094	86123.703	0	86123.703
8	21	14	79555.938	76538.758	0	76538.758
8	21	15	69853.352	67231.25	0	67231.25
8	21	16	41516.184	39883.91	0	39883.91
8	21	17	22453.201	21349.32	0.10362185	19137.0639
8	21	18	3356.13	2670.702	0.2	2136.5616
8	21	19	0	0	0	0
8	21	20	0	0	0	0
8	21	21	0	0	0	0
8	21	22	0	0	0	0
8	21	23	0	0	0	0

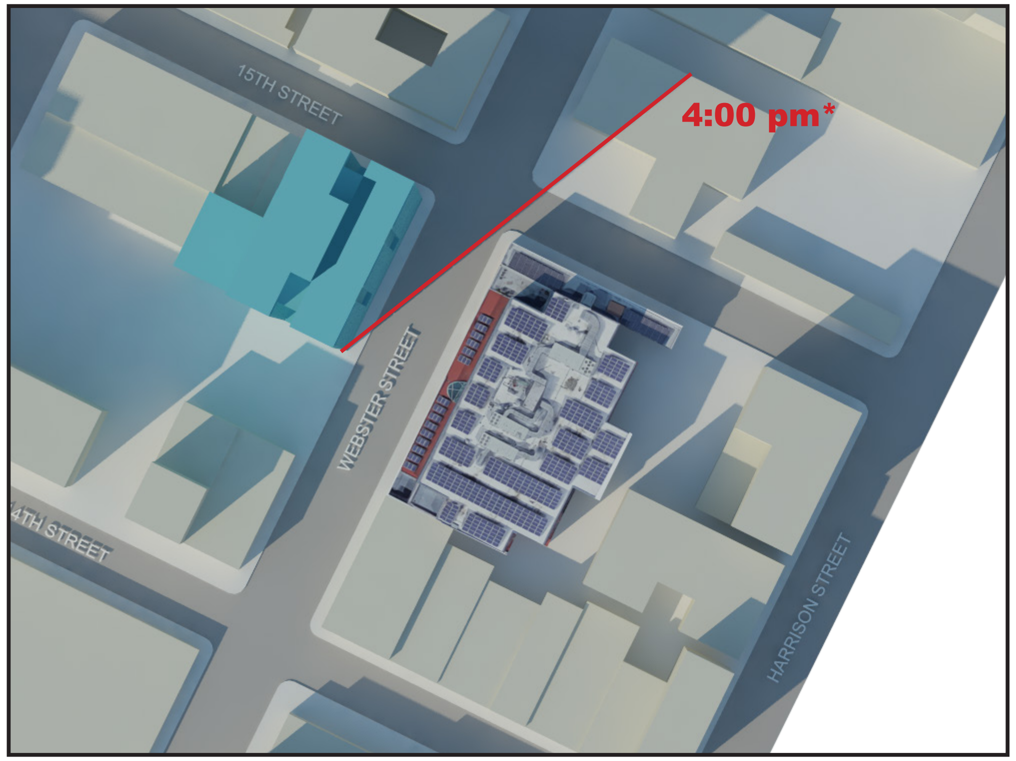
SEPTEMBER 21st

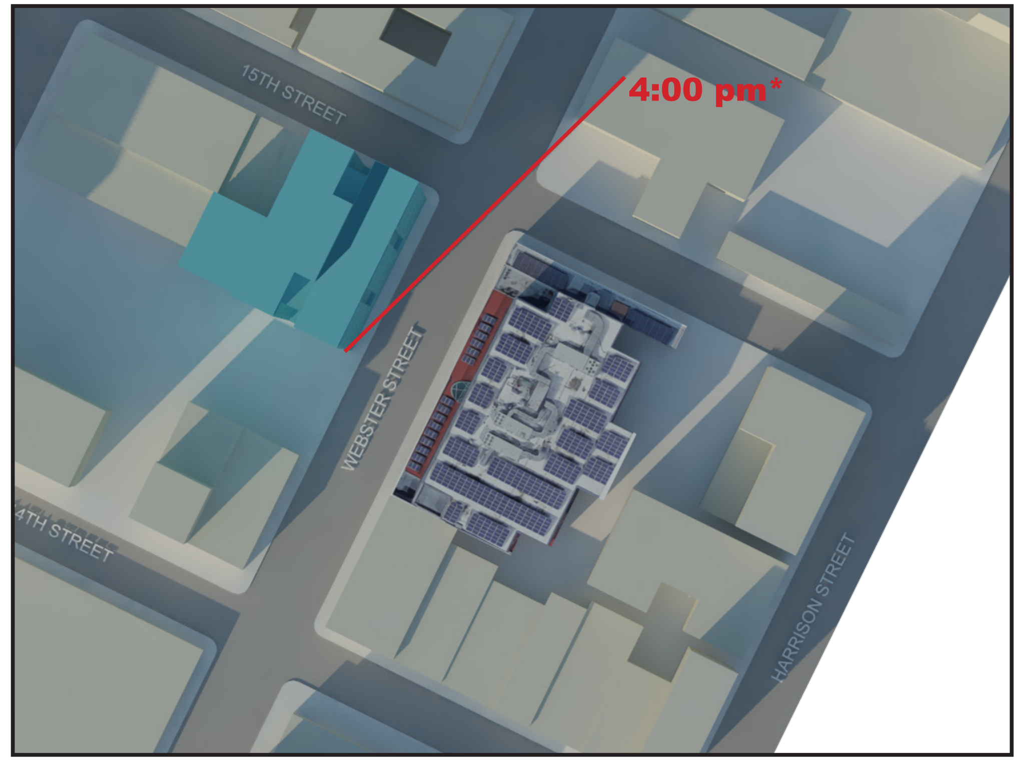
Sunset 6:49 pm

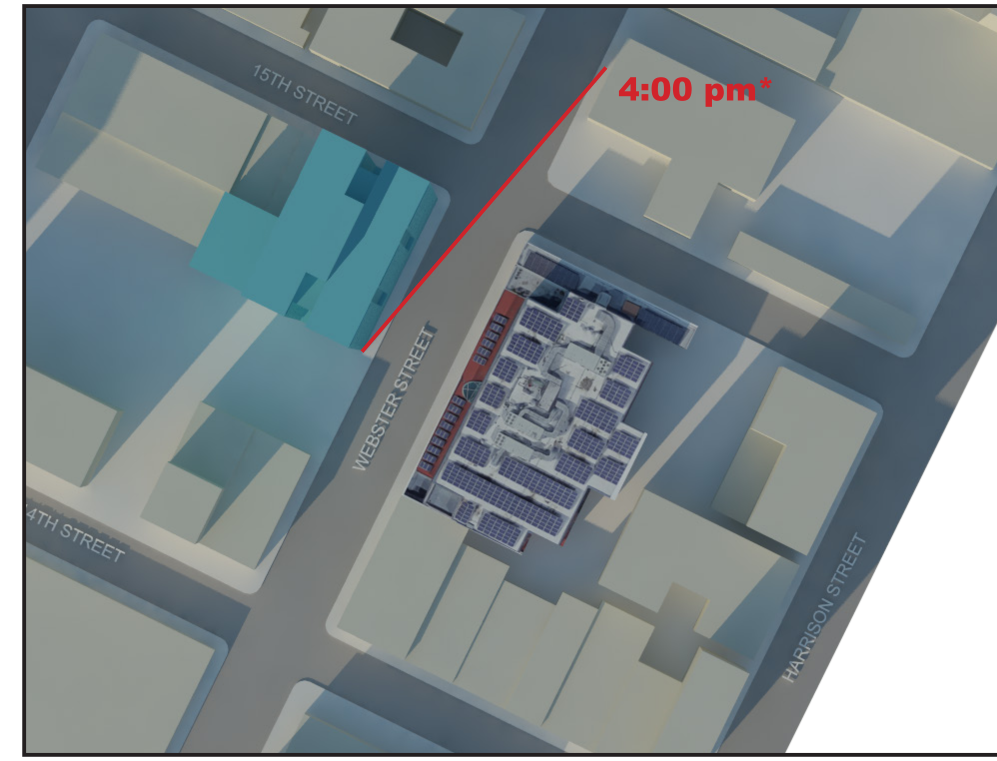
* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
9	21	0	0	0	0	0
9	21	1	0	0	0	0
9	21	2	0	0	0	0
9	21	3	0	0	0	0
9	21	4	0	0	0	0
9	21	5	0	0	0	0
9	21	6	1976.607	1317.109	0	1317.109
9	21	7	9512.285	8704.085	0	8704.085
9	21	8	28910.914	27640.422	0	27640.422
9	21	9	46738.988	44942.648	0	44942.648
9	21	10	60672.902	58398.234	0	58398.234
9	21	11	67224.18	64704.195	0	64704.195
9	21	12	83025.32	79859.922	0	79859.922
9	21	13	75838.18	72975.766	0	72975.766
9	21	14	71948.18	69243.203	0	69243.203
9	21	15	56701.789	54569.465	0	54569.465
9	21	16	34694.828	33264.336	0	33264.336
9	21	17	0	0	0	0
9	21	18	0	0	0	0
9	21	19	0	0	0	0
9	21	20	0	0	0	0
9	21	21	0	0	0	0
9	21	22	0	0	0	0
9	21	23	0	0	0	0

06 SHADOW IMPACT ON SOLAR COLLECTORS







OCTOBER 21st

Sunset 5:59 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
10	21	0	0	0	0	0
10	21	1	0	0	0	0
10	21	2	0	0	0	0
10	21	3	0	0	0	0
10	21	4	0	0	0	0
10	21	5	0	0	0	0
10	21	6	180.653	0	0	0
10	21	7	5549.477	4821.629	0	4821.629
10	21	8	23575.004	22443.092	0	22443.092
10	21	9	44898.109	43160.543	0	43160.543
10	21	10	61425.754	59123.563	0	59123.563
10	21	11	72414.031	69690.445	0	69690.445
10	21	12	73277.5	70519.242	0	70519.242
10	21	13	74736.594	71919.234	0	71919.234
10	21	14	61467.461	59163.734	0	59163.734
10	21	15	43958.332	42250.375	0	42250.375
10	21	16	22049.561	20955.672	0	20955.672
10	21	17	0	0	0	0
10	21	18	0	0	0	0
10	21	19	0	0	0	0
10	21	20	0	0	0	0
10	21	21	0	0	0	0
10	21	22	0	0	0	0
10	21	23	0	0	0	0

NOVEMBER 21st

Sunset 4:25 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
11	21	0	0	0	0	0
11	21	1	0	0	0	0
11	21	2	0	0	0	0
11	21	3	0	0	0	0
11	21	4	0	0	0	0
11	21	5	0	0	0	0
11	21	6	0	0	0	0
11	21	7	1956.338	1297.216	0	1297.216
11	21	8	14738.856	13817.372	0	13817.372
11	21	9	32984.059	31601.951	0	31601.951
11	21	10	50783.387	48854.297	0	48854.297
11	21	11	61047.488	58759.145	0	58759.145
11	21	12	63132.539	60767.301	0	60767.301
11	21	13	60294.348	58033.457	0	58033.457
11	21	14	47404.844	45586.992	0	45586.992
11	21	15	33387.746	31994.303	0	31994.303
11	21	16	9331.991	8527.551	0	8527.551
11	21	17	0	0	0	0
11	21	18	0	0	0	0
11	21	19	0	0	0	0
11	21	20	0	0	0	0
11	21	21	0	0	0	0
11	21	22	0	0	0	0
11	21	23	0	0	0	0

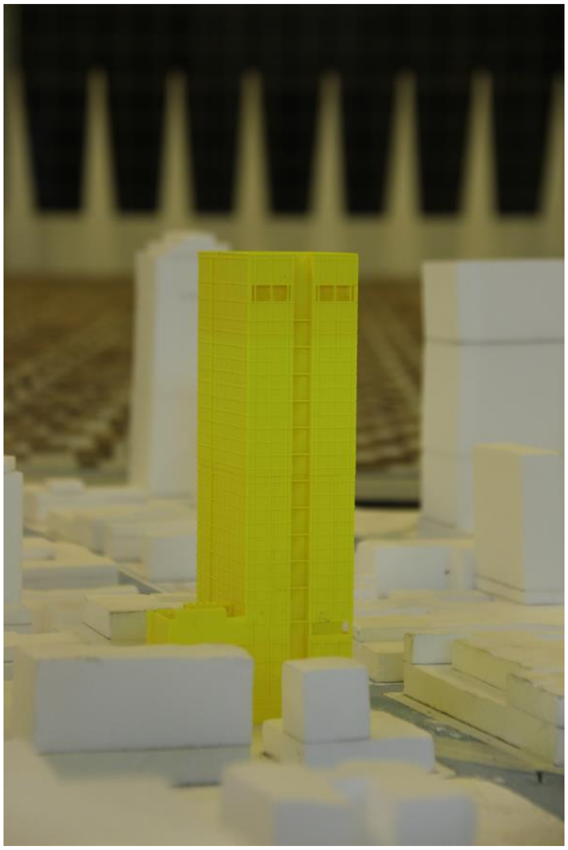
DECEMBER 21st

Sunset 4:23 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
12	21	0	0	0	0	0
12	21	1	0	0	0	0
12	21	2	0	0	0	0
12	21	3	0	0	0	0
12	21	4	0	0	0	0
12	21	5	0	0	0	0
12	21	6	0	0	0	0
12	21	7	216.302	0	0	0
12	21	8	8743.941	7951.694	0	7951.694
12	21	9	26534.066	25326.373	0	25326.373
12	21	10	41519.52	39887.145	0	39887.145
12	21	11	54968.516	52896.816	0	52896.816
12	21	12	58998.16	56784.105	0	56784.105
12	21	13	58449.816	56255.426	0	56255.426
12	21	14	51784.988	49822.254	0	49822.254
12	21	15	35053.258	33612.516	0	33612.516
12	21	16	10376.662	9550.301	0	9550.301
12	21	17	0	0	0	0
12	21	18	0	0	0	0
12	21	19	0	0	0	0
12	21	20	0	0	0	0
12	21	21	0	0	0	0
12	21	22	0	0	0	0
12	21	23	0	0	0	0

Attachment H:
Wind Impact Analysis



PEDESTRIAN WIND ENVIRONMENT STUDY

1433 WEBSTER STREET, OAKLAND, CA

WD408-01F02-REV0 WE REPORT

SEPTEMBER 12, 2017

Prepared for:

Lamphier-Gregory

1944 Embarcadero
Oakland, CA 94606

WINDTECH Consultants
30 Broad Street, 14th Floor, Suite 1471, New York, NY 10004
P +1 212 920 6949 **E** reception@windtechglobal.com **W** www.windtechconsult.com

DOCUMENT CONTROL

Date	Revision History	Issued Revision	Prepared By (initials)	Instructed By (initials)	Reviewed & Authorized by (initials)
September 01, 2017	Initial.	0	SWR	TR	TR
September 12, 2017	Update for client comments	1	SWR	TR	TR

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EXECUTIVE SUMMARY

This report presents the results of a detailed investigation into the wind environment impact of the development located at 1433 Webster Street, Oakland, CA. Testing was performed using Windtech's boundary layer wind tunnel, which has a 10ft wide working section and has a fetch length of 46ft. Measurements were made at 27 critical study locations in the wind tunnel from 36 wind directions at 10 degree increments using a 1:400 scale model of the development, including the land topography and surrounding buildings for a radius of approximately 1640ft.

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

The model of the development was tested in the wind tunnel without the effect of any forms of wind ameliorating devices, which are not already shown in the architectural drawings. The effect of vegetation was also excluded from testing, in accordance with current AWES (2001) and ASCE (2012) guidelines. If the results of the study indicate that any area is exposed to strong winds, in-principle treatments are recommended.

The results of the study indicate that the wind conditions at each of the 27 study points are below the City of Oakland's CEQA Wind Hazard Threshold.

It is noted that there are exceedances of the appropriate wind comfort criteria for the area towards the north eastern corner of the development at ground level and at the southern-most corner of the Level 6 Amenity communal terrace. If it is desirable to improve the wind comfort conditions within these areas it is recommended that in-principal treatments be included, as follows:

- Increasing the depth of the awning along the south eastern and north eastern aspects above Level 01 from 5.0 feet to 6.5 feet from the podium façade. It is important to also link these awnings and have them wrap around the north-eastern corner of the development.

- Retain the large existing trees at the ground level.
- An 8ft high screen on the Level 06 Amenity Communal Terrace adjacent to the south-western corner of the tower to meet with the emergency electrical room.

With the inclusion of the above recommended treatments, it is expected that all areas within and around the development will satisfy the appropriate wind comfort criteria in addition to already satisfying the City of Oakland CEQA Wind Hazard Threshold.

CONTENTS

1 WIND CLIMATE FOR THE OAKLAND REGION

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

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

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

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

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

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

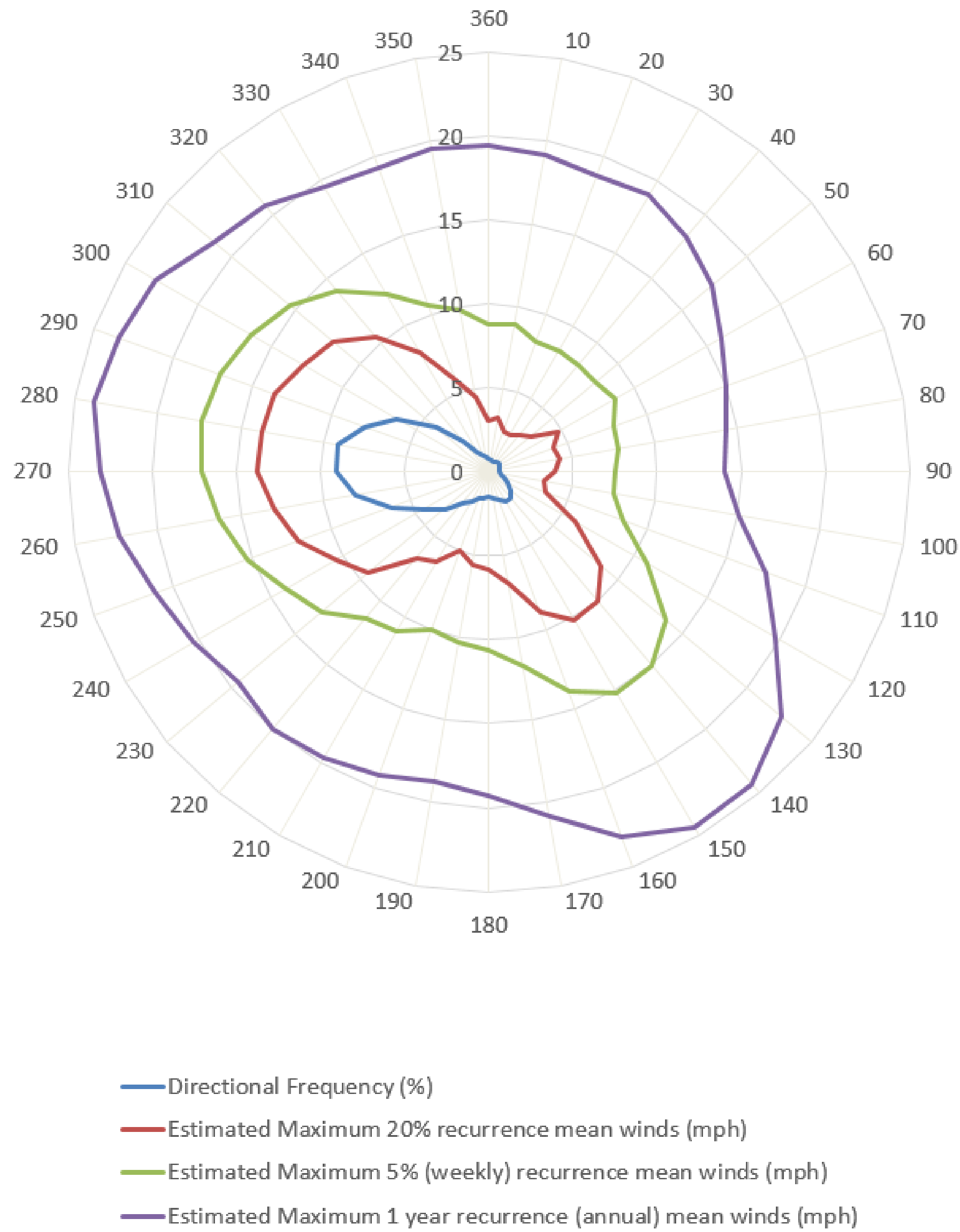

Figure 1: Annual, Weekly, and 20% Probability of Exceedance Recurrence Hourly Mean Wind Speeds, and Frequencies of Occurrence, for the Oakland Region (referenced to Exposure C, 33ft above ground)

2 THE WIND TUNNEL MODEL

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

The model was tested in the wind tunnel without the effect of any forms of wind ameliorating devices that are not already shown in the architectural drawings. The effect of vegetation was also excluded from testing. If the results of the study indicate that any area is exposed to strong winds, in-principal treatments have been recommended. These treatments could be in the form of vegetation that is already proposed for the site, and/or additional trees, shrubs, screens, awnings, etc. The existing wind conditions for the sidewalks around the site have also been tested to determine the impact of the subject development.

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

- Existing Scenario: Existing site conditions without the proposed development and existing surrounding buildings.
- Proposed Scenario: With the proposed development and existing surrounding buildings.
- Cumulative Scenario: With the proposed development, existing and future surrounding buildings.

Photographs of the wind tunnel model in its various configurations are presented in Figures 2a to 2n on the following pages.

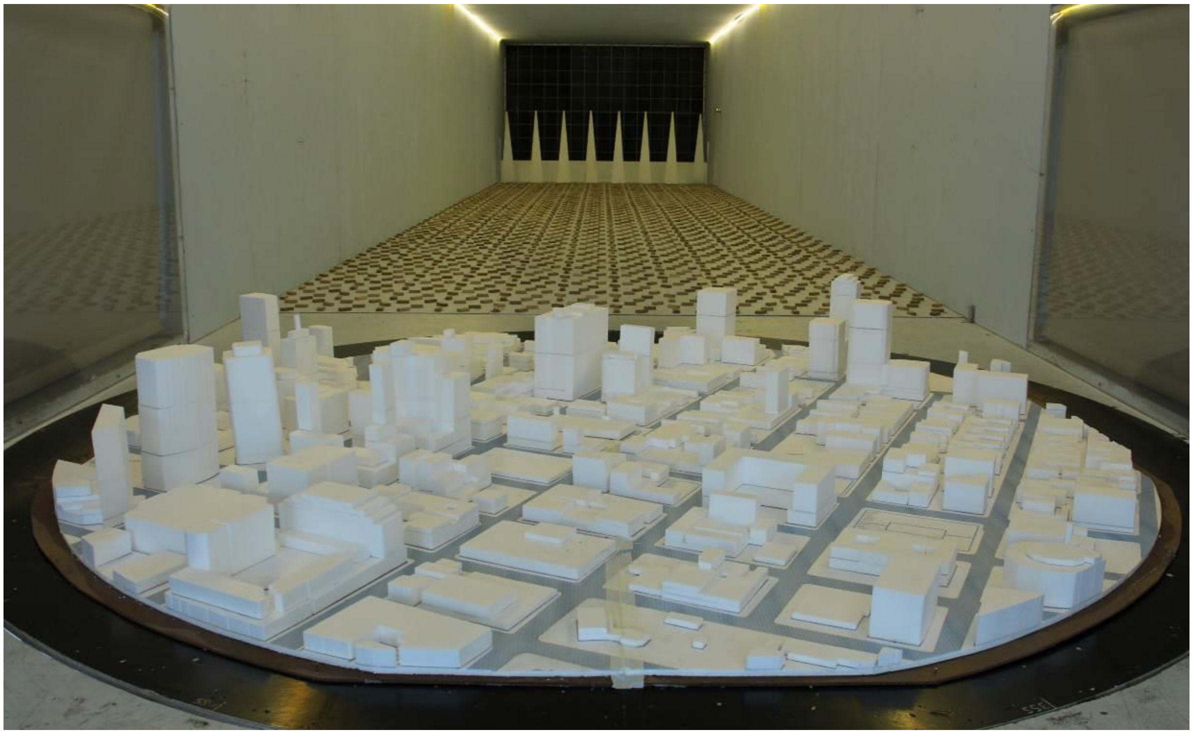

Figure 2a: Photograph of the Wind Tunnel Model (view from the south)
Existing Surrounds Scenario

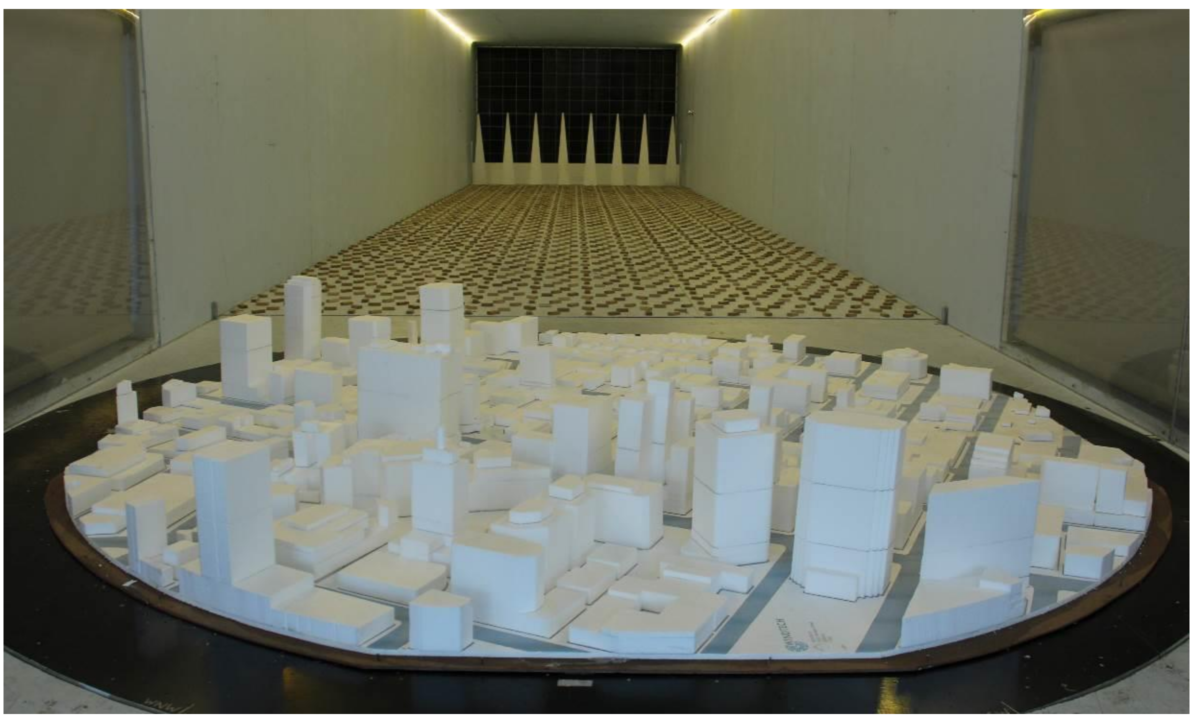

Figure 2b: Photograph of the Wind Tunnel Model (view from the west)
Existing Surrounds Scenario

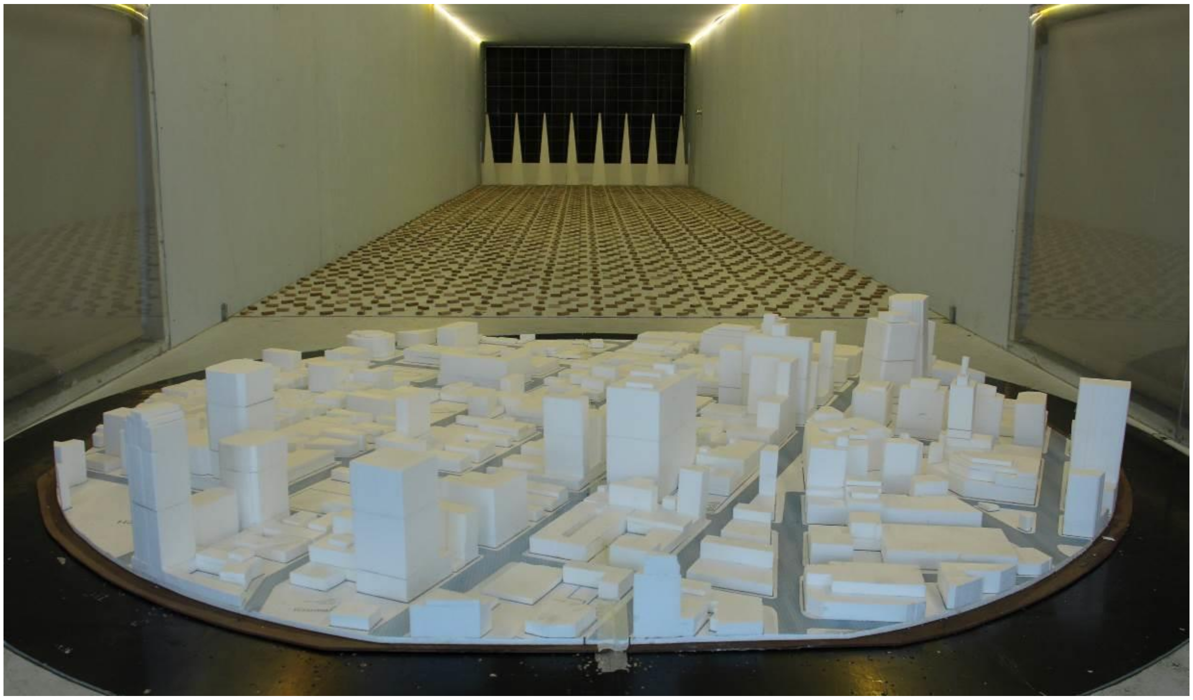

Figure 2c: Photograph of the Wind Tunnel Model (view from the north)
Existing Surrounds Scenario

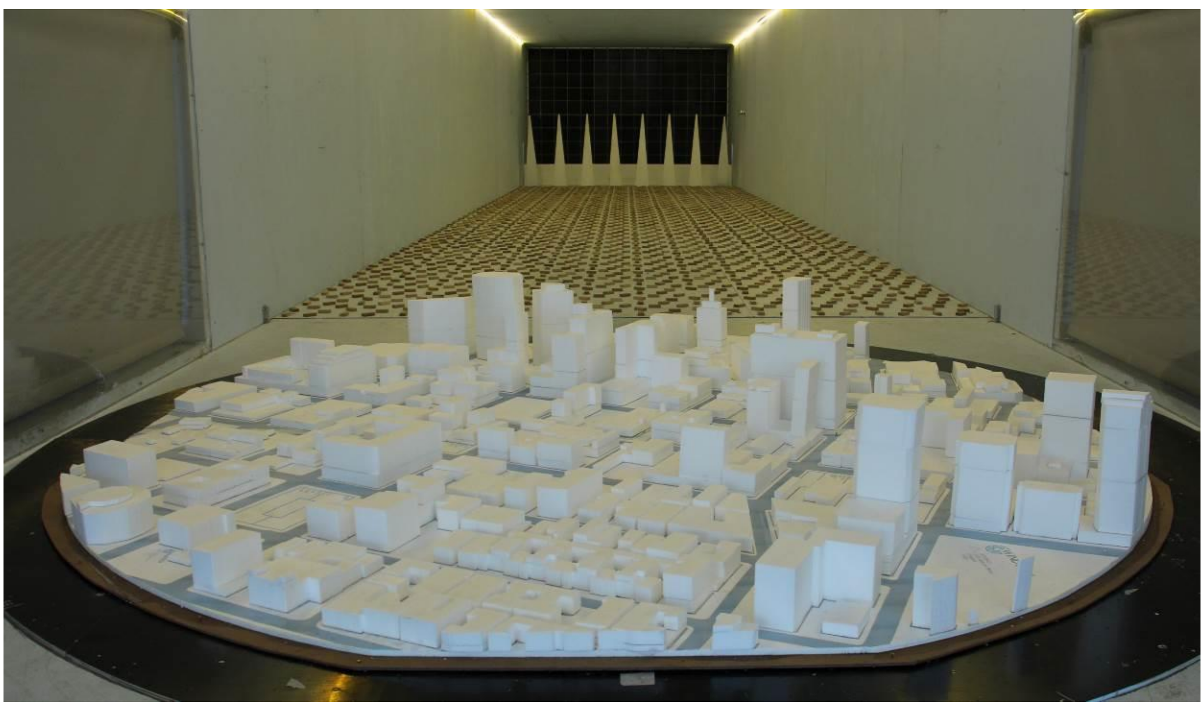

Figure 2d: Photograph of the Wind Tunnel Model (view from the east)
Existing Surrounds Scenario

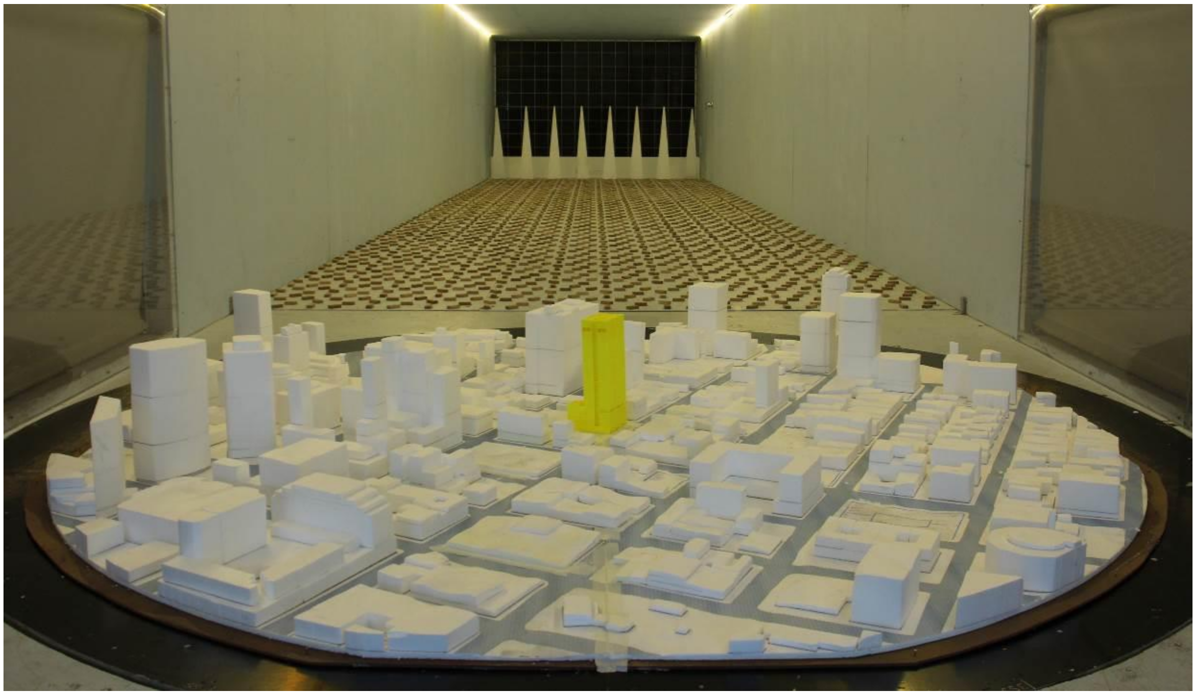

Figure 2e: Photograph of the Wind Tunnel Model (view from the south)
Proposed Surrounds Scenario

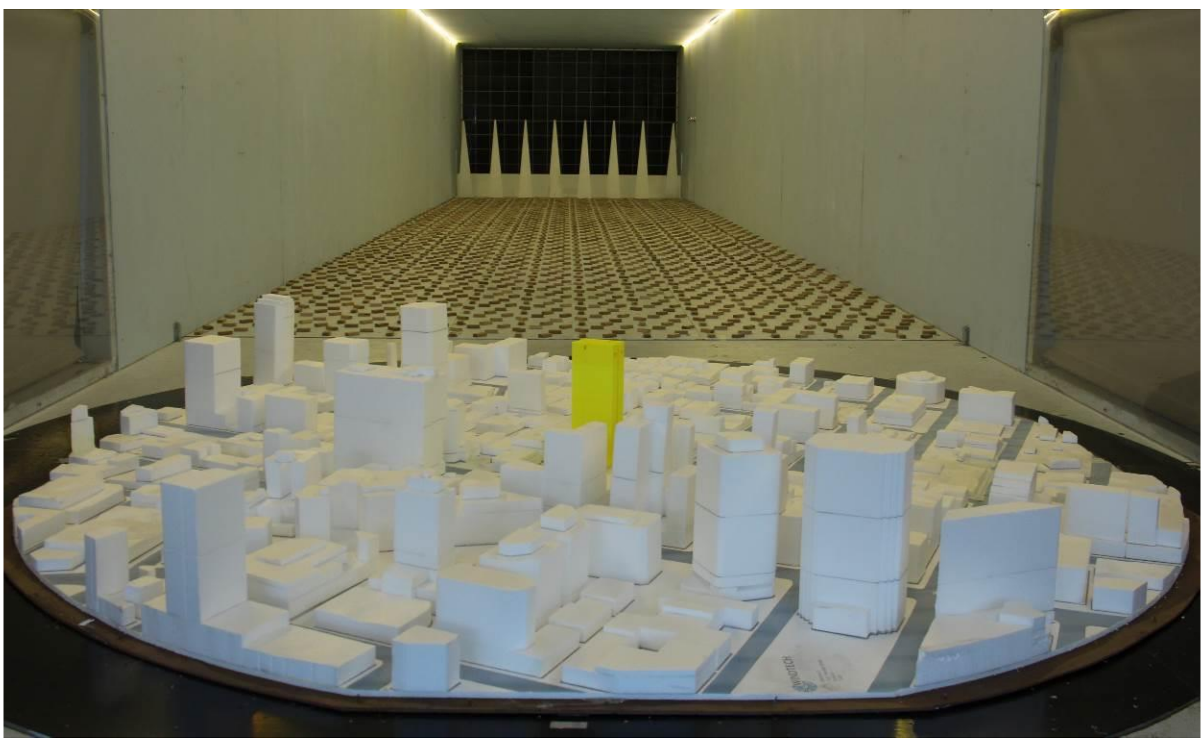

Figure 2f: Photograph of the Wind Tunnel Model (view from the west)
Proposed Surrounds Scenario

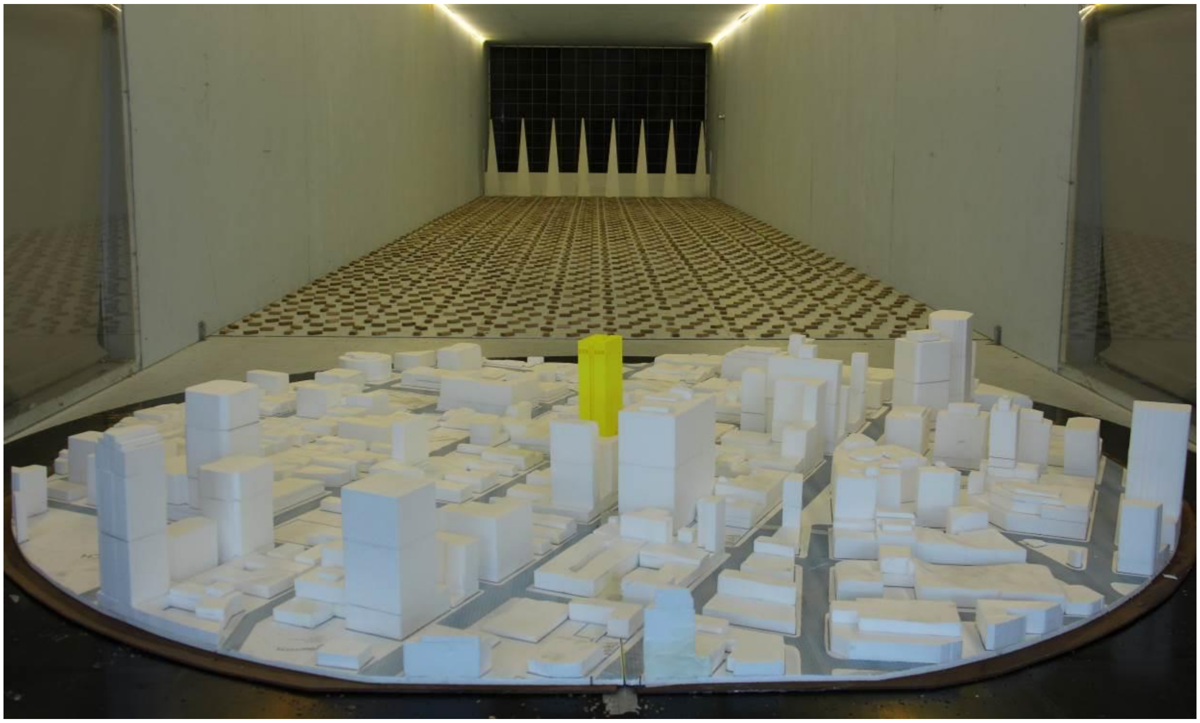

Figure 2g: Photograph of the Wind Tunnel Model (view from the north)
Proposed Surrounds Scenario

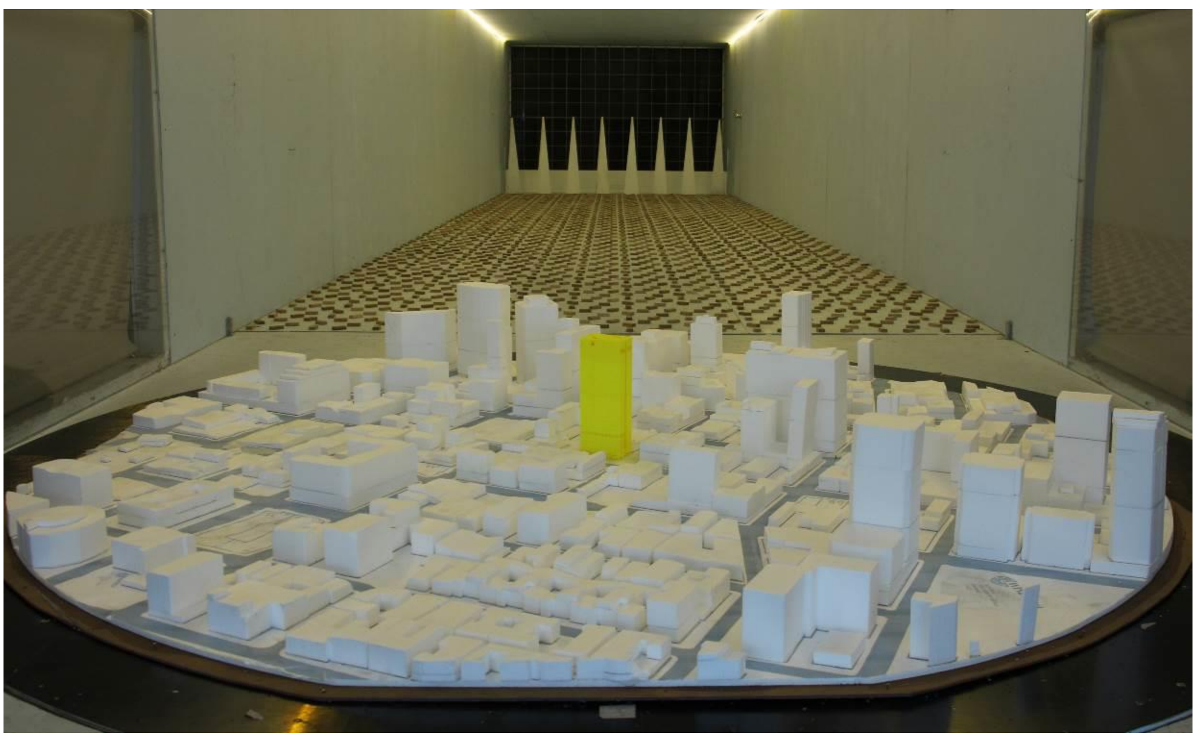

Figure 2h: Photograph of the Wind Tunnel Model (view from the east)
Proposed Surrounds Scenario

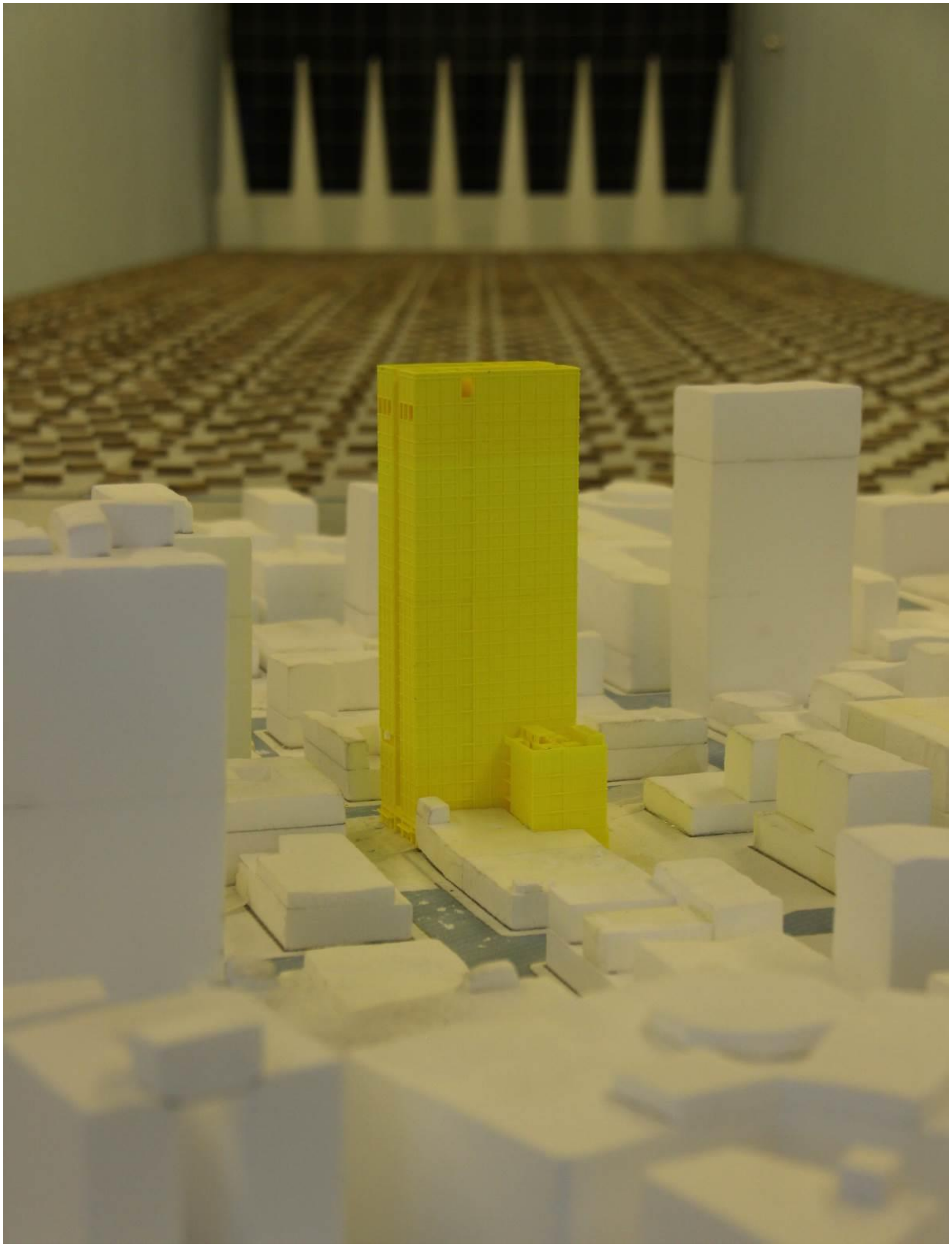

Figure 2i: Photograph of the Wind Tunnel Model (close-up view from the north-west) Proposed Surrounds Scenario

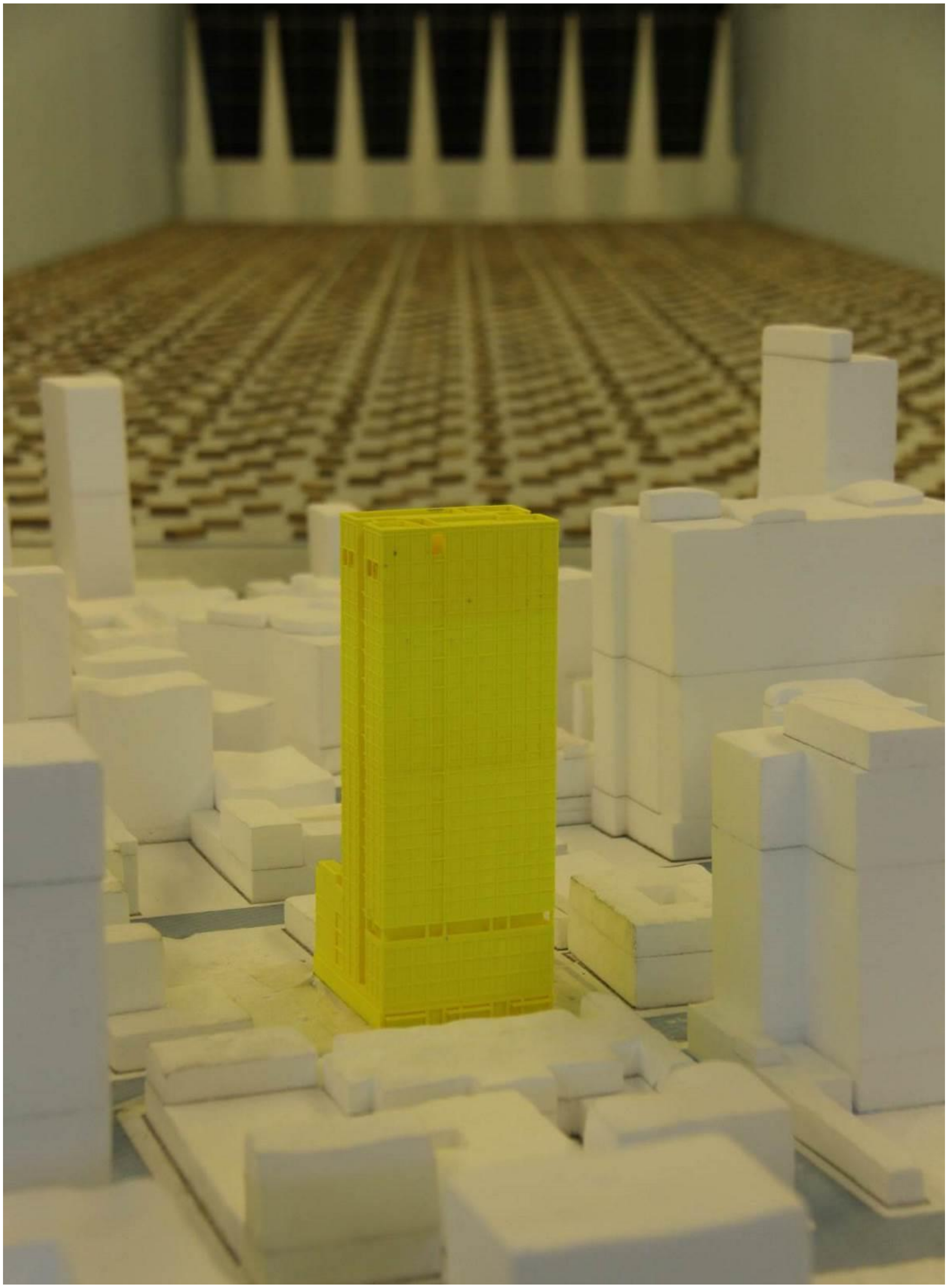

Figure 2j: Photograph of the Wind Tunnel Model (close-up view from the south-east) Proposed Surrounds Scenario

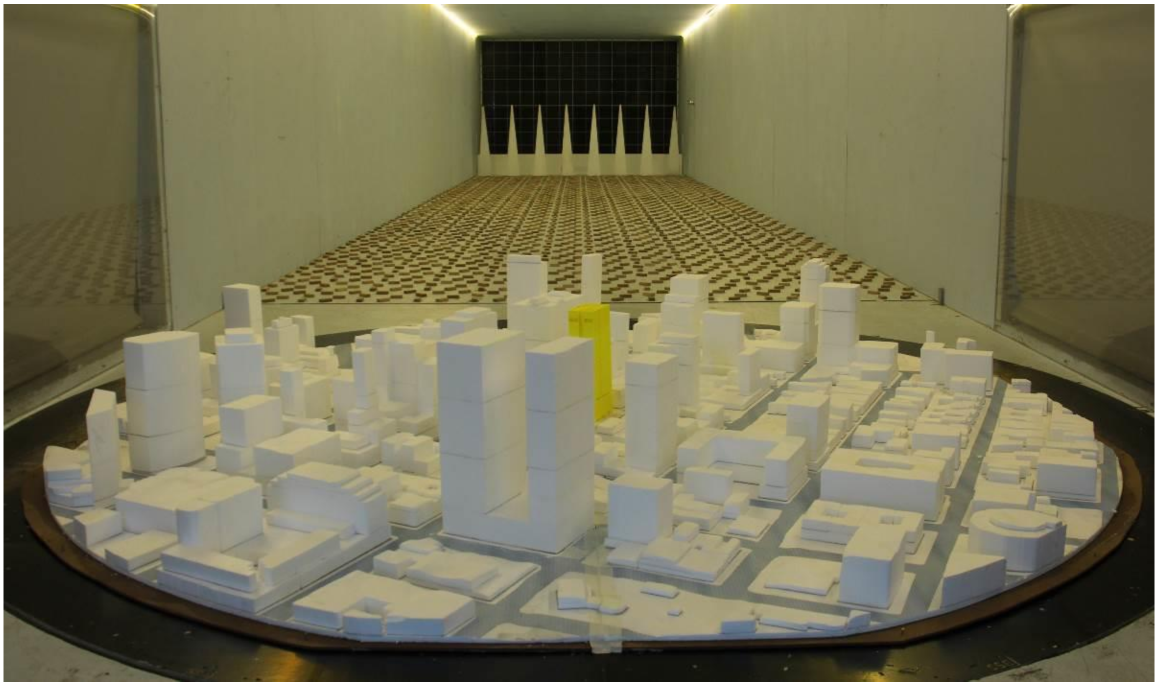

Figure 2k: Photograph of the Wind Tunnel Model (view from the south)
Cumulative Surrounds Scenario

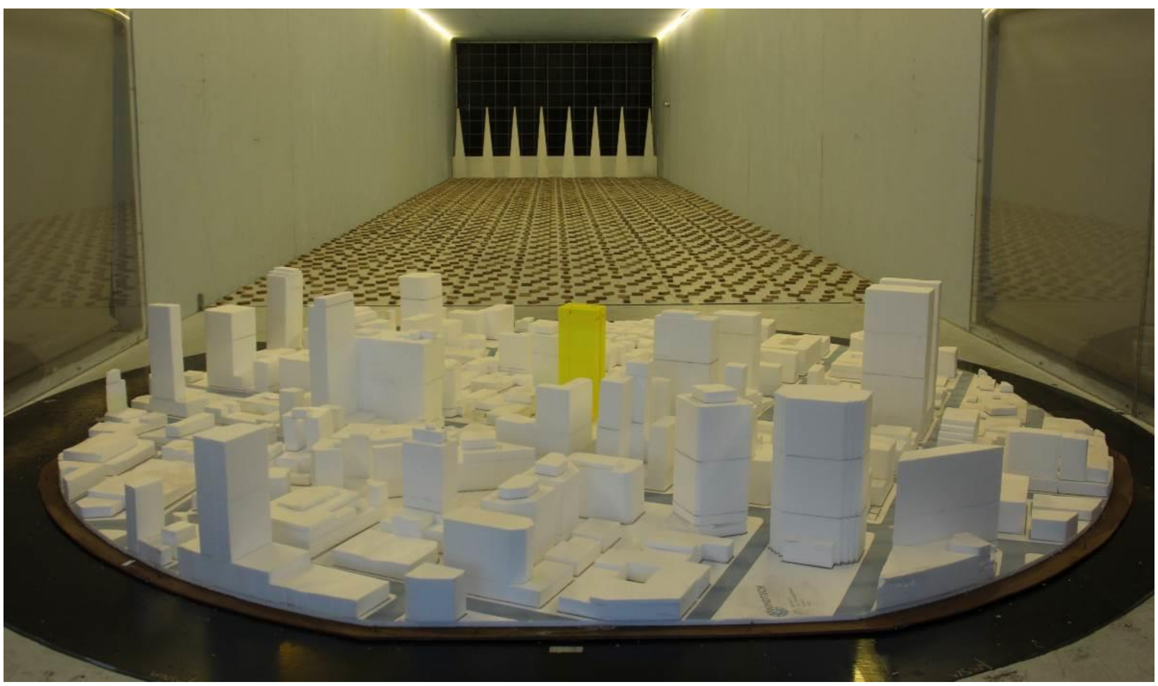

Figure 2l: Photograph of the Wind Tunnel Model (view from the west)
Cumulative Surrounds Scenario

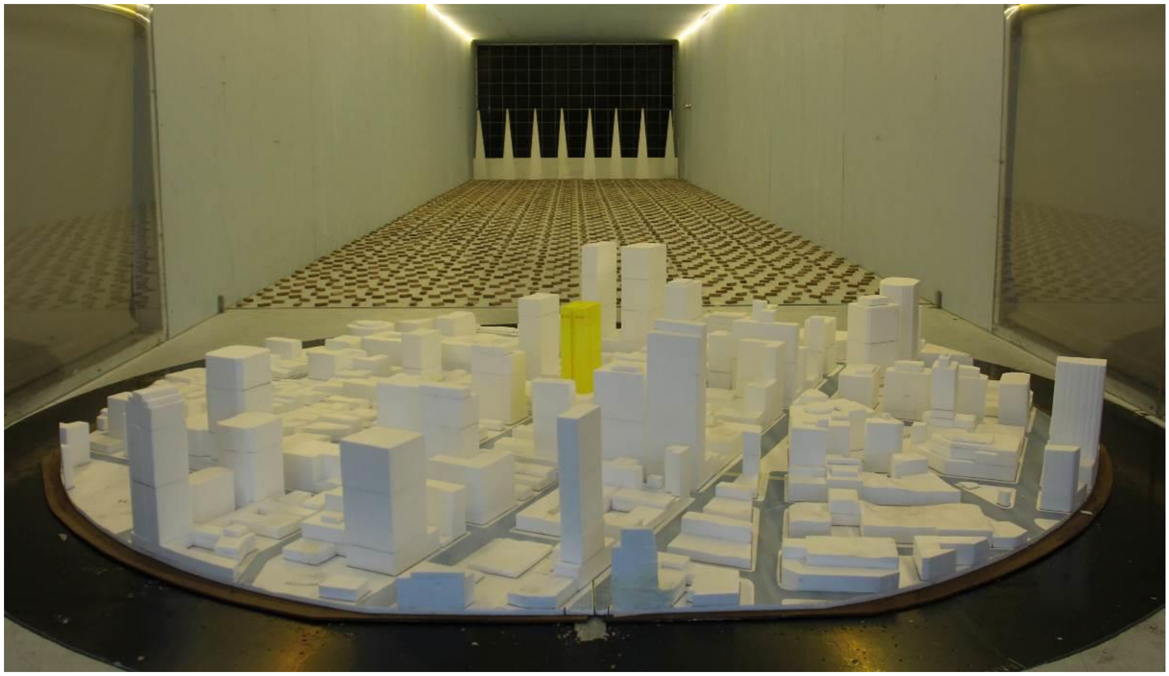

Figure 2m: Photograph of the Wind Tunnel Model (view from the north)
Cumulative Surrounds Scenario

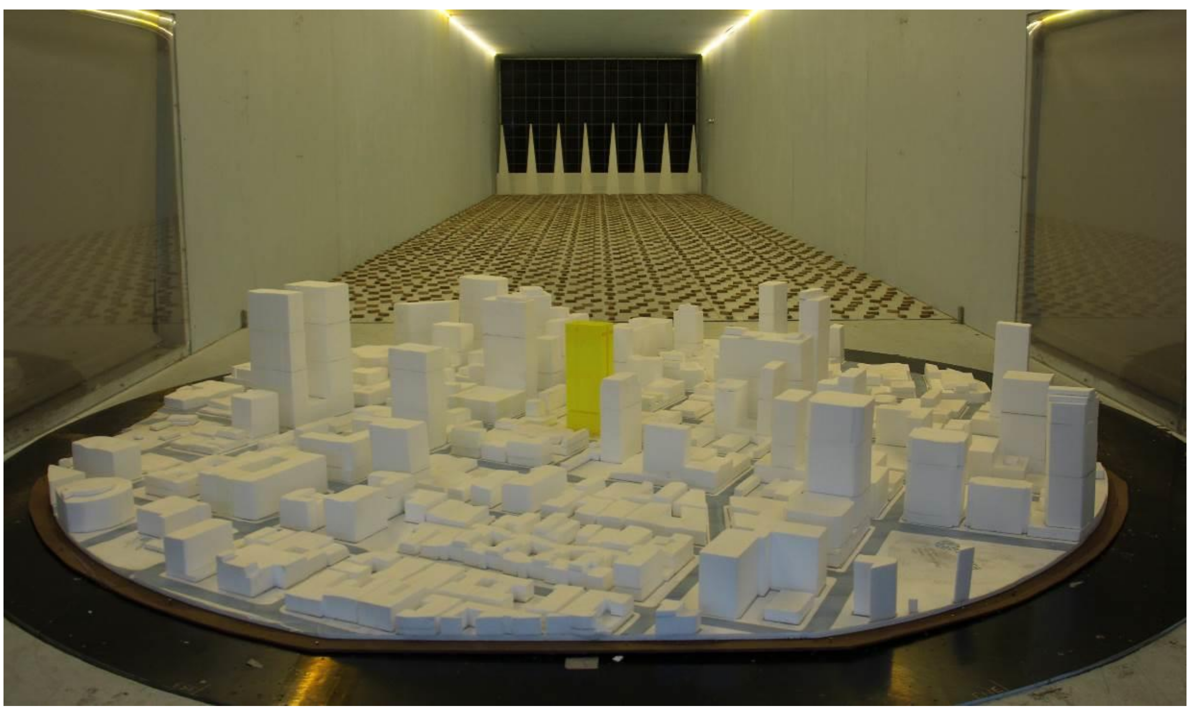

Figure 2n: Photograph of the Wind Tunnel Model (view from the east)
Cumulative Surrounds Scenario

3 BOUNDARY LAYER WIND FLOW MODEL

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

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

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

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

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

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

Exposure Category	Terrain & Height Multipliers			Turbulence Intensity	Roughness Length (ft)
	$k_{tr,T=3600s}$ (hourly)	$k_{tr,T=600s}$ (10-minute)	$k_{tr,T=3s}$ (3-second)		$z_{0,r}$
Exposure D	0.97	1.00	1.28	0.110	0.001
Exposure C	0.85	0.89	1.22	0.144	0.01
Exposure B	0.70	0.74	1.13	0.205	0.1

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

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

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

Wind Sector (degrees)	$k_{tr,T=3600s}$ (hourly mean)	$k_{tr,T=600s}$ (10-minute mean)	$k_{tr,T=3s}$ (3-second gust)
0	0.68	0.72	1.13
30	0.61	0.67	1.09
60	0.69	0.72	1.10
90	0.75	0.78	1.15
120	0.74	0.77	1.12
150	0.70	0.75	1.14
180	0.75	0.80	1.18
210	0.75	0.80	1.18
240	0.75	0.80	1.18
270	0.77	0.83	1.20
300	0.76	0.81	1.17
330	0.71	0.76	1.14

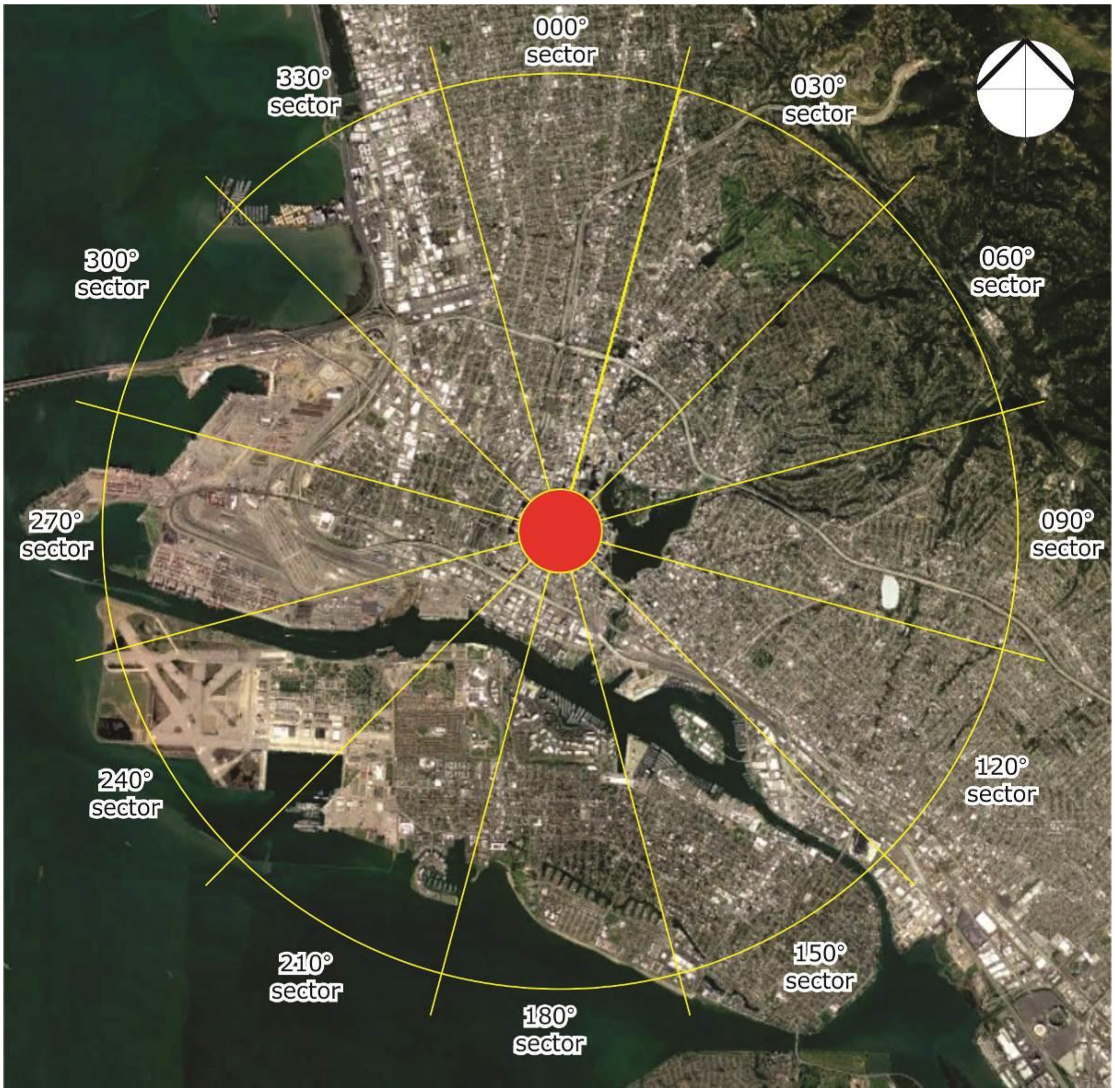

Figure 3a: Aerial Image of the Surrounding Terrain

(radius of 3.1 miles from the edge of the proximity model, which is colored red)

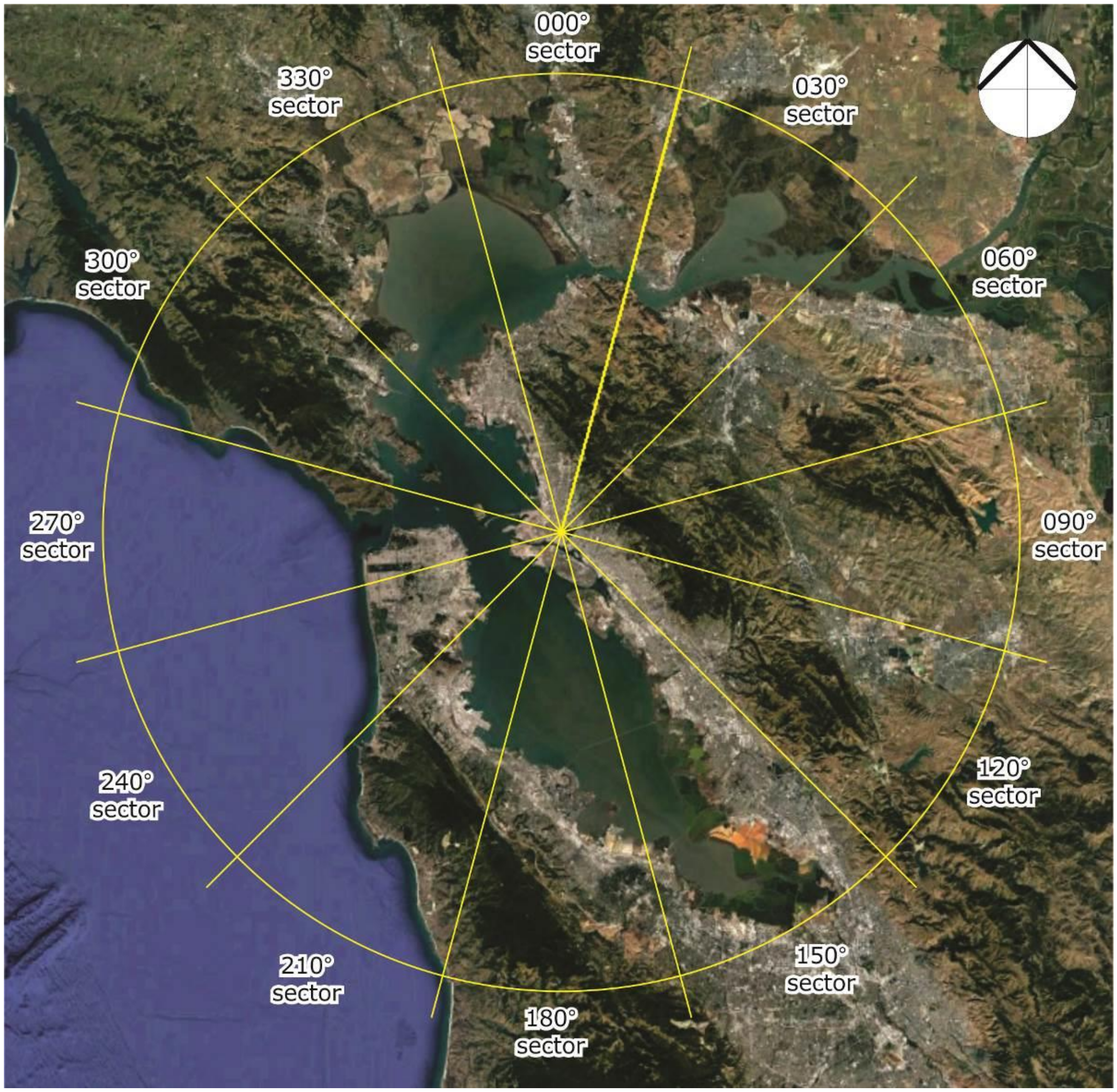

Figure 3b: Aerial Image of the Surrounding Terrain (radius of 31 miles)

4 ENVIRONMENTAL WIND SPEED CRITERIA

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

$$EWS = V_m \times (2 \times TI + 0.7) \tag{4.1}$$

Definitions of the terms above are described as follows:

EWS Equivalent wind speed

TI Turbulence intensity

V_m Mean pedestrian-level wind speed

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

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

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

Notes:

- The GEM is defined as the maximum of the mean wind speed and the gust wind speed divided by a gust factor of 1.85.
- The gust wind speed is defined as 3.0 standard deviations from the mean for a 3 second gust duration, or 3.4 standard deviations from the mean for a 0.5 second gust duration.
- Long Exposure applies typically to outdoor dining areas in restaurants, amphitheaters, etc.
- Short Exposure applies typically to areas where short duration stationary activities are involved (less than 1 hour). This includes window shopping, waiting areas, etc.
- Comfortable Walking applies typically to areas used mainly for pedestrian thoroughfares. This also includes private swimming pools, balconies, terraces and communal areas.
- Fast walking applies typically to car parks, laneways, infrequently used public pedestrian thoroughfares and parks, etc.
- In all areas, the wind conditions are also checked against the CEQA Wind Hazard Threshold.

5 TEST PROCEDURE AND METHODOLOGY

5.1 Measurement of the Velocity Coefficients

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

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

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

$$\hat{C}_V = \overline{C}_V + g.\sigma_V \tag{5.1}$$

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

$\overline{C}_V$ is the mean velocity coefficient.

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

σ_V is the standard deviation of the velocity measurement.

The mean free-stream wind speed measured in the wind tunnel for this study was approximately 20mph. The measurement location for the mean free-stream wind speed is at a height of 650ft at the upwind edge of the proximity model. A sample length of 10 seconds was used for each wind direction tested, which is equivalent to a minimum sample time of approximately 43 minutes in full-scale for the annual maximum gust wind speeds, which is suitable for this type of study.

5.2 Calculation of the Full-Scale Results

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

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

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

5.2.1 Equivalent Wind Speeds

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

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

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

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

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

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

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

$$C_V = \frac{C_{V,study}}{C_{V,650ft}} \tag{5.3}$$

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

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

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

5.2.2 Maximum Gust-Equivalent Mean Wind Speeds

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

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

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

5.3 Layout of Study Points

For this study a total of 27 study point locations have been selected for analysis. This includes the following:

- 20 study points along the outdoor trafficable areas on the Ground level public and private spaces.
- 7 study points on the Level 5 office balcony and Level 6 Amenity communal terrace.

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

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

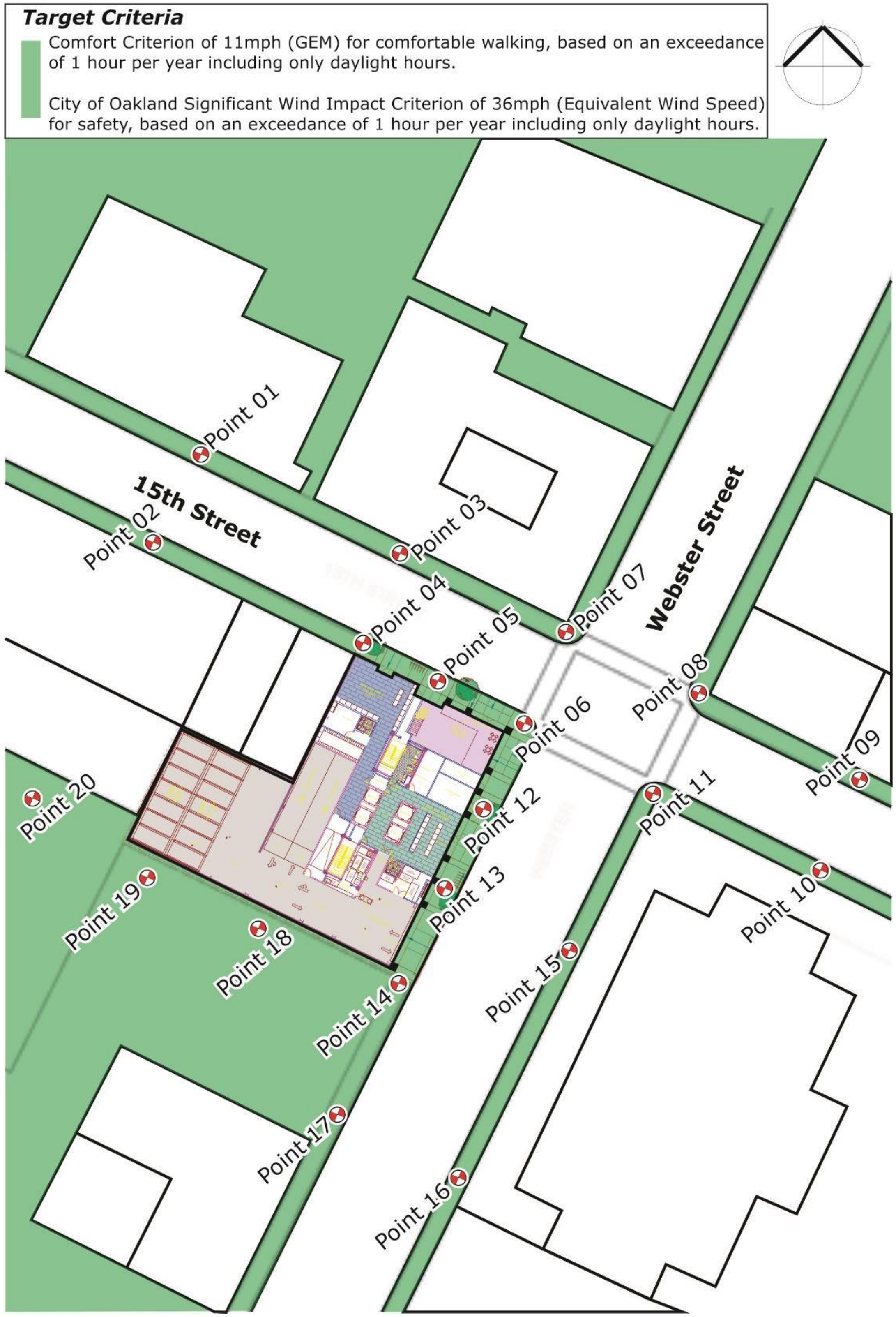

Figure 5a: Study Point Locations and Target Wind Speed Criteria – Level 01 (Ground)

Target Criteria

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

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

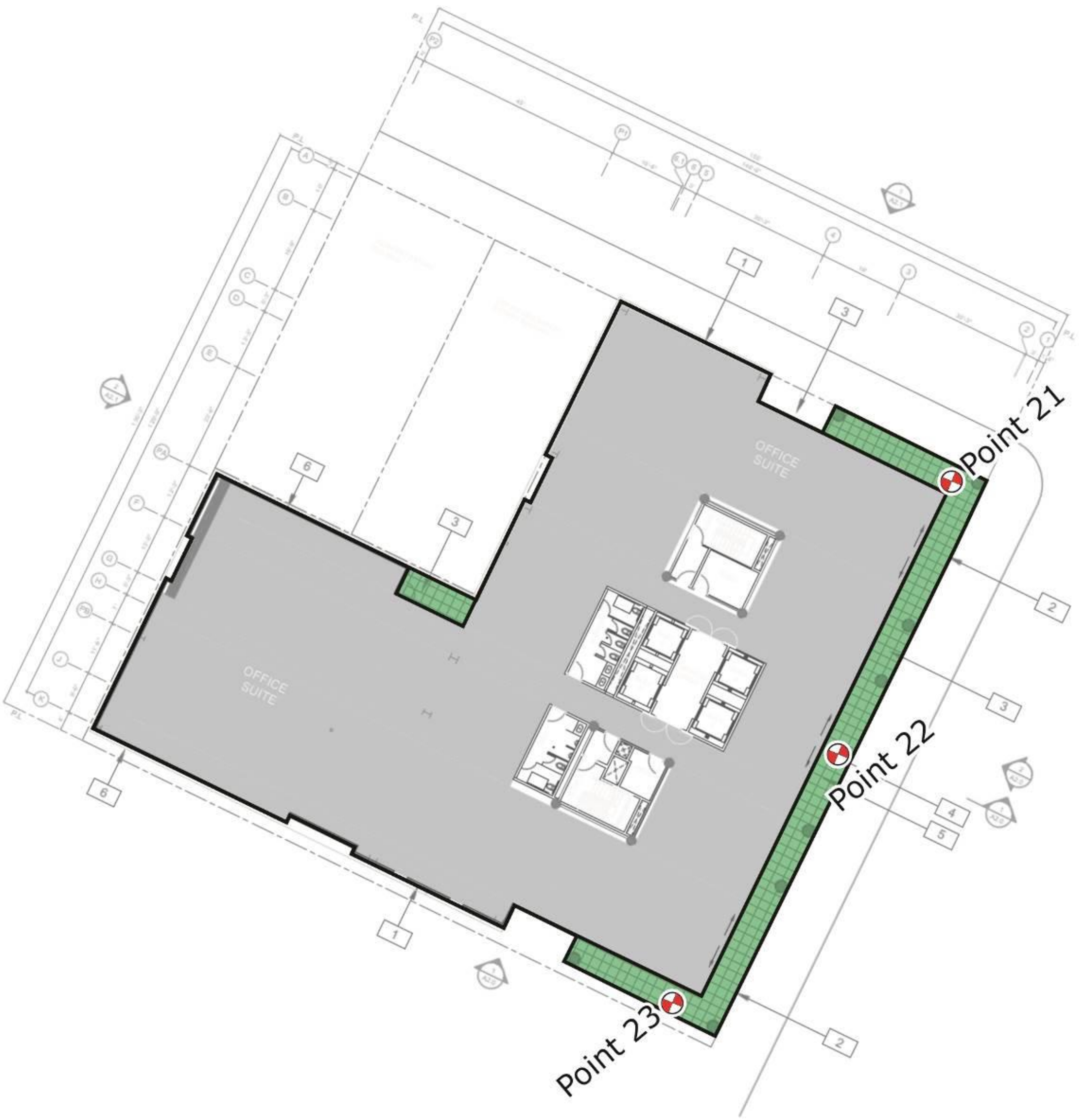

Figure 5b: Study Point Locations and Target Wind Speed Criteria – Level 01 Office

Target Criteria

Comfort Criterion of 9mph (GEM) for short exposure, based on an exceedance of 1 hour per year including only daylight hours.

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

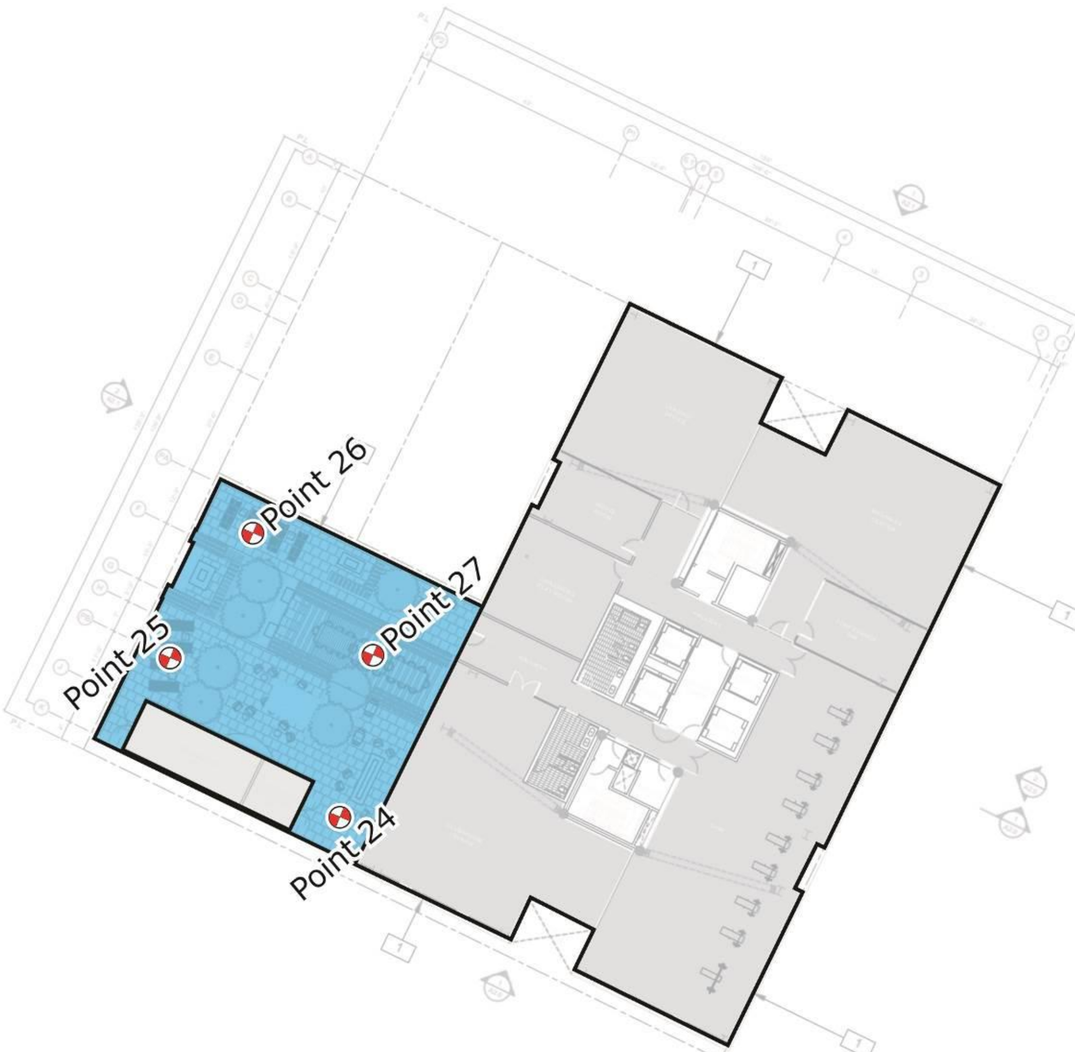

Figure 5c: Study Point Locations and Target Wind Speed Criteria – Level 06 Amenity

6 RESULTS AND DISCUSSION

6.1 Results

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

Table 9: Wind Tunnel Results Summary
(Existing Surrounds Scenario)

Study Point	Desired Criterion (mph)		Meet Comfort Criterion	Meet CEQA Threshold
	20% Exceedance GEM	CEQA Threshold		
Point 01	11.0	36.0	YES	YES
Point 02	11.0	36.0	YES	YES
Point 03	11.0	36.0	YES	YES
Point 04	11.0	36.0	YES	YES
Point 05	11.0	36.0	YES	YES
Point 06	11.0	36.0	YES	YES
Point 10	11.0	36.0	YES	YES
Point 11	11.0	36.0	YES	YES
Point 12	11.0	36.0	YES	YES
Point 13	11.0	36.0	YES	YES
Point 14	11.0	36.0	YES	YES
Point 15	11.0	36.0	YES	YES
Point 16	11.0	36.0	YES	YES
Point 17	11.0	36.0	YES	YES
Point 18	11.0	36.0	YES	YES
Point 19	11.0	36.0	YES	YES
Point 20	11.0	36.0	YES	YES

Table 10: Wind Tunnel Results Summary

(Proposed Surrounds Scenario)

Study Point	Desired Criterion (mph)		Meet Comfort Criterion	Meet CEQA Threshold	Better than Existing/Notes
	20% Exceedance GEM	CEQA Threshold			
Point 01	11.0	36.0	YES	YES	-
Point 02	11.0	36.0	YES	YES	-
Point 03	11.0	36.0	YES	YES	-
Point 04	11.0	36.0	YES	YES	-
Point 05	11.0	36.0	YES	YES	-
Point 06	11.0	36.0	NO	YES	As indicated in Figure 7a
Point 07	11.0	36.0	YES	YES	-
Point 08	11.0	36.0	YES	YES	-
Point 09	11.0	36.0	YES	YES	-
Point 10	11.0	36.0	YES	YES	-
Point 11	11.0	36.0	YES	YES	-
Point 12	11.0	36.0	YES	YES	-
Point 13	11.0	36.0	YES	YES	-
Point 14	11.0	36.0	YES	YES	-
Point 15	11.0	36.0	YES	YES	-
Point 16	11.0	36.0	YES	YES	-
Point 17	11.0	36.0	YES	YES	-
Point 18	11.0	36.0	YES	YES	-
Point 19	11.0	36.0	YES	YES	-
Point 20	11.0	36.0	YES	YES	-
Point 21	11.0	36.0	YES	YES	-
Point 22	11.0	36.0	YES	YES	-
Point 23	11.0	36.0	YES	YES	-
Point 24	9.0	36.0	NO	YES	As indicated in Figure 7b
Point 25	9.0	36.0	YES	YES	-
Point 26	9.0	36.0	YES	YES	-
Point 27	9.0	36.0	YES	YES	-

Table 11: Wind Tunnel Results Summary

(Cumulative Surrounds Scenario)

Study Point	Desired Criterion (mph)		Meet Comfort Criterion	Meet CEQA Threshold	Better than Existing/Notes
	20% Exceedance GEM	CEQA Threshold			
Point 01	11.0	36.0	YES	YES	-
Point 02	11.0	36.0	YES	YES	-
Point 03	11.0	36.0	YES	YES	-
Point 04	11.0	36.0	YES	YES	-
Point 05	11.0	36.0	YES	YES	-
Point 06	11.0	36.0	NO	YES	As indicated in Figure 7a
Point 07	11.0	36.0	YES	YES	-
Point 08	11.0	36.0	YES	YES	-
Point 09	11.0	36.0	YES	YES	-
Point 10	11.0	36.0	YES	YES	-
Point 11	11.0	36.0	YES	YES	-
Point 12	11.0	36.0	YES	YES	-
Point 13	11.0	36.0	YES	YES	-
Point 14	11.0	36.0	YES	YES	-
Point 15	11.0	36.0	YES	YES	-
Point 16	11.0	36.0	YES	YES	-
Point 17	11.0	36.0	YES	YES	-
Point 18	11.0	36.0	YES	YES	-
Point 19	11.0	36.0	YES	YES	-
Point 20	11.0	36.0	YES	YES	-
Point 21	11.0	36.0	YES	YES	-
Point 22	11.0	36.0	YES	YES	-
Point 23	11.0	36.0	YES	YES	-
Point 24	9.0	36.0	YES	YES	-
Point 25	9.0	36.0	YES	YES	-
Point 26	9.0	36.0	YES	YES	-
Point 27	9.0	36.0	YES	YES	-

Figure 6a: Wind Directionality Results Plots – Level 01 (Ground)
(Existing Surrounds Scenario)

Figure 6b: Wind Directionality Results Plots – Level 01 (Ground)
(Proposed Surrounds Scenario)

Legend

Wind Speed Magnitude from Directions Exceeding Comfort Criteria

Wind Speed Magnitude from Directions Satisfying Comfort Criteria

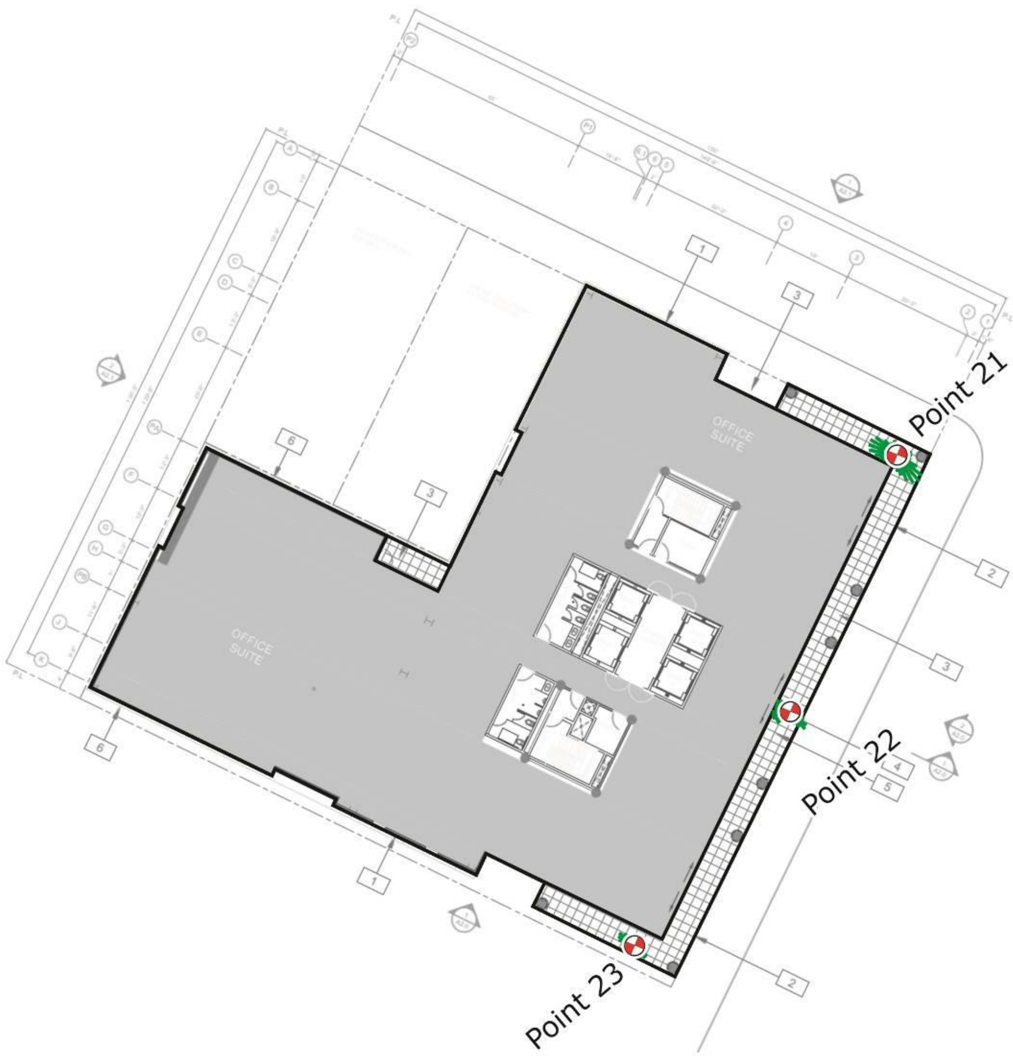

Figure 6c: Wind Directionality Results Plots – Level 05 Office (Proposed Surrounds Scenario)

Legend

Wind Speed Magnitude from Directions Exceeding Comfort Criteria

Wind Speed Magnitude from Directions Satisfying Comfort Criteria

Figure 6d: Wind Directionality Results Plots – Level 06 Amenity (Proposed Surrounds Scenario)

Figure 6e: Wind Directionality Results Plots – Level 01 (Ground)

(Cumulative Surrounds Scenario)

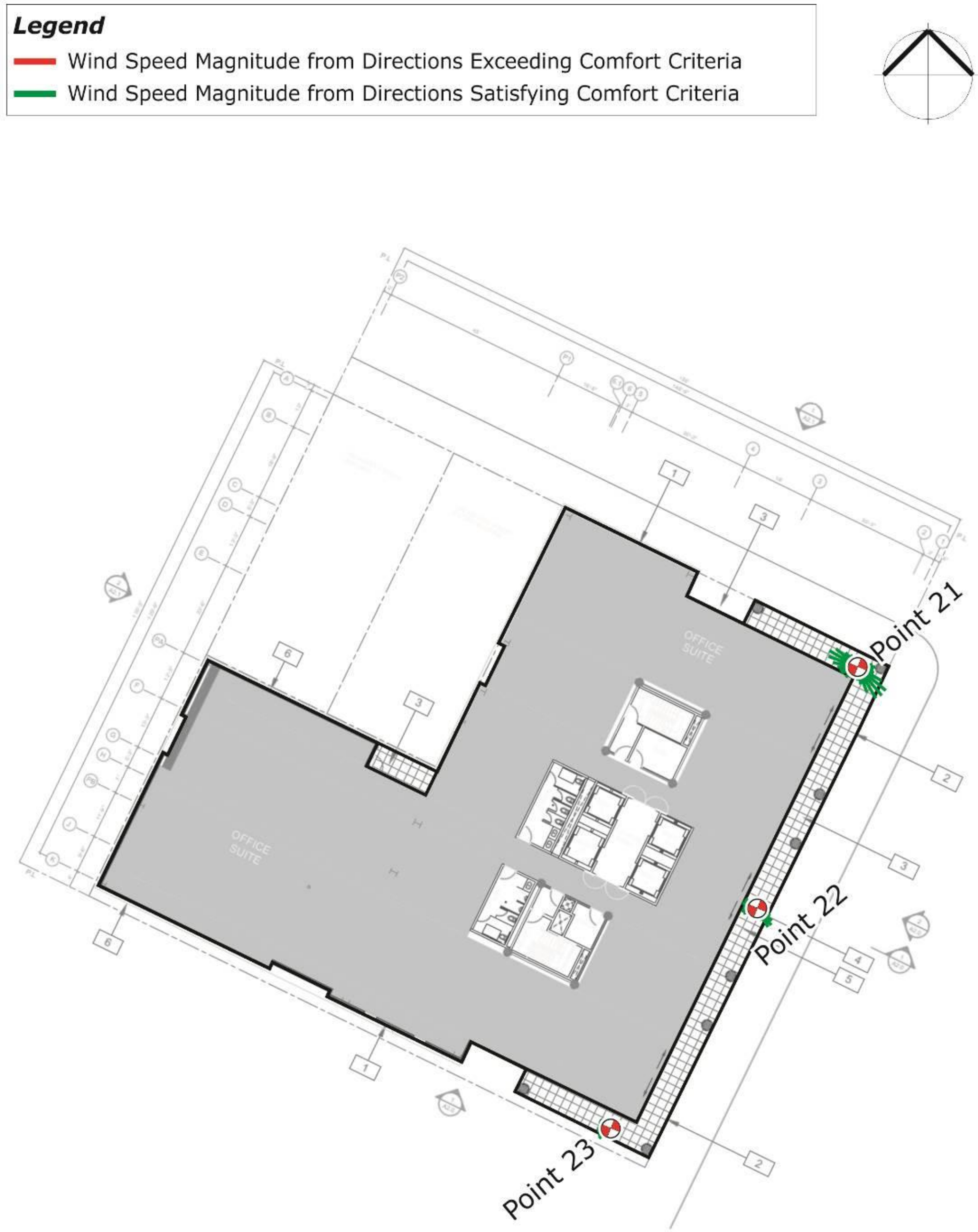

Figure 6f: Wind Directionality Results Plots – Level 05 Office (Cumulative Surrounds Scenario)

Legend

Wind Speed Magnitude from Directions Exceeding Comfort Criteria

Wind Speed Magnitude from Directions Satisfying Comfort Criteria

Figure 6g: Wind Directionality Results Plots – Level 06 Amenity (Cumulative Surrounds Scenario)

6.2 Discussion

The results of the study indicate that all locations tested within and around the subject development satisfy the City of Oakland CEQA wind hazard threshold.

However, there is an exceedance of the appropriate wind comfort criterion for the area around the north-eastern corner of the development at ground level. This exceedance is due to the north easterly and south easterly winds being captured by the development, side streamed and accelerated around the building corner. If it is desired to improve wind comfort conditions within this area, it is recommended that the existing awnings along the south eastern and north western aspects be increased in depth from 5.0 feet to 6.5ft. It is also recommended that the awning be continuous and wrap around the north-eastern corner as indicated in Figure 7a. It is also recommended to retain the existing large trees along the Webster and 15th Street frontages. It should be noted that wind comfort conditions improve for winds from the south east due to the surrounding future developments included as part of the cumulative surrounds scenario.

The results of the study also indicate that there is an exceedance of the appropriate wind comfort criteria at the southern-most corner of the Level 06 Amenity communal terrace. This exceedance is due to the north-easterly winds being captured by the adjacent tower façade and side-streamed across this area. Should it be desired to improve wind comfort conditions within this area, it is recommended that an impermeable screen approximately 8.0 feet in height be included that extends out from the south-western corner of the tower to meet with the emergency electrical room as indicated in Figure 7b. It is expected that further improvements can be gained with the inclusion of the currently proposed landscaping/ tree planting. To be effective in wind mitigation the suggested trees should be of a densely foliating evergreen variety to ensure year round protection. It should be noted that the appropriate wind comfort criteria is satisfied within this area with the inclusion of the proposed future developments as part of the cumulative surrounds scenario.

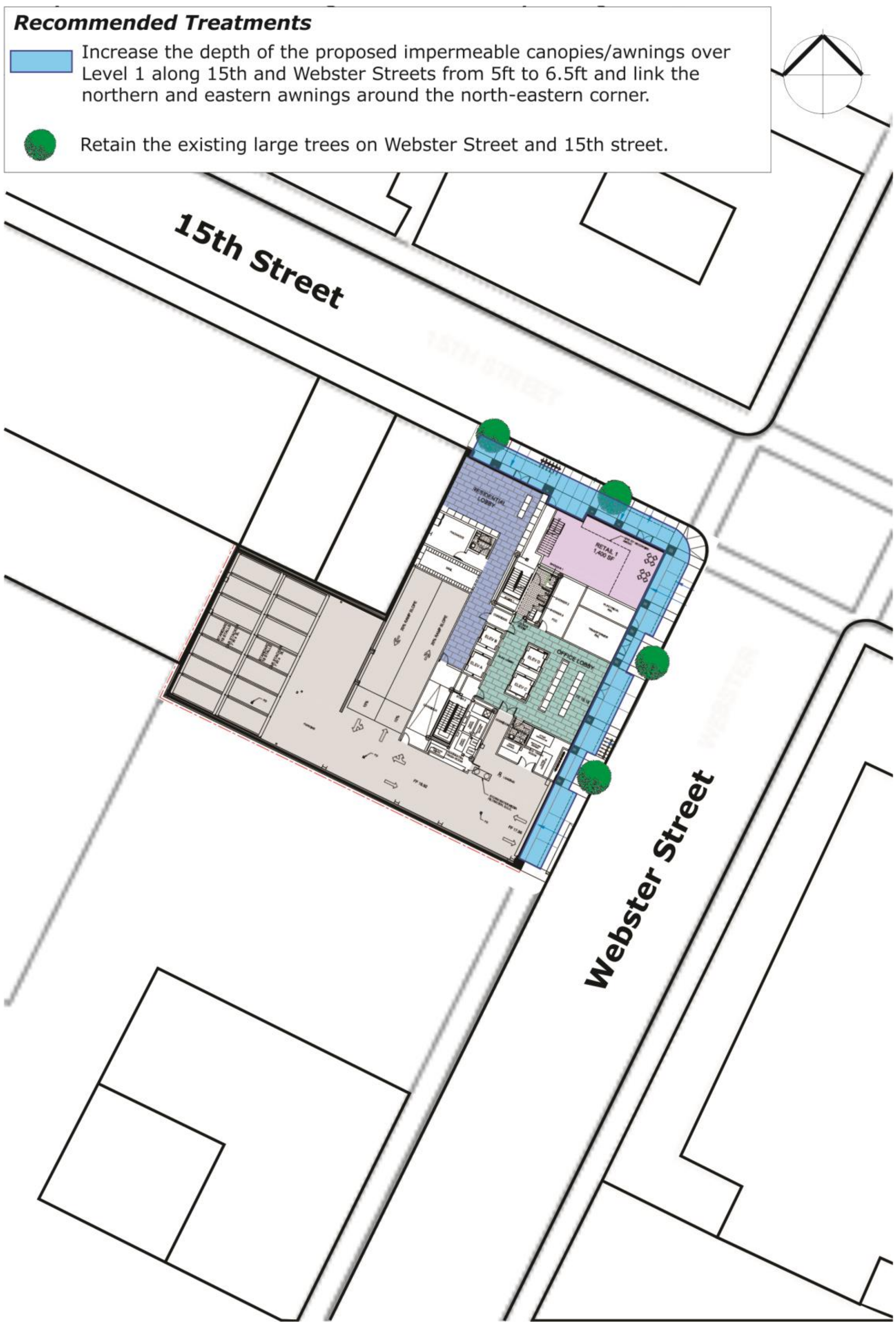

Figure 7a: Suggested Treatments – Level 01 (Ground)

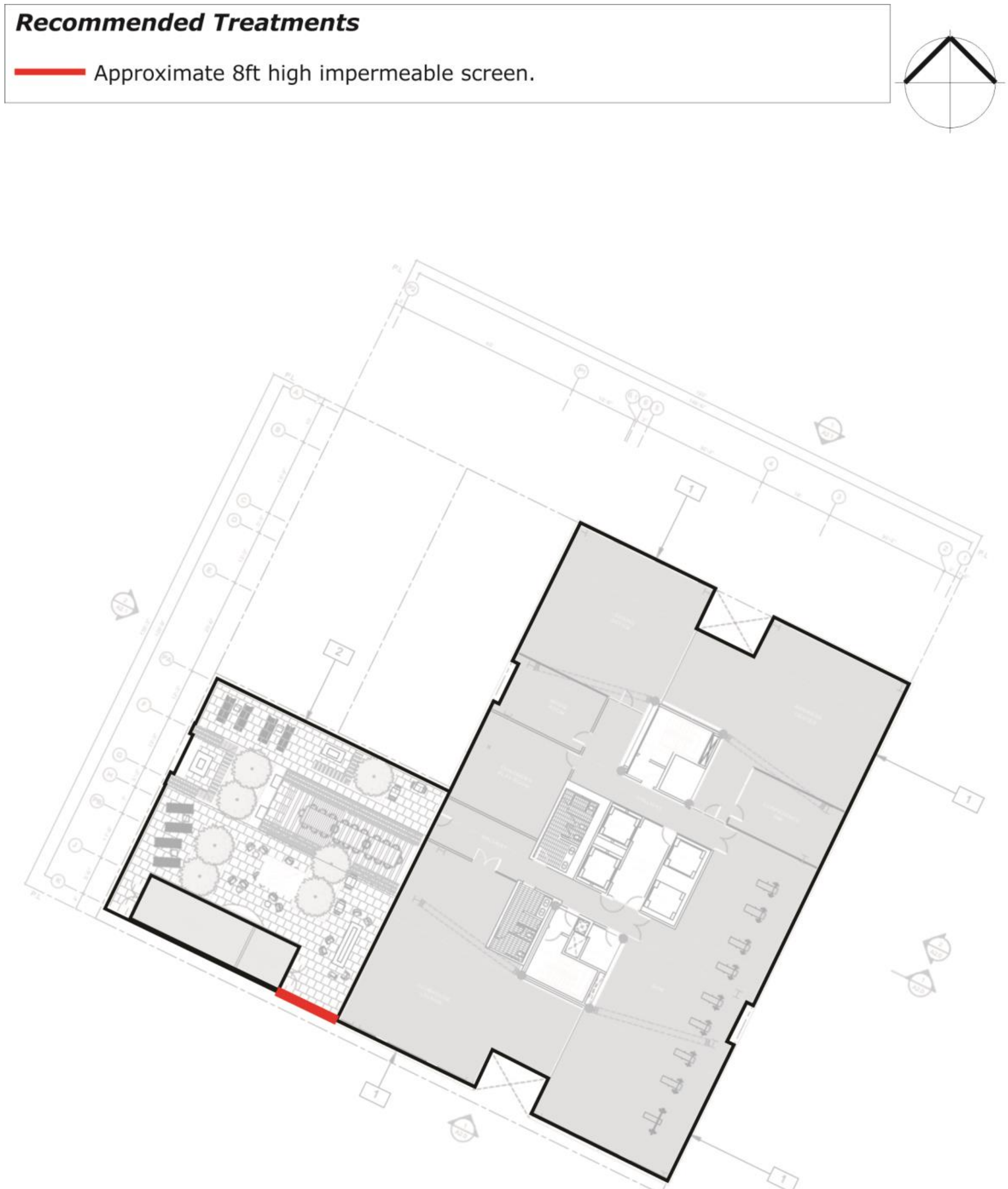

Figure 7b: Suggested Treatments – Level 06 Amenity

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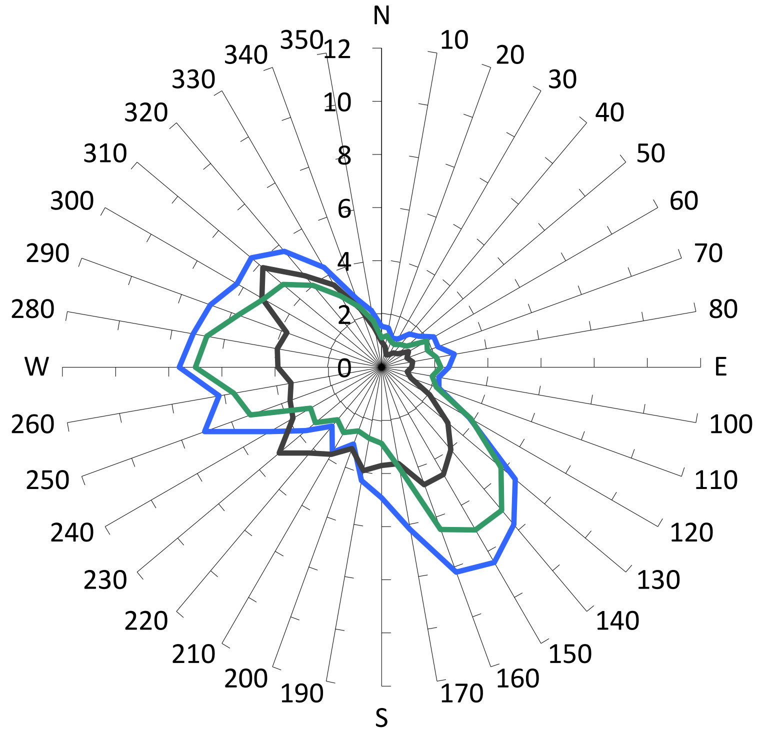
APPENDIX A - DIRECTIONAL RESULTS OF THE WIND TUNNEL TEST

Measured Wind Speeds at Point 01

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedence (existing site conditions)

1%

Probability of Criterion Exceedence (Proposed)

5%

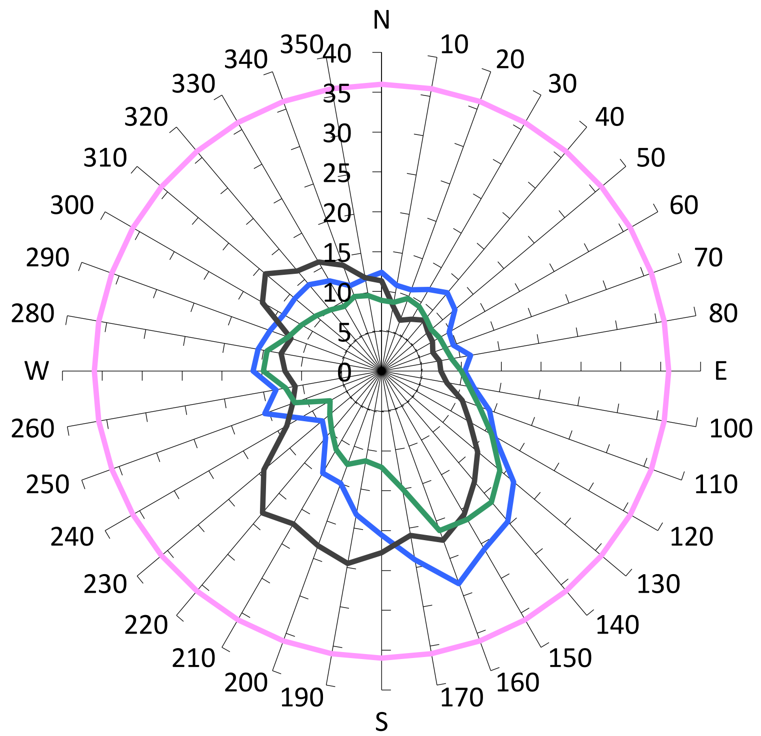
Probability of Criterion Exceedence (Cumulative)

2%

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

- *Criterion.*
- *With development as proposed. No vegetation or other treatments.*
- *Existing site conditions.*
- *Proposed with cumulative scenario case*

Equivalent Wind Speed (mph)

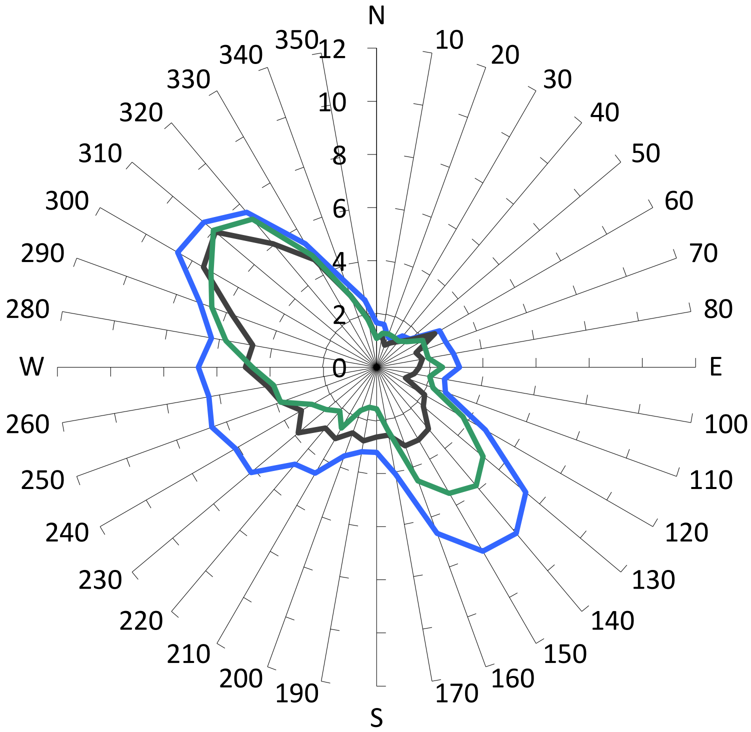


Desired Criterion

36mph

Measured Wind Speeds at Point 02

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
1%

Probability of Criterion Exceedence (Proposed)
6%

Probability of Criterion Exceedence (Cumulative)
2%

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

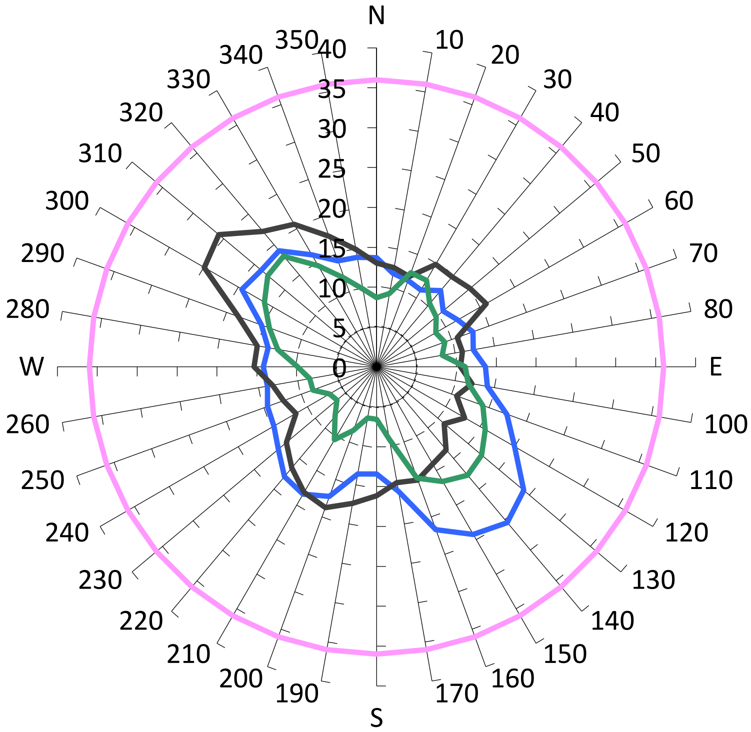
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

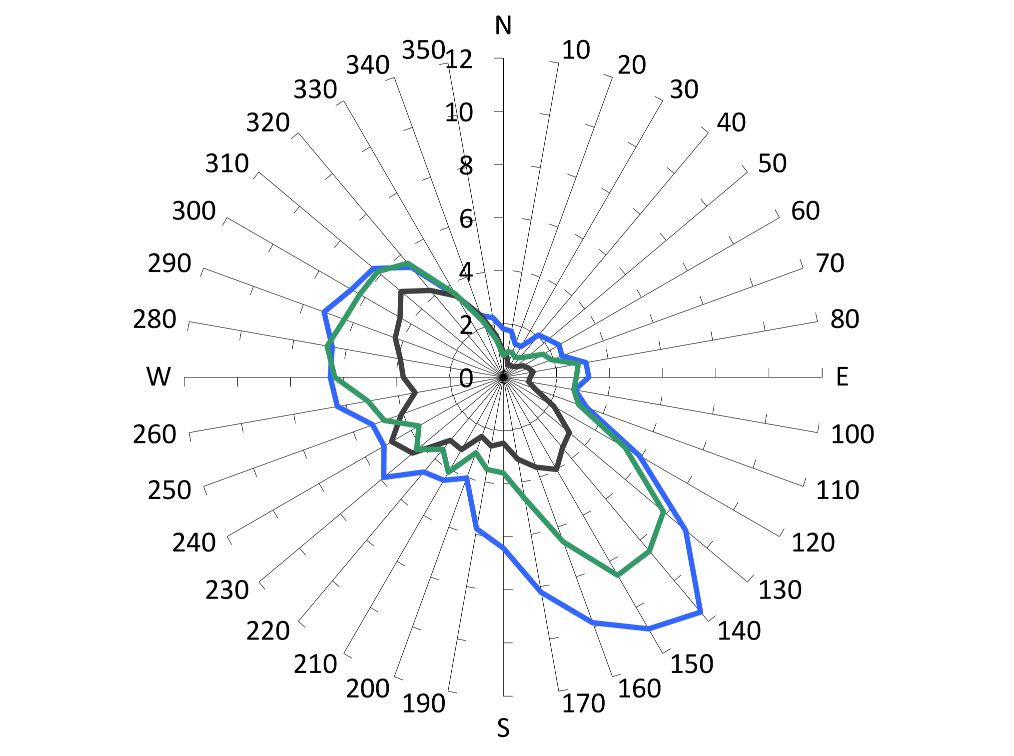
Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 03

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
0%

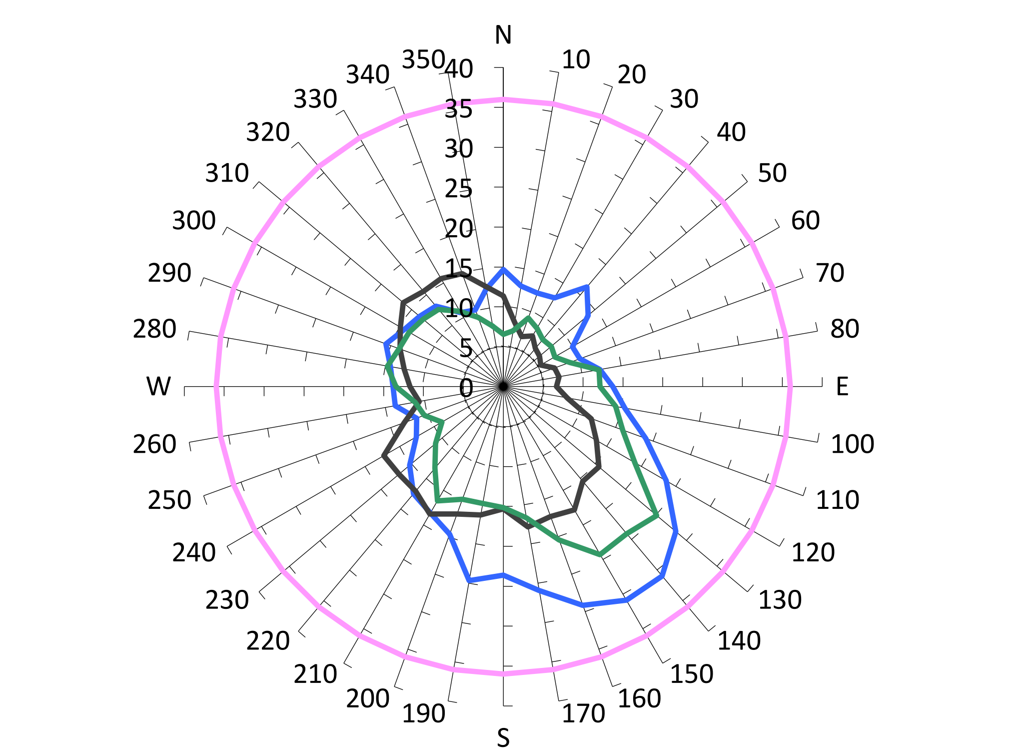
Probability of Criterion Exceedence (Proposed)
11%

Probability of Criterion Exceedence (Cumulative)
5%

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

Criterion.
With development as proposed. No vegetation or other treatments.
Existing site conditions.
Proposed with cumulative scenario case

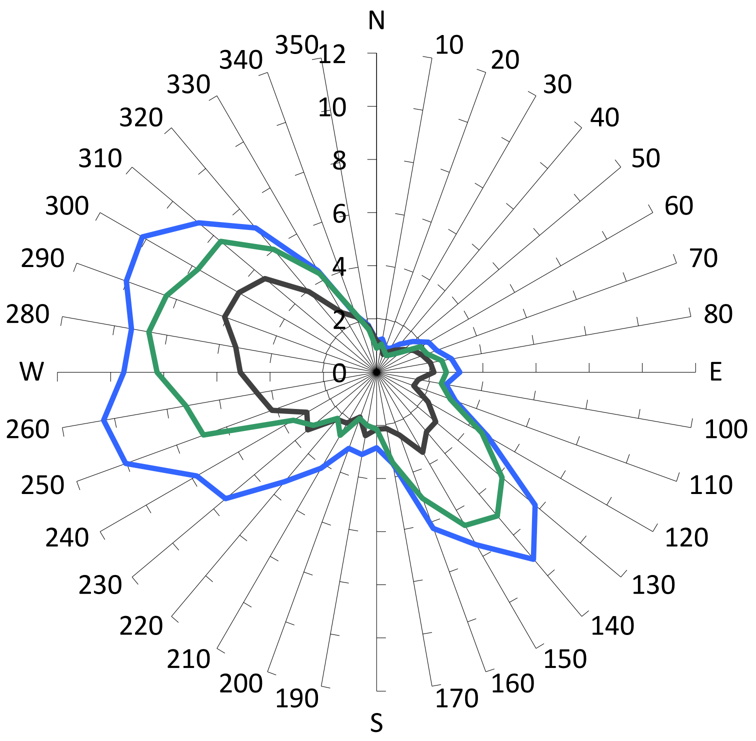
Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 04

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
0%

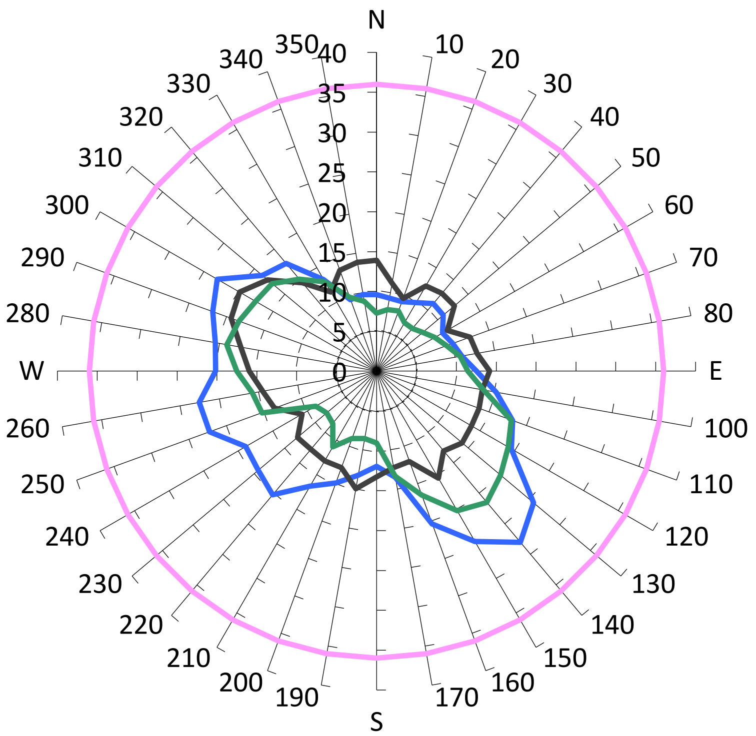
Probability of Criterion Exceedence (Proposed)
13%

Probability of Criterion Exceedence (Cumulative)
4%

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

Criterion.
With development as proposed. No vegetation or other treatments.
Existing site conditions.
Proposed with cumulative scenario case

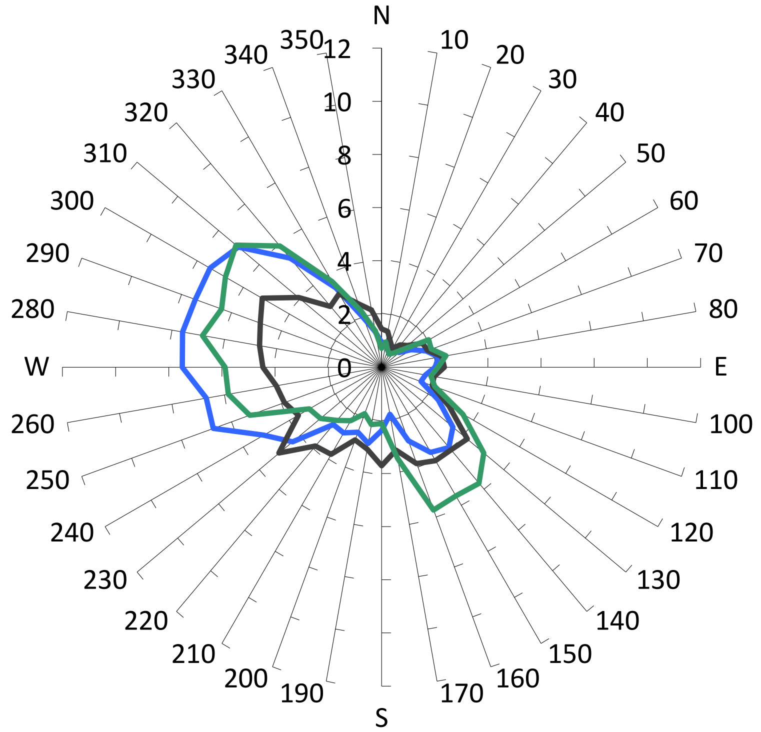
Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 05

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
1%

Probability of Criterion Exceedence (Proposed)
1%

Probability of Criterion Exceedence (Cumulative)
1%

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

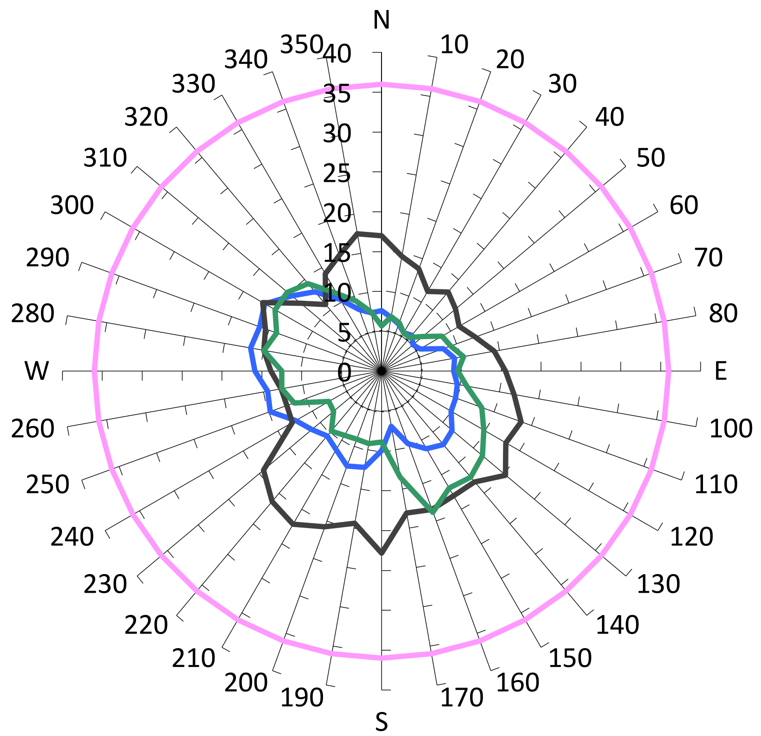
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

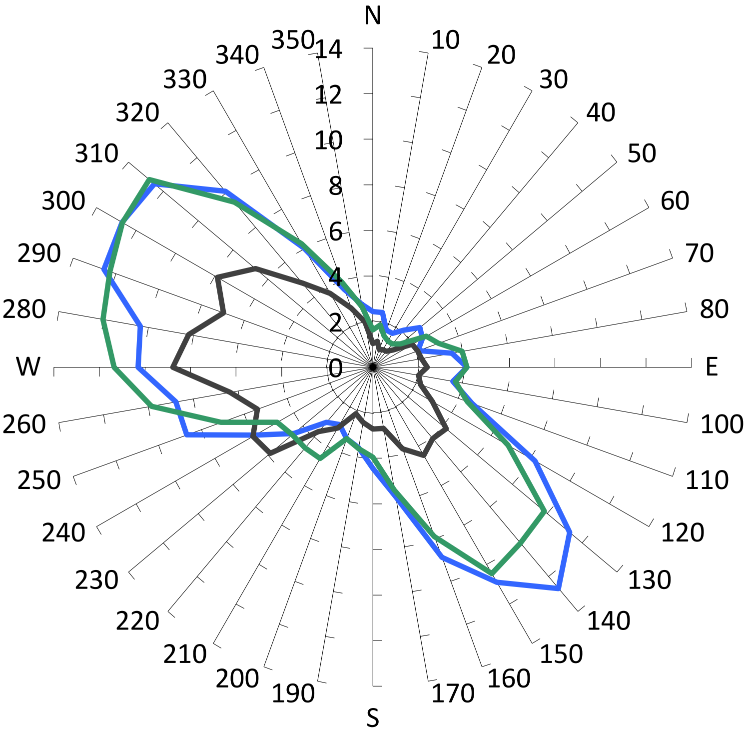
Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 06

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedence (existing site conditions)

2%

Probability of Criterion Exceedence (Proposed)

25%

Probability of Criterion Exceedence (Cumulative)

26%

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

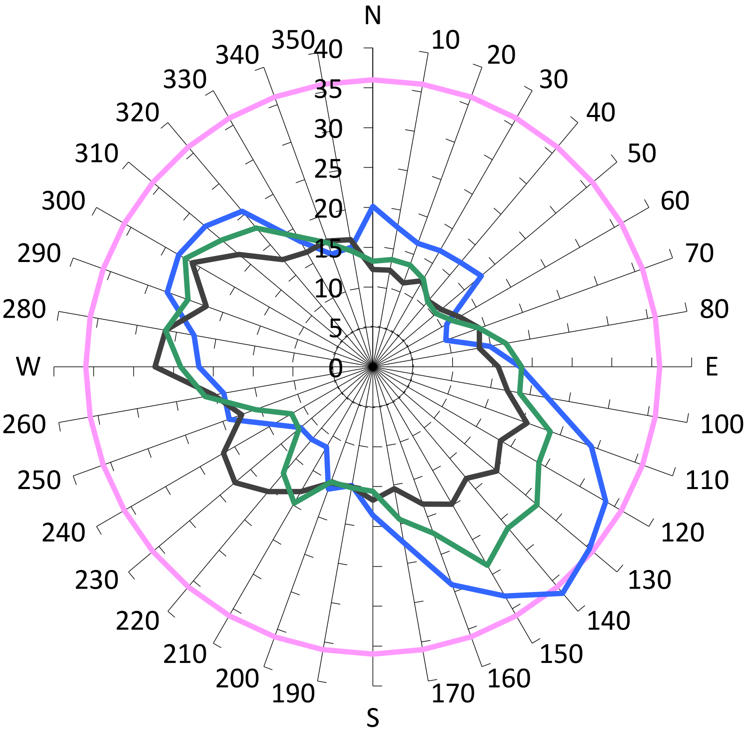
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

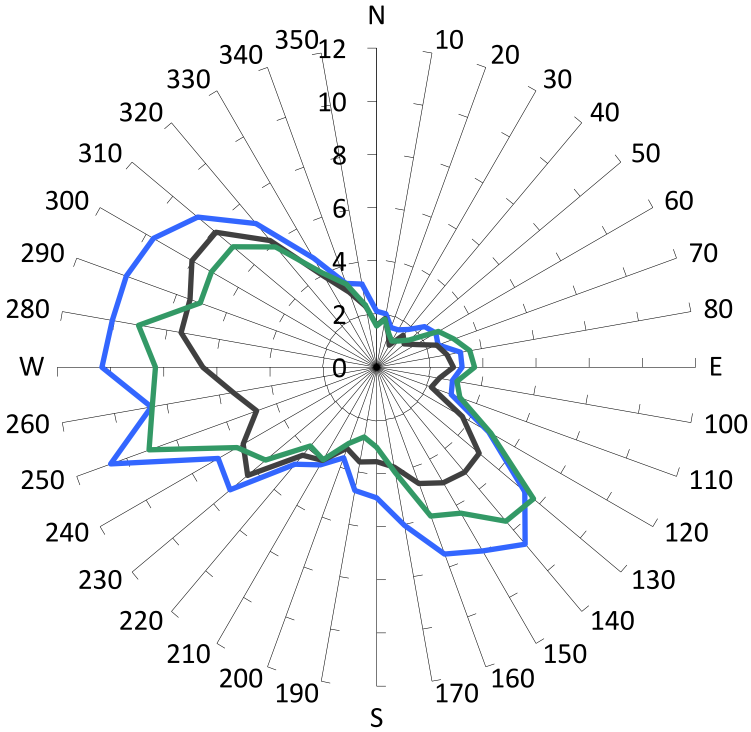


Desired Criterion

36mph

Measured Wind Speeds at Point 07

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
3%

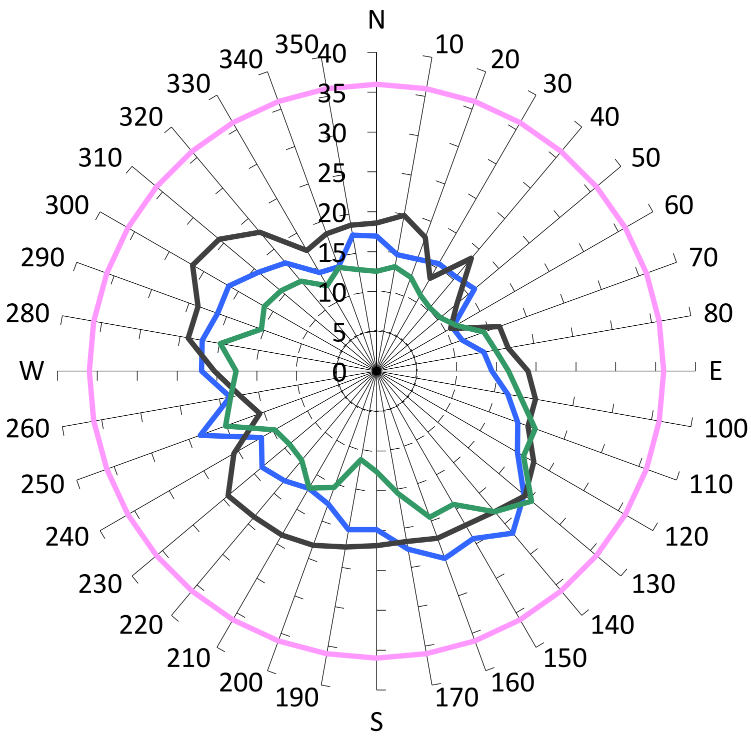
Probability of Criterion Exceedence (Proposed)
14%

Probability of Criterion Exceedence (Cumulative)
6%

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

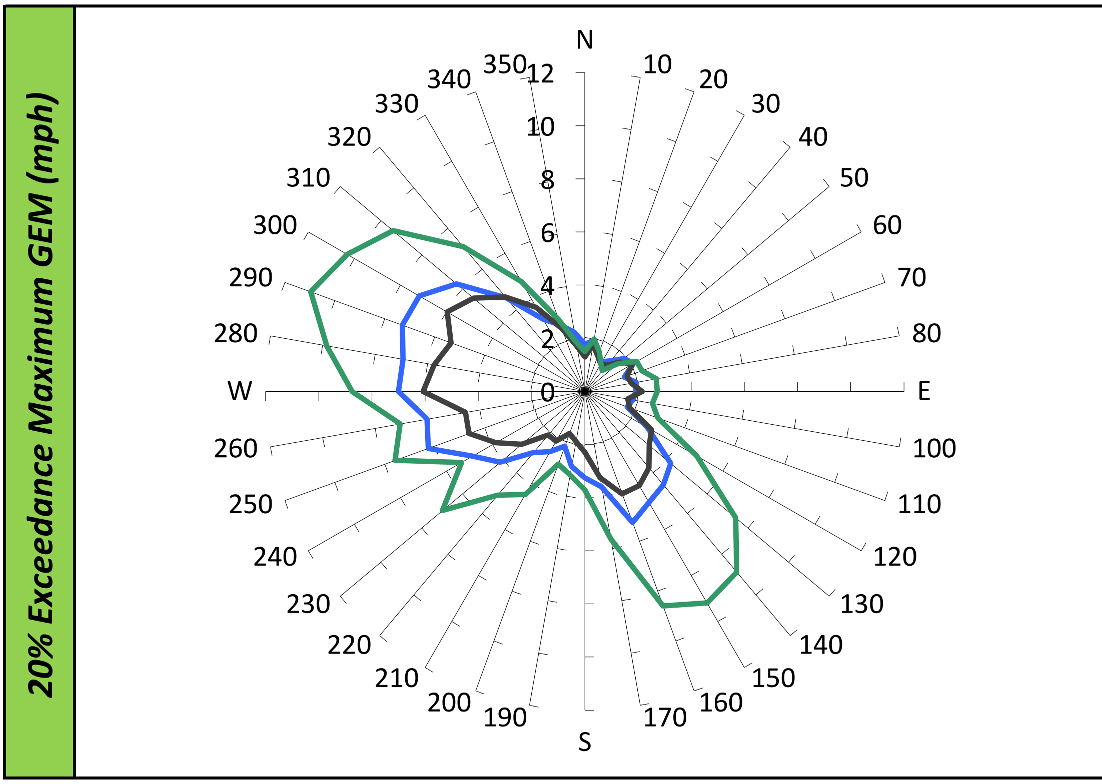
Criterion.
With development as proposed. No vegetation or other treatments.
Existing site conditions.
Proposed with cumulative scenario case

Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 08



Desired Criterion
11mph

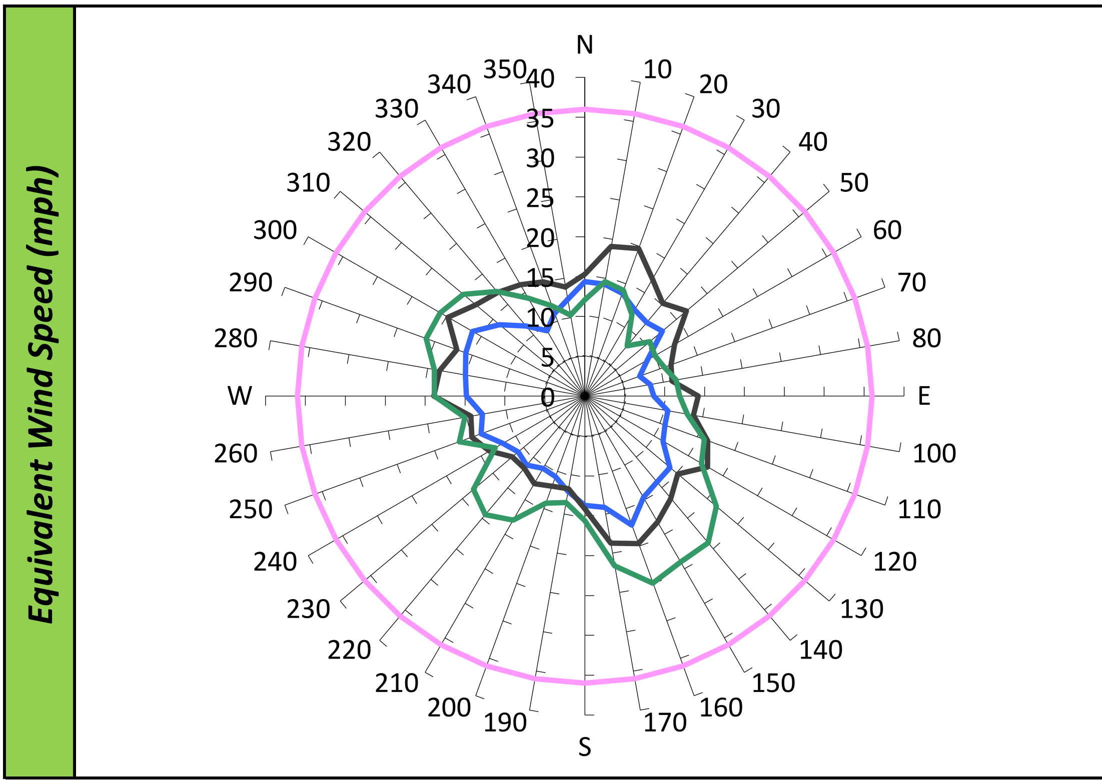
Prob. of Criterion Exceedence (existing site conditions)
0%

Probability of Criterion Exceedence (Proposed)
1%

Probability of Criterion Exceedence (Cumulative)
12%

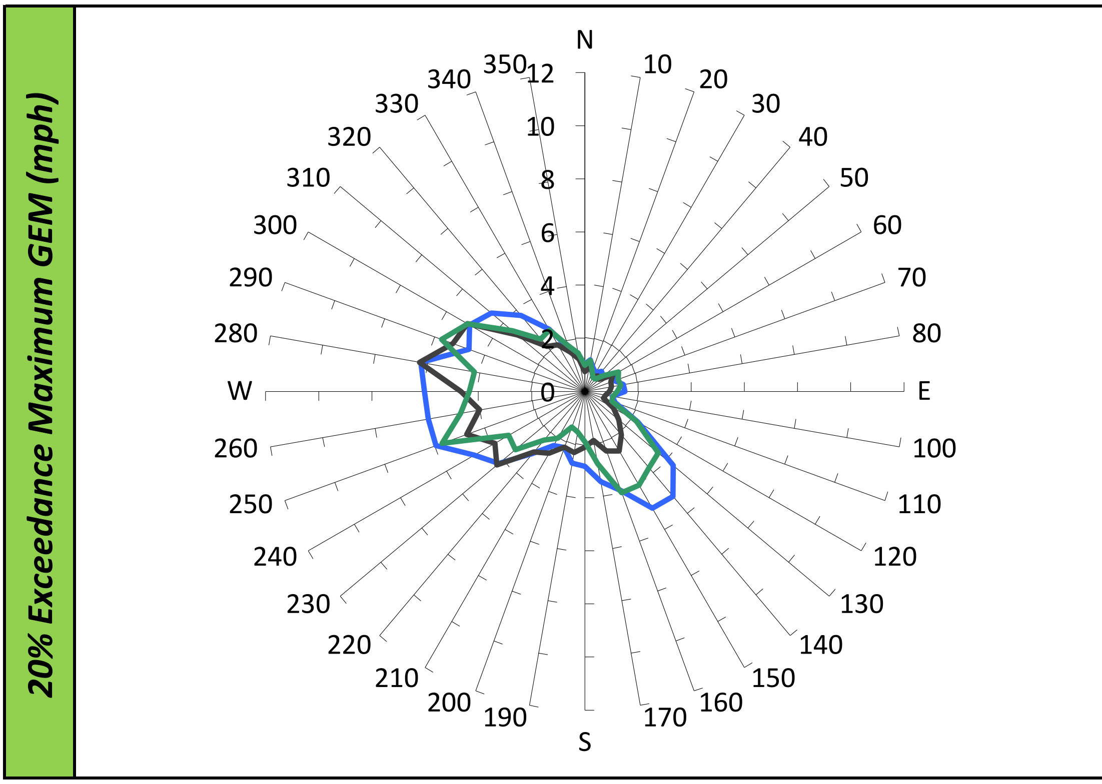
NOTE: The desired criterion is exceeded if the probability of exceedence is greater than 20%

Criterion.
With development as proposed. No vegetation or other treatments.
Existing site conditions.
Proposed with cumulative scenario case



Desired Criterion
36mph

Measured Wind Speeds at Point 09



Desired Criterion
11mph

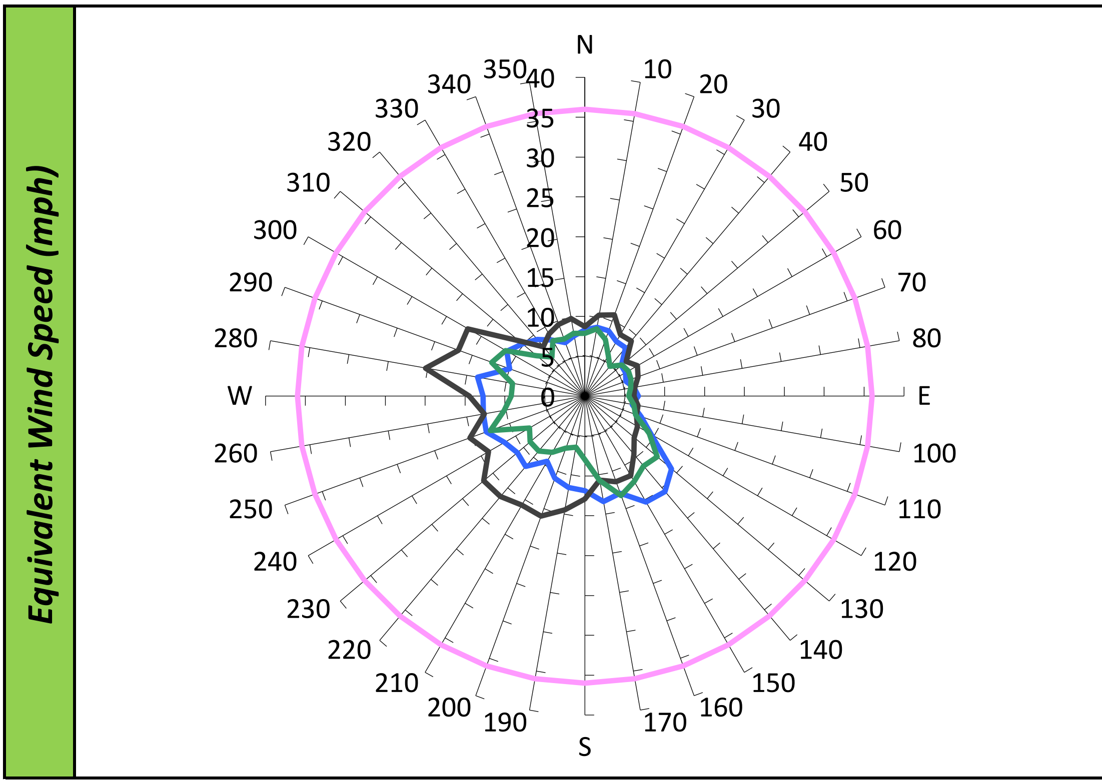
Prob. of Criterion Exceedence (existing site conditions)
0%

Probability of Criterion Exceedence (Proposed)
1%

Probability of Criterion Exceedence (Cumulative)
0%

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

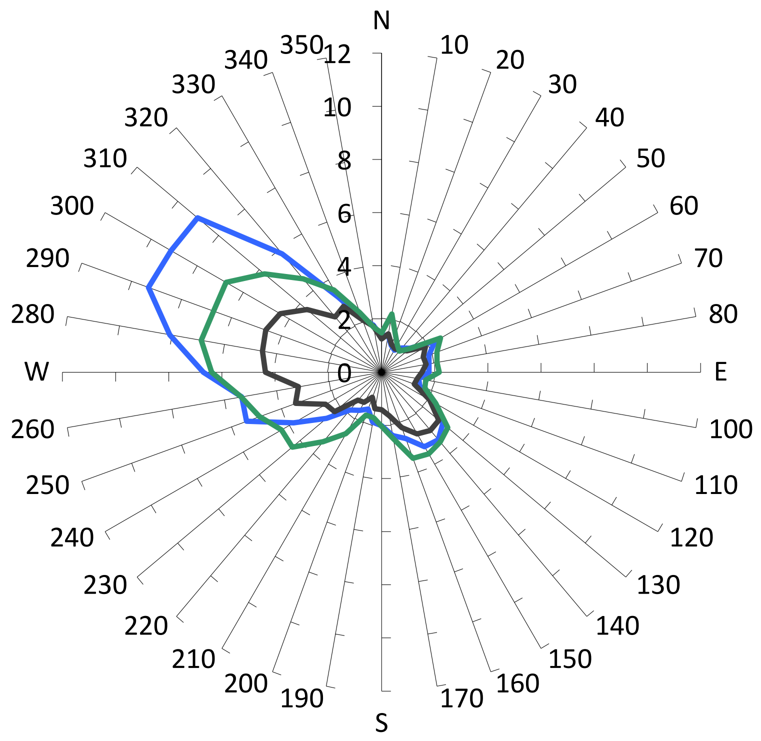
Criterion.
With development as proposed. No vegetation or other treatments.
Existing site conditions.
Proposed with cumulative scenario case



Desired Criterion
36mph

Measured Wind Speeds at Point 10

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
0%

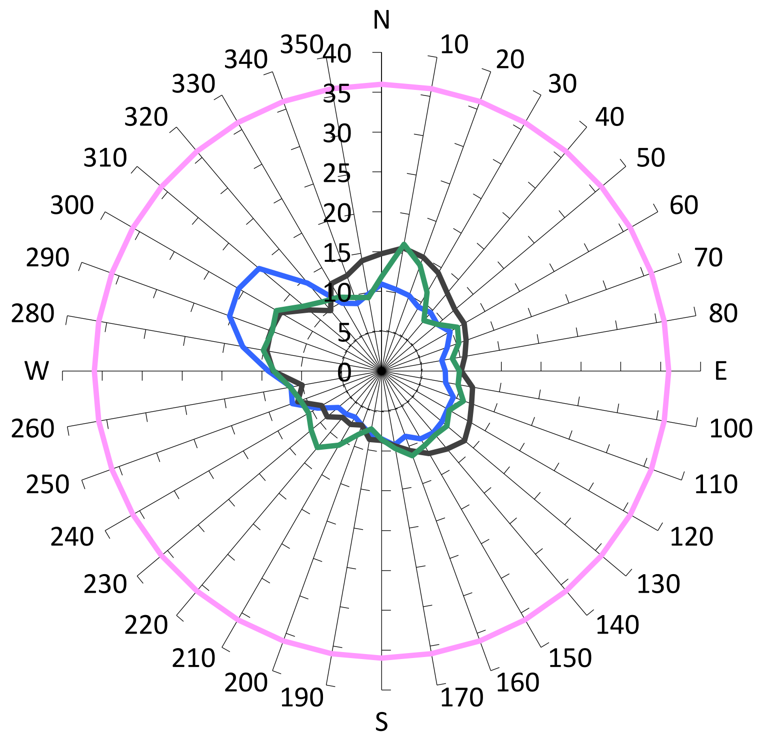
Probability of Criterion Exceedence (Proposed)
3%

Probability of Criterion Exceedence (Cumulative)
1%

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

- *Criterion.*
- *With development as proposed. No vegetation or other treatments.*
- *Existing site conditions.*
- *Proposed with cumulative scenario case*

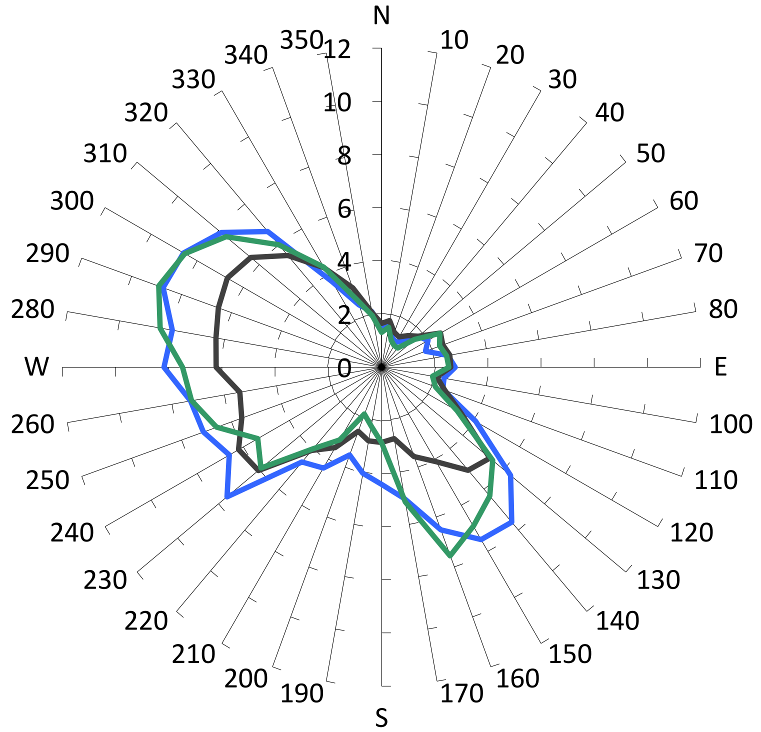
Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 11

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
1%

Probability of Criterion Exceedence (Proposed)
6%

Probability of Criterion Exceedence (Cumulative)
5%

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

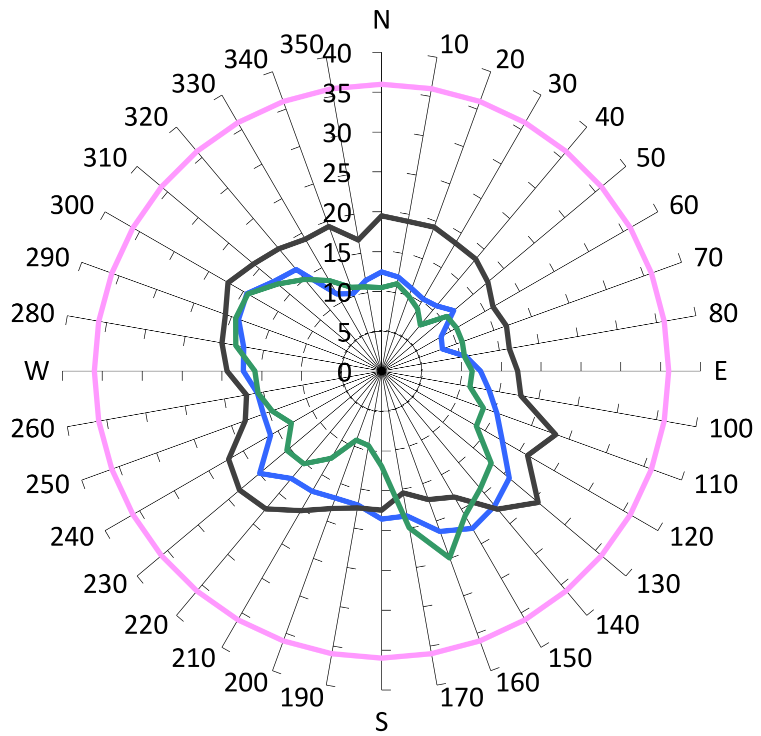
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

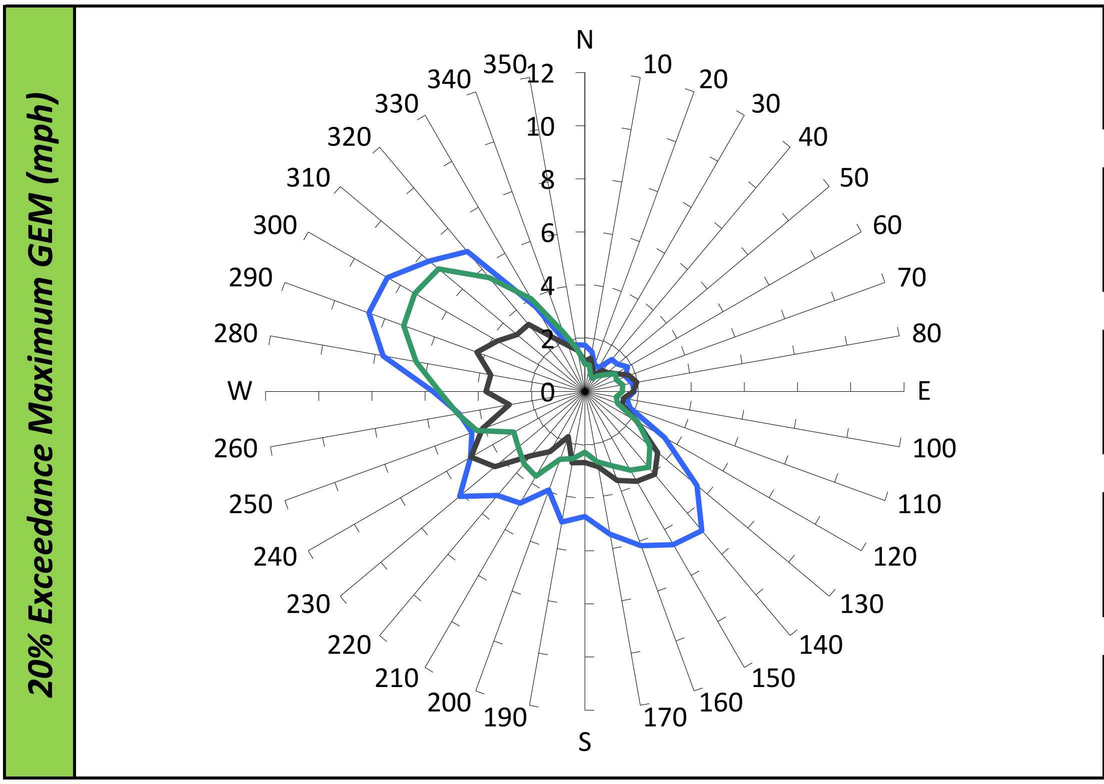
Proposed with cumulative scenario case

Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 12



Desired Criterion
11mph

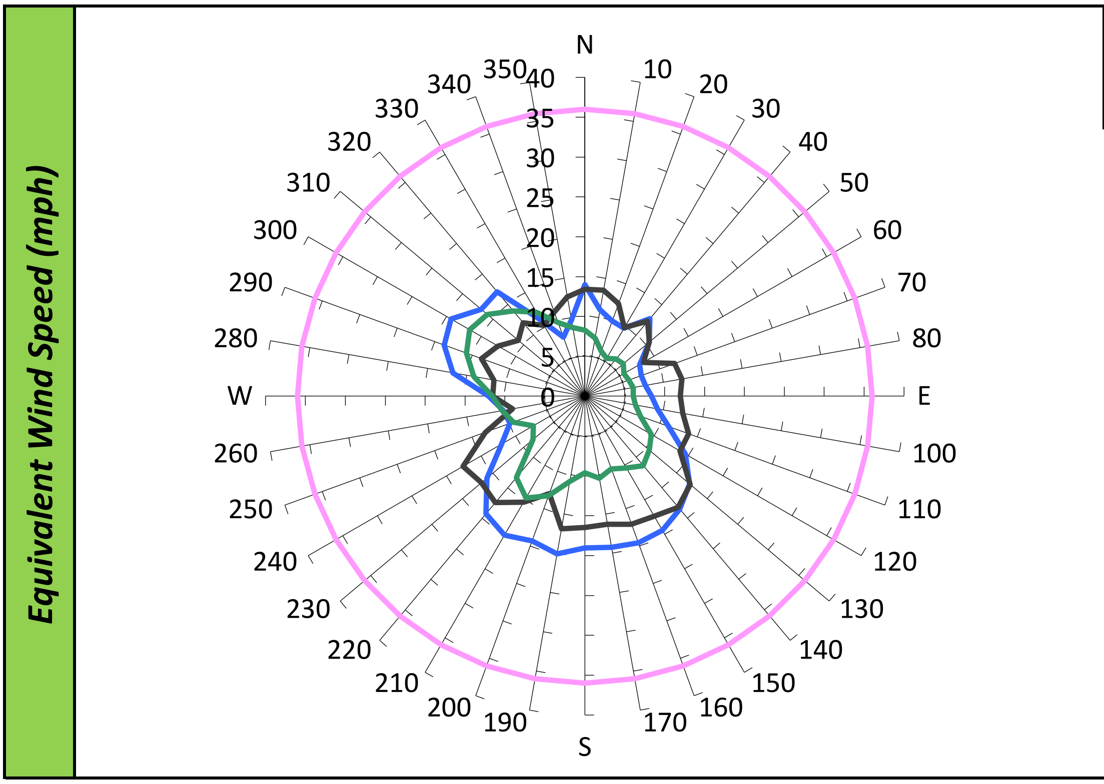
Prob. of Criterion Exceedence (existing site conditions)
0%

Probability of Criterion Exceedence (Proposed)
5%

Probability of Criterion Exceedence (Cumulative)
1%

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

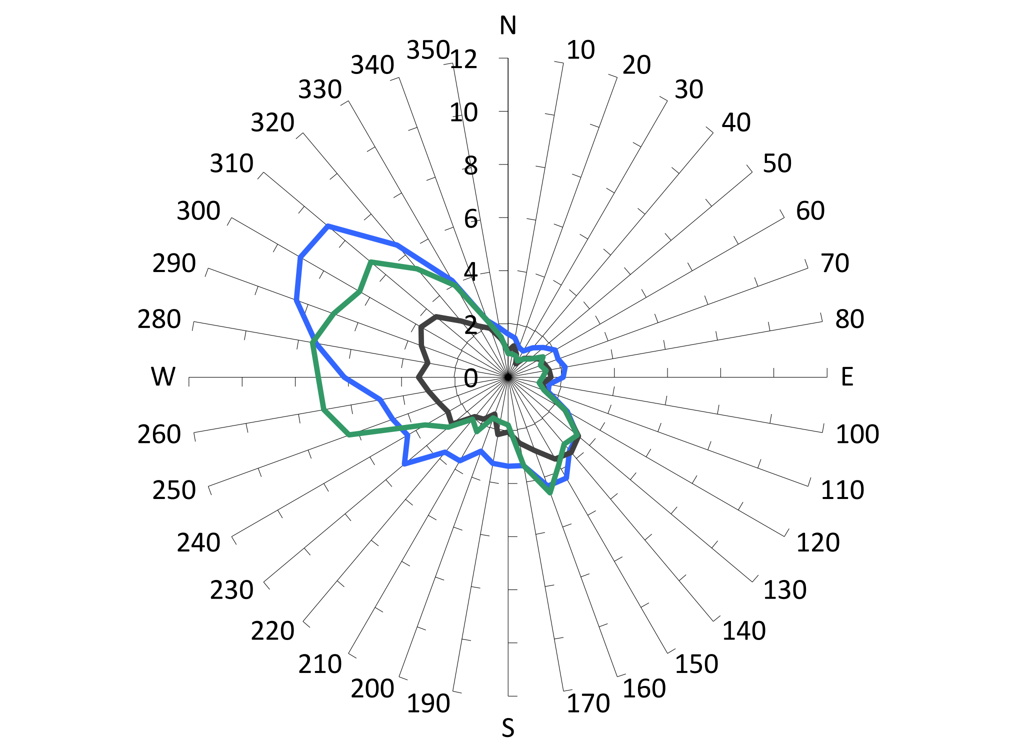
Criterion.
With development as proposed. No vegetation or other treatments.
Existing site conditions.
Proposed with cumulative scenario case



Desired Criterion
36mph

Measured Wind Speeds at Point 13

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
0%

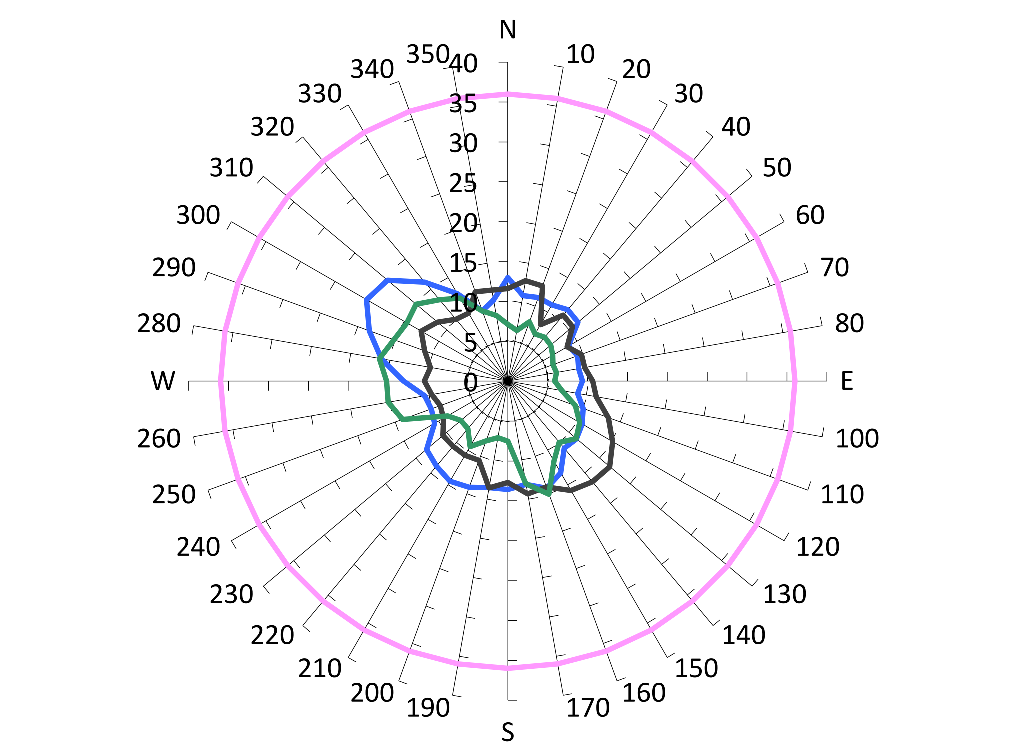
Probability of Criterion Exceedence (Proposed)
3%

Probability of Criterion Exceedence (Cumulative)
1%

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

Criterion.
With development as proposed. No vegetation or other treatments.
Existing site conditions.
Proposed with cumulative scenario case

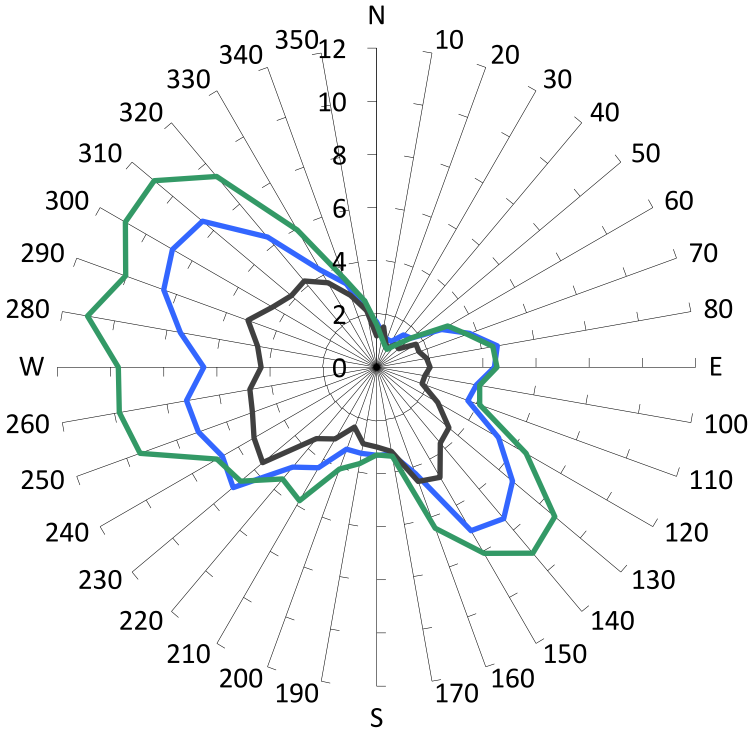
Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 14

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
1%

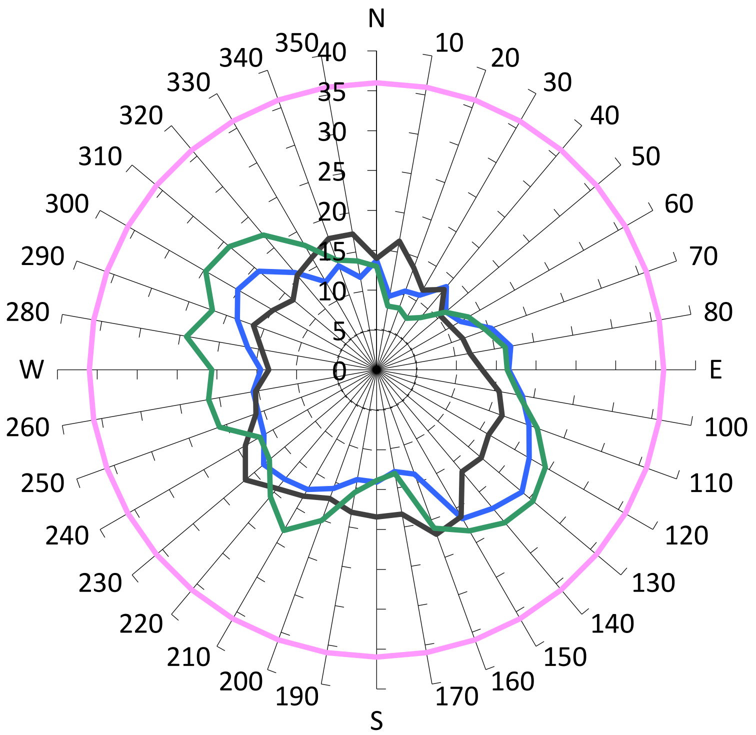
Probability of Criterion Exceedence (Proposed)
6%

Probability of Criterion Exceedence (Cumulative)
18%

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

- *Criterion.*
- *With development as proposed. No vegetation or other treatments.*
- *Existing site conditions.*
- *Proposed with cumulative scenario case*

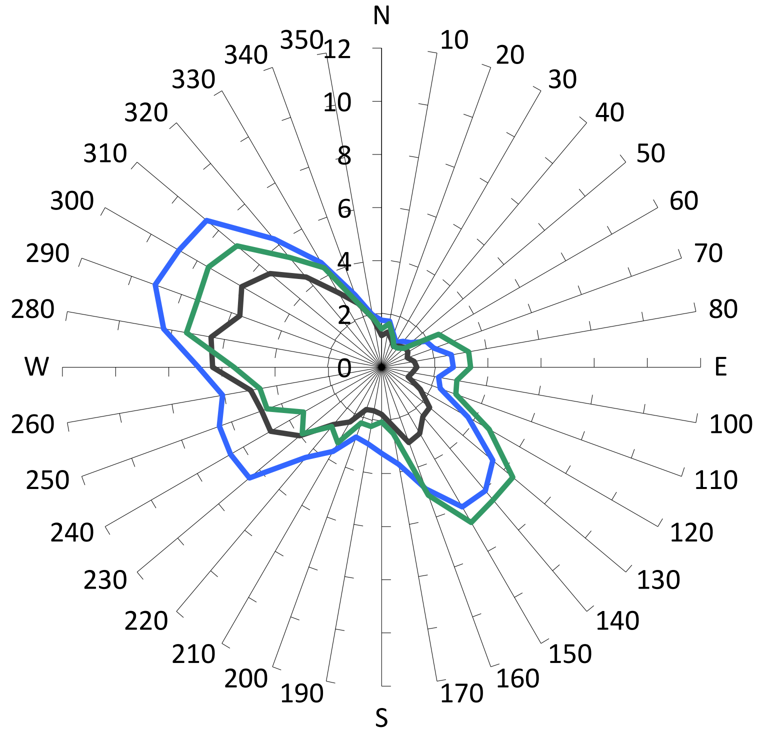
Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 15

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedence (existing site conditions)

0%

Probability of Criterion Exceedence (Proposed)

4%

Probability of Criterion Exceedence (Cumulative)

3%

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

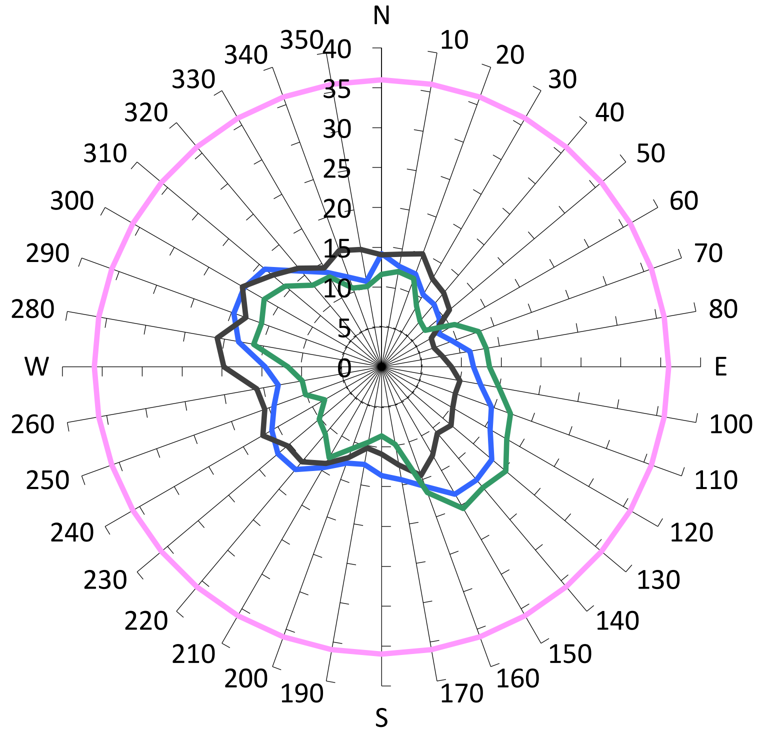
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

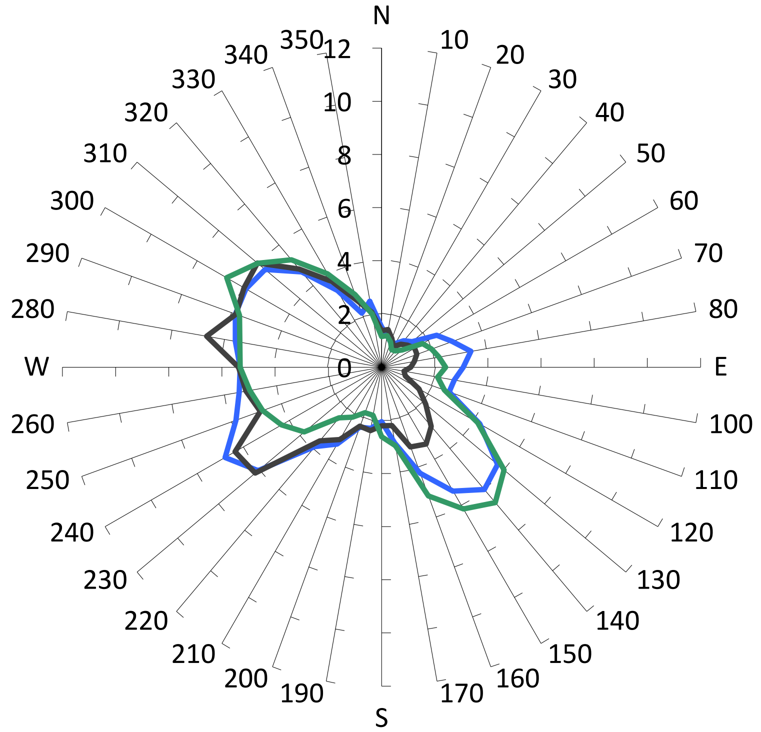


Desired Criterion

36mph

Measured Wind Speeds at Point 16

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedence (existing site conditions)

1%

Probability of Criterion Exceedence (Proposed)

2%

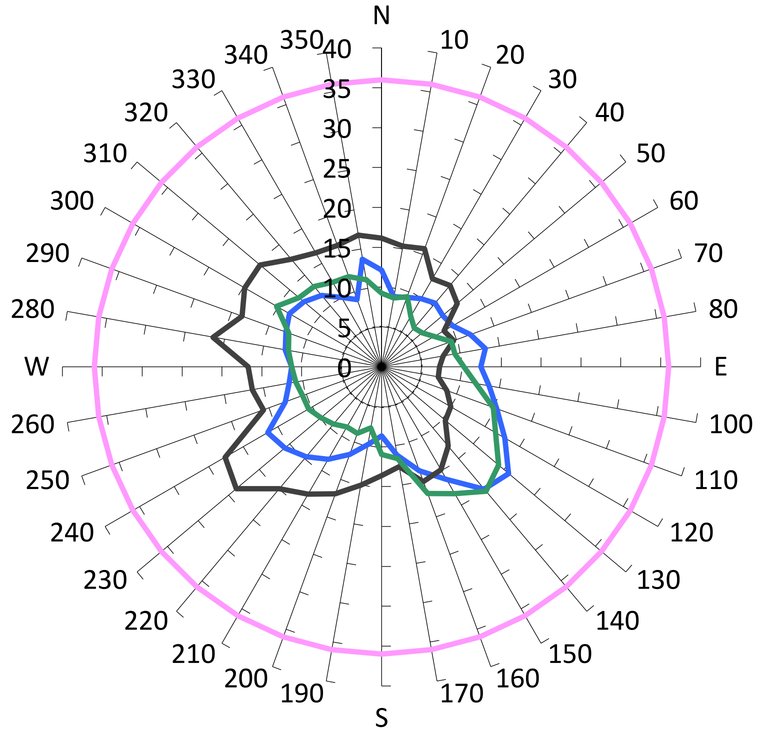
Probability of Criterion Exceedence (Cumulative)

2%

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

Criterion.
With development as proposed. No vegetation or other treatments.
Existing site conditions.
Proposed with cumulative scenario case

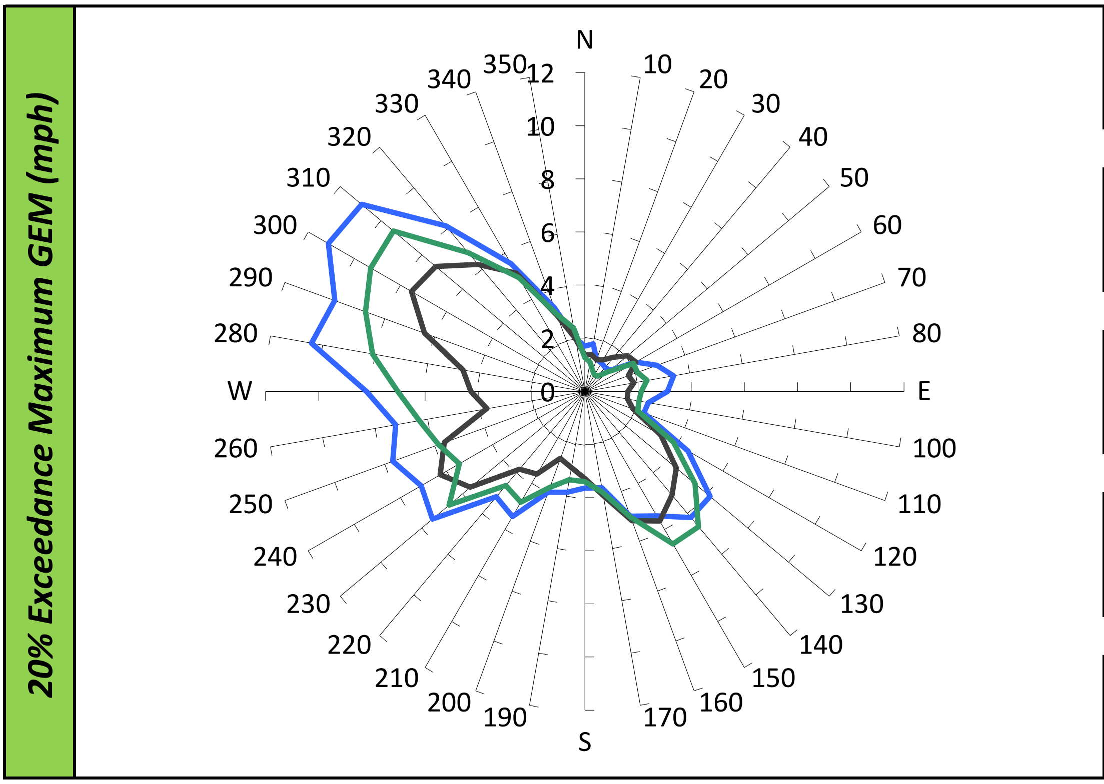
Equivalent Wind Speed (mph)



Desired Criterion

36mph

Measured Wind Speeds at Point 17



Desired Criterion
11mph

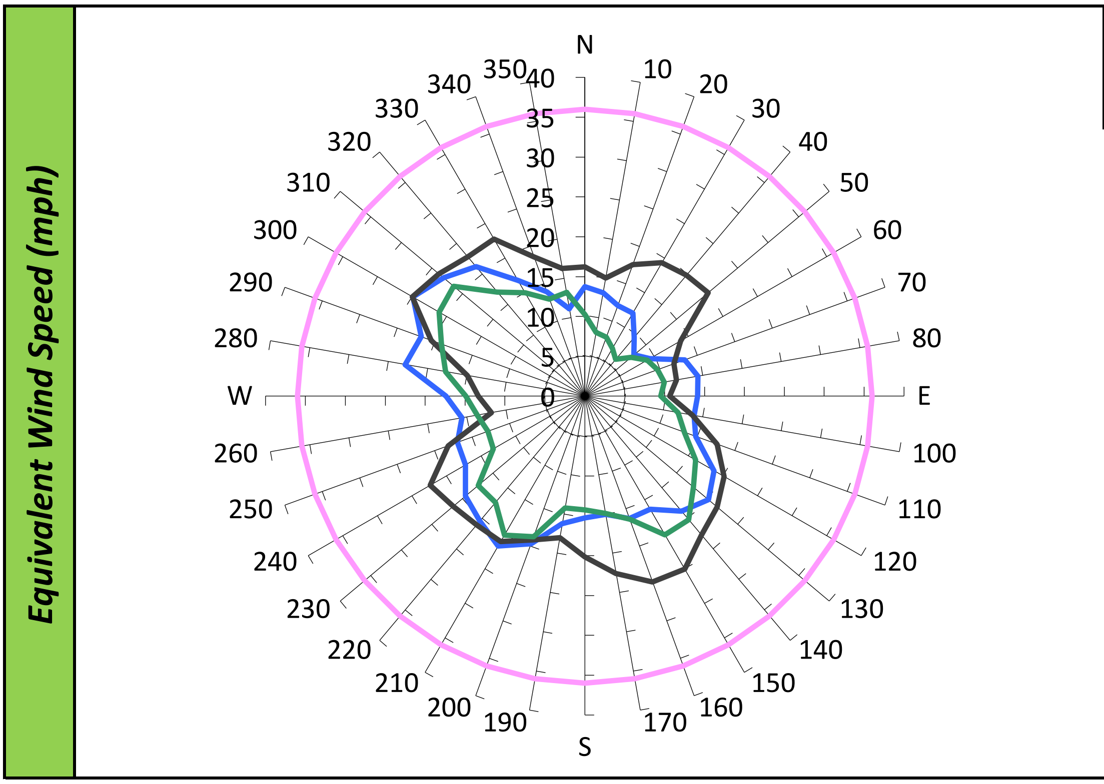
Prob. of Criterion Exceedence (existing site conditions)
2%

Probability of Criterion Exceedence (Proposed)
11%

Probability of Criterion Exceedence (Cumulative)
5%

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

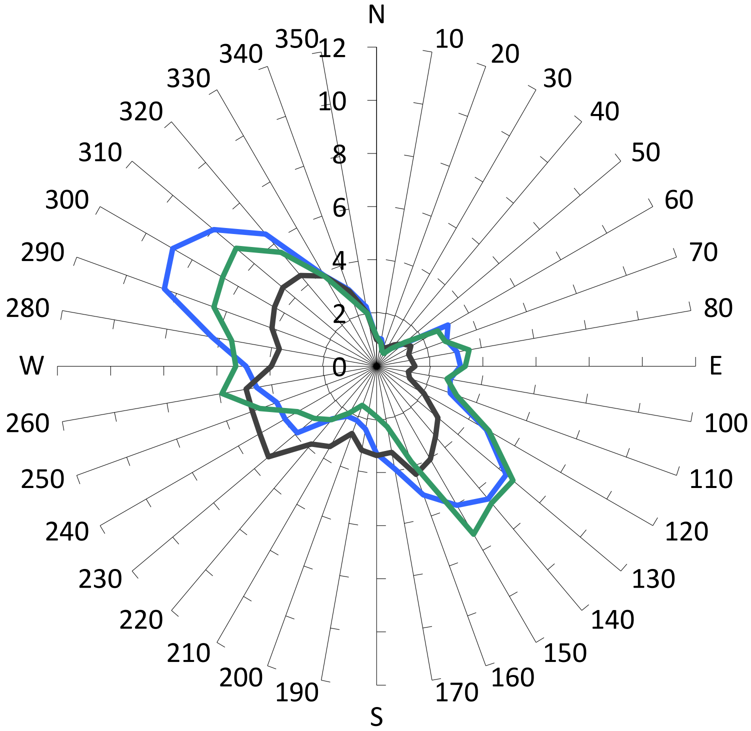
Criterion.
With development as proposed. No vegetation or other treatments.
Existing site conditions.
Proposed with cumulative scenario case



Desired Criterion
36mph

Measured Wind Speeds at Point 18

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
0%

Probability of Criterion Exceedence (Proposed)
3%

Probability of Criterion Exceedence (Cumulative)
2%

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

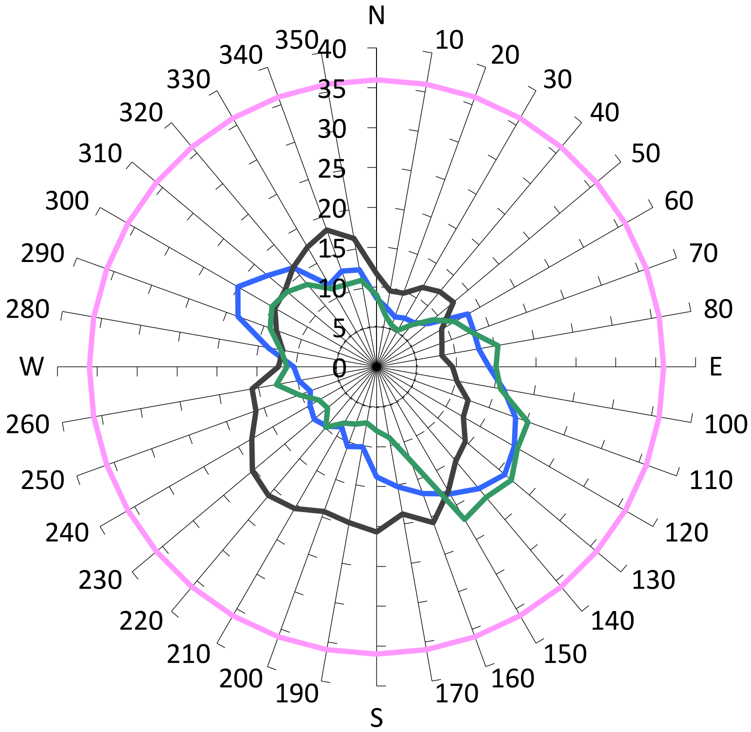
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

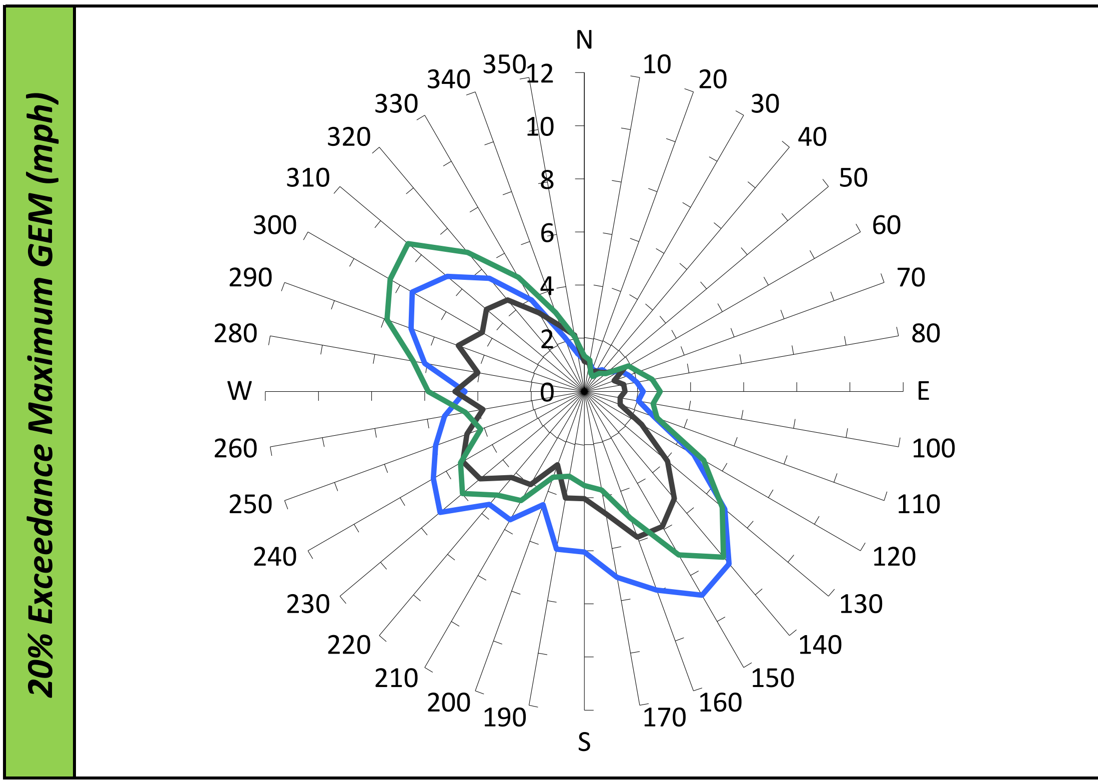
Proposed with cumulative scenario case

Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 19



Desired Criterion
11mph

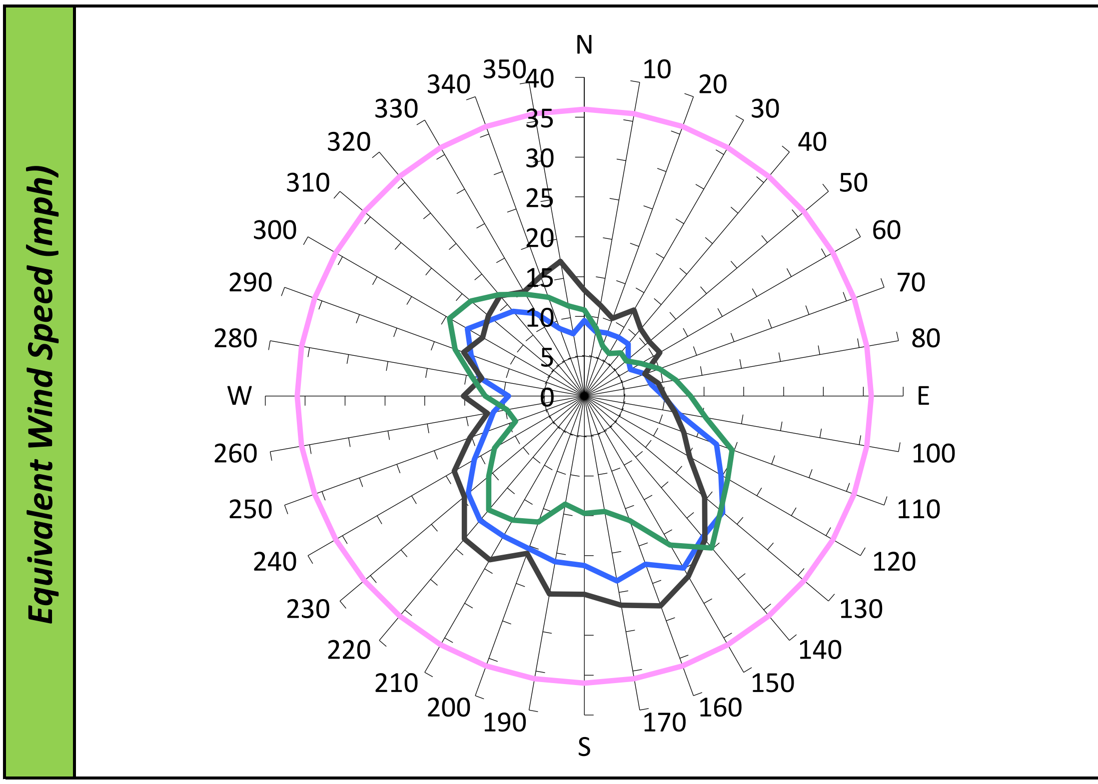
Prob. of Criterion Exceedence (existing site conditions)
1%

Probability of Criterion Exceedence (Proposed)
8%

Probability of Criterion Exceedence (Cumulative)
5%

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

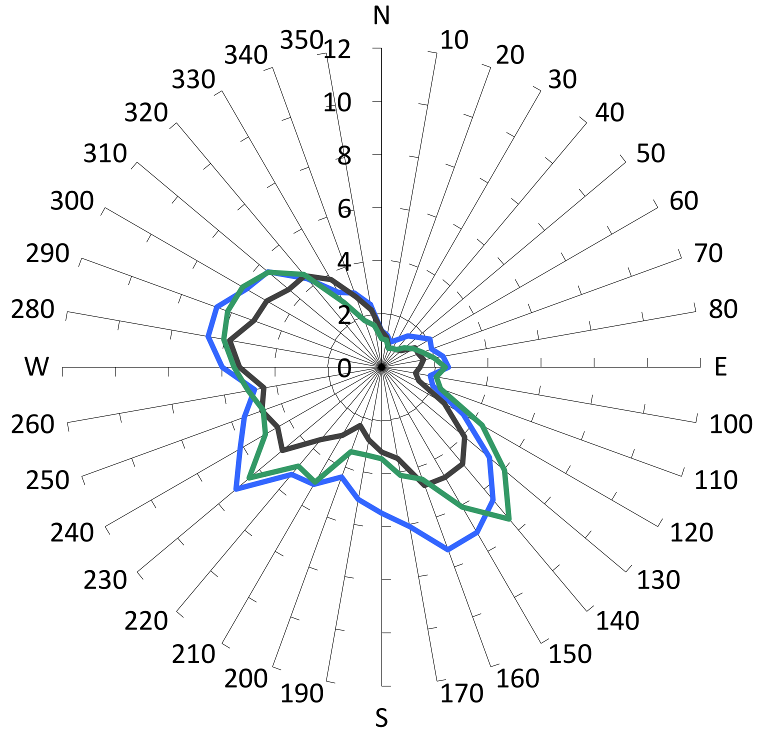
Criterion.
With development as proposed. No vegetation or other treatments.
Existing site conditions.
Proposed with cumulative scenario case



Desired Criterion
36mph

Measured Wind Speeds at Point 20

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
1%

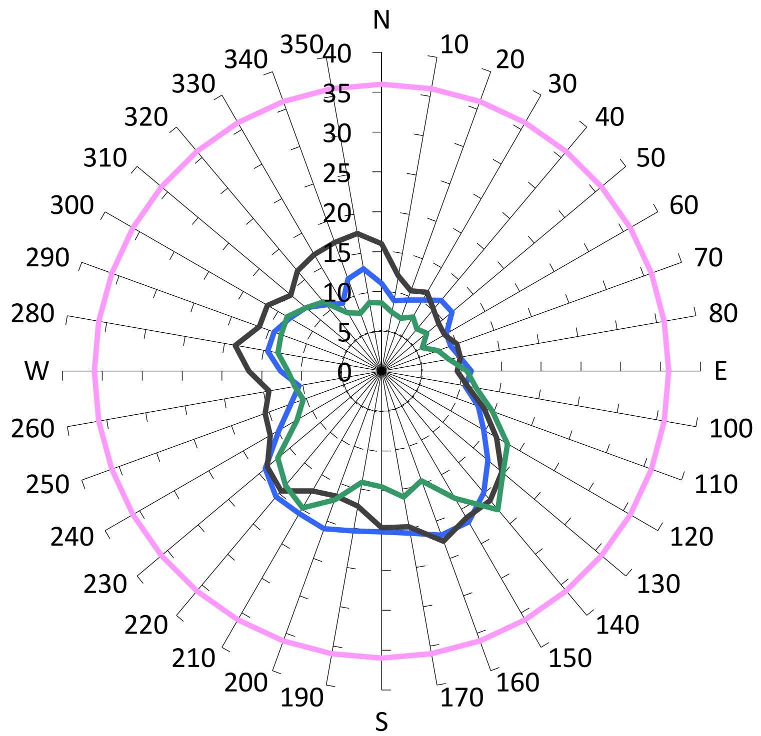
Probability of Criterion Exceedence (Proposed)
4%

Probability of Criterion Exceedence (Cumulative)
3%

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

Criterion.
With development as proposed. No vegetation or other treatments.
Existing site conditions.
Proposed with cumulative scenario case

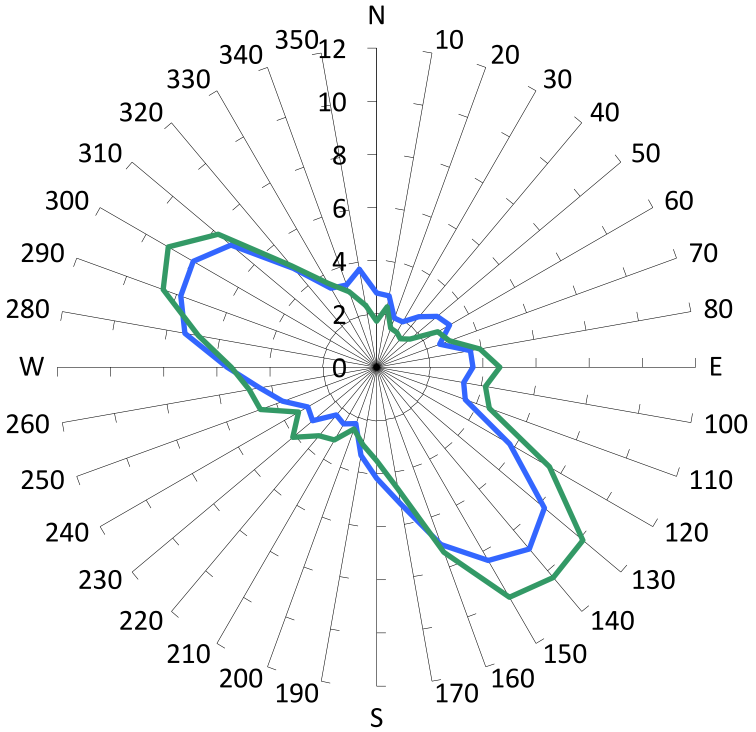
Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 21

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
N/A

Probability of Criterion Exceedence (Proposed)
7%

Probability of Criterion Exceedence (Cumulative)
10%

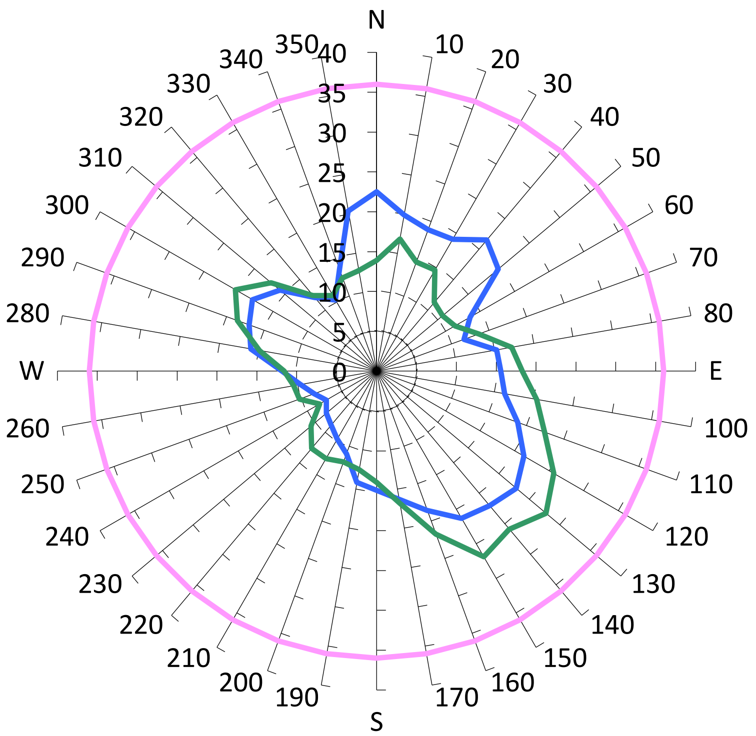
NOTE: The desired criterion is exceeded if the probability of exceedence is greater than 20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

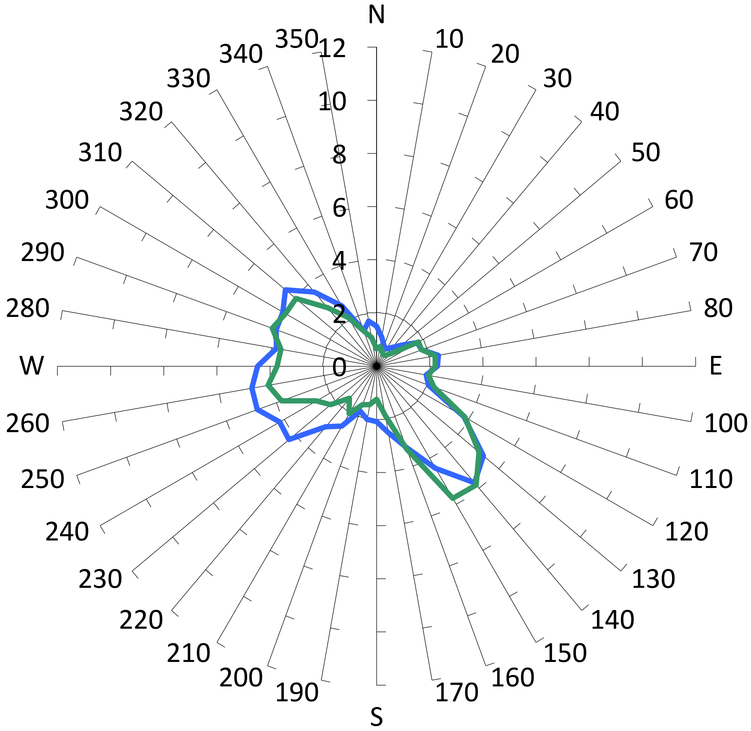
Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 22

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
N/A

Probability of Criterion Exceedence (Proposed)
1%

Probability of Criterion Exceedence (Cumulative)
1%

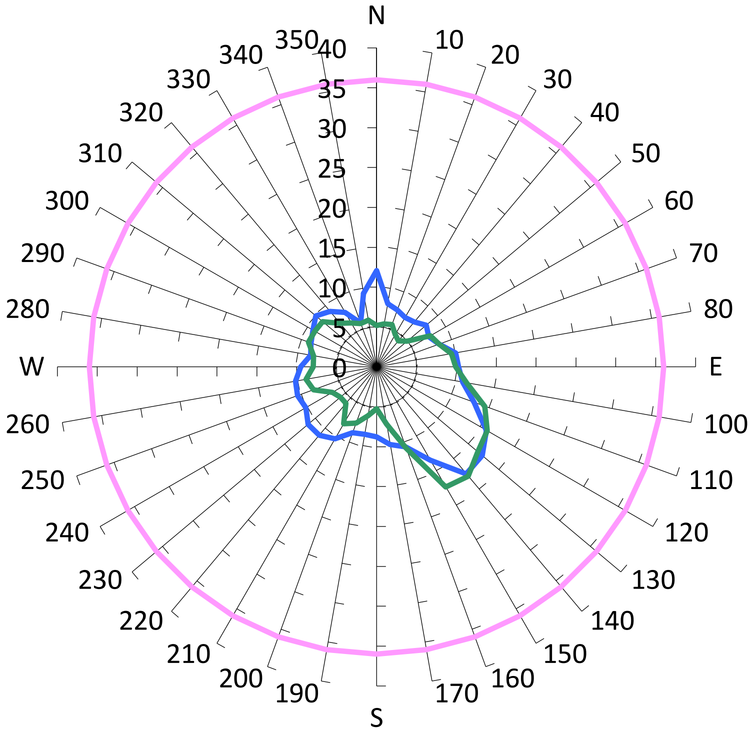
NOTE: The desired criterion is exceeded if the probability of exceedence is greater than 20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

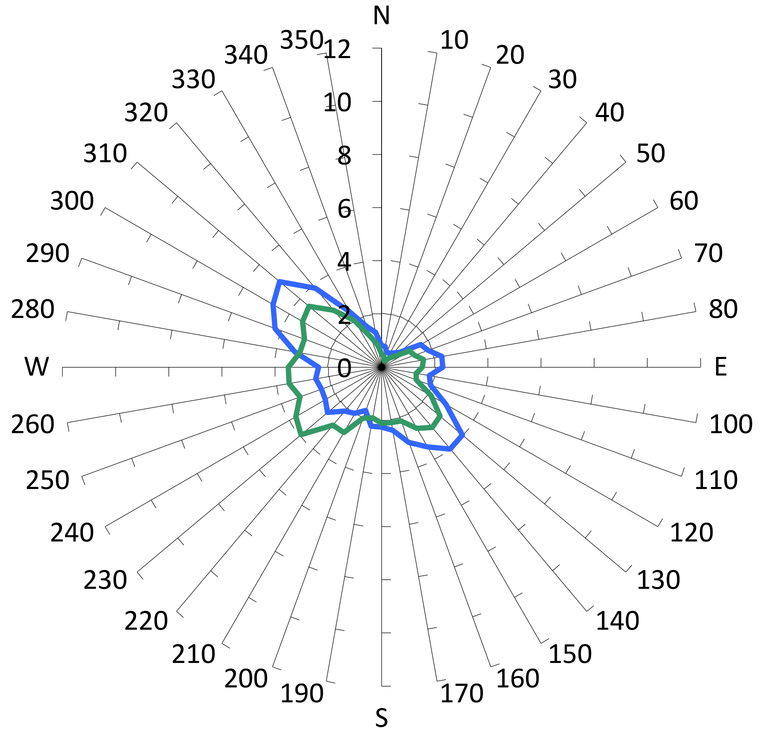
Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 23

20% Exceedance Maximum GEM (mph)



Desired Criterion
11mph

Prob. of Criterion Exceedence (existing site conditions)
N/A

Probability of Criterion Exceedence (Proposed)
0%

Probability of Criterion Exceedence (Cumulative)
0%

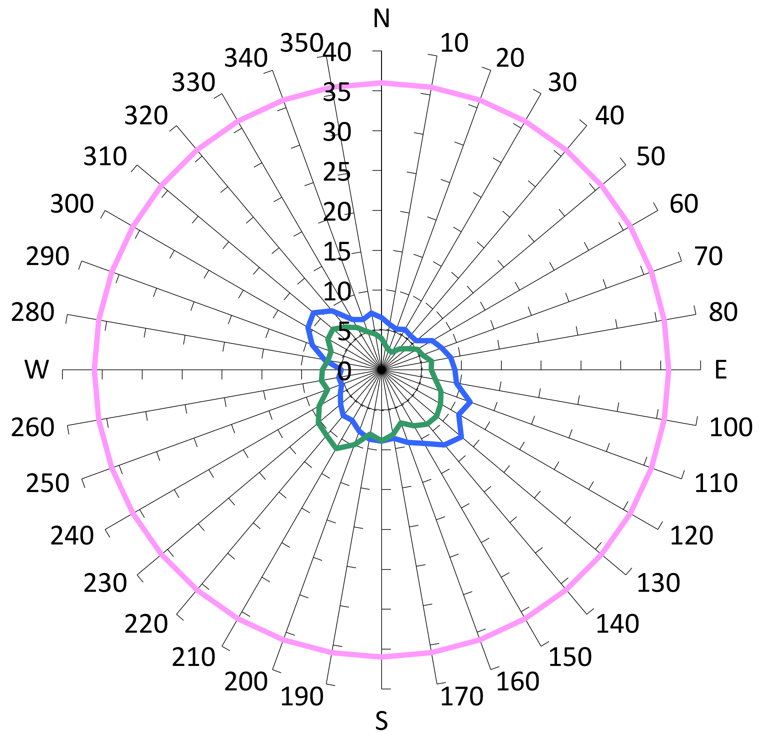
NOTE: The desired criterion is exceeded if the probability of exceedence is greater than 20%

Criterion.

With development as proposed. No vegetation or other treatments.

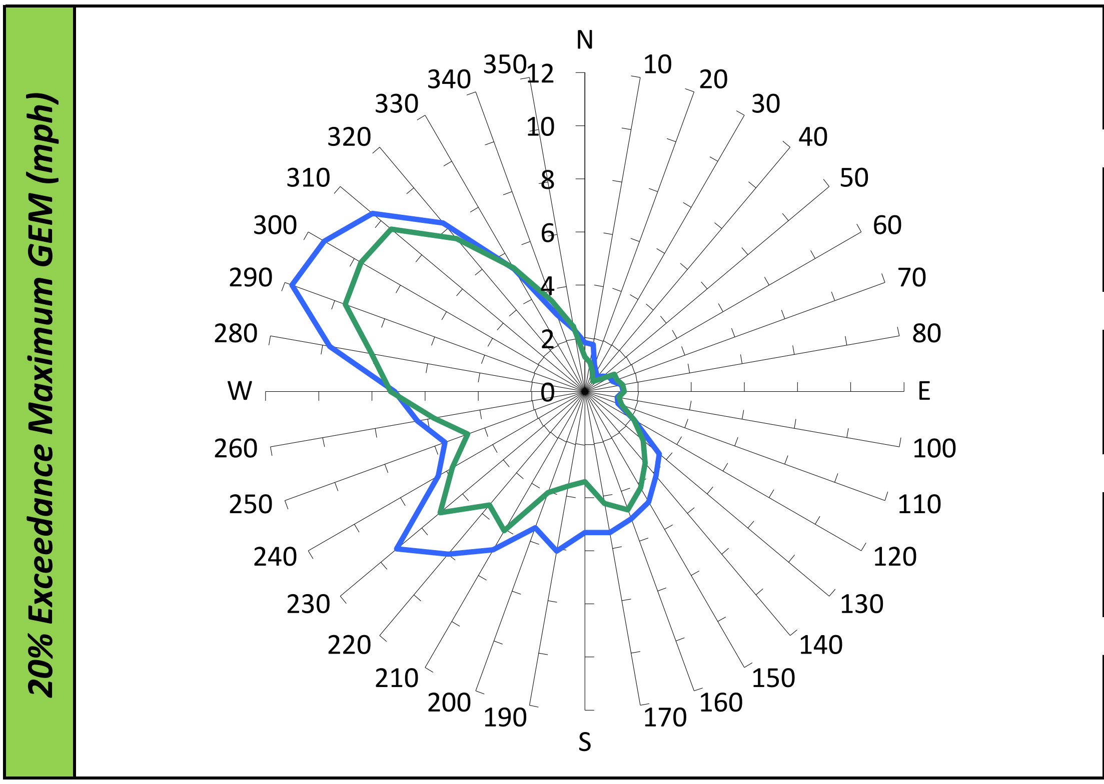
Proposed with cumulative scenario case

Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 24



Desired Criterion
9mph

Prob. of Criterion Exceedence (existing site conditions)
N/A

Probability of Criterion Exceedence (Proposed)
28%

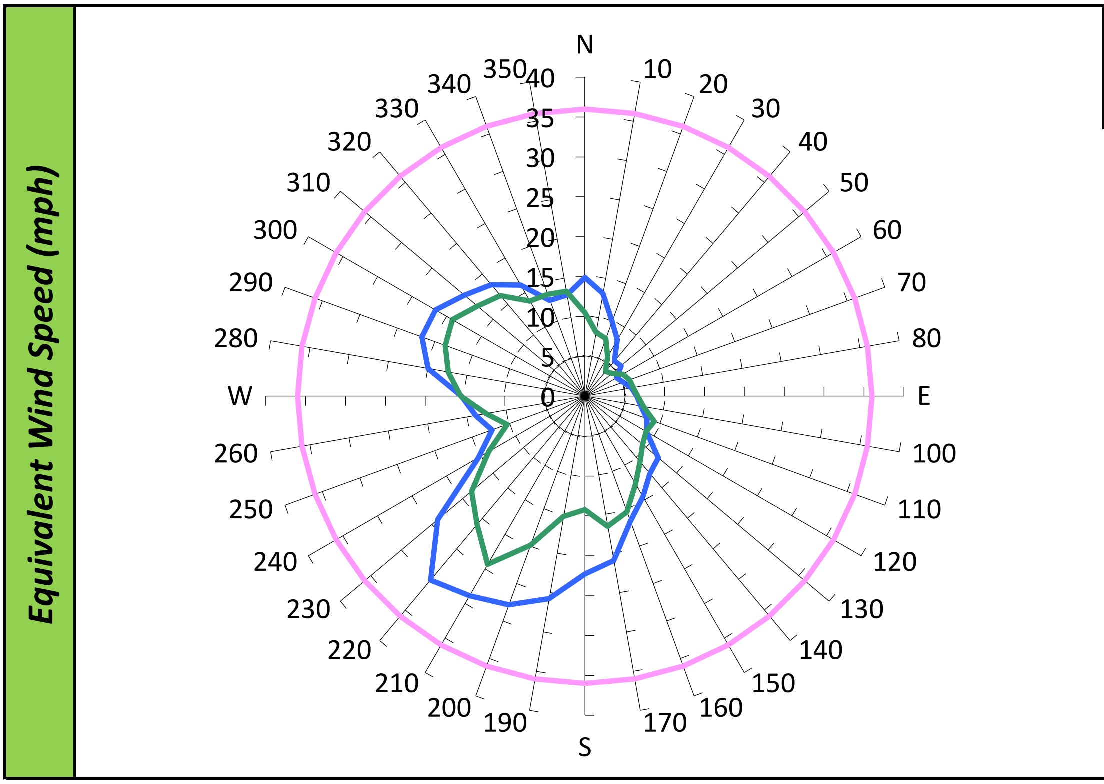
Probability of Criterion Exceedence (Cumulative)
16%

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

Criterion.

With development as proposed. No vegetation or other treatments.

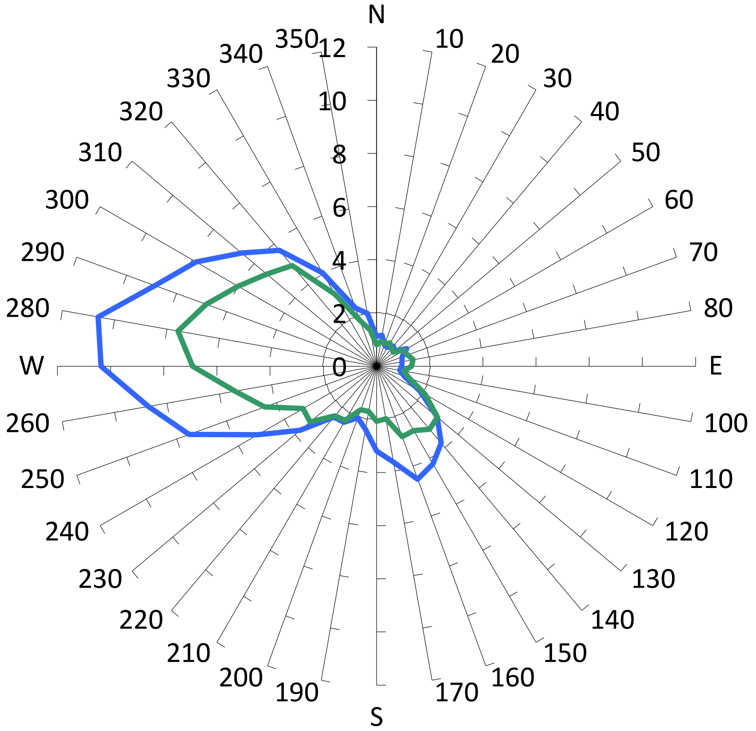
Proposed with cumulative scenario case



Desired Criterion
36mph

Measured Wind Speeds at Point 25

20% Exceedance Maximum GEM (mph)



Desired Criterion

9mph

Prob. of Criterion Exceedence (existing site conditions)

N/A

Probability of Criterion Exceedence (Proposed)

16%

Probability of Criterion Exceedence (Cumulative)

2%

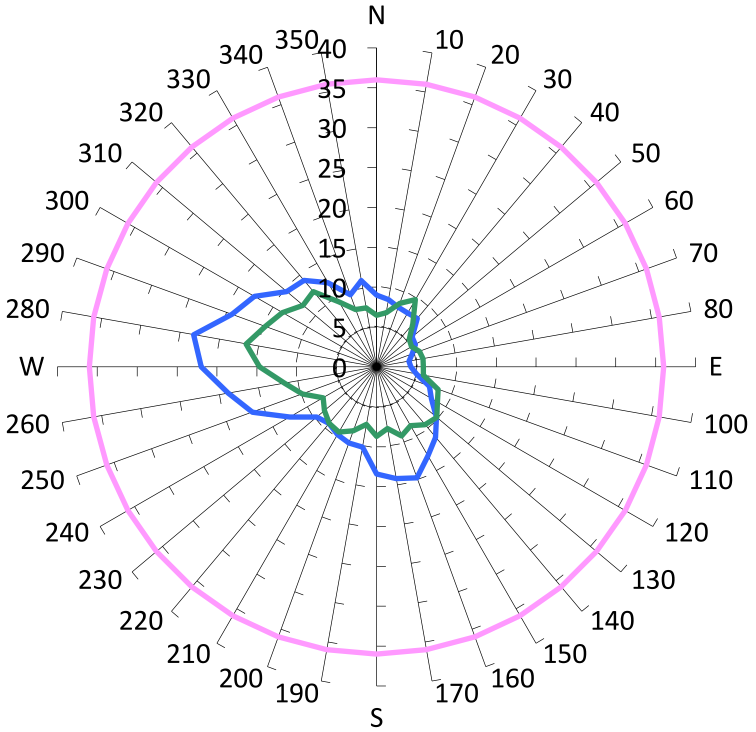
NOTE: The desired criterion is exceeded if the probability of exceedence is greater than 20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

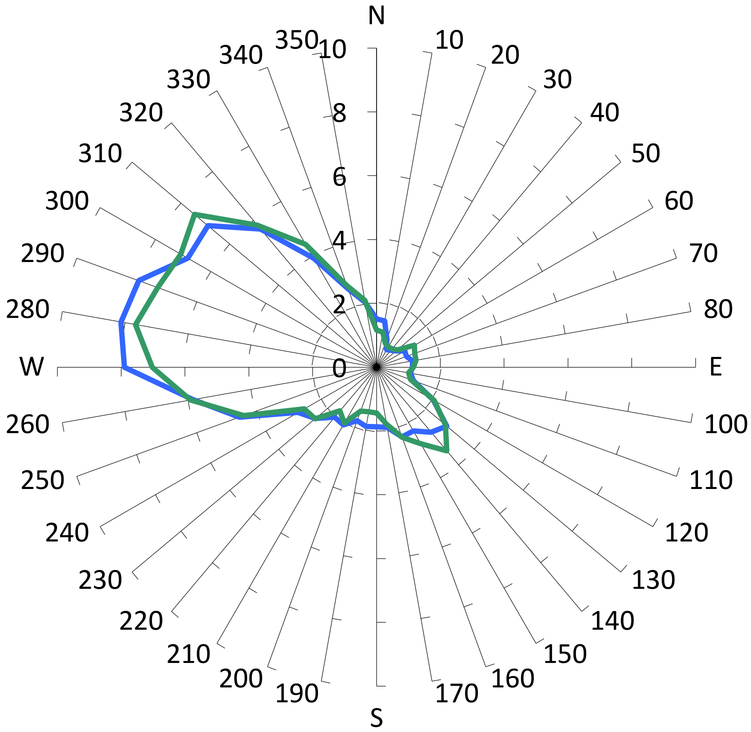


Desired Criterion

36mph

Measured Wind Speeds at Point 26

20% Exceedance Maximum GEM (mph)



Desired Criterion
9mph

Prob. of Criterion Exceedence (existing site conditions)
N/A

Probability of Criterion Exceedence (Proposed)
5%

Probability of Criterion Exceedence (Cumulative)
4%

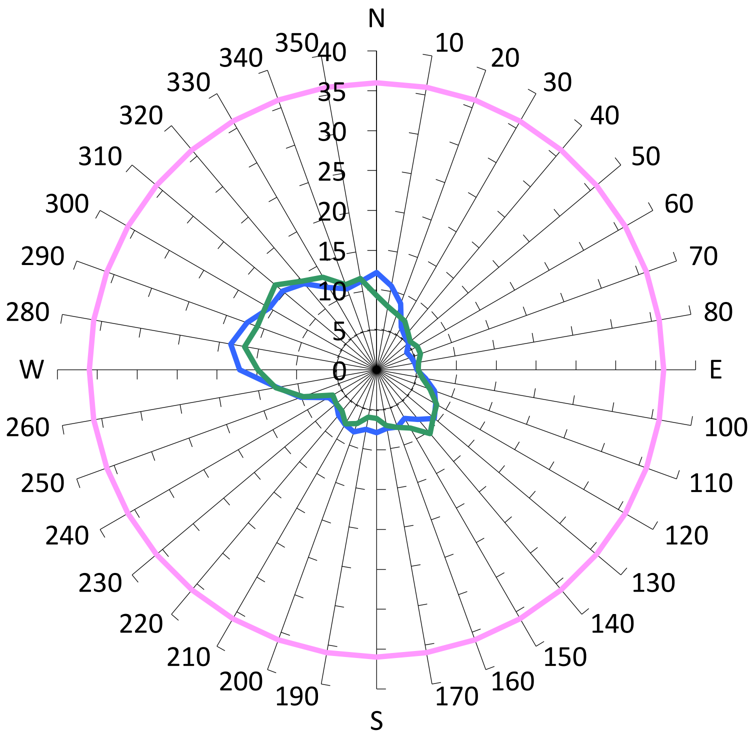
NOTE: The desired criterion is exceeded if the probability of exceedence is greater than 20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

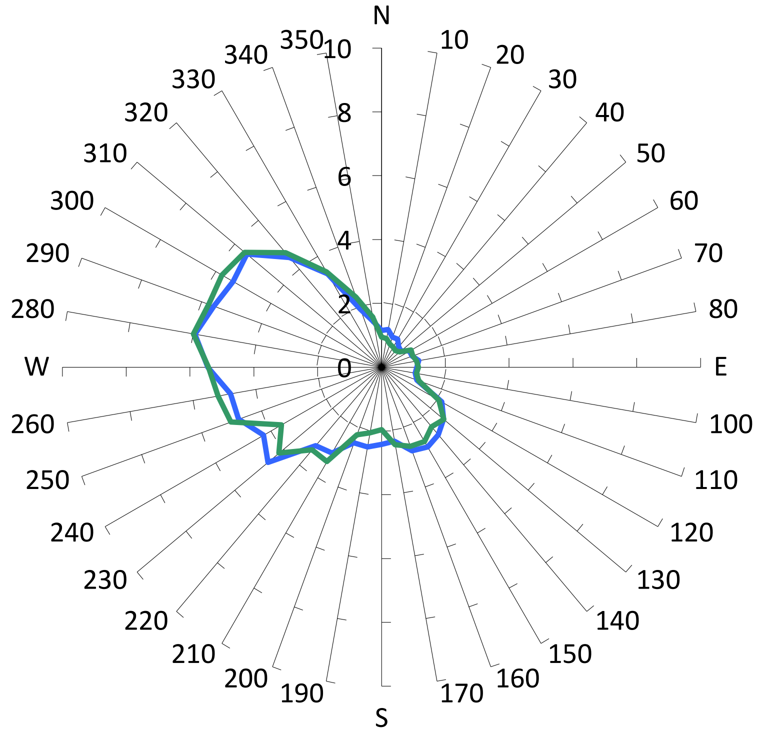
Equivalent Wind Speed (mph)



Desired Criterion
36mph

Measured Wind Speeds at Point 27

20% Exceedance Maximum GEM (mph)



Desired Criterion
9mph

Prob. of Criterion Exceedence (existing site conditions)
N/A

Probability of Criterion Exceedence (Proposed)
1%

Probability of Criterion Exceedence (Cumulative)
1%

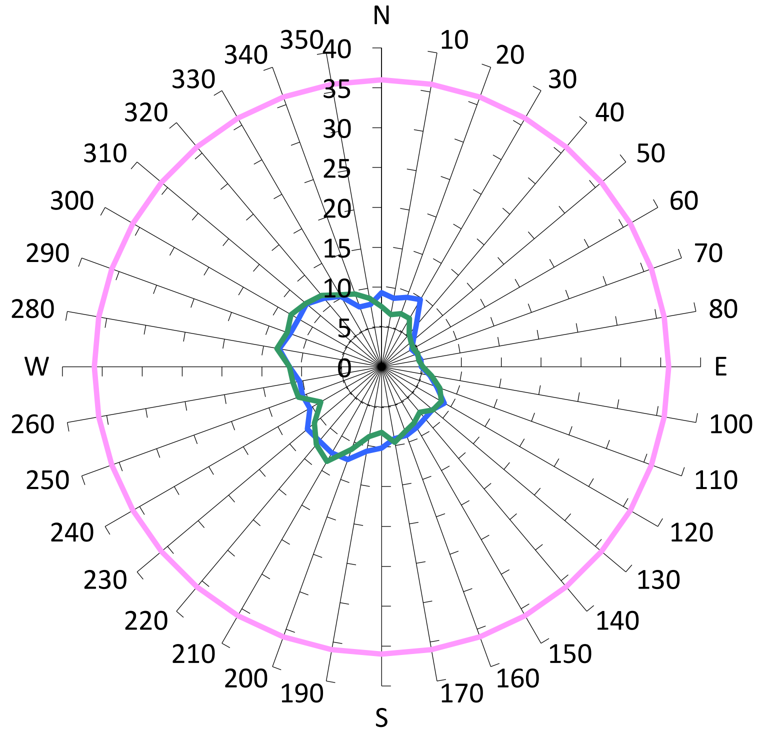
NOTE: The desired criterion is exceeded if the probability of exceedence is greater than 20%

Criterion.

With development as proposed. No vegetation or other treatments.

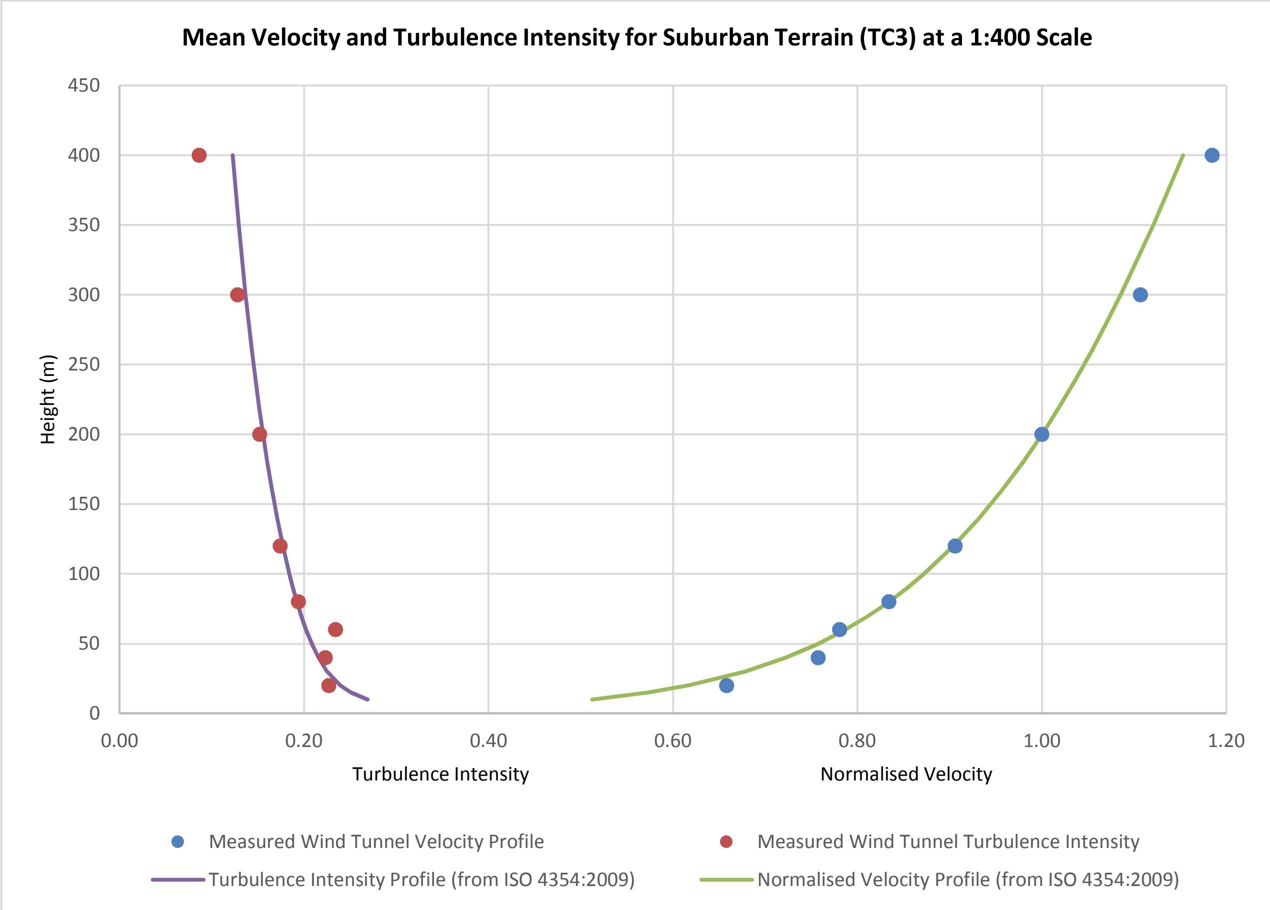
Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

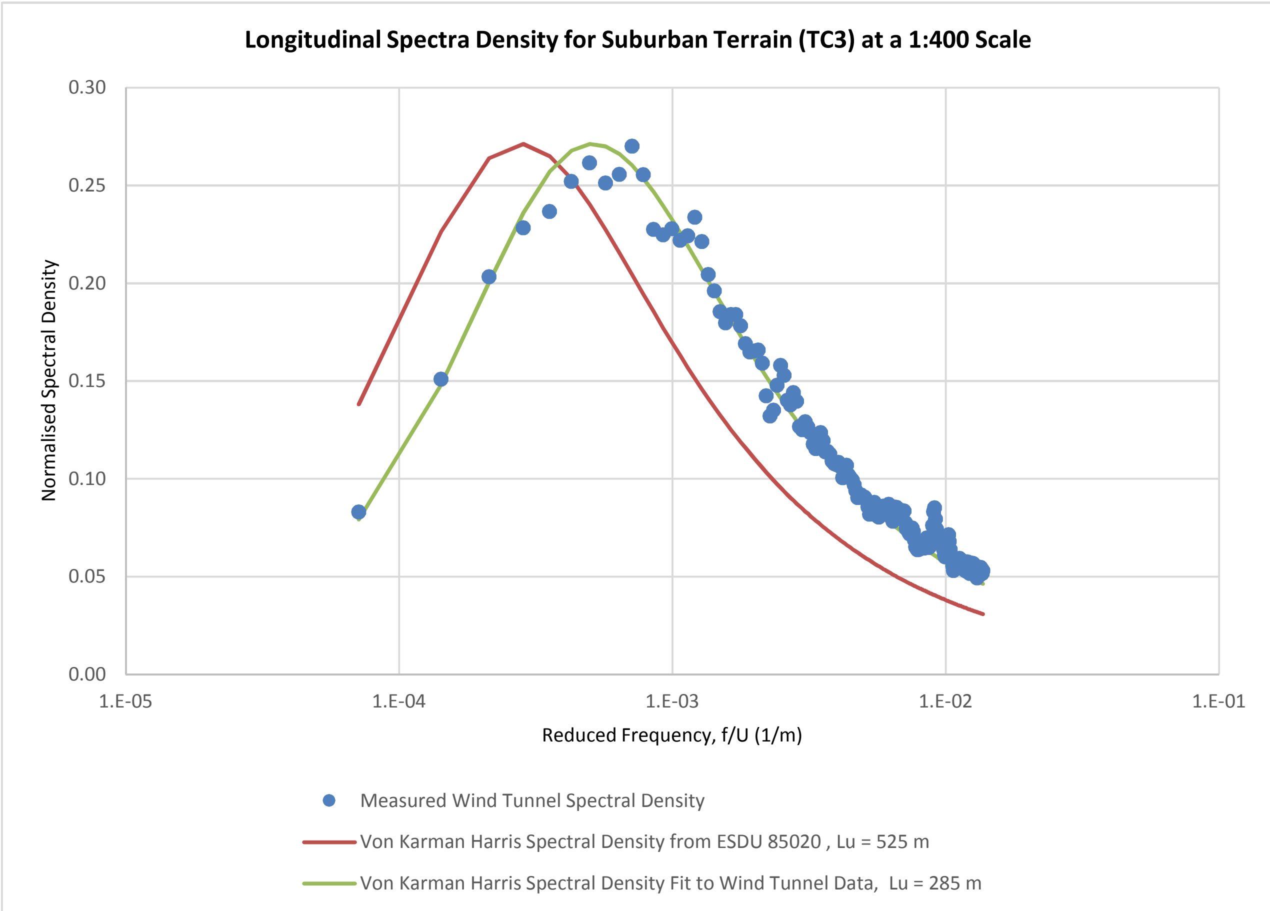


Desired Criterion
36mph

APPENDIX B - VELOCITY AND TURBULENCE INTENSITY PROFILES



Mean Velocity and Turbulence Intensity for Suburban Terrain (TC3) at a 1:400 Scale
Height (m)
450
400
350
300
250
200
150
100
50
0
0.00
0.20
0.40
0.60
0.80
1.00
1.20
Turbulence Intensity
Normalised Velocity
Measured Wind Tunnel Velocity Profile
Measured Wind Tunnel Turbulence Intensity
Turbulence Intensity Profile (from ISO 4354:2009)
Normalised Velocity Profile (from ISO 4354:2009)



Longitudinal Spectra Density for Suburban Terrain (TC3) at a 1:400 Scale
Normalised Spectral Density
0.30
0.25
0.20
0.15
0.10
0.05
0.00
1.E-05
1.E-04
1.E-03
1.E-02
1.E-01
Reduced Frequency, f/U (1/m)
Measured Wind Tunnel Spectral Density
Von Karman Harris Spectral Density from ESDU 85020 , Lu = 525 m
Von Karman Harris Spectral Density Fit to Wind Tunnel Data, Lu = 285 m

Attachment I:
Noise Impact Study

RGD ACOUSTICS

Acoustical & Audiovisual Consultants

ENVIRONMENTAL NOISE STUDY FOR:

1433 Webster Street

Oakland, CA

RGD Project #: 16-018

PREPARED FOR:

Lamphier-Gregory

1944 Embarcadero

Oakland, CA 94606

PREPARED BY:

Harold Goldberg, P.E.

DATE:

29 January 2018

Project Description

The proposed project is the construction of a 29-story mixed-use facility consisting of 179 residential units and 1,130 square feet of ground floor retail and an above grade podium (floors 2-5) containing up to approximately 60,000 square feet of office use. The site is located at 1433 Webster Street and 359 15th Street in Oakland, California.

Environmental noise sources in the vicinity are primarily traffic on Webster Street and 15th Street. This noise analysis quantifies the existing noise environment at the site, determines future noise level associated with the construction and operation of the project and cumulative growth and compares these noise levels to the City of Oakland's CEQA thresholds of significance.

Setting

Environmental Noise Fundamentals

Noise can be defined as unwanted sound. It is commonly measured with an instrument called a sound level meter. The sound level meter captures the sound with a microphone and converts it into a number called a sound level. Sound levels are expressed in units of decibels. To correlate the microphone signal to a level that corresponds to the way humans perceive noise, the A-weighting filter is used. A-weighting de-emphasizes low-frequency and very high-frequency sound in a manner similar to human hearing. The use of A-weighting is required by most local General Plans as well as federal and state noise regulations (e.g. Caltrans, EPA, OSHA and HUD). The abbreviation dBA is sometimes used when the A-weighted sound level is reported.

Because of the time-varying nature of environmental sound, there are many descriptors that are used to quantify the sound level. Although one individual descriptor alone does not fully describe a particular noise environment, taken together, they can more accurately represent the noise environment. The maximum instantaneous noise level (L_{max}) is often used to identify the loudness of a single event such as a car passby or airplane flyover. To express the average noise level the L_{eq} (equivalent noise level) is used. The L_{eq} can be measured over any length of time but is typically reported for periods of 15 minutes to 1 hour. The background noise level (or residual noise level) is the sound level during the quietest moments. It is usually generated by steady sources such as distant freeway traffic. It can be quantified with a descriptor called the L_{90} which is the sound level exceeded 90 percent of the time.

To quantify the noise level over a 24-hour period, the Day/Night Average Sound Level (DNL or L_{dn}) or Community Noise Equivalent Level (CNEL) is used. These descriptors are averages like the L_{eq} except they include a 10 dB penalty during nighttime hours (and a 5 dB penalty during evening hours in the CNEL) to account for peoples increased sensitivity during these hours. The CNEL and L_{dn} are typically less that one decibel from each other.

In environmental noise, a change in noise level of 3 dB is considered a just noticeable difference. A 5 dB change is clearly noticeable, but not dramatic. A 10 dB change is perceived as a halving or doubling in loudness.

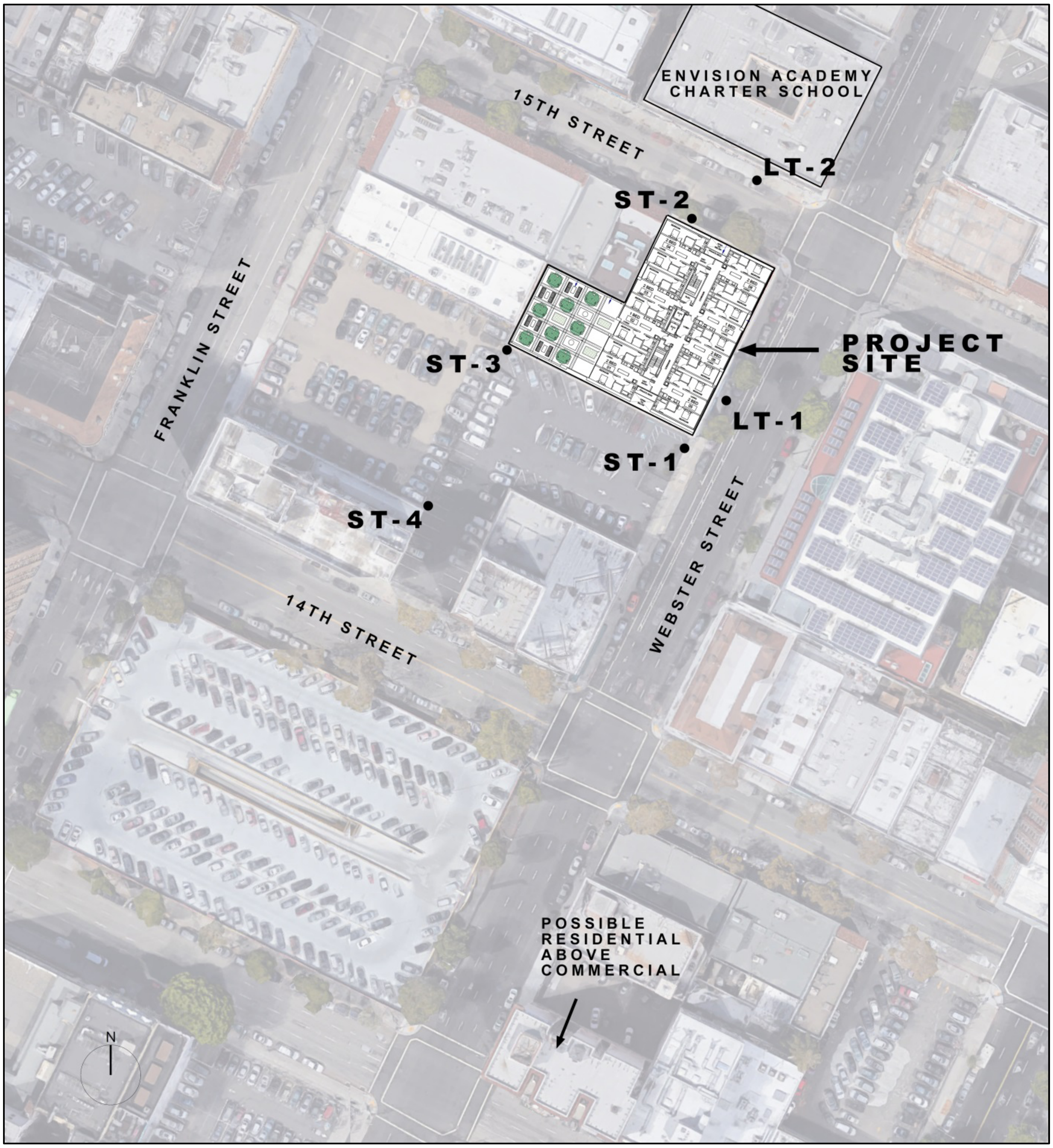
Existing Noise Environment

A noise measurement program was conducted at the project site to quantify existing noise levels. The program included two long-term (24-hour) noise measurements and four short-term (15-minute) measurements. The measurement locations are shown in Figure 1. The measurement locations were chosen to represent the traffic noise exposure at the project building facades closest to the major roadways, as well as the noise exposure at existing nearby residences that are potentially affected by project generated noise. The results of the noise measurements are shown in Table 1 and Figure 2 and 3.

Location LT-1 was along Webster Street and Location LT-2 was along 15th Street. The noise monitors at these two locations documented the day/night variation in traffic noise from the two roadways.

The short-term measurements at locations ST-1 and ST-2 were made simultaneously with the measurements at LT-1 and LT-2 to quantify the traffic noise exposure at the setback of the proposed building. These measurements are also representative of the exposure of the nearby buildings that front on these roadways. Short-term measurement locations ST-3 and ST-4 were near existing buildings that are not directly along the adjacent roadways. The noise exposure at these locations is representative of the facades of buildings that are shielded and more distant from the noise of the nearby streets. These locations are used as a baseline for comparison with future project noise related to the operation and construction of the project.

Figure 1: Noise Measurement Locations



Imagery ©2016 Google, Map data ©2016 Google

Table 1: Short-Term Noise Measurement Results

Location		Time	A-weighted Noise Level, dBA						
			L_{eq}	L_{max}	L_1	L_{10}	L_{33}	L_{50}	L_{dn}*
ST-1	Webster Street, setback of project building, 24 ft above ground.	30 March 2016 11:08 - 11:23 AM	64	83	71	66	63	61	66
ST-2	15th Street, 4 ft in front of existing building, 5 ft above ground.	30 March 2016 12:32 - 12:47 PM	63	84	70	65	63	60	65
ST-3	Southwest corner of project site, 5 ft above ground.	30 March 2016 11:53 - 12:08 PM	55	64	60	58	55	54	58
ST-4	Adjacent to building at 1404 Franklin Street, 5 ft above ground.	30 March 2016 12:11 - 12: 26 PM	57	72	62	60	58	56	61

*L_{dn} based on correlation of short-term noise measurement with long-term noise measurement.

Figure 2: Long-Term Noise Measurement Results, Webster Street (LT-1)

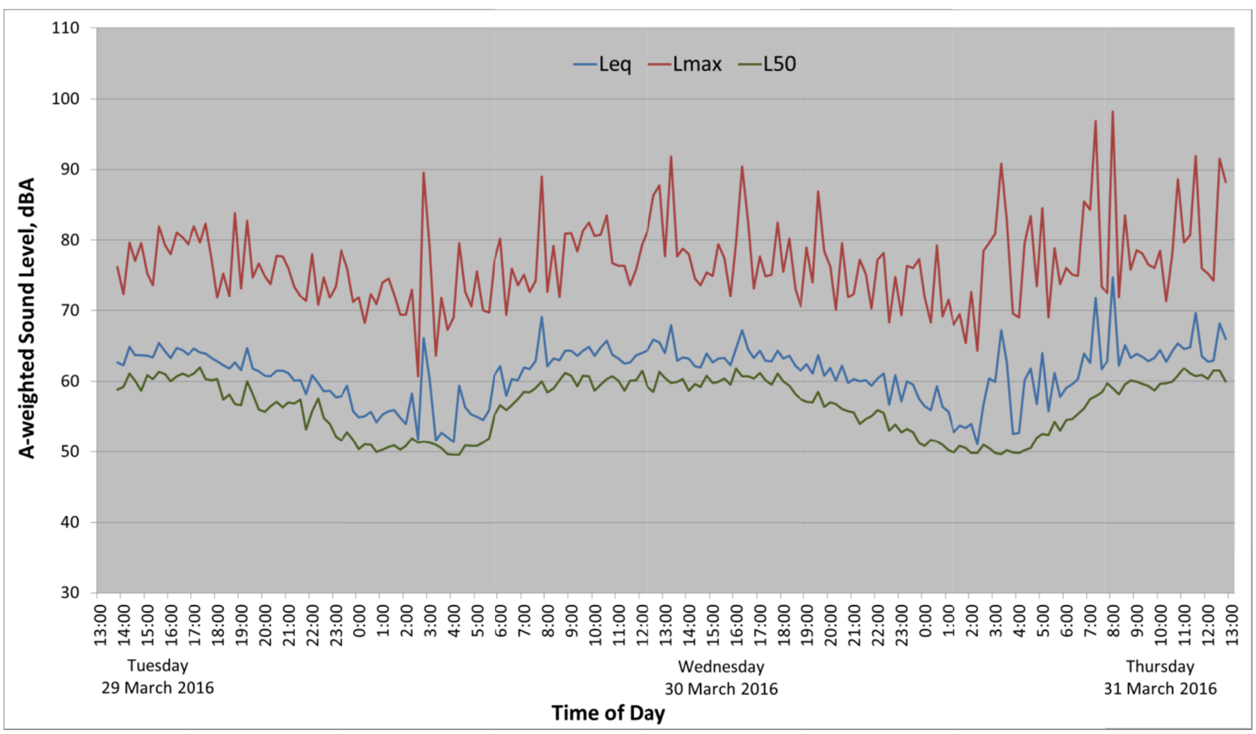
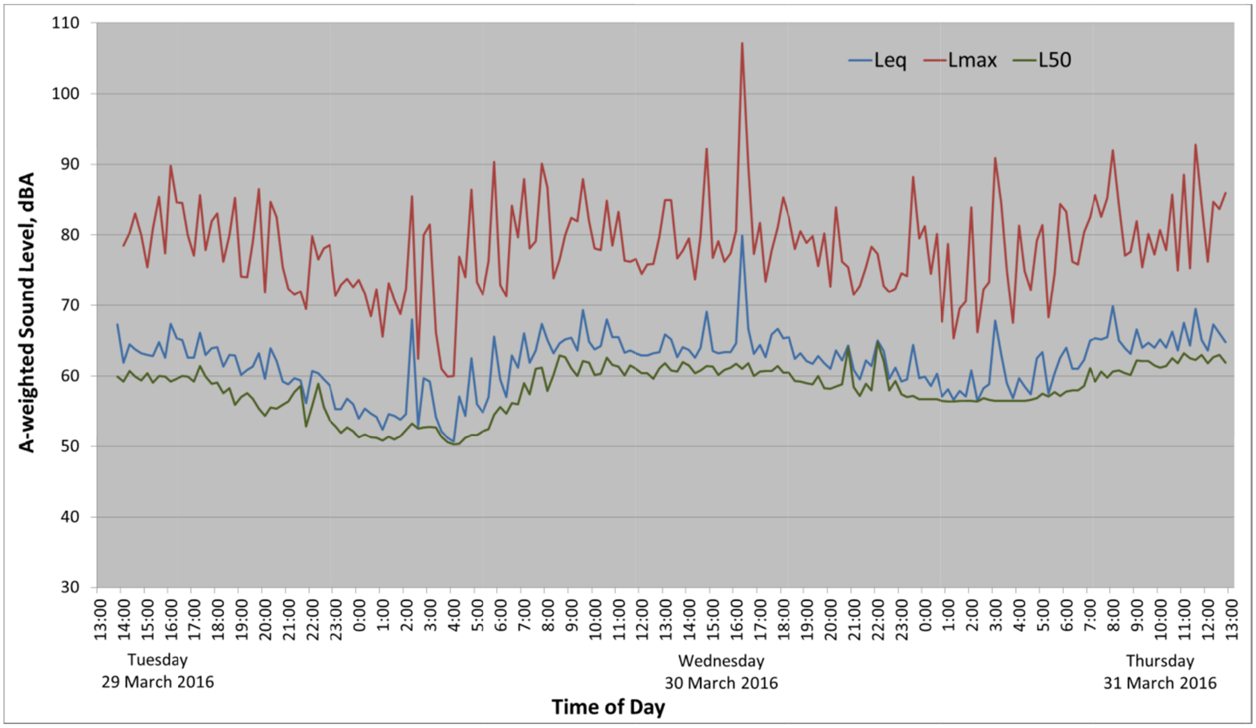


Figure 3: Long-Term Noise Measurement Results, 15th Street (LT-2)



Regulatory Setting

State of California Noise Insulation Standards

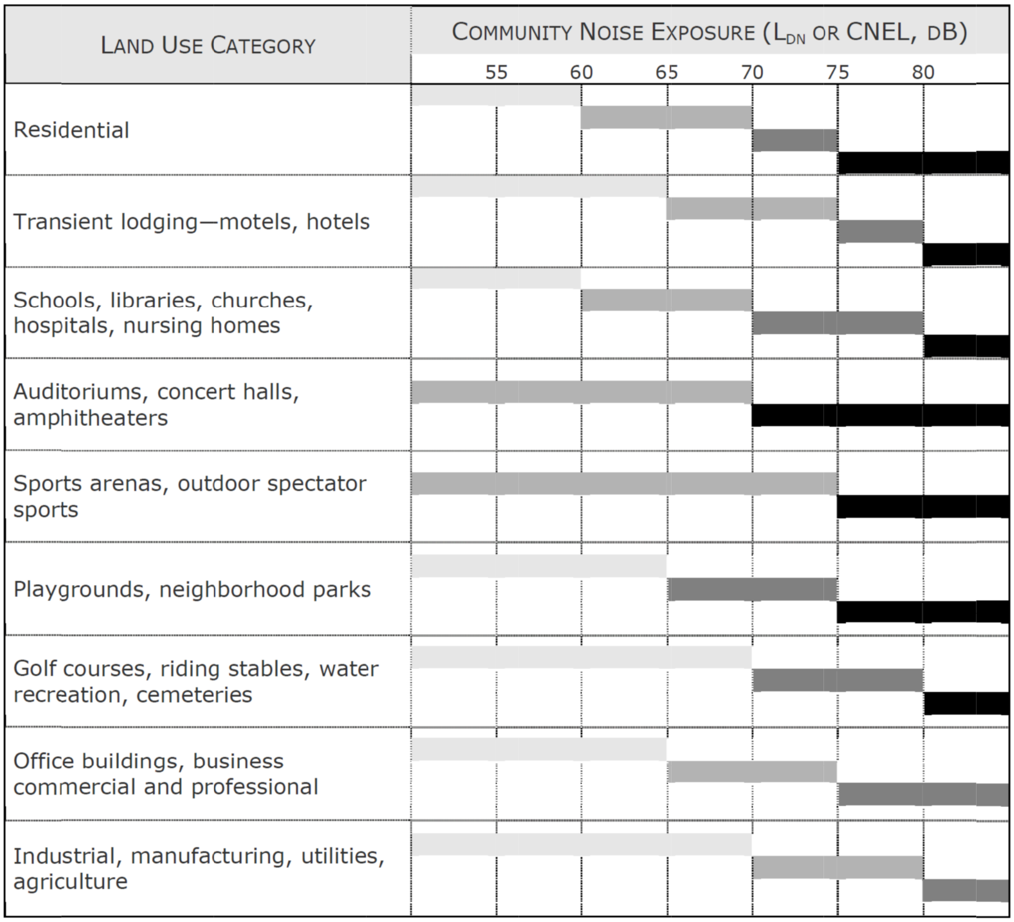
The California Noise Insulation Standards found in CCR, Title 24 establish requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation noise. In this case, the noise insulation criterion is 45 dB Ldn inside noise sensitive spaces. For developments with exterior transportation noise exposure exceeding 60 dB Ldn, an acoustical analysis and mitigation (if required) must be provided showing compliance with the 45 dB Ldn interior noise exposure limit.

City of Oakland

Oakland General Plan

The City of Oakland's General Plan Noise Element compatibility guidelines are shown in Table 2. Residences are considered "normally acceptable" when exposed to an L_{dn} of 60 dBA or less, "conditionally acceptable" when exposed to an L_{dn} between 60 and 70 dBA, and "normally unacceptable" between L_{dn} 70 and 75 dBA. In some instances the guidelines require that noise insulation be included in the design to reduce interior noise.

Table 2: Oakland General Plan Noise - Land Use Compatibility Matrix



INTERPRETATION

NORMALLY ACCEPTABLE: Development may occur without an analysis of potential noise impacts *to the proposed development* (though it might still be necessary to analyze noise impacts that the project might have *on its surroundings*).

CONDITIONALLY ACCEPTABLE: Development should be undertaken only after an analysis of noise-reduction requirements is conducted, and if necessary noise-mitigating features are included in the design. Conventional construction will usually suffice as long as it incorporates air conditioning or forced fresh-air-supply systems, though it will likely require that project occupants maintain their windows closed.

NORMALLY UNACCEPTABLE: Development should generally be discouraged; it may be undertaken only if a detailed analysis of the noise-reduction requirements is conducted, and if highly effective noise insulation, mitigation or abatement features are included in the design.

CLEARLY UNACCEPTABLE: Development should not be undertaken.

The Noise Element also discusses acceptable noise levels for interior spaces as follows:

Conventional contemporary construction methods and materials decrease outdoor noise by 12-18 dB (with partially open windows). At the same time, according to common practice, the following are the maximum interior noise levels generally considered acceptable for various common land uses:

45 dB: residential, hotels, motels, transient lodging, institutional (churches, hospitals, classrooms, libraries), movie theaters

50 dB: professional offices, research and development, auditoria, meeting halls

55 dB: retail, banks, restaurants, sports clubs

65 dB: manufacturing, warehousing

City of Oakland Noise Ordinance

The City of Oakland also regulates noise through enforcement of its Noise Ordinance, which is found in Sections 8.18 and 17.120 of the Oakland Municipal Code.

Per Chapter 8.18.020:

The persistent maintenance or emission of any noise or sound produced by human, animal or mechanical means, between the hours of 9:00 p.m. and 7:00 a.m. which shall disturb the peace or comfort, or be injurious to the health of any person shall constitute a nuisance.

Failure to comply with the following provisions shall constitute a nuisance.

a) *All construction equipment powered by internal combustion engines shall be properly muffled and maintained.*
b) *Unnecessary idling of internal combustion engines is prohibited.*
c) *All stationary noise-generating construction equipment such as tree grinders and air compressors are to be located as far as is practical from existing residences.*
d) *Quiet construction equipment, particularly air compressors, is to be selected whenever possible.*
e) *Use of pile drivers and jack hammers shall be prohibited on Sundays and holidays, except for emergencies and as approved in advance by the Building Official.*

Whenever the existence of any such nuisance shall come to the attention of the Health Officer, it shall be his or her duty to notify in writing the occupant of the premises upon which such nuisance exists, specifying the measures necessary to abate such nuisance, and unless the same is abated within forty-eight (48) hours *thereafter, the occupant so notified shall be guilty of an infraction, and the Health Officer shall summarily abate such nuisance.*

Chapter 17.120.050 of the Oakland Planning Code regulates operational noise from stationary sources. Table 3 presents maximum allowable receiving noise standards applicable to long-term exposure for residential and civic land uses, for noise from stationary noise sources (not transportation noise). For example, between 7:00 a.m. and 10:00 p.m., residential and civic land uses, including public open spaces, may only be exposed to noises up to 60 dBA for a period of 20 cumulative minutes in a one-hour time period and a maximum of 80 dBA.

Per Chapter 17.120.060 of the Oakland Planning Code:

All activities, except those located within the M-40 zone, or in the M-30 zone more than 400 feet from any legal residentially occupied property, shall be so operated as not to create a vibration which is perceptible without instruments by the average person at or beyond any lot line of the lot containing such activities. Ground vibration caused by motor vehicles, trains, and temporary construction or demolition work is exempted from this standard. (Ord. 11895 Section 8, 1996: prior planning code Section 7711).

Table 4 presents noise level standards from the Noise Ordinance that applies to temporary exposure to short- and long-term construction noise. In this context, short-term refers to construction activity lasting less than 10 days at a time while long-term refers to construction activities lasting greater than 10 days at a time.

Table 3: Maximum Allowable Receiving Noise Level Standards (dBA)

Cumulative Number of Minutes in Either the Daytime or Nighttime One Hour Time Period	***Commercial***	***Residential***[3]	
	Anytime	***Daytime (7:00 a.m. to 10:00 p.m.)***	***Nighttime (10:00 p.m. to 7:00 a.m.)***
20 (L_{33})	65	60	45
10 (L_{17})	70	65	50
5 (L_8)	75	70	55
1 (L_2)	80	75	60
0 (L_{max})	85	80	65

Notes:

1. ***These standards are reduced 5 dBA for simple tone noise, noise consisting primarily of speech or music, or recurring impact noise. If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.***
2. ***Lx represents the noise level that is exceeded X percent of a given period. L max is the maximum instantaneous noise level.***
3. ***Legal residences, schools and childcare facilities, health care or nursing home, public open space, or similarly sensitive land uses.***

Source: OMC Section 17.120.050.

Table 4: Construction Noise Level Standards[1] (dBA)

Receiving Land Use	***Less Than 10 Days***		***More Than 10 Days***	
	Weekdays 7 AM to 7 PM	***Weekends 9 AM to 8 PM***	***Weekdays 7 AM to 7 PM***	***Weekends 9 AM to 8 PM***
Residential	80	65	65	55
Commercial, Industrial	85	70	70	60

Notes:

1. ***If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.***

Source: OMC Section 17.120.050.

City of Oakland Standard Conditions of Approval

The City of Oakland's Standard Conditions of Approval[1] (SCA) relevant to reducing noise and vibration impacts due to an approved project are listed below. These Conditions are Uniformly Applied Development Standards that substantially mitigate environmental effects. The Conditions are incorporated into a project regardless of the project's environmental determination, pursuant, in part, to CEQA Guidelines sections 15183 and 15183.3. As applicable, the Conditions are adopted as requirements of an individual project when the project is approved by the City and are designed to, and will, substantially mitigate environmental effects. In reviewing project applications, the City determines which of the Conditions are applied, based upon the project's characteristics and location, zoning district, applicable plans, and type(s) of permit(s)/approvals(s) required for the project. In a CEQA document, the Standard Conditions of Approval applicable to the project are considered requirements of the project and not mitigation measures.

[1] *Standard Conditions of Approval*, City of Oakland Planning and Zoning Division, Adopted 11/03/08, Revised 4/11/2017.

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

58. Construction Days/Hours

Requirement: The project applicant shall comply with the following restrictions concerning construction days and hours:

a. Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday, except that pier drilling and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m.

b. Construction activities are limited to between 9:00 a.m. and 5:00 p.m. on Saturday. In residential zones and within 300 feet of a residential zone, construction activities are allowed from 9:00 a.m. to 5:00 p.m. only within the interior of the building with the doors and windows closed. No pier drilling or other extreme noise generating activities greater than 90 dBA are allowed on Saturday.

c. No construction is allowed on Sunday or federal holidays.

Construction activities include, but are not limited to, truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.

Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the City, with criteria including the urgency/emergency nature of the work, the proximity of residential or other sensitive uses, and a consideration of nearby residents'/occupants' preferences. The project applicant shall notify property owners and occupants located within 300 feet at least 14 calendar days prior to construction activity proposed outside of the above days/hours. When submitting a request to the City to allow construction activity outside of the above days/hours, the project applicant shall submit information concerning the type and duration of proposed construction activity and the draft public notice for City review and approval prior to distribution of the public notice.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

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

59. Construction Noise

Requirement: The project applicant shall implement noise reduction measures to reduce noise impacts due to construction. Noise reduction measures include, but are not limited to, the following:

a. Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) wherever feasible.

b. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.

c. Applicant shall use temporary power poles instead of generators where feasible.

d. Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction.

e. The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

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

60. Extreme Construction Noise

a. ***Construction Noise Management Plan Required***

Requirement: Prior to any extreme noise generating construction activities (e.g., pier drilling, pile driving and other activities generating greater than 90dBA), the project applicant shall submit a Construction Noise Management

Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction impacts associated with extreme noise generating activities. The project applicant shall implement the approved Plan during construction. Potential attenuation measures include, but are not limited to, the following:

i. Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;
ii. Implement “quiet” pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;
iii. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;
iv. Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and
v. Monitor the effectiveness of noise attenuation measures by taking noise measurements.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

Public Notification Required

Requirement: The project applicant shall notify property owners and occupants located within 300 feet of the construction activities at least 14 calendar days prior to commencing extreme noise generating activities. Prior to providing the notice, the project applicant shall submit to the City for review and approval the proposed type and duration of extreme noise generating activities and the proposed public notice. The public notice shall provide the estimated start and end dates of the extreme noise generating activities and describe noise attenuation measures to be implemented.

When Required: During construction

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

[The following condition applies to all projects for which a noise study was prepared during the project review process that contained recommended noise reduction measures.]

61. Project-Specific Construction Noise Reduction Measures

Requirement: The project applicant shall submit a Construction Noise Management Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction noise impacts. The project applicant shall implement the approved Plan during construction

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

[The following condition applies to all major development projects, specifically those involving:

a. Construction of 50 or more residential dwelling units;

b. Construction of 50,000 sq. ft. or more of nonresidential floor area; or

c. CEQA review (e.g., negative declaration, mitigated negative declaration, or EIR).]

62. Construction Noise Complaints

Requirement: The project applicant shall submit to the City for review and approval a set of procedures for responding to and tracking complaints received pertaining to construction noise, and shall implement the procedures during construction. At a minimum, the procedures shall include**:**

a. Designation of an on-site construction complaint and enforcement manager for the project;
b. A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager and City Code Enforcement unit;
c. Protocols for receiving, responding to, and tracking received complaints; and
d. Maintenance of a complaint log that records received complaints and how complaints were addressed, which shall be submitted to the City for review upon the City's request.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

[The following condition applies to all projects for which a noise study was performed during the project review process and the project exposure to community noise is Conditionally Acceptable, Normally Unacceptable, or Clearly Unacceptable per the land use compatibility guidelines of the Noise Element of the Oakland General Plan.]

63. Exposure to Community Noise

Requirement: The project applicant shall submit a Noise Reduction Plan prepared by a qualified acoustical engineer for City review and approval that contains noise reduction measures (e.g., sound-rated window, wall, and door assemblies) to achieve an acceptable interior noise level in accordance with the land use compatibility guidelines of the Noise Element of the Oakland General Plan. The applicant shall implement the approved Plan during construction. To the maximum extent practicable, interior noise levels shall not exceed the following:

a. 45 dBA: Residential activities, civic activities, hotels
b. 50 dBA: Administrative offices; group assembly activities
c. 55 dBA: Commercial activities
d. 65 dBA: Industrial activities

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

[The following condition applies to all projects.]

64. Operational Noise

Requirement: Noise levels from the project site after completion of the project (i.e., during project operation) shall comply with the performance standards of chapter 17.120 of the Oakland Planning Code and chapter 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the City.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

[The following condition applies to all projects involving new residential facilities or new dwelling units located adjacent to an active rail line.]

65. <u>Exposure to Vibration</u>

<u>Requirement</u>: The project applicant shall submit a Vibration Reduction Plan prepared by a qualified acoustical consultant for City review and approval that contains vibration reduction measures to reduce groundborne vibration to acceptable levels per Federal Transit Administration (FTA) standards. The applicant shall implement the approved Plan during construction. Potential vibration reduction measures include, but are not limited to, the following:

a. Isolation of foundation and footings using resilient elements such as rubber bearing pads or springs, such as a "spring isolation" system that consists of resilient spring supports that can support the podium or residential foundations. The specific system shall be selected so that it can properly support the structural loads, and provide adequate filtering of groundborne vibration to the residences above.

b. Trenching, which involves excavating soil between the railway and the project so that the vibration path is interrupted, thereby reducing the vibration levels before they enter the project's structures. Since the reduction in vibration level is based on a ratio between trench depth and vibration wavelength, additional measurements shall be conducted to determine the vibration wavelengths affecting the project. Based on the resulting measurement findings, an adequate trench depth and, if required, suitable fill shall be identified (such as foamed styrene packing pellets [i.e., Styrofoam] or low-density polyethylene).

<u>When Required</u>: Prior to approval of construction-related permit

<u>Initial Approval</u>: Bureau of Planning

<u>Monitoring/Inspection</u>: Bureau of Building

[The following condition applies to all projects involving construction adjacent to an historical resource under CEQA or adjacent to vibration sensitive activities where vibration could substantially interfere with normal operations.]

66. <u>Vibration Impacts on Adjacent Historic Structures or Vibration-Sensitive Activities</u>

<u>Requirement</u>: The project applicant shall submit a Vibration Analysis prepared by an acoustical and/or structural engineer or other appropriate qualified professional for City review and approval that establishes pre-construction baseline conditions and threshold levels of vibration that could damage the structure and/or substantially interfere with activities located at **[ENTER ADDRESS OF ADJACENT HISTORICAL RESOURCE OR VIBRATION SENSITIVE ACTIVITY]**. The Vibration Analysis shall

identify design means and methods of construction that shall be utilized in order to not exceed the thresholds. The applicant shall implement the recommendations during construction.

When Required: Prior to construction

Initial Approval: Bureau of Building

Monitoring/Inspection: Bureau of Building

Noise and Vibration Impact Assessment

Significance Criteria

The significance thresholds used in this noise assessment are based on the compatibility criteria of the City of Oakland General Plan. The *City of Oakland CEQA Thresholds of Significance Guidelines* state that the project would have a significant impact on the environment if it would:

1. Generate noise in violation of the City of Oakland Noise Ordinance (Oakland Planning Code section 17.120.050) regarding construction noise, except if an acoustical analysis is performed that identifies recommend measures to reduce potential impacts:[2] During the hours of 7 p.m. to 7 a.m. on weekdays and 8 p.m. to 9 a.m. on weekends and federal holidays, noise levels received by any land use from construction or demolition shall not exceed the applicable nighttime operational noise level standard (see Table 2);
2. Generate noise in violation of the City of Oakland nuisance standards (Oakland Municipal Code section 8.18.020) regarding persistent construction-related noise;
3. Generate noise in violation of the City of Oakland Noise Ordinance (Oakland Planning Code section 17.120.050) regarding operational noise:
4. Generate noise resulting in a 5 dBA permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or, if under a cumulative scenario where the cumulative increase results in a 5 dBA permanent increase in ambient noise levels in the project vicinity without the project (i.e., the cumulative condition including the project compared to the existing conditions) and a 3 dBA permanent increase is attributable to the project (i.e., the cumulative condition including the project compared to the cumulative baseline condition without the project) [**NOTE**: Outside of a laboratory, a 3 dBA change is considered a just-perceivable difference. Therefore, 3 dBA is used to determine if the project-related noise increases are cumulative considerable. Project-related noise should include both vehicle trips and project operations.];

[2] The acoustical analysis must identify, at a minimum, (a) the types of construction equipment expected to be used and the noise levels typically associated with the construction equipment and (b) the surrounding land uses including any sensitive land uses (e.g., schools and childcare facilities, health care and nursing homes, public open space). If sensitive land uses are present, the acoustical analysis must recommend measures to reduce potential impacts.

5. Expose persons to interior L_{dn} or CNEL greater than 45 dBA for multi-family dwellings, hotels, motels, dormitories and long-term care facilities (and may be extended by local legislative action to include single-family dwellings) per California Noise Insulation Standards (CCR Part 2, Title 24);
6. Expose the project to community noise in conflict with the land use compatibility guidelines of the Oakland General Plan after incorporation of all applicable Standard Conditions of Approval[3]:
7. Expose persons to or generate noise levels in excess of applicable standards established by a regulatory agency (e.g., occupational noise standards of the Occupational Safety and Health Administration [OSHA]);
8. During either project construction or project operation expose persons to or generate groundborne vibration that exceeds the criteria established by the Federal Transit Administration (FTA).[4]
9. Be located within an airport land use plan and would expose people residing or working in the project area to excessive noise levels; or
10. Be located within the vicinity of a private airstrip, and would expose people residing or working in the project area to excessive noise levels.

Construction Noise and Vibration

Construction of the project is expected to occur over a period of roughly 18 - 22 months. The noisiest activities (demolition, excavation and foundation) are expected to occur during the first phases. The later phases of construction include many activities that will occur indoors and are, therefore, much quieter.

Project construction would begin with the demolition of the existing buildings on the site. An excavator would be used at locations farthest from the existing buildings. Near the existing buildings smaller equipment would be needed and saw cuts may be used to help protect the adjacent structures.

The construction of the project building is anticipated to be accomplished with modular construction techniques. This type of construction uses factory assembled modules that are stacked and fastened together at the site. Noise sources such as truck deliveries and cranes are comparable to conventional construction. However, many of the noises

[3] The evaluation of land use compatibility should consider the following factors: type of noise source; the sensitivity of the noise receptor; the noise reduction likely to be provided by structures; the degree to which the noise source may interfere with speech, sleep or other activities characteristic of the land use; seasonal variations in noise source levels; existing outdoor ambient levels; general societal attitudes towards the noise source; prior history of the noise source; and tonal characteristics of the noise source. To the extent that any of these factors can be evaluated, the measured or computed noise exposure values may be adjusted in order to more accurately assess local sentiments towards acceptable noise exposure. (Oakland General Plan, Noise Element, 2005)

[4] The FTA criteria were developed to apply to transit-related groundborne vibration. However, these criteria should be applied to transit-related and non-transit-related sources of vibration.

typical of construction sites such as hammers and nail guns are substantially reduced. The project would not use impact or vibratory driven piles. All piles will use drilled concrete piers.

The Project would be constructed in the following general phases:

- Demolition of existing buildings, shoring and excavation and backfill: approximately 40 work days;
- Construction of the mixed-use building: approximately 235 work days;
- Site improvements: approximately 10 work days;
- Commissioning, testing, and final inspection: approximately 20 work days.

Table 5 presents the typical noise levels from various types of equipment that will likely be used during the project construction. The noisier equipment are generally diesel powered and generate noise levels in the range of 80 to 89 dBA at a distance of 50 feet.

Existing commercial buildings are located right up to the property lines on the west side of the project site. The project building footprint is less than 1 foot from these buildings. Since noise from construction equipment is attenuated at a rate of 6 dBA for each doubling of distance, the noisiest equipment could generate noise levels greater than 100 dBA at the nearest commercial buildings when the equipment is at its nearest point.

The nearest location with possible residences is located on the east side of Webster Street above commercial businesses just north of 13th Street. This building is approximately 440 feet from the project site. Envision Academy of Arts & Technology is located directly across 15th Street from the project site. Based on information on its website Envision Academy is a public charter high school with 411 students. The building has operable windows facing the project site and is 67 feet from the project site. The roof has a large skylight is located over an interior courtyard.

According to Table 5, most equipment generate a noise level of 85 dBA at a distance of 50 ft. This corresponds to an exterior noise level of 66 dBA at Webster Street's possible residential location and 82 dBA at the school[5]. Standard construction with the windows closed would typically reduce interior noise levels by at least 20 decibels. In other words, the interior noise levels would be 46 dBA at the potential residences at the Webster Street location and 62 dBA at the school with the windows closed.

[5] Sound attenuates at a rate of 6 dBA per doubling of distance from the source based on the equation Atten = 20*log(Reference Distance/Distance). In this case the Reference distance is 50 ft (see Table 5). For the school, attenuation = 20*log(50/67) = -3 and thus the construction noise level would be 85 - 3 = 82 dBA. For the potential residences at 13th/Webster, attenuation = 20*log(50/440) = -19 and the construction noise level is 85 – 19 = 66 dBA.

Table 5: Construction Equipment Noise Levels

Equipment	Typical Noise Level (dBA) 50 ft from Source
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pneumatic Tool	85
Pile-driver (Impact)	101
Pile-driver (Sonic)	96
Pump	76
Roller	74
Saw	76
Scraper	89
Truck	88

Source: Federal Transit Administration *Transit Noise and Vibration Impact Assessment*, May 2006, FTA-VA-90-1003-06, (FTA 2006)

Construction activities are expected to generate noise levels at residential properties that are in excess of the Noise Ordinance standard of 65 dBA for construction lasting more than 10 days. This is the case for the potential residences at 13th/Webster Streets that are within about 500 feet of the project site. It should be noted that the residences along Webster Street are already exposed to average noise level of 64 dBA due to existing traffic.

Construction activities are expected to generate noise levels at commercial properties that are in excess of the Noise Ordinance standard of 70 dBA for construction lasting more than 10 days. This is the case for commercial properties that border the site on the west side as well as commercial properties across 15th & Webster Streets that have line of sight to the site including the Envision Academy school. Commercial buildings that are to the south on the same block would also be exposed to noise levels that are 5 to 10 dBA greater than the 70 dBA standard.

Construction activities will also generate groundborne vibration. Vibration effects are typically limited to land uses that are very close to the project site. Table 6 shows ground vibration levels for the various types of construction equipment that may be used at the project site.

Table 6: Vibration Source Levels for Construction Equipment

Equipment		PPV at 25 ft (in/sec)
Pile Driver (impact)	Upper range	1.518
	typical	0.644
Pile Driver (sonic)	Upper range	0.734
	typical	0.170
Vibratory Roller		0.210
Hoe Ram		0.089
Large Bulldozer		0.089
Loaded Truck		0.076
Jackhammer		0.035
Small Bulldozer		0.003
PPV: Peak particle velocity Source: FTA (2006)		

The City's Thresholds of Significance Guidelines has adopted the Federal Transit Administration's (FTA 2006) recommended construction vibration damage criteria that should be used during the environmental impact assessment phase of a project to identify problem locations that must be addressed in the final design. These criteria include a threshold of 0.20 inches per second peak particle velocity (PPV) for *non-engineered timber and masonry buildings*. Other, less restrictive, criteria are recommended for engineered and reinforced buildings.

Since the nearest neighboring commercial buildings (i.e. office buildings along the project's west property lines) are less than one foot from the building footprint, vibration levels could exceed the PPV 0.20 in/sec threshold. Based on calculations using a standard attenuation rate of ground vibration, the threshold could be exceeded if heavy equipment is used along property line near adjacent buildings (i.e. when a vibratory roller is within 26 feet of an adjacent building, or when a large bulldozer or hoe ram is within 15 feet of an adjacent building).

The City of Oakland's standard conditions of approval (SCA) will lessen the impacts of the construction period noise and vibration. SCA 58 provides reasonable limits on the days and hours of construction to avoid generating noise when it would be most objectionable to neighboring residences. SCA 59 requires that the project applicant prepare and implement a noise reduction program that addresses noise attenuation measures for equipment and tools. SCA 62 provides measures to respond to and track construction noise complaints. SCA 60 reduces construction noise generation by requiring that a plan for site specific noise attenuation measures be developed under the supervision of a qualified acoustical consultant to further reduce construction noise impacts.

SCA 60 is relevant for this project because construction noise is expected to exceed 90 dBA at the project property lines and there will be pier drilling. Measures such as an 8 to 12 foot high solid plywood walls would provide a noticeable reduction in noise (5 dBA) at first floor receivers when construction equipment is at or below ground level.

SCA 61 is not applicable because this noise study does not recommend noise reduction measures beyond those associated SCA 58, SCA 59 and the Construction Noise Management Plan required under SCA 60.

SCA 65 is not applicable because there is no rail line adjacent to the project site.

SCA 66 reduces potential adverse effects of vibration on adjacent properties by requiring a vibration analysis prepared by an acoustical and/or structural engineer or other appropriate professional. The affected buildings addressed by SCA 66 should include the nearby historic buildings as well as the buildings with offices that are directly adjacent to the west side of the project site (i.e. that share a property line). These buildings include those located at 363/369/375 15th Street and 1430/1432 Franklin Street. The vibration analysis would determine pre-construction baseline conditions, establish threshold conditions that could damage nearby existing structures and/or substantially interfere with activities, and design means and methods of construction that shall be utilized to not exceed the thresholds.

With the implementation of the City of Oakland's SCAs as discussed above, the construction noise and vibration impact would be reduced to a less than significant level.

Permanent Increases in Ambient Traffic Noise

To assess the potential noise impact from increased traffic on roadways near the project, noise levels were calculated based on volume data in the project's traffic study[6]. The calculated noise levels are shown in Table 7. Since the maximum increase in traffic noise is less than the City of Oakland's 5 dBA threshold of significance, this is a less than significant impact.

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[6] Fehr & Peers, *1433 Webster – Draft Transportation Impact Analysis*, 9 September 2016

Table 7: Traffic Noise Level Increase Due to Project Generated Traffic

Roadway	L_{dn} (dBA) at Existing Land Uses		
	Existing	Existing + Project	Increase due to project
Webster Street	66.0	66.3	0.3
15th Street	64.9	65.0	0.1

Conflicts with Land Use Compatibility Guidelines

Based on the results of the noise measurement program, the L_{dn} at the project building setback is 66 dBA along Webster Street and 65 dBA along 15th Street. At the corner of 15th Street and Webster Street the Ldn is calculated to be 68 dBA. The predicted increase in noise due to future traffic (Year 2040) is approximately 1 dBA.

The future noise levels at the project site are in the *conditionally acceptable* range of the City's noise and land use compatibility standards for residential land use (Table 2). According to these guidelines, projects exposed to this noise level may be undertaken only after a detailed analysis of the noise-reduction requirements is conducted, and if necessary noise mitigating features are included in the design. Conventional construction will usually suffice as long as it incorporates air-conditioning or forced fresh-air-supply systems, though it will likely require that project occupants maintain their windows closed.

SCA 63 requires that projects of this type achieve an acceptable interior noise level with sound-rated assemblies as recommended by a qualified acoustical engineer and based on the specific building design and layout. With the implementation of SCA 63, interior noise is a less than significant impact.

Operational Noise in Excess of Standards or Resulting in a Permanent Increase in Noise

Operational noise from the project will be from mechanical equipment associated with ventilation or refrigeration, the interior loading zone on 15th Street and vehicles entering and exiting the parking garage from Webster Street.

Mechanical noise associated with any heating, ventilation or air conditioning systems will be subject to SCA#64 which requires that noise levels conform to the standards in the City's Planning Code and Municipal Code.

The loading dock would be used by vehicles delivering goods, trash pick-up and move-ins. Exact hours of operation and frequency of use are not currently known but any noises that occur within the loading dock area will also be subject to the noise standards in the City's Planning Code and Municipal Code as per the City's Standard Condition of Approval #64.

It is expected that the new building will have a parking garage entrance warning alarm system and it will be required to conform to the noise standards set forth in the City's Planning and Municipal Code.

Since all operational noise associated with the project will be required to conform to the noise standards in the City's Planning and Municipal Code per SCA #64, operational noise associated with the project is considered a less than significant impact.

Vibration

The project site is not exposed to significant levels of ambient vibration since it is not located along a rail line or other source of vibration. Also, the operation of the project will not include any significant vibration sources. Since operation of the project would not expose persons to or generate vibration levels in excess of the applicable FTA vibration criteria this is a less than significant impact.

Cumulative Noise Impacts

Table 8 shows the future traffic noise levels including caused by cumulative growth and the project.

Table 8: Traffic Noise Level Increase Due to Cumulative Growth

Roadway Segment	L_{dn} (dBA) at Existing Land Uses				
	Existing	2040 No Project	2040 + Project	Increase Due to Project	Cumulative Increase
Webster Street	66.0	66.9	67.2	0.3	1.2
15th Street	64.9	65.5	65.8	0.3	0.9

Cumulative noise levels increases are less than up to 1.2 dBA on Webster Street and 0.9 dBA on 15th Street. The portion of this increase due to the project is 0.3 dBA (see Table 8). Since the increase in traffic noise is less than the City of Oakland's 5 dBA threshold of significance, this is a less than significant cumulative impact.

* * *

Attachment J:
Solar Collector Impact Study

1433 WEBSTER STREET

SOLAR COLLECTOR IMPACT STUDY

RAD | SDG

MAY 25, 2016

01 SHADOW IMPACT ON SOLAR COLLECTORS

The building at 1438 Webster Street contains 8,145 sq. ft. of roof mounted solar collectors. The solar collectors are tilted approx. 20 degrees from horizontal and face south west.

A shadow study was conducted that focused on the time of day a shadow from the proposed 27 story project would cast a shadow on the solar collectors. During the months of January, February, September, October, November, and December, the proposed building will cast no shadows on the solar collectors during hours of production. During the remaining months of the year, a shadow will be cast on a portion of the solar collectors for approximately 1-3 hrs. daily in the early evening.

Data was collected and analyzed to determine that the proposed development will reduce the yearly PV output by .85%.

Current Output (wh)	163,228,630
Reduced Output (wh)	161,844,881
output reduction (wh)	1,383,749
output reduction (kwh)	1,384
output reduction ($), @ $0.14/kWh	$193.72
output reduction (%)	0.85%

Solar Shade Control Act (California Public Resources Code Sec. 25980 et seq.)

After the installation of a solar collector, a person owning or in control of another property shall not allow a tree or shrub to be placed or, if placed, to grow on that property so as to cast a shadow greater than 10 percent of the collector absorption area upon that solar collector surface at any one time between the hours of 10 a.m. and 2 p.m., local standard time.

The proposed project, located at 1433 Webster Street, will not cast a shadow on the solar collector at any time between 10 am and 2 pm and would comply with the Solar Shade Control Act

Since the proposed project will have less than 1% impact on the solar collection of the existing solar collector located at 1438 Webster and will not shade the solar collectors at anytime between 10 am and 2pm, It is our recommendation that the the new tower will not have a significant impact on the solar collectors located at 1438 Webster

The proposed project will have an .85% reduction in yearly output of the solar array located to the projects east.

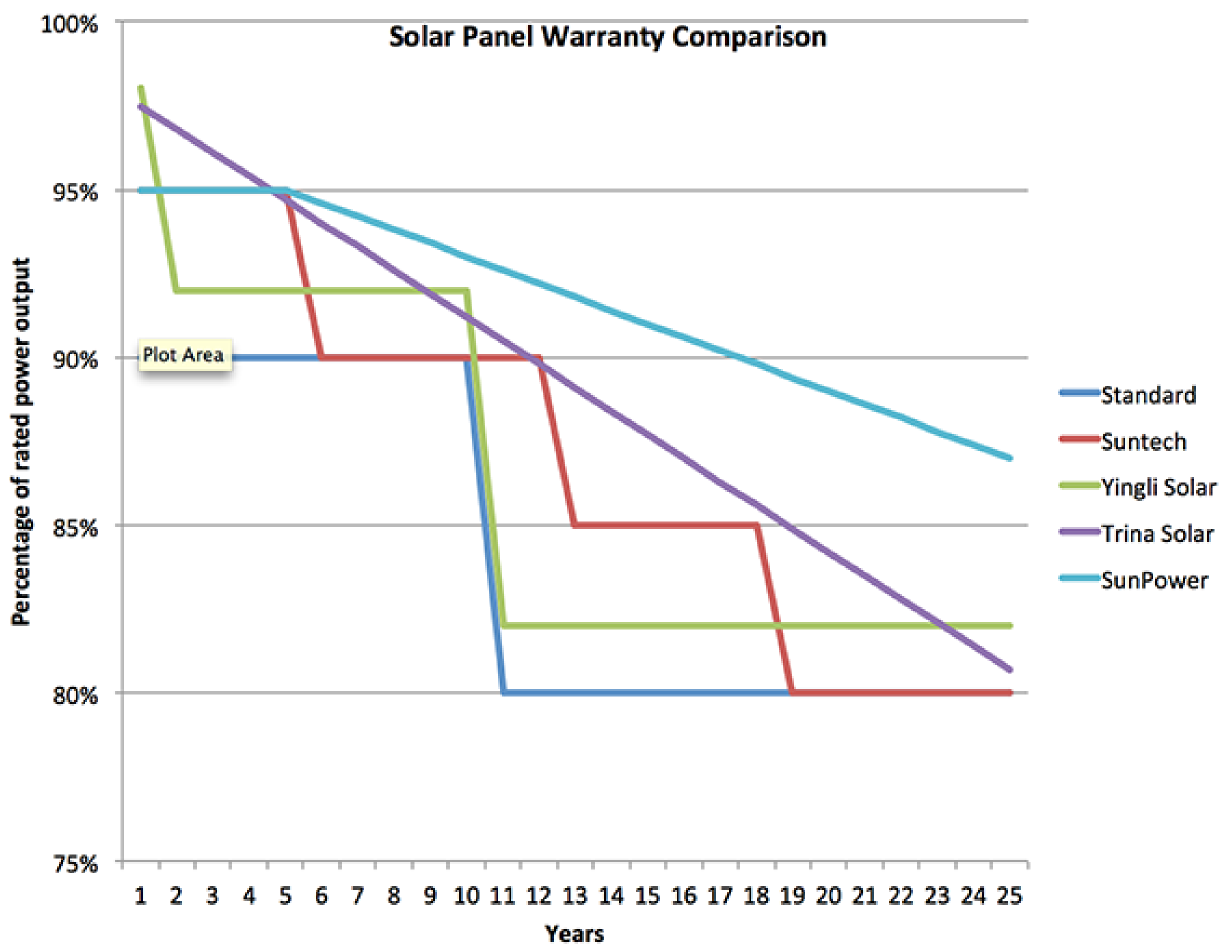
02 SOLAR COLLECTOR DATA

1438 Webster

Solar Array Installed in 2008

8145 sf of panels

Expect 92.5% of rated power output based on age of panels



http://energyinformative.org/lifespan-solar-panels/

Assume module with 16% initial PV efficiency.

Corresponds to 14.9 w/ft^2

At 8 years old corresponds to 13.8 w/ft

Assume array size of 112kW DC at age 8

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at http://sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

The energy output range is based on analysis of 30 years of historical weather data for nearby , and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

163,229 kWh per Year *

System output may range from 156,846 to 166,004kWh per year near this location.

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Energy Value ($)
January	2.73	7,700	1,084
February	3.13	7,970	1,122
March	3.72	10,416	1,467
April	6.60	17,576	2,475
May	6.75	18,524	2,608
June	7.68	20,310	2,860
July	6.98	19,176	2,700
August	6.54	17,767	2,502
September	6.12	15,972	2,249
October	4.21	11,617	1,636
November	3.33	8,890	1,252
December	2.61	7,309	1,029
Annual	**5.03**	**163,227**	**$ 22,984**

Location and Station Identification

Requested Location	1438 Webster St, Oakland, CA
Weather Data Source	(TMY3) OAKLAND METROPOLITAN ARPT, CA 6.6 mi
Latitude	37.72° N
Longitude	122.22° W

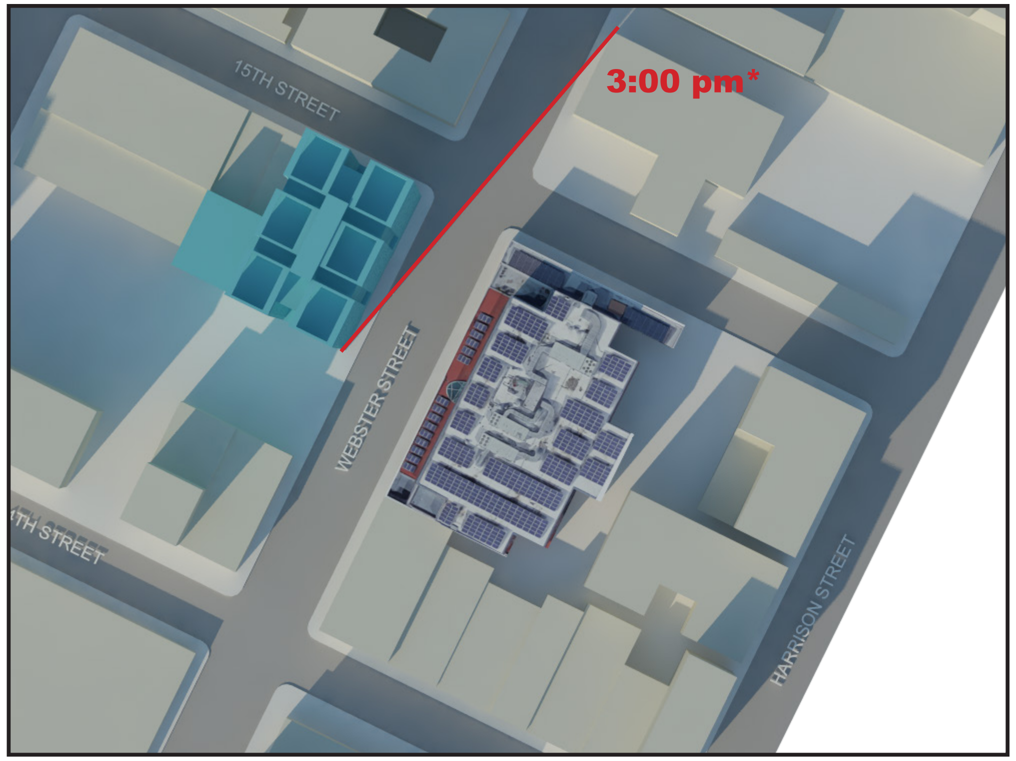
PV System Specifications *(Commercial)*

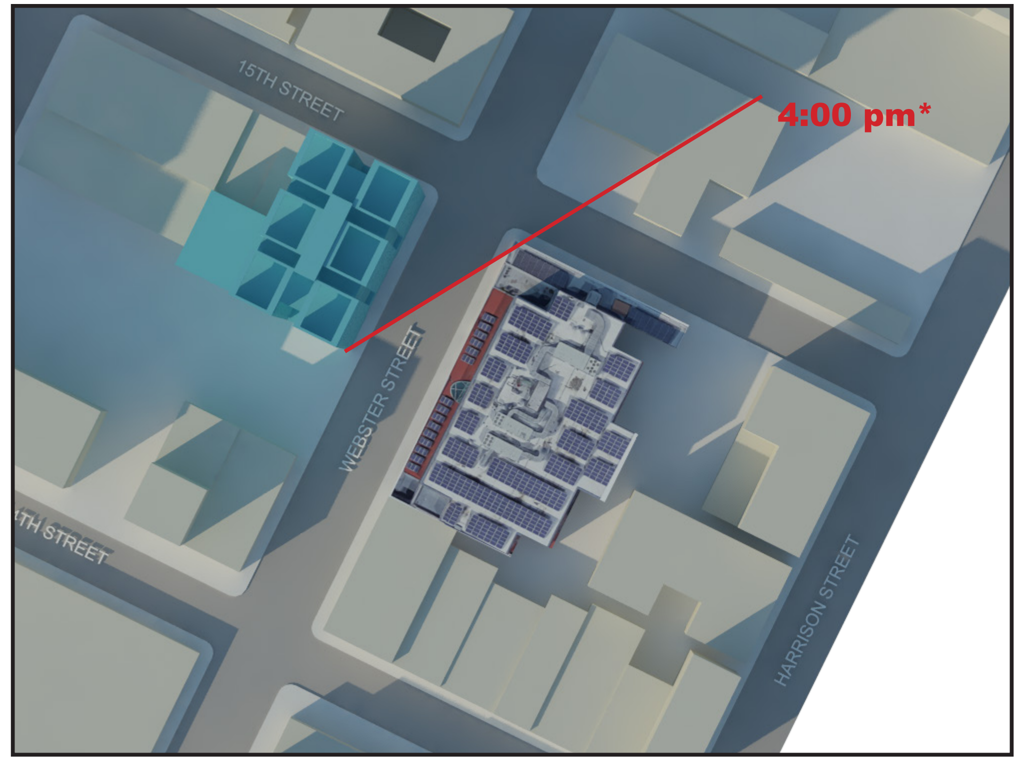
DC System Size	112 kW
Module Type	Standard
Array Type	Fixed (open rack)
Array Tilt	20°
Array Azimuth	225°
System Losses	14%
Inverter Efficiency	96%
DC to AC Size Ratio	1.1

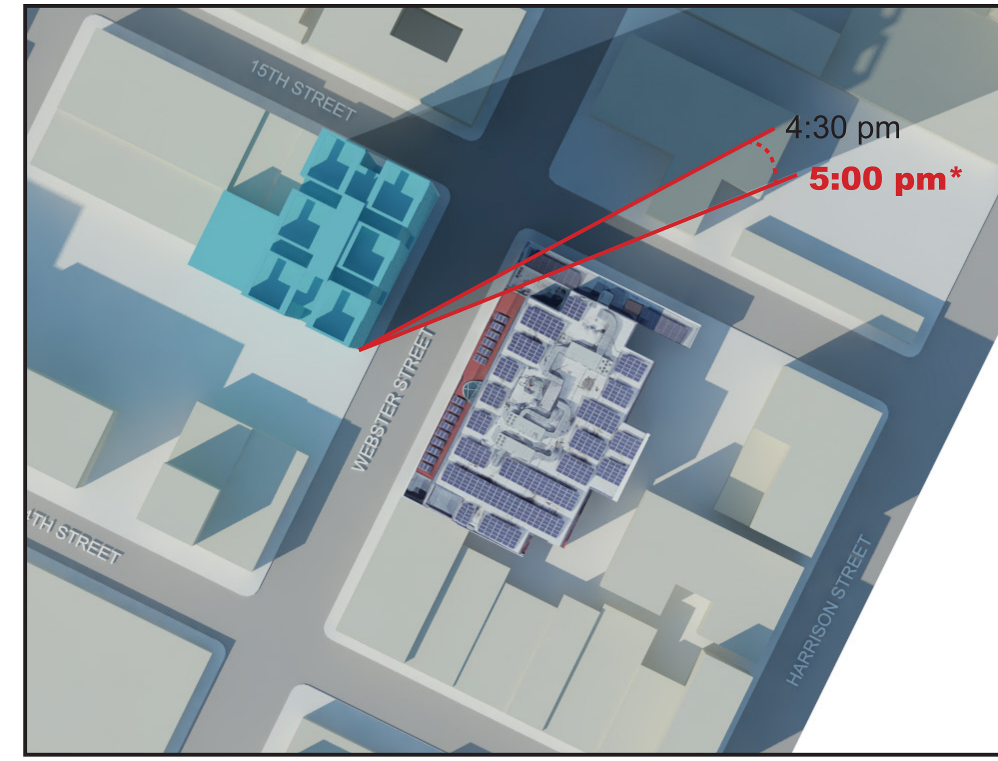
Initial Economic Comparison

Average Cost of Electricity Purchased from Utility	0.14 $/kWh

03 SHADOW IMPACT ON SOLAR COLLECTORS







JANUARY 21st

Sunset 4:51 pm

* Last hour of PV output: 3:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
1	21	0	0	0	0	0
1	21	1	0	0	0	0
1	21	2	0	0	0	0
1	21	3	0	0	0	0
1	21	4	0	0	0	0
1	21	5	0	0	0	0
1	21	6	0	0	0	0
1	21	7	207.796	0	0	0
1	21	8	8231.258	7449.555	0	7449.555
1	21	9	14236.114	13325.888	0	13325.888
1	21	10	12478.273	11606.807	0	11606.807
1	21	11	54269.5	52221.988	0	52221.988
1	21	12	33028.75	31645.391	0	31645.391
1	21	13	50072.25	48166.863	0	48166.863
1	21	14	23040.604	21922.092	0	21922.092
1	21	15	19404.684	18375.045	0	18375.045
1	21	16	12667.508	11791.913	0	11791.913
1	21	17	0	0	0	0
1	21	18	0	0	0	0
1	21	19	0	0	0	0
1	21	20	0	0	0	0
1	21	21	0	0	0	0
1	21	22	0	0	0	0
1	21	23	0	0	0	0

FEBRUARY 21st

Sunset 5:30 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
2	21	0	0	0	0	0
2	21	1	0	0	0	0
2	21	2	0	0	0	0
2	21	3	0	0	0	0
2	21	4	0	0	0	0
2	21	5	0	0	0	0
2	21	6	0	0	0	0
2	21	7	3808.324	3114.27	0	3114.27
2	21	8	14538.129	13621.148	0	13621.148
2	21	9	31872.598	30521.449	0	30521.449
2	21	10	49319.625	47439.156	0	47439.156
2	21	11	57050.902	54906.258	0	54906.258
2	21	12	59015.305	56800.637	0	56800.637
2	21	13	68050.945	65499.074	0	65499.074
2	21	14	63384.918	61010.285	0	61010.285
2	21	15	43235.98	41550.598	0	41550.598
2	21	16	23667.186	22532.953	0	22532.953
2	21	17	3803.679	3109.714	0	3109.714
2	21	18	0	0	0	0
2	21	19	0	0	0	0
2	21	20	0	0	0	0
2	21	21	0	0	0	0
2	21	22	0	0	0	0
2	21	23	0	0	0	0

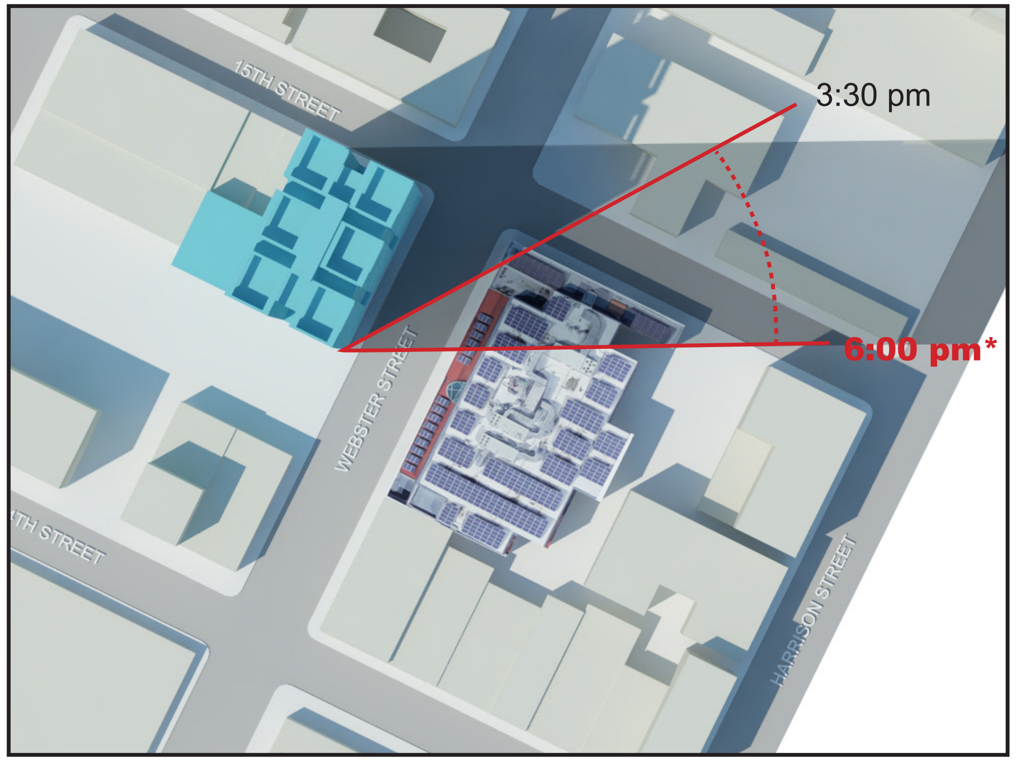
MARCH 21st

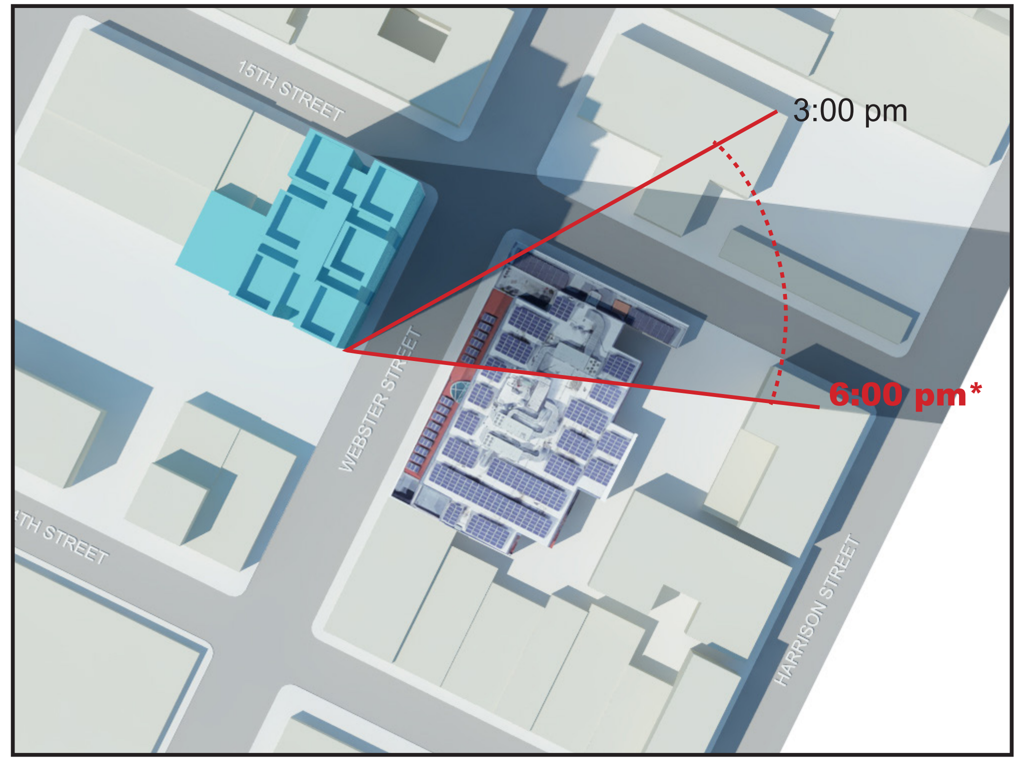
Sunset 7:04 pm

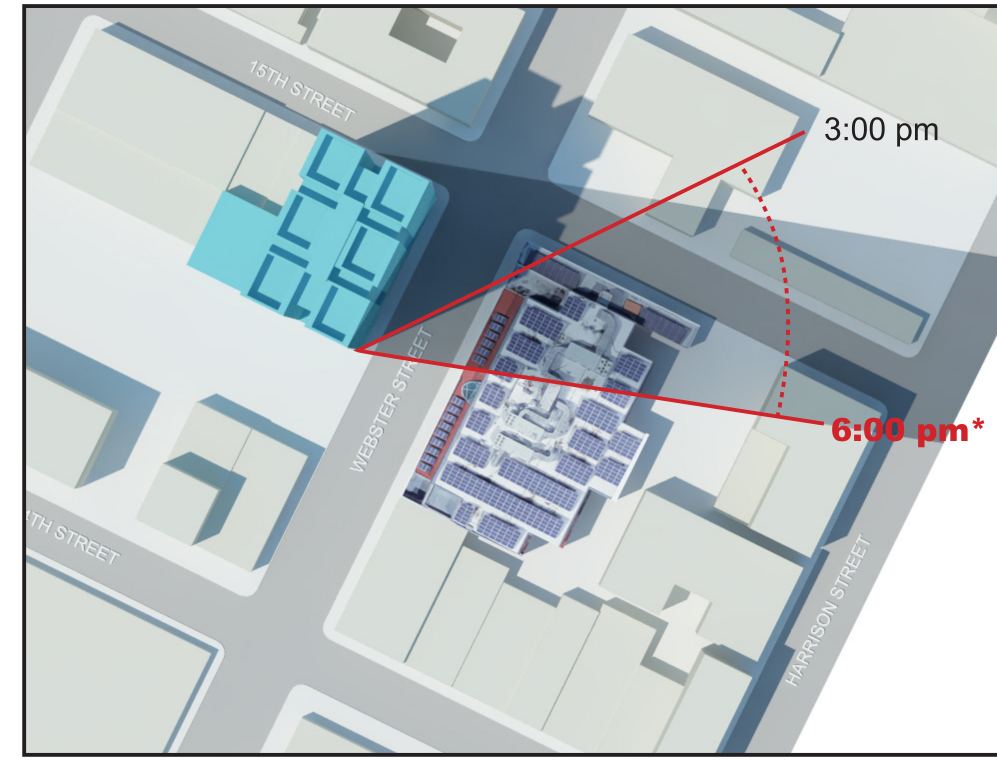
* Last hour of PV output: 5:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
3	21	0	0	0	0	0
3	21	1	0	0	0	0
3	21	2	0	0	0	0
3	21	3	0	0	0	0
3	21	4	0	0	0	0
3	21	5	0	0	0	0
3	21	6	1874.011	1216.418	0	1216.418
3	21	7	7598.856	6830.051	0	6830.051
3	21	8	24559.33	23402.504	0	23402.504
3	21	9	16179.048	15224.886	0	15224.886
3	21	10	58965.961	56753.066	0	56753.066
3	21	11	36899.738	35405.574	0	35405.574
3	21	12	43804.008	42100.887	0	42100.887
3	21	13	21231.227	20157.445	0	20157.445
3	21	14	22714.711	21604.328	0	21604.328
3	21	15	28714.67	27449.428	0	27449.428
3	21	16	12387.458	11517.968	0.08	10596.5306
3	21	17	10984.865	10145.589	0.16022099	8520.05264
3	21	18	201.475	0	0	0
3	21	19	0	0	0	0
3	21	20	0	0	0	0
3	21	21	0	0	0	0
3	21	22	0	0	0	0
3	21	23	0	0	0	0

04 SHADOW IMPACT ON SOLAR COLLECTORS







APRIL 21st

Sunset 7:39 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
4	21	0	0	0	0	0
4	21	1	0	0	0	0
4	21	2	0	0	0	0
4	21	3	0	0	0	0
4	21	4	0	0	0	0
4	21	5	90.479	0	0	0
4	21	6	5223.912	4502.454	0	4502.454
4	21	7	17158.521	16181.776	0	16181.776
4	21	8	34413.738	32991.258	0	32991.258
4	21	9	56825.332	54688.648	0	54688.648
4	21	10	76086.313	73213.703	0	73213.703
4	21	11	89589.672	86133.805	0	86133.805
4	21	12	96027.953	92274.453	0	92274.453
4	21	13	96177.203	92416.664	0	92416.664
4	21	14	69234.555	66636.68	0	66636.68
4	21	15	60673.25	58398.57	0	58398.57
4	21	16	46223.336	44443.566	0.12	39110.3381
4	21	17	29551.418	28263.709	0.23585022	21597.7072
4	21	18	4941.591	4225.646	0.35	2746.6699
4	21	19	0	0	0	0
4	21	20	0	0	0	0
4	21	21	0	0	0	0
4	21	22	0	0	0	0
4	21	23	0	0	0	0

MAY 21st

Sunset 8:10 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
5	21	0	0	0	0	0
5	21	1	0	0	0	0
5	21	2	0	0	0	0
5	21	3	0	0	0	0
5	21	4	0	0	0	0
5	21	5	1898.225	1240.183	0	1240.183
5	21	6	5586.348	4857.775	0	4857.775
5	21	7	18861.121	17844.424	0	17844.424
5	21	8	38763.582	37214.438	0	37214.438
5	21	9	55894.574	53790.598	0	53790.598
5	21	10	68677.617	66101.445	0	66101.445
5	21	11	79427.281	76415.531	0	76415.531
5	21	12	83498.805	80312.891	0	80312.891
5	21	13	85407.172	82137.891	0	82137.891
5	21	14	79668.234	76646.32	0	76646.32
5	21	15	69264.945	66665.875	0	66665.875
5	21	16	53537.43	51515.094	0.12	45333.2827
5	21	17	31765.236	30417.059	0.23585022	23243.1891
5	21	18	0	0	0.35	0
5	21	19	0	0	0	0
5	21	20	0	0	0	0
5	21	21	0	0	0	0
5	21	22	0	0	0	0
5	21	23	0	0	0	0

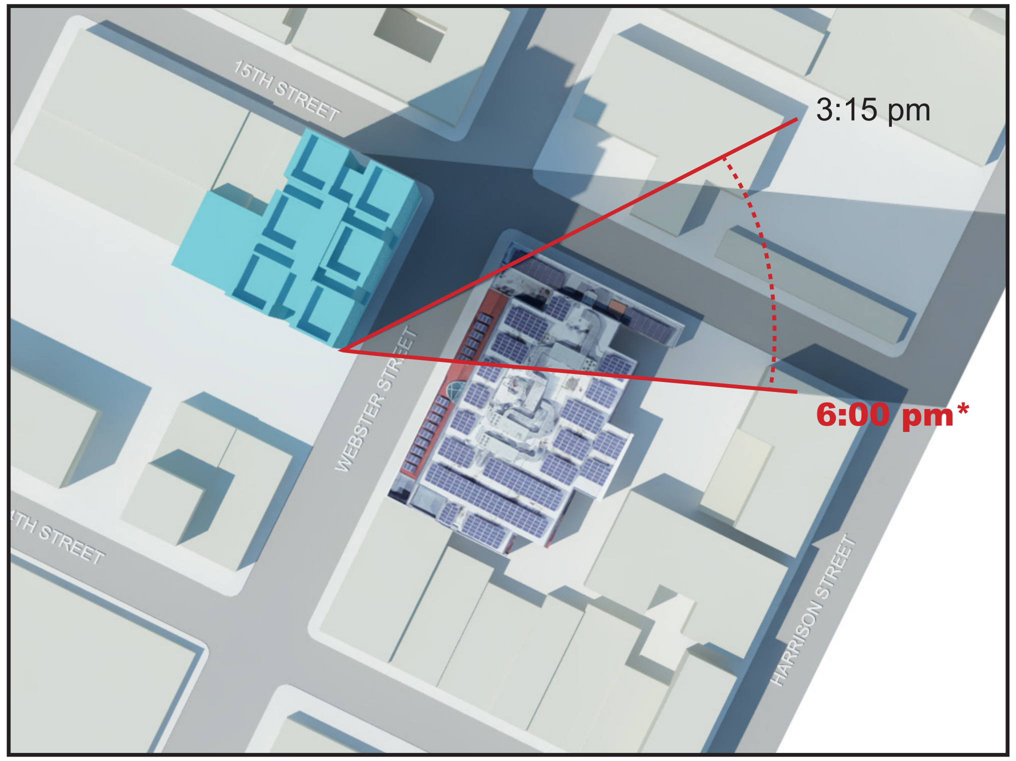
JUNE 21st

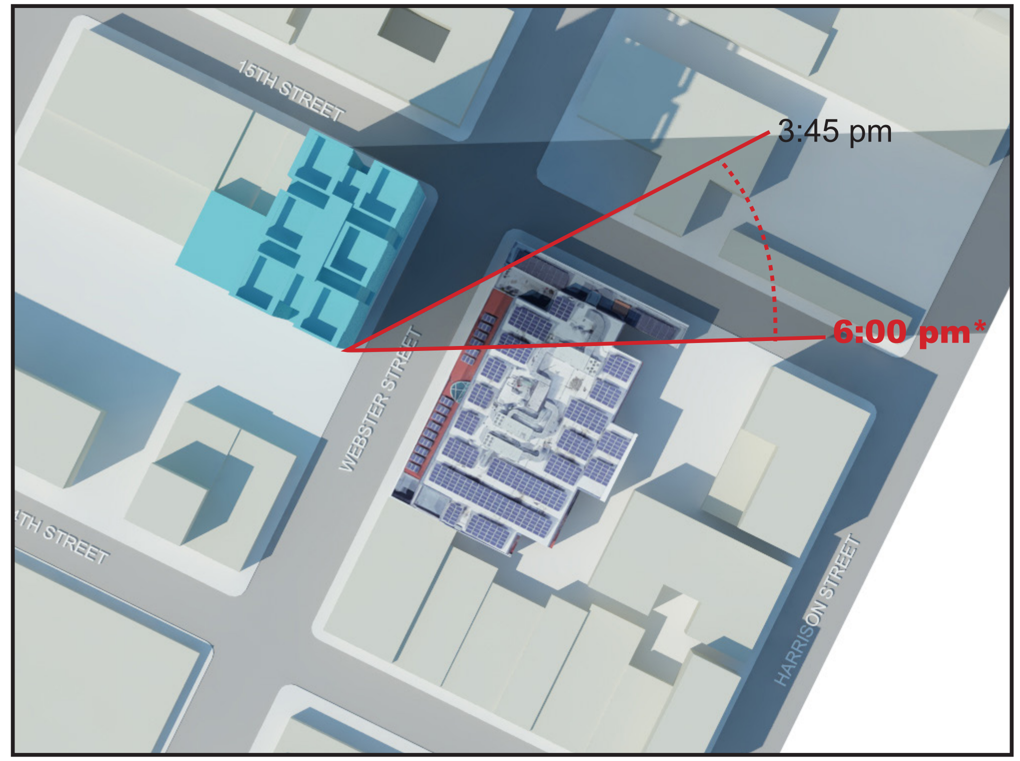
Sunset 8:35 pm

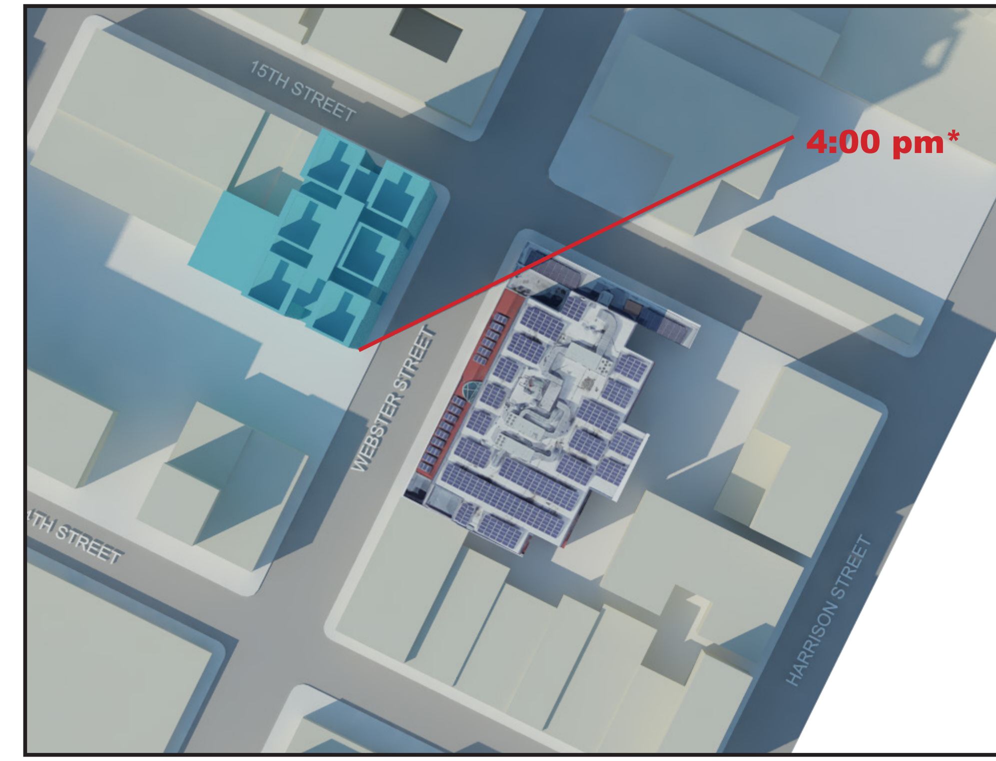
* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
6	21	0	0	0	0	0
6	21	1	0	0	0	0
6	21	2	0	0	0	0
6	21	3	0	0	0	0
6	21	4	0	0	0	0
6	21	5	1641.73	988.438	0	988.438
6	21	6	6679.67	5929.394	0	5929.394
6	21	7	13852.792	12951.098	0	12951.098
6	21	8	26392.168	25188.17	0	25188.17
6	21	9	43978.328	42269.746	0	42269.746
6	21	10	72896.578	70153.641	0	70153.641
6	21	11	84712.688	81473.875	0	81473.875
6	21	12	90116.055	86636.328	0	86636.328
6	21	13	93730.867	90085.008	0	90085.008
6	21	14	87338.766	83983.977	0	83983.977
6	21	15	69820.539	67199.727	0	67199.727
6	21	16	57364.152	55208.418	0.12	48583.4078
6	21	17	36079.125	34608.832	0.23585022	26446.3315
6	21	18	12489.798	11618.08	0.35	7551.752
6	21	19	197.402	0	0	0
6	21	20	0	0	0	0
6	21	21	0	0	0	0
6	21	22	0	0	0	0
6	21	23	0	0	0	0

05 SHADOW IMPACT ON SOLAR COLLECTORS







JULY 21st

Sunset 8:19 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
7	21	0	0	0	0	0
7	21	1	0	0	0	0
7	21	2	0	0	0	0
7	21	3	0	0	0	0
7	21	4	0	0	0	0
7	21	5	1159.826	515.407	0	515.407
7	21	6	8041.697	7263.874	0	7263.874
7	21	7	12437.765	11567.18	0	11567.18
7	21	8	16899.51	15928.765	0	15928.765
7	21	9	37867.328	36344.754	0	36344.754
7	21	10	31636.838	30292.209	0	30292.209
7	21	11	71590.805	68900.063	0	68900.063
7	21	12	85372.188	82104.445	0	82104.445
7	21	13	92905.719	89298.133	0	89298.133
7	21	14	87049.133	83707.242	0	83707.242
7	21	15	77045.742	74133.523	0	74133.523
7	21	16	58666.156	56464.02	0.05	53640.819
7	21	17	37307.359	35801.262	0.20798036	28355.3028
7	21	18	14478.104	13562.469	0.4	8137.4814
7	21	19	0	0	0	0
7	21	20	0	0	0	0
7	21	21	0	0	0	0
7	21	22	0	0	0	0
7	21	23	0	0	0	0

AUGUST 21st

Sunset 7:41 pm

* Last hour of PV output: 6:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
8	21	0	0	0	0	0
8	21	1	0	0	0	0
8	21	2	0	0	0	0
8	21	3	0	0	0	0
8	21	4	0	0	0	0
8	21	5	0	0	0	0
8	21	6	4639.901	3929.823	0	3929.823
8	21	7	15055.977	14127.351	0	14127.351
8	21	8	31265.299	29930.906	0	29930.906
8	21	9	53480.402	51460.02	0	51460.02
8	21	10	70189.094	67553.797	0	67553.797
8	21	11	82762.336	79608.305	0	79608.305
8	21	12	88983.461	85554.969	0	85554.969
8	21	13	89579.094	86123.703	0	86123.703
8	21	14	79555.938	76538.758	0	76538.758
8	21	15	69853.352	67231.25	0	67231.25
8	21	16	41516.184	39883.91	0	39883.91
8	21	17	22453.201	21349.32	0.10362185	19137.0639
8	21	18	3356.13	2670.702	0.2	2136.5616
8	21	19	0	0	0	0
8	21	20	0	0	0	0
8	21	21	0	0	0	0
8	21	22	0	0	0	0
8	21	23	0	0	0	0

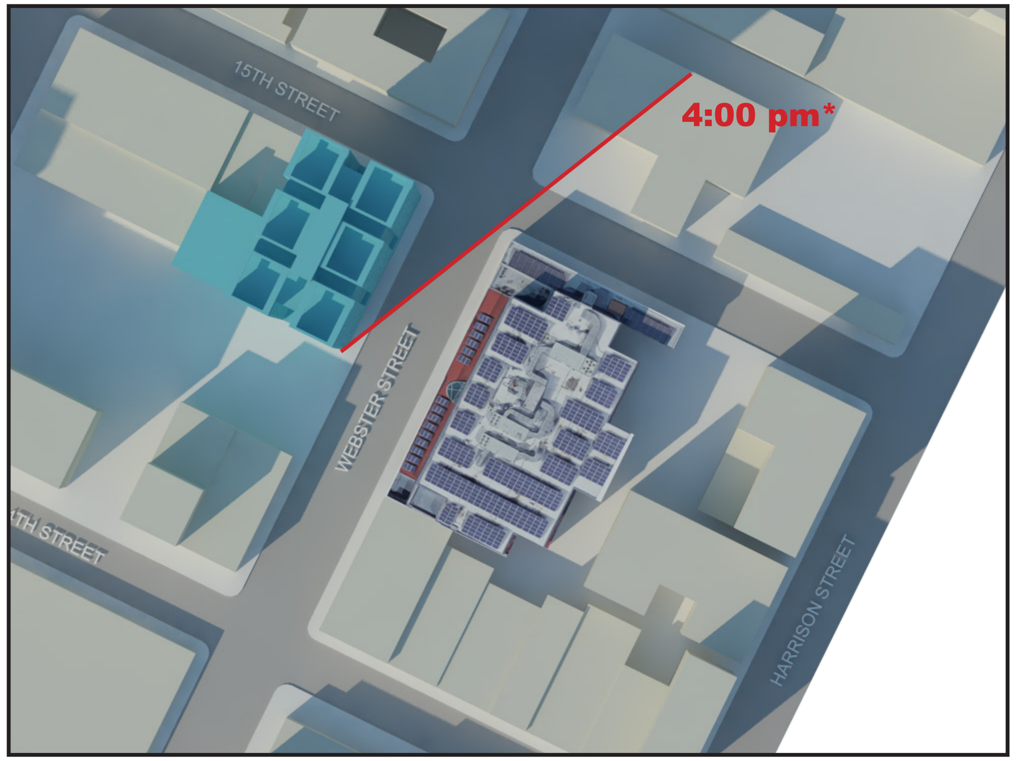
SEPTEMBER 21st

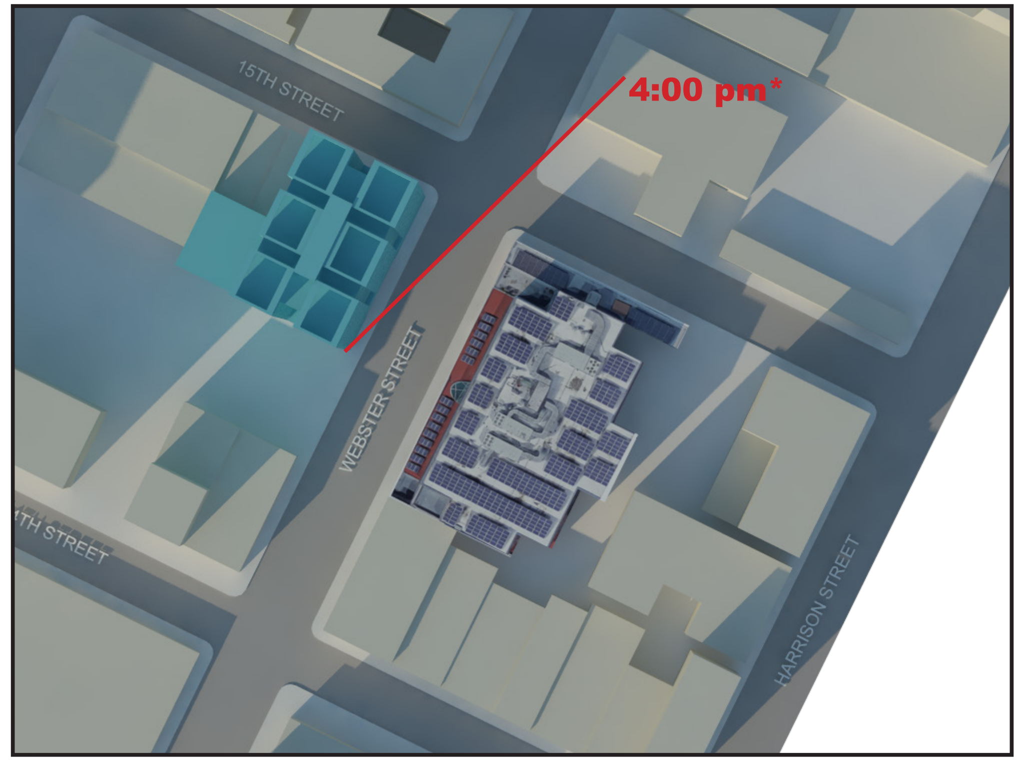
Sunset 6:49 pm

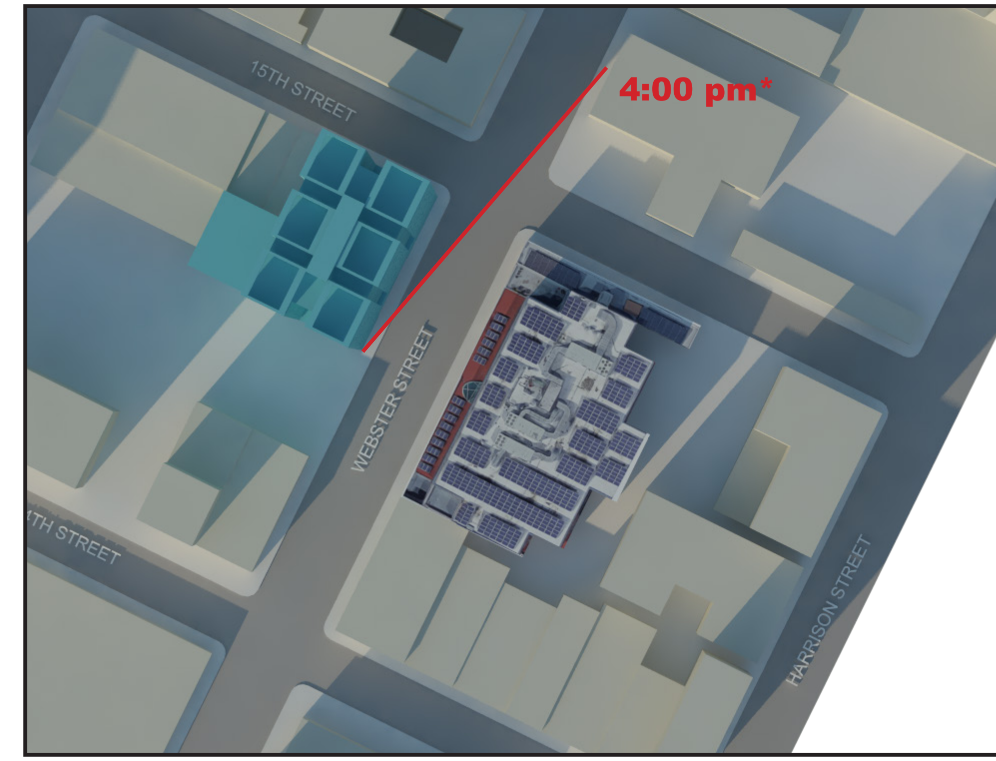
* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
9	21	0	0	0	0	0
9	21	1	0	0	0	0
9	21	2	0	0	0	0
9	21	3	0	0	0	0
9	21	4	0	0	0	0
9	21	5	0	0	0	0
9	21	6	1976.607	1317.109	0	1317.109
9	21	7	9512.285	8704.085	0	8704.085
9	21	8	28910.914	27640.422	0	27640.422
9	21	9	46738.988	44942.648	0	44942.648
9	21	10	60672.902	58398.234	0	58398.234
9	21	11	67224.18	64704.195	0	64704.195
9	21	12	83025.32	79859.922	0	79859.922
9	21	13	75838.18	72975.766	0	72975.766
9	21	14	71948.18	69243.203	0	69243.203
9	21	15	56701.789	54569.465	0	54569.465
9	21	16	34694.828	33264.336	0	33264.336
9	21	17	0	0	0	0
9	21	18	0	0	0	0
9	21	19	0	0	0	0
9	21	20	0	0	0	0
9	21	21	0	0	0	0
9	21	22	0	0	0	0
9	21	23	0	0	0	0

06 SHADOW IMPACT ON SOLAR COLLECTORS







OCTOBER 21st

Sunset 5:59 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
10	21	0	0	0	0	0
10	21	1	0	0	0	0
10	21	2	0	0	0	0
10	21	3	0	0	0	0
10	21	4	0	0	0	0
10	21	5	0	0	0	0
10	21	6	180.653	0	0	0
10	21	7	5549.477	4821.629	0	4821.629
10	21	8	23575.004	22443.092	0	22443.092
10	21	9	44898.109	43160.543	0	43160.543
10	21	10	61425.754	59123.563	0	59123.563
10	21	11	72414.031	69690.445	0	69690.445
10	21	12	73277.5	70519.242	0	70519.242
10	21	13	74736.594	71919.234	0	71919.234
10	21	14	61467.461	59163.734	0	59163.734
10	21	15	43958.332	42250.375	0	42250.375
10	21	16	22049.561	20955.672	0	20955.672
10	21	17	0	0	0	0
10	21	18	0	0	0	0
10	21	19	0	0	0	0
10	21	20	0	0	0	0
10	21	21	0	0	0	0
10	21	22	0	0	0	0
10	21	23	0	0	0	0

NOVEMBER 21st

Sunset 4:25 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
11	21	0	0	0	0	0
11	21	1	0	0	0	0
11	21	2	0	0	0	0
11	21	3	0	0	0	0
11	21	4	0	0	0	0
11	21	5	0	0	0	0
11	21	6	0	0	0	0
11	21	7	1956.338	1297.216	0	1297.216
11	21	8	14738.856	13817.372	0	13817.372
11	21	9	32984.059	31601.951	0	31601.951
11	21	10	50783.387	48854.297	0	48854.297
11	21	11	61047.488	58759.145	0	58759.145
11	21	12	63132.539	60767.301	0	60767.301
11	21	13	60294.348	58033.457	0	58033.457
11	21	14	47404.844	45586.992	0	45586.992
11	21	15	33387.746	31994.303	0	31994.303
11	21	16	9331.991	8527.551	0	8527.551
11	21	17	0	0	0	0
11	21	18	0	0	0	0
11	21	19	0	0	0	0
11	21	20	0	0	0	0
11	21	21	0	0	0	0
11	21	22	0	0	0	0
11	21	23	0	0	0	0

DECEMBER 21st

Sunset 4:23 pm

* Last hour of PV output: 4:00 pm

Month	Day	Hour	DC Array Output (W)	AC System Output (W)	Percent Shading	AC Output w shading
12	21	0	0	0	0	0
12	21	1	0	0	0	0
12	21	2	0	0	0	0
12	21	3	0	0	0	0
12	21	4	0	0	0	0
12	21	5	0	0	0	0
12	21	6	0	0	0	0
12	21	7	216.302	0	0	0
12	21	8	8743.941	7951.694	0	7951.694
12	21	9	26534.066	25326.373	0	25326.373
12	21	10	41519.52	39887.145	0	39887.145
12	21	11	54968.516	52896.816	0	52896.816
12	21	12	58998.16	56784.105	0	56784.105
12	21	13	58449.816	56255.426	0	56255.426
12	21	14	51784.988	49822.254	0	49822.254
12	21	15	35053.258	33612.516	0	33612.516
12	21	16	10376.662	9550.301	0	9550.301
12	21	17	0	0	0	0
12	21	18	0	0	0	0
12	21	19	0	0	0	0
12	21	20	0	0	0	0
12	21	21	0	0	0	0
12	21	22	0	0	0	0
12	21	23	0	0	0	0