1510 WEBSTER STREET PROJECT

CEQA Checklist

Prepared for
City of Oakland

January 2021

ESA

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CEQA Checklist

1. General Project Information

1. Project Title:	1510 Webster Street Project
2. Lead Agency Name and Address:	City of Oakland Bureau of Planning 250 Frank H. Ogawa Plaza, Suite 2114 Oakland, CA 94612
3. Project Case File Number	PLN20107
4. Contact Person and Phone Number:	Pete Vollmann, Planner IV Bureau of Planning 250 Frank H. Ogawa Plaza, Suite 2114 Oakland, CA 94612 (510) 238-6167 pvollmann@oaklandca.gov
5. Project Location:	1510 Webster Street Assessor's Parcel Nos. 008-0625-034-01 and 008-0625-032-00
6. Project Applicant's Name and Address:	oWow Development Attn: Jeremy Harris 411 2nd Street Oakland, CA 94607
7. Existing General Plan Designations:	Central Business District (CBD)
8. Existing Zoning:	Central Business District General Commercial Zone (CBD-C) and Central Business District Pedestrian Retail Commercial Zone (CBD-P)
9. Requested Permits:	Regular Design Review for new construction Parcel Map Waiver to merge the two lots

2. Executive Summary

The Project Applicant, oWow Development, proposes to redevelop two parcels in downtown Oakland with a mixed use development on the corner of Webster and 15th Streets. The project, referred to as the 1510 Webster Street Project (Project), would be a 19-story, mixed-use residential building with approximately 182 residential units, 11,397 square feet of office space, and 3,489 square feet of ground floor retail space. The approximately 195-foot-tall building would include an approximately 65-foot-tall, a 6-story podium on the southwestern portion of the Project site. The Project site is approximately 0.33 acres and comprised of two privately-owned parcels (Assessor's Parcel Numbers 008-0625-034-01 and 008-0625-032-00) at 1510 Webster Street and 1508 Webster Street. The Project site currently contains a vacant commercial building and an abandoned construction site. The Project would include the demolition of all buildings and structures on the Project site. Project construction is anticipated to last for a period of approximately 18 months.

This California Environmental Quality Act (CEQA) Checklist evaluates the Project. Specifically, this analysis uses CEQA streamlining and/or tiering provisions under CEQA Guidelines Section 15183, 15183.3, and 15180 to tier from the program-level analyses completed in the City General Plan Land Use and Transportation Element (LUTE) and its Environmental Impact Report (EIR), the 2007-2014 Housing Element and its EIR, the 2015-2023 Housing Element and its EIR Addendum (2010 Housing Element Update EIR and associated 2014 Addendum), and the Proposed Amendments to the Central District Urban Renewal Plan and its EIR (2011 Renewal Plan Amendments EIR). These are collectively referred to herein as the "Previous CEQA Documents" or "Previous EIRs," which analyzed environmental impacts associated with adoption and implementation of the General Plan and Renewal Plan.

The Project would be required to implement the City Standard Conditions of Approval (SCAs) included as **Attachment A** to avoid or reduce potential impacts.

Based on the information and conclusions set forth on the following pages, this CEQA Checklist consists of findings of consistency with Section 15183, 15183.3, and 15180. In addition, the analyses provided in the Previous EIRs previously analyzed the potential environmental effects associated with this Project and none of the criteria under Section 15162 are present. No additional environmental documentation or analysis is required.

3. Background

The following describes the Program EIRs that constitute the Previous CEQA Documents considered in this CEQA Checklist. 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 or online at: https://www.oaklandca.gov/resources/completed-environmental-review-ceqa-eir-documents.

3.1 Applicable Program EIRs

3.1.1 General Plan Land Use and Transportation Element and EIR Analysis

The City certified the EIR for its General Plan Land Use and Transportation Element (LUTE) in 1998. The LUTE identifies policies for utilizing Oakland's land as changes occur, and sets forth an action program to implement the land use policy through development controls and other strategies.

The Project would be consistent with several 1998 General Plan LUTE objectives and policies. For example, the Project would help the City meet its objectives related to expanding Oakland's job base and economic strength (Objective I/C1) by providing opportunities for new short- and long-term employment associated with the construction and operation of the Project. The Project would improve the existing underutilized conditions of the Project site in Downtown Oakland. In doing so, the Project would be consistent with the City's Downtown goals and objectives related to enhancing the identity of Downtown Oakland and its distinctive districts (Objective D1); enhancing the visual quality of downtown by encouraging new, high quality development (Objective D2); and creating a pedestrian-friendly downtown (Objective D3).

The 1998 LUTE EIR is designated as a Program EIR under CEQA Guidelines Section 15168. Thus, the 1998 LUTE EIR provides the basis for use of the Qualified Infill streamlined review provisions under CEQA Guidelines Section 15183.3. The 1998 LUTE EIR is also the basis for use of the Community Plan Consistency provisions under CEQA Guidelines Section 15183. As such, subsequent activities under the LUTE are subject to the requirements of the applicable CEQA sections.

Applicable mitigation measures identified in the 1998 LUTE EIR are largely the same as those identified in the other Previous EIRs prepared after the 1998 LUTE EIR, either as mitigation measures or newer Standard Conditions of Approval (SCAs).

3.1.1.1 Environmental Effects Summary

The 1998 LUTE EIR 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. Mitigation is required for the following resource topics: Aesthetics (views, architectural compatibility and shadow only); Air Quality (construction dust [including particulate matter less than 10 microns in diameter] and odor nuisance; 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); and Transportation and Circulation (intersection operations Downtown).

In the 1998 LUTE EIR, less-than-significant impacts were identified for the following resources: 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, multi-family 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 and Circulation (transit demand). No impacts were identified for Agricultural and Forestry Resources or 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 and 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.

3.1.2 General Plan Housing Element and EIR Analysis

The City has twice amended its General Plan to adopt updates to its Housing Element. It certified a 2010 EIR for the 2007–2014 Housing Element, and a 2014 Addendum to the 2010 EIR for the 2015–2023 Housing Element. The Project would be consistent with the 2007-2014 Housing Element and the 2015-2023 Housing Element of the General Plan by virtue of introducing new housing stock in Downtown Oakland, specifically in proximity to transit and with a mix of land uses on the same site (2015-2023 Housing Element Policy 7.3 Encourage Development that Reduces Carbon Emissions).

The 2010 Housing Element Update EIR is designated a Program EIR under State CEQA Guidelines Sections 15168. Thus, the 2010 Housing Element Update EIR provides the basis for use of the Qualified Infill streamlined review provisions under CEQA Guidelines Section 15183.3 The 2010 Housing Element Update EIR is also the basis for use of the Community Plan Consistency provisions under CEQA Guidelines Section 15183. As such, subsequent activities under the Housing Element that involve housing are subject to requirements under each of the applicable CEQA sections.

Applicable mitigation measures and SCAs identified in the 2010 Housing Element Update EIR are considered in the analysis of this document. Further, the Project implements all applicable mitigations identified in the 2010 Housing Element Update EIR and associated 2014 Addendum.[1,2]

1 City of Oakland, 2010 City of Oakland Housing Element Draft Environmental Impact Report, August 2010.
2 City of Oakland, 2014, CEQA Addendum for City of Oakland Housing Element (2015-2023), December 2014.

3.1.2.1 *Environmental Effects Summary*

The 2010 Housing Element Update EIR, including its Initial Study Checklist, determined that housing developed pursuant to the Housing Element 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 Attachment A). Mitigation is required for the following resource topics: Aesthetics (visual character/quality and light/glare only); Air Quality (except as noted below); Biological Resources; Cultural Resources; Geology and Soils; Greenhouse Gas Emissions; Hazards and Hazardous Materials (except as noted below, with no impacts regarding airport/airstrip hazards and emergency routes); Hydrology and Water Quality (except as noted below); Noise; Public Services (police and fire only); and Utilities and Service Systems (except as noted below).

Less-than-significant impacts were identified for the following resources in the 2010 Housing Element Update EIR: Hazards and Hazardous Materials (emergency plans and risk via transport/disposal); Hydrology and Water Quality (flooding/flood flows, and inundation by seiche, tsunami, or mudflow); Land Use (except for no impact regarding community division or conservation plans); Population and Housing (except for no impact regarding growth inducement); Public Services and Recreation (except as noted above, and no impact regarding new recreation facilities); and Utilities and Service Systems (landfill, solid waste, and energy capacity only, and no impact regarding energy standards). No impacts were identified for Agricultural and Forestry Resources or Mineral Resources.

Significant unavoidable impacts were identified for the following environmental resources in the 2010 Housing Element Update EIR: Air Quality (toxic air contaminant exposure) and Transportation and Circulation (traffic delays). Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's approvals. The 2014 Addendum to the 2010 EIR for the 2015–2023 Housing Element found that adoption would not generate new or substantially increase the severity of any impacts beyond those addressed in the 2010 Housing Element Update EIR.

3.1.3 2011 Central District Urban Renewal Plan Amendments and EIR Analysis

The 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 (the "2011 Renewal Plan" or "Plan") for the Project Area in June 1969. The City prepared and certified an EIR for proposed amendments to the 2011 Renewal Plan in 2011, and amended or supplemented the Plan up to April 3, 2012.[3] The

[3] The 2011 Renewal Plan Amendments EIR addressed two amendments. A 17th Amendment to the Renewal 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-Renewal 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.

2011 Renewal Plan Amendments EIR was designated a Program EIR under CEQA Guidelines Section 15180; as such, subsequent activities are subject to requirements under CEQA Section 15168.[4]

The 2011 Renewal Plan was intended to facilitate future redevelopment activity within the project area consistent with the City of Oakland General Plan. The 2011 Renewal Plan Amendments EIR analyzed the environmental impacts of the redevelopment activities associated with implementation of the proposed amendments to the 2011 Renewal Plan. As such, the Project would be consistent with the 2011 Renewal Plan as well as the analysis within the 2011 Renewal Plan Amendments EIR. Applicable mitigation measures and SCAs (described in Section 3.2) identified in the 2011 Renewal Plan Amendments EIR are considered in the analysis in this document and are also largely the same as those identified in the other EIRs described in this section.

Applicable mitigation measures and SCAs identified in the 2011 Renewal Plan Amendments EIR are considered in the analysis in this document.

Environmental Effects Summary

The 2011 Renewal Plan 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 SCA. Mitigation would be required in the following resource topics: 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); utilities and service systems (stormwater and solid waste only).

Less-than-significant impacts were identified for the following resources in the 2011 Renewal Plan EIR: aesthetics (except as noted above as less than significant with SCA); air quality (clean air plan consistency); hydrology and water quality (except as noted above as less than significant with SCA); 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 SCA). **No impacts** were identified for agricultural or forestry resources, and mineral resources.

The 2011 Renewal 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).[5] Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's approvals.

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4 City of Oakland, 2011. *Proposed Amendments to the Central District Urban Renewal Plan Draft Environmental Impact Report*, March 2011.

5 The 2011 Redevelopment Plan Amendments EIR also identified significant and unavoidable 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.

3.2 City of Oakland – Standard Conditions of Approval

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

Consistent with the requirements of CEQA, a determination of whether the Project would have a significant impact was made prior to the approval of the Project and, where applicable, SCAs and/or mitigation measures in the Previous EIRs have been identified to mitigate those 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 are specified and required; and where the Project commits to developing measures that comply with the requirements and criteria identified.

SCAs that would apply to the Project are listed in Attachment A to this document, which is incorporated by reference into this CEQA Checklist. Because the SCAs are mandatory City requirements, the impact analysis for the Project assumes that they will be imposed and implemented, which the Project Applicant has agreed to do or ensure as part of the Project. If this CEQA Checklist 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.

6 The most recent set of SCAs was published by the City of Oakland on December 16, 2020.

4. Purpose and Determination

4.1 Purpose

The analysis in this environmental review document supports determinations, on separate and independent bases, that: (1) the Project qualifies for an exemption per CEQA Guidelines Section 15183 (Projects Consistent with a Community Plan, General Plan, or Zoning); (2) the Project qualifies for streamlining and/or tiering provisions under CEQA Guidelines Section 15180 (Redevelopment Projects) and Section 15168 (Program EIRs) which provides that the 2011 Redevelopment Plan Amendments EIR can be used as a Program EIR; and (3) the Project qualifies for streamlining provisions of CEQA under Public Resources Code Section 21094.5 and CEQA Guidelines Section 15183.3 (Streamlining for Infill Projects) as none of the conditions requiring a supplemental or subsequent EIR, as specified in Public Resources Code section 21166 and CEQA Guidelines Sections 15162 (Subsequent EIRs) and 15163 (Supplement to an EIR), are present.

This environmental review document is intended to assist the City to determine the appropriate CEQA documentation for the Project—either a CEQA exemption or an EIR. It does not address every applicable CEQA topic or significance thresholds but focuses on those most pertinent to the City's assessment of the appropriate CEQA documentation and whether a General Plan Consistency Project and/or an In-fill Development Project exemption, and/or streamlining or tiering from a Program EIR is viable for the Project.

4.2 Determination

The information presented in this environmental review document supports that none of the criteria under Sections 15162 or 15163 is present. As a result, the Project qualifies for CEQA exemptions under CEQA Guidelines Section 15183 and Section 15183.3 as well as streamlining and/or tiering provisions under CEQA Section 15180.

5. Project Description

5.1 Project Setting

5.1.1 Project Location and Planning Context

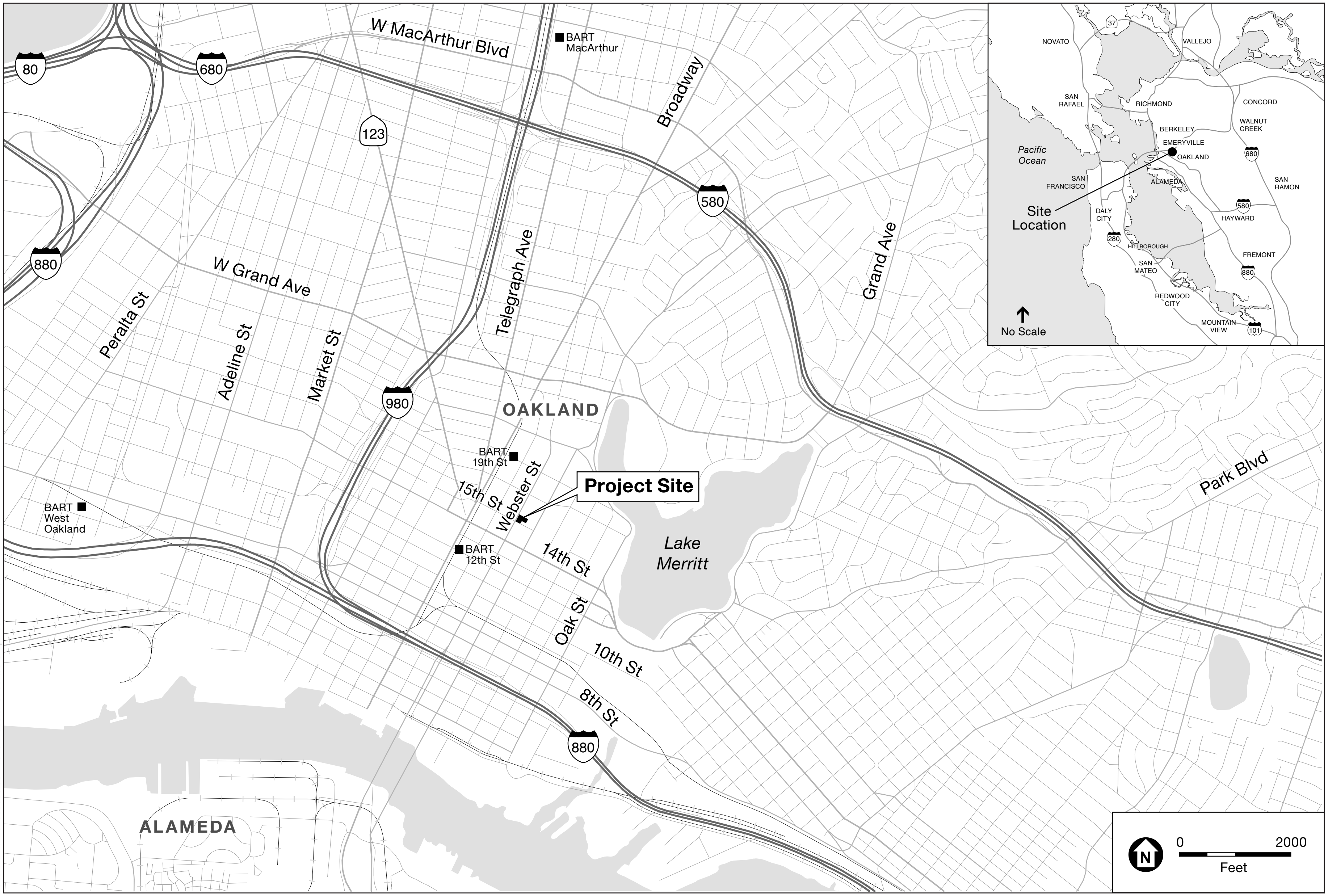
The 1510 Webster Street Project site (Project site) is located at the southwest corner of 15th Street and Webster Street (see **Figure 1**) in Downton Oakland. The Project site is approximately 0.33 acres and comprised of two privately-owned parcels at 1510 and 1508 Webster Street (Assessor's Parcel Numbers 008-0625-034-01 and 008-0625-032-00, respectively).

The Project site is located within the Central Business District (CBD) General Plan land use designation. The CBD designation is intended to encourage, support, and enhance the downtown area as a high-density, mixed-use urban center of regional importance, and a primary hub for business, communications, office, government, high technology, retail, entertainment, and transportation. The parcel at 1510 Webster Street is zoned Central Business District General Commercial Zone (CBD-C) and the parcel at 1508 Webster Street is zoned Central Business District Pedestrian Retail Commercial Zone (CBD-P). The intent of the CBD zones is to create, maintain, and enhance areas of the Central Business District appropriate for a wide range of ground-floor retail, office and other commercial activities. Upper-story spaces are intended to be available for a wide range of residential and office or other commercial activities.

The Project site is not within a specific plan area but is located approximately one block north of the northern boundary of the Lake Merritt Station Area Plan, which was adopted in 2014. The Lake Merritt Station Area Plan aims to provide a roadmap for future development with the goal of increasing employment opportunities, accommodating future population growth, and encouraging local and regional Transit-Oriented Development. The Project site is also within the boundaries of the proposed Downtown Oakland Specific Plan. The City of Oakland is preparing the Downtown Oakland Specific Plan to ensure continued growth and revitalization to benefit both Downtown residents and the larger community by providing policy guidance on development, linking land use, transportation, economic development, housing, public spaces, cultural arts, and social equity. The City released the Draft Downtown Oakland Specific Plan and Draft Environmental Impact Report for the Specific Plan on August 30, 2019.

5.1.2 Existing Site Conditions

The Project site is comprised of two parcels containing a vacant commercial building and an abandoned construction site. An existing vacant commercial building at 1510 Webster Street, most recently occupied by an import business called Tien-Hu Knitting Company, is located mid-block with a Webster Street frontage. There is one existing street tree present on the Project site along the 1510 Webster Street frontage. An abandoned construction site containing a partially constructed two-story concrete building is located at 1508 Webster Street on the northeast corner of 15th Street and Webster Street.



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SOURCE: ESA, 2020

1510 Webster Street

Figure 1
Project Location

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5.1.3 Surrounding Context

The Project site is within an urban downtown context, surrounded by zero-lot line commercial development in buildings ranging from one-story to high-rises within an urban street grid. Primary land uses around the Project site include commercial office, retail, and restaurant uses, educational and institutional uses, as well as arts and entertainment uses and parking.

Surface parking lots are located adjacent to the Project site on the north and east boundaries. Two 2-story commercial buildings are located along the Project site's eastern boundary and are occupied by multiple professional services tenants. The White Building, an historical resource listed in Oakland's Local Register, is located across 15th Street to the south of the Project site. This three-level building is currently occupied by multiple retail and office tenants. The Young Women's Christian Association (YWCA) Building, also an historical resource listed in Oakland's Local Register, is located across Webster Street to the west of the Project site. This five-level Julia Morgan-designed building is currently occupied by the Envision Academy of Arts and Technology, a public charter school with an enrollment of approximately 460 students in grades 6-12.

The closest parks to the site include Snow Park approximately 0.19 mile to the northeast, Lincoln Square Park approximately 0.25 mile to the southeast, and Frank H Ogawa Plaza approximately 0.20 mile to the west.

The nearest Bay Area Rapid Transit (BART) station is the 12th Street Oakland City Center Station, with the nearest entrance located two blocks west and one block south of the Project site at the corner of 14th Street and Broadway. BART provides daily commuter rail service between San Francisco, the East Bay, and northern San Mateo County. Alameda County-Contra Costa Transit District (AC Transit) operates regional bus service nearby the Project site. The majority of AC Transit's bus lines are accessible via 13th Street, two blocks south of the Project site, or Broadway, two blocks west of the Project site. Regional automobile access to the Project site includes Interstate 980 (I-980), approximately 0.6 miles to the west, and Interstate 880 (I-880), approximately 0.5 miles to the south.

5.2 Project Characteristics

5.2.1 Program

The Project analyzed in this CEQA Checklist document is referred to as the 1510 Webster Street Project (or Project). The Project Applicant proposes to develop a 19-story, mixed-use residential building with approximately 182 residential units, 11,397 square feet of office space, and 3,489 square feet of ground floor retail space (see **Figure 2**). The approximately 195-foot-tall building would include an approximately 65-foot-tall, 6-story podium on the southwestern portion of the Project site. The Project would include the demolition of all structures on the Project site. A summary of Project characteristics is included in **Table 5-1** below.

TABLE 5-1
PROJECT CHARACTERISTICS

Height (feet)	195
Stories	19
Residential Units	182
Retail Space (sf)	3,489
Office Space (sf)	11,397
Long-Term Bicycle Parking (spaces)	66
Short-Term Bicycle Parking (spaces)	14
Off-Street Loading (spaces)	1

SOURCE: oWow Development, 2020.

The ground floor would consist of approximately 3,489 square feet of retail space as well as office space, an interior open air plaza, residential, office, and service lobbies, a mailroom, a garbage collection area, utility/mechanical spaces, a loading and unloading area, and bicycle parking. The retail space would be contained in two separate spaces between the interior plaza. One retail space would be located mid-block with access via Webster Street, and the other would be located on the corner of Webster and 15th Streets, with access from each street. A basement level would contain office space, two lower courtyards open to the ground floor above, a residential lobby, bike rooms for the office and residential uses, and utility/mechanical space. Approximately 11,397 square feet of office space would be divided between a basement level and the ground floor.

The Project would include up to 182 residential units, consisting of approximately 33 one-, 77 two-, 54 three-, and 18 four-bedroom units on the second through 19th floors. Approximately 16 units would also be affordable residential units. The second through sixth floors would contain approximately 13 residential units per floor, and the seventh through 19th floors would contain approximately 9 units per floor. The 7th floor would also contain a residential open space on the podium roof at the southwestern corner of the Project site.

Figures 2 through **6**, show the Project's proposed floor plans. **Figure 7** shows the Project elevations.

5.2.2 Other Characteristics of the Project

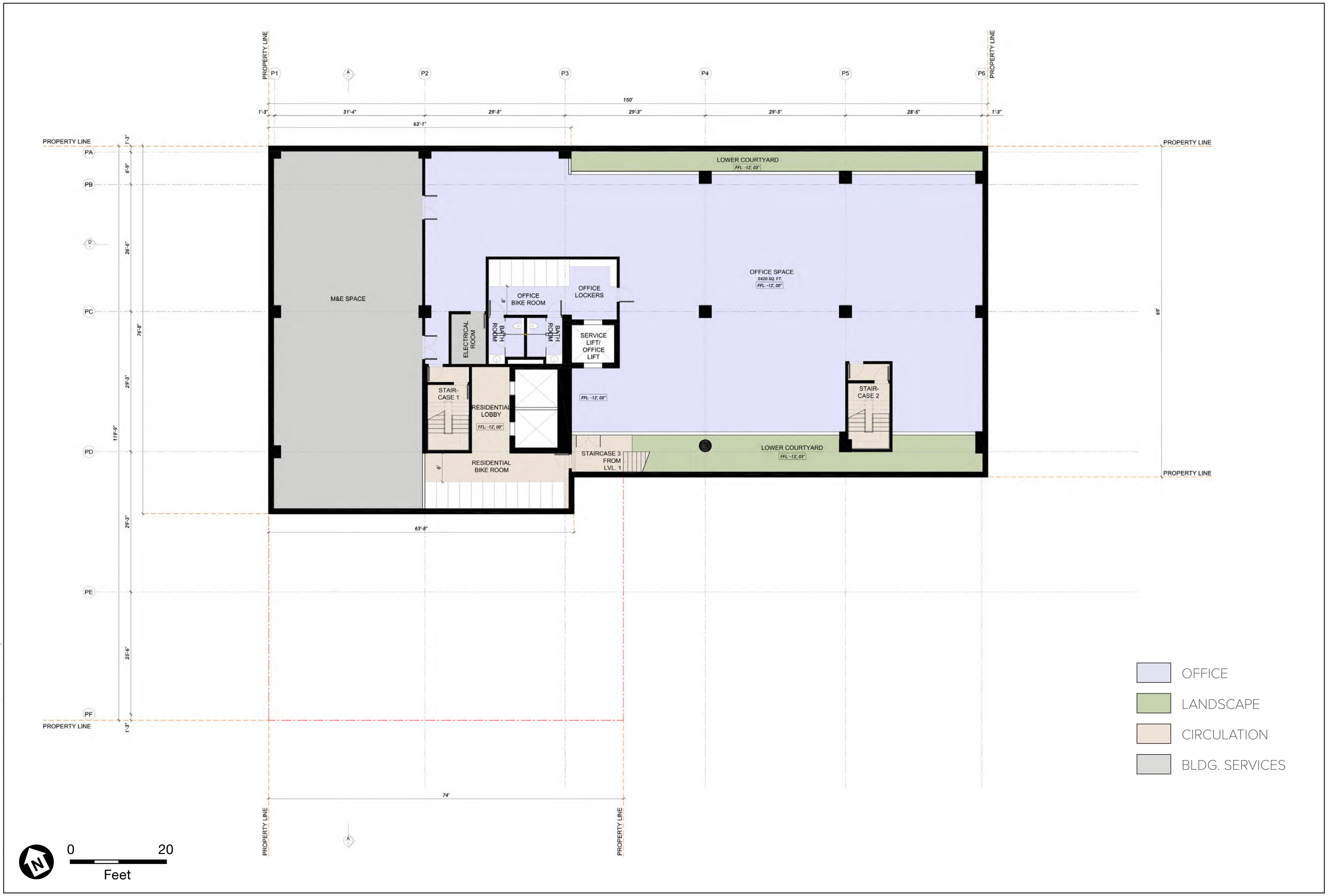
5.2.2.1 Landscaping, Open Space, and Tree Removal

The Project would remove one existing tree on the Project site, and would plant approximately six new street trees, as required, along all of the street frontages (see Figure 2). As described above, the Project would construct an interior open air plaza on the ground floor that would serve as the entryway to the residential and office spaces, as well as provide a connection between the ground floor retail spaces. The interior plaza would include a living wall feature containing plants and vines. Landscaping would also be provided in basement-level courtyards, open to the ground floor interior plaza above. The Project would also provide approximately 3,303 square feet of private open space for residents on the podium roof that would contain landscaping including potted trees, shrubs, and other plants (see Figure 5).

SOURCE: oWOW, 2020

1510 Webster Street

Figure 2
Ground Floor Plan



SOURCE: oWOW, 2020

1510 Webster Street

Figure 3
Basement Floor Plan

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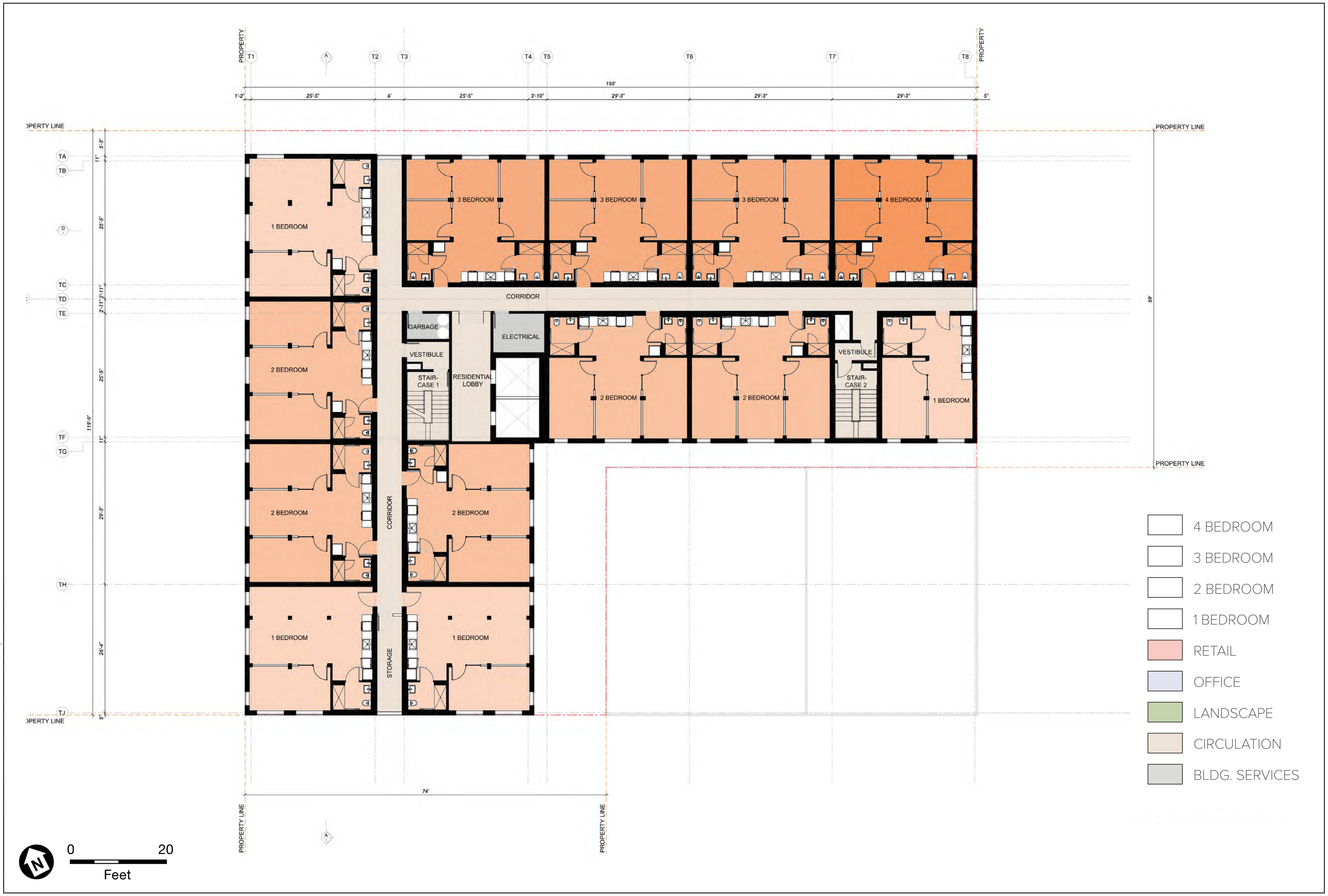

SOURCE: oWOW, 2020

1510 Webster Street

Figure 4
2nd through 6th Floor Plan

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SOURCE: oWOW, 2020

1510 Webster Street

Figure 5
7th Floor Plan

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SOURCE: oWOW, 2020

1510 Webster Street

Figure 6
8th through 19th Floor Plan

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South Elevation

West Elevation

0 40
Feet

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SOURCE: oWOW, 2020

1510 Webster Street

Figure 7
South-West Elevations

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5.2.2.2 *Parking and Circulation*

No vehicle parking is proposed as part of the Project. The Project would construct a vehicle loading bay on the ground floor with a roller shutter gate. The loading bay would be accessible via Webster Street on the northwestern side of the Project site. A proposed curb cut would be constructed at the new loading bay entrance on Webster Street.

The Project would provide approximately 80 total bicycle parking spaces. Approximately 46 long-term, secured bicycle spaces for residents and 20 long-term, secured bicycle spaces for employees would be provided on the basement level. Bicycle parking would also be provided in the interior plaza to accommodate an additional 14 bicycles.

Primary pedestrian access to the retail component of the Project would be via entrances on Webster and 15th Streets. The interior plaza would also be accessible via an entrance on Webster Street. Primary pedestrian access to the residential and office components of the Project would be through the residential and office lobbies which front the interior plaza (see Figure 2).

5.2.3 Sustainability and Efficiency

The Project Applicant intends to meet GreenPoint Rated standards, comply with the Green Building ordinance and requirements, and would qualify for Leadership in Energy and Environmental Design (LEED) Silver Certification at a minimum. The Project would optimize the efficiency of its building envelope, and would reduce domestic energy use through the use of efficient lighting and HVAC systems. The Project would also meet Building Energy Efficiency Standards.

5.2.4 Construction and Phasing

Project construction is anticipated to last a period of approximately 18 months. Construction activities on the Project site would consist of demolition of all existing structures on the Project site, except for existing foundation piers at the abandoned construction site that may be retained, excavation for building foundations and below-grade construction, building construction, and finishing interiors.

5.3 Discretionary Project Approvals Requested

The Project Applicant requests, and the Project would require, discretionary actions/approvals, as well as ministerial permits/approvals, as listed below.

5.3.1 Actions by the City of Oakland

- **Bureau of Planning –** Regular Design Review, Parcel Map Waiver, and CEQA determination.
- **Bureau of Building and Department of Transportation –** Demolition permit, grading permit, and other related on- and offsite work permits (e.g., public right-of-way improvements, Off Site Infrastructure (PX) Permit, and tie backs) as well as encroachment permits.

5.3.2 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, San Francisco Bay Region (RWQCB):** Acceptance of a Notice of Intent to obtain coverage under the General Construction Activity Storm Water Permit, and Notice of Termination after construction is complete. Granting of required clearances to confirm that all applicable standards, regulations, and conditions for all previous contamination at the site have been met.

6. Summary of Findings

An evaluation of the Project is provided in the CEQA Checklist in Section 7 that follows. This evaluation concludes that the Project qualifies for an exemption from additional environmental review. It is consistent with the development density and land use characteristics established by the City of Oakland General Plan, and any potential environmental impacts associated with its development were adequately analyzed and covered by the analysis in the applicable Previous EIRs: the 1998 LUTE EIR, the 2011 Renewal Plan Amendments EIR, and the 2010 General Plan Housing Element Update EIR and its 2014 Addendum.

The Project would be required to comply with the applicable mitigation measures identified in the Program EIRs as modified, and in some cases wholly replaced, to reflect the City's current standard language and requirements of its SCAs, as well as any applicable City of Oakland SCAs (see Attachment A, at the end of the CEQA Checklist).With implementation of the applicable SCAs, the Project would not result in a substantial increase in the severity of previously identified significant impacts in the applicable Previous EIRs, or in any new significant impacts that were not previously identified in any of those Previous CEQA Documents.

In accordance with California Public Resources Code Sections 21083.3, 21094.5, and 21166; and CEQA Guidelines Sections 15183, 15183.3, 15162, 15168, and 15180, and as set forth in the CEQA Checklist below, the Project qualifies for one or more exemptions because the following findings can be made:

Community Plan Exemption. The Project would not result in significant impacts that (1) are peculiar to the project or project site; (2) were not previously identified as significant Project-level, cumulative, or offsite effects in the applicable Previous CEQA Documents: 1998 LUTE EIR, and for the housing components of the Project, the 2010 General Plan Housing Element Update EIR and its 2014 Addendum; or (3) were previously identified as significant effects, but—as a result of substantial new information not known at the time the Previous EIRs were certified—would increase in severity beyond that described in those EIRs. Therefore, the Project would meet the criteria to be exempt from further environmental review in accordance with Public Resources Code Section 21083.3 and CEQA Guidelines Section 15183.

Qualified Infill Exemption. The Project would not cause any new specific effects on the environment that were not already analyzed in the applicable Previous EIRs: the 1998 LUTE EIR, and for the housing components of the Project, the 2010 General Plan Housing Element Update EIR and its 2014 Addendum. Further, the Project would not cause any new specific effects on the environment that are more significant than previously analyzed in the Previous EIRs. The effects of the Project have been addressed in the Previous EIRs, and no further environmental documents are required in accordance with Public Resources Code Section 21094.5 and CEQA Guidelines Section 15183.3.

Other Applicable Previous CEQA Documents - Program EIRs and Redevelopment Projects. The analysis in the 2011 Renewal Plan Amendments EIR and in this CEQA Checklist 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 now proposed for the site is within the broader development assumptions analyzed in the EIR. The effects of the Project have been addressed in that EIR and no further environmental documents are required in accordance with CEQA Guidelines Sections 15168 and 15180.

Overall, based on an examination of the analysis, findings, and conclusions of the 1998 LUTE EIR, the 2011 Renewal Plan Amendments EIR, and for the housing components of the Project, the 2010 General Plan Housing Element Update EIR and its 2014 Addendum—all of which are summarized in the CEQA Checklist in Section 7 of this document—the potential environmental impacts associated with the Project have been adequately analyzed and covered in the Previous CEQA Documents. Therefore, no further review or analysis under CEQA is required.

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

Ed Manasse **Environmental Review Officer**	**Date**

7. CEQA Checklist

The analysis in this CEQA Checklist provides a summary of the potential environmental impacts that may result from the Project. The analysis in this CEQA Checklist also summarizes the impacts and findings of the certified Previous EIRs that covered the environmental effects of various projects encompassing the Project site and that are still applicable for the Project. As previously indicated, the Previous EIRs are referred to collectively throughout this CEQA Checklist as the "Previous CEQA Documents" or "Previous EIRs" and include the 1998 Land Use and Transportation Element EIR (1998 LUTE EIR), the 2011 Central District Urban Renewal Plan Amendments EIR (2011 Renewal Plan Amendments EIR), and for the housing components of the Project, the 2010 General Plan Housing Element Update EIR and its 2014 Addendum (2010 Housing Element Update EIR and associated 2014 Addendum). Given the timespan between the preparations of these EIRs, there are variations in the specific environmental topics addressed and in the significance criteria; however, as discussed above in Section 3 and throughout this Checklist, the overall environmental effects identified in each are largely the same; any significant differences are noted.

Several SCAs would apply to the Project because of the Project's characteristics. Application of the SCAs are triggered because the City is considering discretionary actions for the Project.

Most of the SCAs that are identified for the Project were identified in the 2011 Renewal Plan Amendments EIR, and the 2010 Housing Element Update EIR and its 2014 Addendum; the 1998 LUTE EIR was developed prior to the City's application of SCAs. As discussed specifically in Attachment A to this document, since certification of the Previous EIRs, the City of Oakland has revised its SCAs, and the most current SCAs are identified in this CEQA Checklist. All mitigation measures identified in the Previous EIRs that would apply to the Project are also identified in Attachment A to this document.

This CEQA Checklist hereby incorporates by reference the discussion and analysis of all potential environmental impact topics as presented in the Previous CEQA Documents. This CEQA Checklist provides a determination of whether the Project would result in:

- Equal or Less Severity of Impact Previously Identified in the Previous CEQA Documents;
- Substantial Increase in Severity of Previously Identified Significant Impact in the Previous CEQA Documents; and/or
- New Significant Impact.

Where the severity of the impacts of the Project would be the same as or less than the severity of the impacts described in the Previous CEQA Documents, the checkbox for "Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents" is checked.

If the checkbox for "Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents" or "New Significant Impact" were checked, there would be significant impacts that are:

- Peculiar to project or project site (per CEQA Guidelines Sections 15183 or 15183.3);

- Not identified in the previous 1998 LUTE EIR, 2010 Housing Element Update EIR and its 2014 Addendum (per CEQA Guidelines Sections 15183 or 15183.3), or 2011 Renewal Plan Amendments EIR (per CEQA Guidelines Section 15180), including offsite and cumulative impacts (per CEQA Guidelines Section 15183);
- Due to substantial changes in the Project (per CEQA Guidelines Section 15162 and 15168);
- Due to substantial changes in circumstances under which the Project will be undertaken (per CEQA Guidelines Sections 15162 and 15168); and/or
- Due to substantial new information not known at the time the Previous CEQA Documents were certified (per CEQA Guidelines Sections 15162, 15168, 15183, or 15183.3).

None of the aforementioned conditions were found for the Project, as demonstrated throughout the following CEQA Checklist and in its supporting attachments (Attachments A through D) that specifically describe how the Project meets the criteria and standards specified in the CEQA Guidelines sections identified above.

7.1 Aesthetics, Shadow, and Wind

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Have a substantial adverse effect on a public scenic vista; substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, located within a state or locally designated scenic highway; substantially degrade the existing visual character or quality of the site and its surroundings; or create a new source of substantial light or glare which would substantially and adversely affect day or nighttime views in the area;	☒	☐	☐
b. Introduce landscape that would now or in the future cast substantial shadows on existing solar collectors (in conflict with California Public Resource Code sections 25980-25986); or cast shadow that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors;	☒	☐	☐
c. Cast shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space; or, cast shadow on an historical resource, as defined by CEQA Guidelines Section 15064.5(a), such that the shadow would materially impair the resource's historic significance;	☒	☐	☐
d. Require an exception (variance) to the policies and regulations in the General Plan, Planning Code, or Uniform Building Code, and the exception causes a fundamental conflict with policies and regulations in the General Plan, Planning Code, and Uniform Building Code addressing the provision of adequate light related to appropriate uses; or	☒	☐	☐
e. Create winds that exceed 36 mph for more than one hour during daylight hours during the year. The wind analysis only needs to be done if the project's height is 100 feet or greater (measured to the roof) and one of the following conditions exist: (a) the project is located adjacent to a substantial water body (i.e., Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the project is located in Downtown.	☒	☐	☐

Since certification of the Previous CEQA Documents, the CEQA statutes have been amended related to the assessment of impacts for aesthetics. Under CEQA Section 21099(d), "Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment."[7] Accordingly, aesthetics is no longer considered in determining if a project has the potential to result in significant environmental effects for projects that meet all three of the following criteria:

- The project is in a transit priority area.[8]
- The project is on an infill site.[9]
- The project is residential, mixed-use residential, or an employment center.[10]

The Project meets all three of the above criteria because the Project (1) is in a transit priority area, and is situated approximately 0.45-mile north of the 19th Street BART Station; (2) is on an infill site that has been previously developed within an urban area of Oakland; and (3) is mixed-use residential project that includes residential, office, and retail uses. Thus, this document does not consider aesthetics, including the aesthetic impacts of light and glare, in determining the significance of Project impacts under CEQA.[11] Nevertheless, the City recognizes that the public and decision makers may be interested in information about the aesthetic effects of a proposed project; therefore, the information contained in this section related to aesthetics, light, and glare is provided solely for informational purposes, and is not used to determine the significance of environmental impacts pursuant to CEQA.

7.1.1 Previous CEQA Documents Findings

Scenic vistas, scenic resources, visual character, light and glare, and shadow were analyzed in each of the Previous CEQA Documents, which found that the effects to these topics would be less than significant. The 2011 Renewal Plan Amendments EIR and the 2010 Housing Element Update EIR and its 2014 Addendum cited applicable SCAs that would ensure the less-than-significant visual quality effects. The 1998 LUTE EIR identified mitigation measures that are functionally equivalent to the SCAs to reduce certain potential effects to less-than-significant levels.

Except for the 1998 LUTE EIR, each of the Previous CEQA Documents found less-than-significant shadow effects, assuming incorporation of applicable SCAs. The 1998 LUTE EIR identified mitigation measures, functionally equivalent to the SCAs, to reduce potential shadow effects to less-than-significant levels. The 1998 LUTE EIR also identified significant and unavoidable impacts regarding wind hazards.

7 CEQA Section 21099(d)(1).

8 CEQA Section 21099(a)(7) defines a "transit priority area" as an area within one-half mile of an existing or planned major transit stop. A "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 a.m. and p.m. peak commute periods.

9 CEQA Section 21099(a)(4) defines an "infill site" as either (1) a lot within an urban area that was previously developed; or (2) a vacant site where at least 75 percent of the site perimeter adjoins (or is separated by only an improved public right-of-way from) parcels that are developed with qualified urban uses.

10 CEQA Section 21099(a)(1) defines an "employment center" as a project situated on property zoned for commercial uses with a floor area ratio of no less than 0.75 and located within a transit priority area.

11 CEQA Appendix G includes light and glare under the topic of aesthetics. Therefore, light and glare, in addition to aesthetics, is not a CEQA consideration.

7.1.2 Project Analysis

7.1.2.1 Aesthetics (Criterion 1a)

The Project involves construction of a 19-story, mixed-use residential, office, and retail building with approximately 182 residential units, 11,400 square feet of office use, and 3,500 square feet of ground floor retail use. The Project site has been previously developed and is currently occupied with a vacant commercial building and an abandoned construction site on a former parking lot. The Project building would measure approximately 195 feet tall, with a 65-foot, 6-story podium on the southwestern portion of the Project site. As discussed in Section 5.1.3, Surrounding Context, the Project site is within an urban downtown context, surrounded by zero-lot line commercial development in buildings ranging from one-story to high-rises within an urban street grid. Given the relative height of the Project building compared to taller and varied building heights of Downtown Oakland in general, as well as the limited views in the area due to the dense, multi-story development adjacent to the Project site, the Project would not obstruct views of any scenic vistas.

Surface parking lots are located adjacent to the Project site on the northern and eastern boundaries. Two 2-story commercial buildings are located along the Project site's eastern boundary and are occupied by multiple professional services tenants. The three-level White Building, an historical resource listed in Oakland's Local Register, is located across 15th Street to the south of the Project site and the five-level Young Women's Christian Association (YWCA) Building, also an historical resource listed in Oakland's Local Register, is located across Webster Street to the west of the Project site. As shown in the Project plans in **Figures 2** through **7**, the Project building and site layout would result in development that is compatible with the visual character and patterns of recent development in Downtown Oakland. The Project's 6-story podium would use building materials such as terracotta cladding which is compatible with the surrounding historical resources. Therefore, the Project would not substantially degrade the existing visual character or quality of the site and its surroundings.

The Project also would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. The Project would utilize nighttime lighting for operational and security purposes, and would result in similar levels of light and glare as is typical for mixed-use developments of this scale.

Although not considered significant under CEQA, the potential impacts of the Project regarding scenic vistas, scenic resources, visual character, and light and glare would be similar to, or less severe than, those identified in the Previous CEQA Documents considered in this analysis. Development of the Project also would be required to comply with the City of Oakland SCA AES-1, Trash and Blight Removal; SCA AES-2, Graffiti Control; SCA AES-3, Landscape Plan; and SCA AES-4, Lighting, related to landscaping, street frontages, landscape maintenance, public right-of-way improvements, graffiti control, and lighting plans to enhance aesthetics. Therefore, the visual impacts of the Project would be less than significant.

7.1.2.2 Shadow (Criteria 1b through 1d)

The Project would construct a 19-story building measuring approximately 195 feet in height, including an approximately 65-foot-tall, a 6-story podium on the southwestern portion of the Project site. Consistent with the City of Oakland methodology for shadow analyses, shadow diagrams were prepared for the Project (see **Appendix A**). Using a virtual 3D model, the Project was rendered in the existing shading conditions. Graphical depictions of the shadows that would be cast by the Project building at 9:00 a.m., 12:00 p.m., and 3:00 p.m. for the summer solstice (June 21st), spring/fall equinoxes (March 20th and September 22nd), and winter solstice (December 21st) were prepared. Graphics showing the extents of net new shading that would be generated by the Project as well as other future planned projects in the vicinity under the cumulative scenario are provided in Appendix A.

There are no major public open spaces adjacent to the Project site. The closest parks to the site include Snow Park approximately 0.19 mile to the northeast, Lincoln Square Park approximately 0.25 mile to the southeast, and Frank H Ogawa Plaza approximately 0.20 mile to the west. The Project would generate no new shadow on any existing public or quasi-public park, lawn, garden, or open space. Therefore, the Project shadow would not substantially impair any public open space as none would be shaded by the Project.

Nearby solar collectors include rooftop panels at 1537 Webster Street, a three-story building northwest of the Project site. Shadows are cast to the west by objects during the morning hours when the sun is coming up on the horizon in the east. During late morning and early afternoon, the shadows move northerly and by late afternoon they are cast easterly in response to the movement of the sun across the sky from east to west. In general, solar collectors collect sun power during the period from two hours prior and two hours post solar noon. As shown in the shadow diagrams, the Project shadow would reach the rooftop at 1537 Webster Street during morning hours of the winter solstice through approximately noon, and would shade the rooftop solar panels located in the center of the building for approximately an hour during this period. While this additional shading during the winter could reduce the ability of solar panels at this address to collect sun power, any reduced amount of energy able to be produced at this address would not substantially impair the function of the building. The solar equipment consists of photovoltaic solar panels used to generate electricity (as opposed to heat or hot water) and any loss in energy can be made up for with additional power drawn from the local electricity provider, Pacific Gas and Electric (PG&E), with no impairment to the functionality of the building. Therefore, the Project shadow would not result in a substantial loss of power, income, or use from the collectors. No other solar collectors are within the Project shadow's path and, therefore, the Project would not cast shadow that would substantially impair the function of existing solar collectors in use on surrounding buildings.

The Project would cast shadow for periods of time throughout the year between the hours of 9:00 a.m. and 3:00 p.m. on six buildings[12] that are either landmark structures, historical resources, or eligible for historical resource status (with rating "B" or higher or "C" if also located within an area of primary importance or National or California Register-listed Historic District) as shown in Appendix A. As discussed in Section 7.4, Cultural Resources, the YWCA at 1515 Webster Street is the only resource that possesses sunlight-sensitive features that could be affected by the Project's shadow. New shadow would be cast on the YWCA during the morning hours throughout the year

[12] These sites include 420 15th Street, 389 15th Street, 1515 Webster Street (YWCA), 1608 Webster Street, 333 17th Street (Howden Building), and 300 17th Street.

as a result of development of the Project. However, potential effects from the Project shadow would be less than significant because the significance of the YWCA is primarily based in its associations with community development and its architect. Thus, the Project's new shadow would not have the potential to materially alter features that would impair the historical designation of the YWCA.

As such, the potential impacts of the Project regarding shadows would be similar to, or less severe than, those identified in the Previous CEQA Documents considered in this analysis.

7.1.2.3 Wind (Criterion 1e)

Pursuant to the City of Oakland's significance thresholds, a wind analysis was prepared for the Project, as the Project would construct a building above 100 feet in height in Downtown Oakland.

A previous wind tunnel test was conducted by wind engineering experts, RWDI, in August 2016 for a proposed project with a similar design on the Project site. The 2016 proposed project included an approximately 262-foot-tall tower plus podium with an L-shaped footprint and similar design and orientation. In the 2016 study, wind speeds at all 37 grade-level locations tested met the wind hazard criterion under existing, existing plus project, and cumulative plus project conditions (see **Appendix B**). Note that the cumulative conditions included projects at 1900 Broadway, 1640 Broadway, 1700 Webster Street, 1433 Webster Street, 1331 Harrison Street, 250 14th Street (at Alice Street), 226 13th Street, and 285 12th Street. The projects at 1640 Broadway and 1700 Webster Street have been constructed as of August 2020, and the projects at 1900 Broadway, 250 14th Street, 226 13th Street, and 285 12th Street are currently under construction.

Using a review of the regional long-term meteorological data from Oakland International Airport, wind-tunnel studies and desktop assessments undertaken by RWDI for projects in the Oakland area, and a 3D model of the Project, RWDI conducted a screening-level numerical estimation of potential wind conditions for the Project based on the results of the 2016 study (see Appendix B). Although the Project could result in localized increases in wind speeds due to winds downwashing off the building facades and accelerating around building corners, the increases would likely be the same as or less than those measured for the 2016 proposed project due to the reduced height. The addition of taller buildings in the existing setting further reduce wind speeds in the project area. The screening-level analysis for the Project found that the wind hazard criterion is not anticipated to be exceeded at any of the 20 grade-level locations analyzed including at Project building entrances, on surrounding sidewalks, and on adjacent off-site areas. Overall, wind conditions around the Project are expected to be similar to wind conditions for the previous design tested by RWDI in 2016. As such, the Project would have a less than significant wind hazard impact and would not result in a new or more severe significant impact with respect to wind.

7.1.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, the Project would not result in new or more severe significant impacts related to aesthetics, shadow, or wind than those already identified in the Previous CEQA Documents. Implementation of **SCA AES-1, Trash and Blight Removal; SCA AES-2, Graffiti Control**; **SCA AES-3**, **Landscape Plan**; and **SCA AES-4, Lighting** (see Attachment A) would be applicable to and would be implemented by the Project and would further ensure that aesthetics-related impacts would be less than significant. No mitigation measures are required.

7.2 Air Quality

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. During project construction result in average daily emissions of 54 pounds per day of ROG, NO_X, or $PM_{2.5}$ or 82 pounds per day of PM_{10}; during project operation result in average daily emissions of 54 pounds per day of ROG, NO_X, or $PM_{2.5}$, or 82 pounds per day of PM_{10}; result in maximum annual emissions of 10 tons per year of ROG, NO_X, or $PM_{2.5}$, or 15 tons per year of PM_{10}; or	☒	☐	☐
b. For new sources of Toxic Air Contaminants (TACs), during either project construction or project operation expose sensitive receptors to substantial levels of TACs under project conditions resulting in (a) an increase in cancer risk level greater than 10 in one million, (b) a noncancer risk (chronic or acute) hazard index greater than 1.0, or (c) an increase of annual average PM2.5 of greater than 0.3 microgram per cubic meter; or, under cumulative conditions, resulting in (a) a cancer risk level greater than 100 in a million, (b) a noncancer risk (chronic or acute) hazard index greater than 10.0, or (c) annual average PM2.5 of greater than 0.8 microgram per cubic meter; or expose new sensitive receptors to substantial ambient levels of Toxic Air Contaminants (TACs) resulting in (a) a cancer risk level greater than 100 in a million, (b) a noncancer risk (chronic or acute) hazard index greater than 10.0, or (c) annual average PM2.5 of greater than 0.8 microgram per cubic meter.	☒	☐	☐

7.2.1 Previous CEQA Documents Findings

7.2.1.1 Construction and Operational Emissions and Odors

The 1998 LUTE EIR identified mitigation measures that would reduce odorous emissions and operational emissions effects to less-than-significant levels, but found significant and unavoidable cumulative impacts regarding increased criteria pollutants from increased traffic regionally.

The 2010 Housing Element Update EIR and its 2014 Addendum found that emissions associated with construction and operations resulting from increased criteria pollutants would result in less-than-significant effects with implementation of SCAs. The 2011 Renewal Plan Amendments EIR did not include a detailed analysis of construction and operational criteria air pollutants leaving it for future project-level analysis.

The 2011 Renewal Plan Amendments EIR and 2010 Housing Element Update EIR and its 2014 Addendum identified effective SCAs to address potentially significant effects regarding dust/particulate matter $(PM)_{10}$, and consistency with the applicable regional clean air plan. The 2011 Renewal Plan Amendments EIR and the 2010 Housing Element Update EIR and its 2014 Addendum found significant and unavoidable impacts related to odors.

7.2.1.2 Toxic Air Contaminants

Analysis of TACs was not required when the 1998 LUTE EIR was prepared and thus the EIR did not quantify or address cumulative health risks. The 2010 Housing Element Update EIR and its 2014 Addendum identified significant and unavoidable impacts regarding cumulative health risks after the consideration of SCAs. The 2011 Renewal Plan Amendments EIR concluded that risks from exposure to TACs, primarily gaseous TACs, would be significant and unavoidable even with the implementation of City's SCAs.

7.2.2 Project Analysis

7.2.2.1 Construction and Operational Emissions (Criterion 2a)

Construction Air Emissions

Methodology and Assumptions

The air quality analysis presented below used the following methodology and assumptions to calculate the average daily construction emissions associated with the Project:

- Construction emissions were estimated using CalEEMod (version 2016.3.2) assuming construction to begin in April 1, 2021 and last for approximately 18 months;
- Demolition of existing structures totaling an area of 30,000 square feet;
- Construction of 182 residential units and 14,886 square feet of retail/office space;
- Project site area of 0.33 acres;
- Off-haul of 2,250 cubic yards of excavated material during the demolition phase;
- Off-haul of 575 cubic yards of excavated material during the grading phase;
- The length of the various construction phases (e.g., demolition, grading, building construction, etc.) were provided by the Project Applicant; and
- The number and types of construction equipment used for each phase, their activity level as well as the number of on-road vehicle trips (worker, vendor and hauling trips) during each phase were also provided by the Project Applicant.

Analysis

The average daily construction-related emissions for the Project, as estimated using CalEEMod based on the assumptions above, are presented in **Table 7.2-1**. As shown in the table, annual average daily construction emissions for the Project would not exceed the City's Thresholds for reactive organic gases (ROG), oxides of nitrogen (NO_X), particulate matter less than or equal to 10 microns in diameter

(PM_{10}), or particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$). These thresholds were developed to represent a cumulatively considerable contribution to regional air quality, and, as such, represent not only a project level threshold but a cumulative threshold as well. As shown in Table 7.2-1, the Project would have less-than-significant project-level impacts with respect to construction emissions and thus would not result in a new or more severe significant impact compared with the Previous CEQA Documents. Additionally, the Project would comply with City of Oakland SCA AIR-1, Dust Controls – Construction Related, and SCA AIR-2, Criteria Air Pollutant Controls – Construction Related, which incorporate dust control measures and applicable control measures for criteria air pollutants during construction of the Project.

TABLE 7.2-1
EMISSIONS FROM CONSTRUCTION (average lbs per day)[a]

Emissions Source	ROG	NO_x	PM_{10}	$PM_{2.5}$
Average Daily Construction Emissions	8.3	10.0	0.3	0.3
City of Oakland Thresholds	54	54	82	54
Significant (Yes or No)?	**No**	**No**	**No**	**No**

[a] Project construction emissions estimates were made using CalEEMod, version 2016.3.2. Emissions are average daily pounds per day and are estimated by dividing the total construction emissions generated by the Project by the total number of construction workdays, estimated to be 371 workdays.

SOURCE: ESA, 2020.

Operational Air Emissions

Methodology and Assumptions

The analysis presented below used the following assumptions to calculate the daily operational emissions associated with the Project:

- The vehicle trip generation rates include a reduction of 46.9 percent based on the City's Guidelines for development in an urban environment within 0.5 miles of a BART station and on Census commute data for Alameda County from the 2014 5-Year Estimates of the American Community Survey. In addition, a further reduction in trips is assumed to account for pass-by trips associated with the proposed restaurant (see Section 7.13, *Transportation and Circulation*, below);
- Default energy consumption rates reflect the 2016 update to Title 24, which became effective on January 1, 2017;[13]

[13] The Project evaluated in this analysis was assumed to include natural gas plumbing for heating and cooking purposes and therefore provides a conservative evaluation of the project's air quality impacts. On December 15, 2020, the Oakland City Council adopted an Ordinance, adding to the Oakland Municipal Code Chapter 15.37, "All-Electric Construction In Newly Constructed Buildings." These new regulations require all newly constructed buildings to meet the definition of an All-Electric Building, as defined therein. As a result, the Project will be required to be designed to use a permanent supply of electricity as the source of energy for all space heating, water heating, cooking appliances, and clothes drying appliances, and will be prohibited from having natural gas or propane plumbing installed in the building. Designing the building to use a permanent supply of electricity will reduce the estimated criteria air pollutant emissions from energy emission sources of the Project.

- All wastewater generated was assumed to be aerobically processed at the East Bay Municipal Utilities District plant. Septic and lagoons contributions were set to a zero percentage;
- Twenty percent reduction in indoor water use was assumed for all uses to account for required compliance with the City's CalGreen code; and
- All other inputs in CalEEMod were based on model default values.

Analysis

The daily operational emissions for the Project, based on the assumptions above, are presented in **Table 7.2-2**. As shown in the table, annual average daily regional emissions for the Project would not exceed the City's thresholds for ROG, NOx, PM_{10} or $PM_{2.5}$. As with the construction thresholds, these thresholds were developed to represent a cumulatively considerable contribution to regional air quality and, as such, represent not only a project-level threshold but a cumulative threshold as well. As shown in Table 7.2-2, the Project would have less-than-significant project-level impacts with respect to operational emissions and thus would not result in a new or more severe significant impact compared with the Previous CEQA Documents.

TABLE 7.2-2
EMISSIONS FROM OPERATION (lbs per day)[a]

Source	ROG	NO_x	PM_{10}	$PM_{2.5}$
Area Source Emissions (lbs/day)	5.5	0.7	0.1	0.1
Energy Emissions (lbs/day)	0.1	0.5	<0.1	<0.1
Project Mobile Source Emissions[b] (lbs/day)	1.0	7.1	3.7	1.0
Stationary Source Emissions (lbs/day)	2.2	6.1	0.3	0.3
Average Daily Emissions (lbs/day)	**8.8**	**14.4**	**4.2**	**1.5**
City of Oakland Thresholds	54	54	82	54
Significant (Yes or No)?	**No**	**No**	**No**	**No**
Annual Emissions (tons/year)	**1.2**	**1.5**	**0.7**	**0.2**
City of Oakland Thresholds	10	10	15	10
Significant (Yes or No)?	**No**	**No**	**No**	**No**

NOTE: Totals may not add up due to rounding.

[a] Project operational emissions estimates were made using CalEEMod, version 2016.3.2.
[b] The vehicle trip rates used to calculate the emissions accounts for mode split and internal capture as recommended by the City of Oakland for projects located in dense, urban environments such as the Project site. Trips rates were also reduced to account for pass-by trips (see Section 7.13, *Transportation and Circulation*, below).

SOURCE: ESA, 2020.

7.2.2.2 Toxic Air Contaminants (Criterion 2b)

Assumptions and Methodology

Toxic air contaminants (TACs) are types of air pollutants that can cause health risks. TACs do not have ambient air quality standards, but are regulated using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis of exposure to toxic substances and human health risks from exposure to toxic substances is estimated, based on the potency of the toxic substances. Such an assessment evaluates chronic, long-term effects, calculating the increased risk of cancer as a result of exposure to one or more TACs.

Health risks to sensitive receptors from exposure to TACs generated during Project construction, as well as the exposure of new sensitive receptors introduced by the Project to substantial ambient levels of TACs have been evaluated below. The Project requires a backup generator to comply with the California Building Code requirement for elevator safety in all buildings in excess of 70 feet in height. The runtime associated to testing and maintenance of the generator is considered an operational source of TAC emissions.

Analysis

Construction TAC Emissions

Construction-related activities over the 18-month construction period would result in the generation of TACs, specifically diesel particulate matter (DPM), from on-road heavy-duty trucks and off-road equipment. Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations.

Regarding construction TACs emissions, BAAQMD recommends that a Health Risk Assessment (HRA) be conducted when sensitive receptors are located within 1,000 feet of project construction activities. The closest sensitive receptors in the form of residential uses are located within 140 feet of the Project site to the southeast. Consequently, a detailed construction HRA was conducted to determine the level of risk generated by construction-related TACs at these and other nearby sensitive receptors (see **Appendix C**, *Air Quality and Health Risk Assessment Information*). In accordance with Office of Environmental Health Hazard Assessment's (OEHHA) 2015 *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments,* the HRA applied the highest estimated concentrations of TACs at the receptors analyzed to established cancer potency factors and acceptable reference concentrations for non-cancer health effects. The maximum DPM concentration as modeled using American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) dispersion model occurred at the residential receptors at 1530 Harrison Street, east of the Project site. This would be considered the Maximum Exposed Individual Receptor (MEIR). Increased cancer risks were calculated using the modeled maximum DPM concentrations and OEHHA-recommended methodologies for residential receptors (3rd trimester through 2 years of age).

Table 7.2-3 shows the cancer risk, chronic Hazard Index (HI) and $PM_{2.5}$ concentration at the MEIR from Project-related construction activities for the residential receptor. The table shows that cancer risk from uncontrolled Project construction emissions at the MEIR would exceed the City's CEQA significance thresholds. The Project would be required to implement enhanced construction-related air pollution controls pursuant to **S**CA AIR-3, Diesel Particulate Matter Controls – Construction Related, which would reduce diesel PM exhaust emissions by requiring best available control technology on diesel off-road equipment. Implementation of SCA AIR-3 assumes use of engines that meet the Tier 4 Final standards as the best available control technology for all construction equipment consistent with the SCA. Currently, Tier 4 engines or installation of Level 3 verified diesel emission control strategies (VDECS) represent best available control technology for control of DPM, and are expected to reduce emissions by 85 percent.[14] Table 7.2-3 shows that with the use of Tier 4 controls, all health risks at the MEIR would be under the City's significance thresholds for the residential receptors.

TABLE 7.2-3
MAXIMUM HEALTH RISKS FROM PROJECT CONSTRUCTION

Health Risk at MEIR	Maximum Cancer Risk (in a million)	Chronic Risk (Hazard Index)	Maximum $PM_{2.5}$ concentration ($\mu g/m^3$)
Uncontrolled Scenario (prior to application of SCAs)			
Residential Receptor	**28.4**	0.03	0.16
Project-level Threshold	10	1.0	0.3
Significant?	**Yes**	**No**	**No**
SCA Scenario (With Tier 4 Final Equipment)			
Residential Receptor	1.6	<0.01	0.01
Project-level Threshold	10	1.0	0.3
Significant?	**No**	**No**	**No**

SOURCE: ESA, 2020.

The Project would also include demolition of the existing buildings and structures. It is estimated that a total of 2,250 tons of debris would be removed as part of the demolition of the existing structures. Existing structures may contain Asbestos Containing Materials (ACM), which could pose a health risk to workers and nearby receptors during demolition. Consistent with SCA AIR-6, Asbestos in Structures, the Project would comply with all applicable laws and regulations regarding demolition and renovation of ACM.

Therefore, the potential impact of the Project regarding exposure of existing receptors to construction related health risks would be less than significant.

Operational TAC Emissions

A 670 horsepower backup diesel emergency generator is proposed as part of the Project to comply with the California Building Code requirement for elevator safety in all buildings in excess of 70 feet in height. Installation and operation of the back-up diesel generator would require a permit and an Authority to Construct from the BAAQMD, which would involve an evaluation of emissions based on size and require Best Available Control Technology, if warranted. A site-specific HRA would be conducted as part of the BAAQMD's permitting process and the BAAQMD would deny an Authority to Construct or a Permit to Operate for any new or modified source of TACs that exceeds a cancer risk of 10 in one million or a chronic or acute hazard index of 1.0. This

[14] http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

would be consistent with the requirements of SCA AIR-5, Stationary Sources of Air Pollution (Toxic Air Contaminants) and therefore, operation of the emergency generator would result in a less than significant impact.

Impact to Project Receptors

As the Project includes sensitive residential uses, SCA AIR-4, Exposure to Air Pollution (Toxic Air Contaminants), requires the Project to either prepare a Health Risk Assessment to determine the health risk from exposure of Project residents to air pollutants to be submitted to the City for review and approval, or incorporate City's recommended health risk measures into the Project such as install, operate, and maintain a central heating and ventilation system or other air take system in the building or in each individual residential unit, that meets or exceeds an efficiency standard of MERV 13. According to the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE), MERV-13 air filtration devices installed on an HVAC air intake system can remove 80 to 90 percent of indoor particulate matter (greater than 0.3 microns in diameter). Studies have shown that particulate levels in homes with high efficiency filtration systems were 50 percent to 74 percent lower than those without filtration systems. [15]

Consistent with SCA AIR-4, and the 2019 Title 24 of the California Code of Regulations, the Project would be required to install air filtration units rated MERV-13 or higher to reduce cancer risks and PM exposure of Project residents to sources of air pollution. The effectiveness of filters in reducing health risks depends greatly on properly sealed ducting and maintenance. Therefore, an ongoing maintenance plan for the building's HVAC air filtration system shall also be implemented, as required as part of SCA AIR-4. With implementation of the SCA and compliance with Title 24 requirements, the health risk impact to Project residents would be reduced to a less than significant level.

7.2.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents considered throughout this analysis, the Project would not result in new or more severe significant impacts related to air quality than those already identified in the Previous CEQA Documents**.** Based on the analysis, with implementation of the applicable SCAs, the Project would not exceed any of the City's applicable significance thresholds related to air quality. Therefore, Project construction and operation would result in less-than-significant impacts relating to air quality, including health risk. **SCA AIR-1**, **Dust Controls – Construction Related**; **SCA AIR-2**, **Criteria Air Pollutant Controls – Construction Related**; **SCA AIR-3**, **Diesel Particulate Matter Controls – Construction Related**; **SCA AIR-4**, **Exposure to Air Pollution (Toxic Air Contaminants)**; **SCA AIR-5, Stationary Sources of Air Pollution (Toxic Air Contaminants);** and **SCA AIR-6**, **Asbestos in Structures** (see Attachment A), would be applicable to and implemented by the Project to further ensure that, to the extent feasible, air quality impacts associated with the Project would be less than significant. Therefore, no mitigation measures are required.

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[15] Bhangar, S., Mullen, N.A., Hering, S.V., Kreisberg, N.M., Nazaroff, W.W., Ultrafine Particle Concentrations and Exposures in Seven Residences in Northern California, Indoor Air, 21, 132-144, 2011.

7.3 Biological Resources

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service; Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service; Have a substantial adverse effect on federally protected wetlands (as defined by Section 404 of the Clean Water Act) or state protected wetlands, through direct removal, filling, hydrological interruption, or other means; Substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;	☒	☐	☐
b. Fundamentally conflict with the City of Oakland Tree Protection Ordinance (Oakland Municipal Code [OMC] Chapter 12.36) by removal of protected trees under certain circumstances; or Fundamentally conflict with the City of Oakland Creek Protection Ordinance (OMC Chapter 13.16) intended to protect biological resources.	☒	☐	☐

7.3.1 Previous CEQA Documents Findings

The Previous CEQA Documents identified less-than-significant impacts related to biological resources, with the 2011 Renewal Plan Amendments EIR and 2010 Housing Element Update EIR and its 2014 Addendum identifying applicable City of Oakland SCAs. No mitigation measures were necessary.

7.3.2 Project Analysis

7.3.2.1 Special-Status Species, Wildlife Corridors, Riparian and Sensitive Habitat, Wetlands, Tree and Creek Protection (Criteria 3a and 3b)

The Project site is located in the fully developed urban area of Downtown Oakland. It is fully paved and covered by an existing commercial building and a partially constructed two-story concrete building. The site does not contain vegetation or hydrology conditions suitable for sustaining wetlands, nor are any known special status species or sensitive habitats, including those that could support migratory fish or birds, located on the site.

There is one existing street tree present on the Project site along the 1510 Webster Street frontage which would be removed as part of the Project, and would be considered a protected tree. Therefore, the Project would be required to implement SCA BIO-1, Tree Removal During Breeding Season, and SCA BIO-2, Tree Permit. The Project would also install approximately six new street trees, as required, along all of the street frontages (see Figure 2). Although there are trees present on properties adjacent to the Project site and along sidewalks in front of adjacent properties, they are not connected to other nearby natural habitats and therefore do not constitute a wildlife corridor. There are no natural sensitive communities in the Project vicinity.

Although glass is a part of the Project's exterior, the Project is not located immediately adjacent to a substantially vegetated park larger than one acre or a substantial body or water. The Project would include a rooftop open space on the podium with vegetation in containers including potted trees and shrubs which would not be considered a substantial vegetated green roof or substantial vegetated area. Therefore, the City's SCA related to bird collision reduction measures would not be required for the Project.

In addition, the Project is not located within an area mapped as critical habitat for the Alameda Whipsnake by the U.S. Fish and Wildlife Service. As discussed in Section 7.1.2.1 above, the Project would not create a new source of substantial light or glare. Therefore, the Project would not cause an adverse impact to birds from light or glare. The Project would also comply with SCAs relating to stormwater runoff from construction and operation to ensure that biological resources are protected (see Section 7.8, Hydrology and Water Quality, below and Attachment A).

7.3.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, the Project would not result in any new or more severe significant impacts related to biological resources than those identified in the Previous CEQA Documents. Implementation of **SCA BIO-1, Tree Removal During Breeding Season**; **SCA BIO-2, Tree Permit**; **SCA HYD-1, Erosion and Sedimentation Control Measures for Construction**; **SCA HYD-2, NPDES C.3 Stormwater Requirements for Regulated Projects**; and **SCA UTIL 7, Water Efficient Landscape Ordinance (WELO)** (see Attachment A) would be applicable to and would further ensure that impacts related to biological resources associated with the Project are less than significant. Therefore, no mitigation measures are required.

7.4 Cultural Resources

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Cause a substantial adverse change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5. Specifically, a substantial adverse change includes physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be "materially impaired." The significance of an historical resource is "materially impaired" when a project demolishes or materially alters, in an adverse manner, those physical characteristics of the resource that convey its historical significance **and** that justify its inclusion on, or eligibility for inclusion on an historical resource list (including the California Register of Historical Resources, the National Register of Historic Places, Local Register, or historical resources survey form (DPR Form 523) with a rating of 1-5);	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5;	☒	☐	☐
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or	☒	☐	☐
d. Disturb any human remains, including those interred outside of formal cemeteries.	☒	☐	☐

7.4.1 Previous CEQA Documents Findings

The 1998 LUTE EIR identified potentially significant impacts to historical resources and identified mitigation measures to reduce the impact to less-than-significant levels. The 2011 Renewal Plan Amendments EIR, which addresses much of the oldest part of Downtown Oakland, identified a significant and unavoidable impact to historical resources, even with the implementation of mitigation measures. The 2010 Housing Element Update EIR and its 2014 Addendum identified City of Oakland SCAs pertaining to historical resources and found a less-than-significant impact.

Each of the Previous EIRs identified less-than-significant effects to archaeological and paleontological resources and human remains, specifically with the incorporation of City of Oakland SCAs, except that the 1998 LUTE EIR identified mitigation measures that are functionally equivalent to current SCAs to reduce the effects to archaeological resources to less-than-significant levels.

7.4.2 Project Analysis

7.4.2.1 Historical Resources (Criterion 4a)

The project would include demolition of the building located at 1510 Webster Street. The building is currently assigned an Oakland Cultural Heritage Survey (OCHS) rating of F3, which means that the building was less than 45 years old when it was originally surveyed (F) and is not located in a historic district (3). The building was constructed in 1951 and is age-eligible for consideration as a potential historical resource. ESA completed an evaluation of the building in August 2020 and found it ineligible for listing on the California Register of Historical Resources (California Register) or for consideration as a City of Oakland A- or B-rated historical resource. Therefore, for the purposes of CEQA, 1510 Webster Street is not considered an historical resource (see **Appendix D**).[16]

There are two areas of primary importance (API), one historic district listed in the National Register of Historic Places (National Register), and four individual properties located in the vicinity of the Project site that are considered to be historical resources for the purposes of CEQA. These include:

- APIs
  - Coit Building Group API
  - 17th Street Commercial API
- National Register-listed district
  - Harrison and 15th Streets National Register-listed Historic District (this contains the entire Coit Building Group API and additional contributing properties)
- Individual Properties
  - Thompson Building (330-336 15th Street), a contributor to the Harrison and 15th Streets National Register-listed Historic District that is adjacent to the Project site
  - Young Women's Christian Association (1515 Webster Street), a Landmark that is also individually listed on the National Register
  - White Building (327-349 15th Street and 1464-1466 Webster Street, with frontage on both streets), a Landmark that is also a contributor to the Harrison and 15th Streets National Register-listed Historic District
  - Howden Building (333 17th Street), a contributor to the 17th Street Commercial API and individually eligible for listing in the National Register

Although the Project site is not located within a designated historic district, it is located near the Coit Building Group API and approximately 25 feet from the nearest contributing building (300-318 15th Street and 1501 Harrison Street, with frontage on both streets), which is on the same block as the Project site. When it was first documented in 1984 as part of the OCHS, the API was determined to be eligible for listing in the National Register as an architecturally and historically significant group of four commercial buildings constructed in the 1910s and 1920s. The buildings,

[16] "Title Insurance Firm Moves to $500,000 Home." *Oakland Tribune*, June 17, 1951, p. A13.

which range in height from one to seven stories, were documented as sharing "similar surface materials, massing, balanced articulation, [and] Renaissance/Baroque ornamentation." Additionally, the Coit Building Group API is significant for the role it played in transforming the historically residential Harrison Street to "an exclusive shopping district, called 'Harrison Boulevard' by its boosters."[17] The entire API is contained within the larger Harrison and 15th Streets Historic District, which was listed in the National Register in 1996 under Criterion A (Events) for its role in expanding Oakland's downtown district east toward Lake Merritt.[18] The Project site is adjacent to the Thompson Building at 330-336 15th Street, which is a contributing building to the National Register-listed district and is considered to be a historical resource for the purposes of CEQA.

The 17th Street Commercial API is located several hundred feet to the northeast of the Project site. When it was initially documented in 1984 as part of the OCHS, the API was determined to be eligible for listing in the National Register as an architecturally and historically significant group of six commercial buildings constructed in the 1920s. This "extremely cohesive group of low-rise commercial structures, together a monument to the 1920s speculative building boom as seen by relatively small investors and developers[,]" are designed in "early 20th century commercial" architectural styles, and some also exhibit Spanish Baroque/Moorish- or International-style details.[19] Despite the physical distance from the 17th Street Commercial API, the Project has the potential to cast shadows onto contributors of the API.

Additionally, there are three designated Oakland Landmarks, which are considered to be historical resources for the purposes of CEQA, located in close proximity to the Project site: the Young Women's Christian Association (YWCA) at 1515 Webster Street[20, 21] (also individually listed in the National Register[22]), the White Building at 327-349 15th Street and 1464-1466 Webster Street, with frontage on both streets[23] (also a contributor to the National Register-listed Harrison and 15th Streets Historic District), and the Howden Building at 337 17th Street[24] (also a contributor to the 17th Street Commercial API and individually eligible for listing in the National Register).

Impacts

Vibration

Of the historical resources listed above, only the Thompson Building at 330-336 15th Street is adjacent to the Project site. The Project Applicant would be required to adhere to the conditions of SCA NOI-7, Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities, which entails completion of a Vibration Analysis that establishes pre-construction baseline conditions and

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17 Oakland Cultural Heritage Survey. Historic Resources Inventory Form for the Coit Building Group, 1984, p. 11.

18 Anne Bloomfield. National Register of Historic Places Registration Form for the Harrison and Fifteenth Streets Historic District, 1996, p. 6.

19 Oakland Cultural Heritage Survey. Historic Resources Inventory Form for the 17th Street Commercial District, 1984, pp. 1, 8-18.

20 Landmarks Preservation Advisory Board. Designation of the Oakland YWCA Building as a Landmark (LM 77-151), February 17, 1977.

21 Oakland Cultural Heritage Survey. Historic Resources Inventory Form for the Young Women's Christian Association Building, 1982.

22 Oakland Cultural Heritage Survey. National Register of Historic Places Registration Form for the Oakland YWCA Building, 1983 (revised 1984).

23 Oakland Cultural Heritage Survey. Historic Resources Inventory Form for the White (Mrs. A. E.) Building, 1982.

24 Oakland Cultural Heritage Survey. Historic Resources Inventory Form for the Howden (Robert A.) Building, 1984.

threshold levels of vibration that could damage the structure and/or substantially interfere with activities at 330-336 15th Street. The Vibration Analysis shall identify design means and methods of construction that shall be utilized in order to not exceed the thresholds and will be submitted to the Bureau of Building prior to construction. The Project Applicant shall implement the recommendations during construction. Therefore, with the implementation of SCA NOI-7, potential effects from construction vibration on historical resources would be less than significant, and no additional mitigation is required.

Shadow

A shadow study for the Project was completed by Prevision Design in August 2020 (see Appendix A). Of the historical resources in the vicinity of the Project site, it appears that only the YWCA at 1515 Webster Street possesses sunlight-sensitive features that could be affected by the Project shadow. These features include elaborately carved ornamentation and design elements that depend on the contrast between light and dark (e.g., open galleries, arcades, or recessed entries or balconies) located on the primary (east) façade of the building. The YWCA is listed in the National Register under Criterion A for "its historic associations with the development of social services at the community level as well as initiating an international Christian women's movement" and Criterion C as "the first of 17 YWCAs nationwide [that were] designed by renowned architect Julia Morgan [and] an excellent example of Julia Morgan's designs for women's organizations in its adaptation of the Renaissance architectural forms."[25] Despite the Project shadow being cast on this historical resource to varying degrees throughout the year, potential effects from the Project shadow would be less than significant because the significance of the YWCA is primarily based in its associations with community development and its architect. These areas of significance would not be materially impaired by increased shadow cast by the Project.

Based on the discussion above, the proposed project would not result in any new or more severe significant impacts on historical resources than those identified in the Previous CEQA Documents.

7.4.2.2 Archaeological and Paleontological Resources and Human Remains (Criteria 4b through 4d)

The Project would involve excavation, grading, foundation installation, and removal of asphalt and dirt for building construction. The Project site is underlain by 3 feet of sandy fill overlying 29 feet of the very dense Merritt Sands which overlie stiff clays and silts with interbeds of sands, and would involve excavation and pier drilling up to a depth of approximately 12 to 30 feet.[26] Therefore, there is the potential to impact unknown archeological resources, as well as potential unknown paleontological resources or human remains, as noted in the Previous CEQA Documents. However, SCA CUL-1, Archaeological and Paleontological Resources – Discovery During Construction, would require all work within 50 feet of inadvertent discoveries of any subsurface archaeological materials to be halted and a qualified archaeologist or paleontologist hired to both assess the significance of the find, and deal with the find according to regulatory guidance. Since the Project is located in an area

[25] Oakland Cultural Heritage Survey. National Register of Historic Places Registration Form for the Oakland YWCA Building, 1983 (revised 1984).

[26] Terraphase Engineering Inc., 2020. *Geotechnical Design Report, Proposed 15th and Webster Development, 1510 and 1528 Webster Street, Oakland, California*, May 1, 2020.

in which the 2011 Renewal Plan Amendments EIR has identified as a higher likelihood of archaeological finds, the Project would be required to implement SCA CUL-2, Archaeologically Sensitive Areas – Pre-Construction Measures, so that archaeological resources are further protected and accounted for**.** While the discovery of human remains on the Project site is unlikely, in the case that human remains are inadvertently encountered during construction, implementation of SCA CUL-3, Human Remains – Discovery During Construction, would ensure that the remains are handled properly by the Coroner or in consultation with the California Native American Heritage Commission (NAHC).

7.4.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, the Project would not result in any new or more severe significant impacts related to cultural resources than those identified in the previous CEQA documents. Implementation of **SCA CUL-1**, **Archaeological and Paleontological Resources – Discovery During Construction**; **SCA CUL-2**, **Archaeologically Sensitive Areas – Pre-Construction Measures**; **SCA CUL-3**, **Human Remains – Discovery During Construction**; and **SCA NOI-7 Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities** (see Attachment A), would further ensure that potential impacts associated with cultural resources would be less than significant. No mitigation measures are required.

7.5 Geology, Soils, and Geohazards

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Expose people or structures to substantial risk of loss, injury, or death involving: 1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map or Seismic Hazards Map issued by the State Geologist for the area or based on other substantial evidence of a known fault; 2. Strong seismic ground shaking; 3. Seismic-related ground failure, including liquefaction, lateral spreading, subsidence, collapse; or 4. Landslides;	☒	☐	☐
b. Be located on expansive soil, as defined in Section 1802.3.2 of the California Building Code (2007, as it may be revised), creating substantial risks to life or property; result in substantial soil erosion or loss of topsoil, creating substantial risks to life, property, or creeks/waterways.	☒	☐	☐

7.5.1 Previous CEQA Documents Findings

The Previous CEQA Documents identified that impacts to geology, soils, and geohazards would be less than significant, with the 2011 Renewal Plan Amendments EIR and 2010 Housing Element Update EIR and its 2014 Addendum identifying applicable City of Oakland SCAs. No mitigation measures were necessary.

7.5.2 Project Analysis

7.5.2.1 Seismic Hazards, Expansive Soils, and Soil Erosion (Criteria 5a and 5b)

The Project site is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone.[27] Therefore, the Project would not result in significant impacts with respect to rupture of a known earthquake fault. The Project site is located on flat land, with no adjacent hillsides, and is not located

[27] Metropolitan Transportation Commission (MTC), MTC/ABAG Hazard Viewer Map, Earthquake Fault Zones, https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8, accessed August 6, 2020.

in a landslide area.[28] Furthermore, the Project site is not located within a liquefaction hazard area, as mapped by the California Geological Survey (CGS).[29]

According to the geotechnical report prepared for the Project by Terraphase Engineering, the Project site is underlain by 3 feet of sandy fill overlying 29 feet of the very dense Merritt Sands which overlie stiff clays and silts with interbeds of sands. The Project would involve excavation and pier drilling up to a depth of approximately 12 to 30 feet. The 19-story portion of the Project building would be constructed on the parcel at 1510 Webster, where the existing commercial building contains a one-story basement. The podium would extend to the parcel at 1510 Webster, where the partially constructed structure does not contain a basement and is supported on deep drilled piers. While the Merritt Sands are extremely dense and will not significantly settle, the clays underlying the sands would consolidate with time. The Project would include differing foundations, differing foundation depths, and differing foundation loads. For this reason the geotechnical report found that differential settlements could occur between the two parcels, and the Project would need to be designed to accommodate at least six inches of differential movement.[30]

The Project would include grading and excavation across the approximately 0.33-acre site and thus would require a grading permit. As such, SCA GEO-2, Soils Report, would apply to the Project and would require the Project Applicant to implement the recommendations contained in an approved site-specific soils report to ensure that the grading practices and Project design are appropriate in regard to the nature, distribution and strength of existing soils. Likewise, SCA HYD-1, Erosion and Sedimentation Control Plan for Construction, would apply to the Project and would ensure that erosion, sedimentation, and water quality impacts during construction are reduced to the maximum extent practicable. SCA GEO-1, Construction-Related Permit(s), would address all applicable regulatory standards and regulations pertaining to Project grading and excavation activities.

The closest significant earthquake fault that could contribute to ground shaking on the Project site is the Hayward Fault, located approximately 3.5 miles to the east.[31] The Project would be required to comply with the California Building Code's current seismic standards, which require specific design parameters for construction in various seismic environments per City of Oakland SCA GEO-1, Construction-Related Permit(s), and SCA GEO-2, Soils Report, to ensure that development of the Project would avoid and minimize potential geologic impacts through compliance specifically with local and state regulations governing design and construction practices. Additionally, the partially constructed two-story concrete building on the Project site contains existing deep drilled piers as part of the building foundation which could potentially be reused to support new structures. Section 1810.1.2 of the 2019 California Building Code allows the reuse of existing deep foundation elements if the elements can be load tested. The Project would be required to comply with the requirements of California Building Code and the Seismic Hazards Mapping Act, which would prevent exposure of people or structures to substantial risk of loss, injury, or death during a large regional earthquake.

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[28] MTC, MTC/ABAG Hazard Viewer Map, Landslide Hazard (Rainfall Induced), https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8, accessed August 6, 2020.

[29] Terraphase Engineering Inc., 2020. *Geotechnical Design Report, Proposed 15th and Webster Development, 1510 and 1528 Webster Street, Oakland, California*, May 1, 2020.

[30] Ibid.

[31] Ibid.

It is possible that unknown groundwater wells and abandoned structures (pits, mounts, septic tank vaults, sewer lines, etc.) could be present and disturbed during grading and construction activities, which would be appropriately addressed through implementation of SCA GEO-2, Soils Report, and SCA HYD-1, Erosion and Sedimentation Control Plan for Construction, applicable to the Project.

7.5.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, the Project would not result in any new or more significant impacts related to geology and soils than those identified in the Previous CEQA Documents. Furthermore, implementation of **SCA GEO-1**, **Construction-Related Permit(s)**; **SCA GEO-2**, **Soils Report**; and **SCA HYD-1**, **Erosion and Sedimentation Control Plan for Construction** (see Attachment A), would ensure that potential impacts associated with hazardous geologic and soils conditions would be less than significant. No mitigation measures are required.

7.6 Greenhouse Gas and Climate Change[32]

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, specifically: 1. For a project involving a stationary source, produce total emissions of more than 10,000 metric tons of CO2e annually. [NOTE: Stationary sources are projects that require a BAAQMD permit to operate.] 2. For a project involving a land use development,[33] fail to demonstrate consistency with the 2030 Equitable Climate Action Plan (ECAP) adopted by the City Council on July 28, 2020. [NOTE: Land use developments are projects that do not require a BAAQMD permit to operate.] Consistency with the 2030 ECAP can be shown by either: (a) committing to all of the GHG emissions reductions strategies described on the ECAP Consistency Checklist,[34] or (b) complying with the GHG Reduction Standard Condition of Approval that requires a project-level GHG Reduction Plan quantifying how alternative reduction measures will achieve the same or greater emissions than would be achieved by meeting the ECAP Consistency Checklist..	☒	☐	☐
b. Fundamentally conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing greenhouse gas emissions.	☒	☐	☐

[32] The City's Thresholds of Significance pertaining to greenhouse gas (GHG) emissions and global climate change are intended to achieve deeper emissions reductions than the more lenient thresholds adopted by the Bay Area Air Quality Management District (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 the City's 2030 Equitable Climate Action Plan (ECAP), which provide substantial evidence that adherence to the 2030 ECAP action items will achieve GHG emissions reduction targets of 56% below 2005 levels by 2030 and 83% below 2005 levels by 2050. 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.

[33] For projects that involve both a stationary source and a land use development, calculate each component separately and compare to the applicable threshold.

[34] The ECAP Consistency Checklist includes all of the project-level GHG emissions reduction strategies that are either regulatory requirements or are necessary at a project level to meet the adopted city-wide GHG emissions reduction targets of 56% reduction from 2005 levels by 2030 and 83% reduction by 2050. As new strategies are adopted to align with the 2030 ECAP, the Checklist will be updated and new projects will be expected to achieve the revised strategies or comply with GHG Reduction Standard Condition of Approval.

7.6.1 Previous CEQA Documents Findings

Climate change and greenhouse gas emissions (“GHG”) were not expressly addressed in the 1998 LUTE EIR. The 2011 Renewal Plan Amendments EIR and 2010 Housing Element Update EIR and its 2014 Addendum identified less-than-significant GHG impacts with the implementation of applicable City of Oakland SCAs. No mitigation measures were necessary.

7.6.2 Project Analysis

7.6.2.1 Greenhouse Gas Emissions (Criterion 6a)

Both BAAQMD and the California Air Pollution Control Officers Association (“CAPCOA”) consider GHG impacts to be exclusively cumulative impacts in that no single project could, by itself, result in a substantial change in climate. Therefore, the evaluation of GHG emissions impacts evaluates whether the Project would make a considerable contribution to cumulative climate change effects. The City of Oakland’s current adopted thresholds for GHG emissions rely upon the technical and scientific basis for the City's 2030 Equitable Climate Action Plan (ECAP), which provide substantial evidence that adherence to the 2030 ECAP action items will achieve GHG emissions reduction targets of 56 percent below 2005 levels by 2030 and 83 percent below 2005 levels by 2050. These reduction targets are more aggressive than the State's adopted 2030 reduction target of 40 percent below 1990 levels (per AB 32). Therefore, reductions below the City of Oakland's efficiency metric also meet the State's adopted 2030 goals.

An ECAP Consistency Review Checklist was prepared for the Project (see **Appendix E**). The purpose of the ECAP Consistency Review Checklist is to determine, for purposes of compliance with CEQA, whether a development project complies with the ECAP and the City’s GHG emissions reduction targets. According to the Project’s ECAP Consistency Review Checklist, the Project has committed to all applicable GHG emissions reduction strategies, and would, therefore, be in compliance with the ECAP. Therefore, the Project would be required to implement SCA GHG-1, Project Compliance with the ECAP Consistency Checklist, which would ensure that all ECAP Checklist items are incorporated into the Project. Since the Project has committed to all applicable GHG emissions reductions strategies described on the ECAP Consistency Checklist, Project GHG emissions associated with land use development would be less than significant.

A backup diesel emergency generator is proposed as part of the Project to comply with the California Building Code requirement for elevator safety in all buildings in excess of 70 feet in height, which would represent a new stationary source of GHG emissions. According to the City’s GHG thresholds, for projects that involve both a stationary source and a land use development, the stationary source emissions should be calculated separately and compared to the stationary source threshold. The CalEEMod model run for the Project (see Section 7.2 *Air Quality*, above) also calculated the GHG emissions that would be generated by stationary sources associated with the Project. Stationary source-related emissions would total approximately 12.8 metric tons of CO_2 equivalents (“CO_2e”) annually, which is below City and BAAQMD threshold for stationary sources of 10,000 metric tons CO_2e per year. Therefore, GHG emissions associated with the Project’s emergency generator would also be less than significant.

Although not required to mitigate a significant impact related to GHG emissions, the Project would be required to implement several other City of Oakland SCAs that would contribute to minimizing potential GHG emissions from Project construction and operations. These include SCA AIR-2, Criteria Air Pollutant Controls - Construction Related, SCA AIR-3, Diesel Particulate Matter Controls - Construction Related, and SCA UTIL-1, Construction and Demolition Waste Reduction and Recycling, SCA AES-3, Landscape Plan, SCA TRA-2, Bicycle Parking, SCA TRA-4, Transportation and Parking Demand Management Plan, SCA UTIL-4, Green Building Requirements, and SCA UTIL-7, Water Efficient Landscape Ordinance (WELO).

7.6.2.2 Consistency with GHG Emissions Plans and Policies (Criterion 6b)

The Project would comply with the City of Oakland's ECAP, current City Sustainability Programs, and General Plan policies and regulations regarding GHG reductions and other local, regional and statewide plans, policies and regulations that are related to the reduction of GHG emissions and relevant to the Project.

Specifically, the Project would be consistent with the State's Updated Climate Change Scoping Plan and the City of Oakland's ECAP (as indicated by the attached ECAP Checklist in Appendix E) in that it has committed to all applicable GHG emissions reductions strategies and would include a number of sustainability design features.

On December 15, 2020, the Oakland City Council adopted an Ordinance, adding to the Oakland Municipal Code Chapter 15.37, "All-Electric Construction In Newly Constructed Buildings." These new regulations require all newly constructed buildings to meet the definition of an All-Electric Building, as defined therein. As a result, the Project will be required to be designed to use a permanent supply of electricity as the source of energy for all space heating, water heating, cooking appliances, and clothes drying appliances, and will be prohibited from having natural gas or propane plumbing installed in the building. Designing the building to use a permanent supply of electricity will reduce the estimated annual operational greenhouse gas emissions from energy emission sources of the project.

The Project Applicant intends to meet Build it Green, City Green Building ordinances and requirements such as reduction in indoor and outdoor water use. The Project would optimize the efficiency of its building envelope, and it would reduce the building's energy use through the use of efficient lighting and HVAC systems. Also, the Project would meet the most recently implemented Building Energy Efficiency Standards. Additionally, the Project would be located in area with diverse land uses and in proximity to transit services, which would reduce the number of vehicle trips and the associated GHG emissions generated. Therefore, the Project would be considered to be consistent with all applicable goals, policies and regulations adopted to reduce GHG emissions and this impact would be less than significant.

7.6.3 Conclusion

Based on the analysis above, and on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, the Project would not result in any new or more severe significant impacts related to GHG emissions or compliance with applicable plans, policies, or regulations adopted for the purposes of reducing GHG emissions than those identified in the Previous CEQA Documents. Implementation of **SCA GHG-1, Project Compliance with the ECAP Consistency Checklist** (see Attachment A) would be applicable to and would ensure that impacts related to GHG emissions associated with the Project are less than significant. In addition, implementation of SCAs relating to Aesthetics, Air Quality, Transportation, and Utilities (see Sections 7.1, 7.2, 7.13, 7.14 and Attachment A) including **SCA AES-3, Landscape Plan**; **SCA AIR-2, Criteria Air Pollutant Controls - Construction Related**; **SCA AIR-3, Diesel Particulate Matter Controls - Construction Related**; **SCA TRA-2, Bicycle Parking**; **SCA TRA-4, Transportation and Parking Demand Management**; **SCA UTIL-1, Construction and Demolition Waste Reduction and Recycling**; **SCA UTIL-4, Green Building Requirements**; and **SCA UTIL-7, Water Efficient Landscape Ordinance (WELO)**, would further ensure that impacts associated with GHG emissions would be less than significant. No mitigation measures are required.

7.7 Hazards and Hazardous Materials

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials; Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment; Create a significant hazard to the public through the storage or use of acutely hazardous materials near sensitive receptors; Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (i.e., the "Cortese List") and, as a result, would create a significant hazard to the public or the environment;	☒	☐	☐
b. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;	☒	☐	☐
c. Result in less than two emergency access routes for streets exceeding 600 feet in length unless otherwise determined to be acceptable by the Fire Chief, or his/her designee, in specific instances due to climatic, geographic, topographic, or other conditions; or Fundamentally impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	☒	☐	☐

7.7.1 Previous CEQA Documents Findings

The Previous CEQA Documents found less-than-significant effects regarding hazards and hazardous materials including risk of upset in school proximity and emergency response/evacuation plans, with the 2011 Renewal Plan Amendments EIR and 2010 Housing Element Update EIR and its 2014 Addendum identifying applicable City of Oakland SCAs. The 1998 LUTE EIR identified mitigation measures to reduce potentially significant effects regarding exposing workers and the public to hazardous substances to less-than-significant levels. These mitigation measures are now incorporated into the applicable City of Oakland SCAs.

7.7.2 Project Analysis

7.7.2.1 Exposure to Hazards, Hazardous Materials Use, Storage and Disposal (Criterion 7a)

Within the project vicinity, there are three active Cleanup Program sites with site assessment and/or remediation activities occurring within the past four years. The Project site is also listed as a Cleanup Program site due to the activities described below.[35,36] A Phase I Environmental Site Assessment (ESA) was conducted for the Project site in May 2019.[37] In addition, a Phase II ESA was prepared in July 2019.[38] The following is a summary of the Phase I ESA and Phase II ESA findings.

Phase I ESA

The Phase I prepared for the Project site summarized the history of land uses on the site that included residential followed by light industrial and commercial uses such as an auto repair building, a restaurant, and offices on the northern parcel of the Project site, and a parking lot on the southern portion of the Project site. The existing building was occupied by a knitting company from 1992 to approximately 2015 and has been vacant since. The parking lot on the southern portion of the site is occupied by a construction project that was started around 2014 and was never completed.

The Phase I ESA did not reveal any recognized environmental conditions (RECs).[39] However, it identified other environmental concerns associated with former operations on and adjacent to the Project site. The former auto repair shop operated on the Project site from approximately 1925 until 1943 and involved storage and use of hazardous materials. Since 1943, the Project site was redeveloped with the existing building with a complete single-level excavated basement likely requiring removal of any underground features associated with the former auto repair shop building. Additionally, no indication of the presence of fuel or oil storage tanks was found in the Phase I ESA's review of historical sources. Based on the small size of the operation, and the time elapsed since this property use, the historical uses of the Project site as an auto repair shop are not expected to represent a significant environmental concern.

The adjacent property to the north (1520 Webster Street) was formerly occupied by a dry cleaning business from around 1920 through 1938. The building at 1520 Webster Street was demolished sometime around 1971 and the site has been an asphalt-paved yard/parking lot since that time. No pollutant releases have been reported in association with this site and it is not known whether the dry cleaner was a pickup and drop-off location, or if dry cleaning was actually performed onsite.

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35 State Water Resources Control Board (SWRCB), 2020. GeoTracker database. Available at: geotracker.waterboards.ca.gov/. Accessed August 11, 2020.

36 California Department of Toxic Substances Control (DTSC), 2020. Envirostor database. Available at: http://www.envirostor.dtsc.ca.gov/public/. Accessed August 11, 2020.

37 PANGEA Environmental Services, Inc., 2019. *Phase I Environmental Site Assessment Report*, 1510 Webster Street and 344 15th Street, Oakland, California 94512, May 7, 2019.

38 PANGEA Environmental Services, Inc., 2019. *Phase II Environmental Site Assessment Report*, 1510 Webster Street and 344 15th Street, Oakland, California, July 3, 2019.

39 Recognized Environmental Condition (REC) – the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that indicate pose a material threat of a future release to the environment.

While the length of time elapsed since operations may potentially reduce the risk of a significant release if dry cleaning operations were actually performed at 1520 Webster Street, the only way to determine if a release has occurred that would have migrated beneath the Project site would be through the performance of subsurface sampling. Therefore, as recommended in the Phase I ESA, a Phase II ESA was prepared and is summarized below.

The Phase I ESA identified additional environmental concerns associated with the existing building on the Project site. Given its age, asbestos and/or lead paint may be present in or on the existing building and a survey would be required as part of future site demolition. Additionally, mold growth or conditions conducive for mold growth were observed in various portions of the ground floors and basement of the existing building which will require remediation clean up.

Phase II ESA

In May and June 2019, a Phase II ESA was prepared for the Project and included subsurface assessment of soil, groundwater, subslab gas, and soil gas for potential subsurface impact and vapor intrusion. Based on initial detection of volatile organic compounds (VOCs) in subslab gas samples, subsequent assessment of soil, groundwater, and soil gas was conducted.[40]

The Phase II ESA identified the California Regional Water Quality Control Board's (RWQCB) Environmental Screening Levels (ESLs) for residential use as the applicable ESLs for the Project given the proposed residential use. Based on comparison to the applicable ESL, the Phase II ESA identified Tetrachloroethylene (PCE) and Trichloroethylene (TCE), both of which are VOCs, as the primary pollutants of concern on the Project site. Benzene, another VOC, was also identified as a secondary pollutant of concern on the Project site.

Metals detected in soil onsite were below published background levels and the applicable ESL. PCE was detected in one soil sample on the parcel at 1510 Webster Street, but in a concentration below the ESL. However, PCE was found in unsaturated soil above the estimated groundwater depth suggesting the potential for an onsite source.

PCE exceeding the ESL and the maximum contaminant level (MCL) was detected in one groundwater sample on the 1508 Webster Street parcel. Based on data from nearby sites, the estimated groundwater flow direction is to the north-northeast toward Lake Merritt. Given the historic dry cleaner business operated on a parcel north-northeast of the Project site and was operational between approximately 1920 to 1938, when PCE was not used as a dry cleaning solvent, the Phase II ESA recommended additional groundwater sampling to evaluate if PCE emanates from an onsite or off-site source, and if the PCE plume extends downgradient toward the adjacent building to the east along 15th Street where PCE could represent a vapor intrusion concern.

PCE and TCE were detected in subslab gas in concentrations above the ESL and merit remediation and/or mitigation to safeguard future occupants from potential vapor intrusion. Benzene above the

[40] Subslab soil gas is typically collected through a building floor, while exterior soil gas is typically collected away from the building or through a building floor at a lower depth than subslab soil gas samples.

ESL was also found in subslab gas and soil gas onsite but not in the soil or groundwater suggesting the benzene impact is primarily limited to subslab gas and soil gas.

The Phase II concluded that, in conjunction with future site use and development, oversight agencies would require further evaluation of subsurface conditions, possible remediation of discovered VOCs, engineering controls (e.g., vapor intrusion mitigation system), and institutional controls (e.g., land use covenant). Prior to occupancy, indoor air sampling for PCE, TCE, and benzene would also be required to evaluate potential vapor intrusion risk.

Additional Testing

To address data gaps and additional testing recommended in the Phase II ESA, a Data Gap Work Plan was prepared and submitted to the Alameda County Department of Environmental Health (ACDEH) that proposed additional soil, soil vapor, and groundwater sampling.[41,42] ACDEH conditionally approved a Data Gap Work Plan for the Project site in July 2020.[43] The Project Applicant also prepared a Draft Corrective Action Plan dated September 23, 2020**.** The Draft Corrective Action Plan proposes: (1) remedial excavation in select areas where elevated concentrations of metals including lead and arsenic have been detected in soil, and where benzene and PCE have been detected in soil vapor for off-site disposal at a permitted disposal facility; (2) removal of a limited volume of groundwater, if encountered, during excavation activities; and (3) installation of vapor mitigation engineering controls to control potential vapor intrusion to indoor air of the proposed residential structures and migration along new utility corridors. Based on their preliminary review, ACDEH concurred that the proposed approach in the Draft Corrective Action Plan will address environmental concerns for on- and off-site receptors.[44]

The Project would be required to implement SCA HAZ-2, Hazardous Building Materials and Site Contamination, which obligates the Project Applicant to submit the Phase I/II to the City for approval. Once approved, SCA HAZ-2 further requires the Project Applicant to submit to the City evidence of approval for any proposed remedial action, including potential vapor intrusion mitigation systems, and required clearances by the applicable local, state, or federal regulatory agency. As such, compliance with SCA HAZ-2 would ensure that the recommendations of the Phase II ESA and requirements for remediation by the lead environmental regulatory agency are implemented. SCA HAZ-2 would also ensure that any extracted groundwater is 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.

The Project Applicant would also be required to implement SCA HAZ-1, Hazardous Materials Related to Construction, to ensure best management practices are followed during construction

41 Cornerstone Earth Group, 2020. *Data Gap Work Plan*, 1510 Webster and 344 15th Street Oakland, California, May 6, 2020.

42 Cornerstone Earth Group, 2020. *Addendum to Data Gap Work Plan*, RO3417, 1510 Webster Street, Oakland, California 94607, July 13, 2020.

43 ACDEH, 2020a. Correspondence from Drew York, Senior Hazardous Material Specialist, Local Oversight & Site Cleanup Program, RE: RO3417 – 1510 Webster St, July 20, 2020.

44 ACDEH, 2020b. *Request to Submit a Draft Corrective Action Plan Fact Sheet for the Initiation of the Public Participation Period for the Draft Corrective Action Plan, Site Cleanup Program Case No. RO0003417 & GeoTracker Global ID T10000014018,* November 25, 2020.

activities. The Project uses during operation include general building management, which would not involve the transportation, use, and storage of a significant amount of hazardous materials. The transportation, use, and storage of all hazardous materials involved with the Project (construction and operation) would be required to follow the applicable laws and regulations adopted to safeguard workers and the general public. The Project would also be subject to the City of Oakland's SCA AIR-6, Asbestos in Structures, and SCA HAZ-1, pertaining to the removal of asbestos-containing materials from structures and implementation of best management practices for hazardous materials during construction, respectively.

Since development of the Project would be subject to the SCAs pertaining to the handling of hazardous materials related to construction activities and the remedial actions required when site contamination is encountered, consistent with the findings and conclusions of the Previous CEQA Documents, the potential impacts would be reduced to less-than-significant levels.

7.7.2.2 Hazardous Materials within a Quarter Mile of a School (Criterion 7b)

The Project site is located adjacent to the Envision Academy of Arts and Technology, an independently run public charter school overseen by the Oakland Unified School District (OUSD). However, the Project would involve residential, retail, and office uses, which would by their nature not require the use of significant quantities of hazardous materials or generate significant amounts of hazardous waste. As discussed above, during construction, the Project Applicant would be required to implement SCA HAZ-1 to ensure best management practices are followed during construction activities pertaining to any potentially contaminated materials. Therefore, consistent with the findings and conclusions of the Previous CEQA Documents, the potential impacts would be reduced to less-than-significant levels.

7.7.2.3 Emergency Access Routes (Criteria 7c)

The Project would not significantly interfere with emergency response plans or evacuation plans. Construction may result in temporary road and lane closures, which could require traffic control plans to ensure at least two emergency access routes are available for streets exceeding 600 feet in length, per the City of Oakland's Ordinances and General Plan Policies; however, the Project would not permanently change the surrounding streets or roadways. Additionally, SCA TRA-1, Construction Activity in the Public Right-of-Way, would ensure that the Project 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.

7.7.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, the Project would not result in any new or more severe significant impacts related to hazards and hazardous materials than those identified in the Previous CEQA Documents. Implementation of **SCA HAZ-1**, **Hazards Materials Related to Construction**; **SCA HAZ-2, Hazardous Building Materials and Site Contamination**; **SCA AIR-6, Asbestos in Structures;** and **SCA TRA-1**, **Construction Activity in the Public Right-of-Way** (see Attachment A), would further ensure that potential impacts associated with hazardous conditions would be less than significant. Therefore, no mitigation measures are required

7.8 Hydrology and Water Quality

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Violate any water quality standards or waste discharge requirements; Result in substantial erosion or siltation on- or off-site that would affect the quality of receiving waters; Create or contribute substantial runoff which would be an additional source of polluted runoff; Otherwise substantially degrade water quality; Fundamentally conflict with the City of Oakland Creek Protection Ordinance (OMC Chapter 13.16) intended to protect hydrologic resources.	☒	☐	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or proposed uses for which permits have been granted);	☒	☐	☐
c. Create or contribute substantial runoff which would exceed the capacity of existing or planned stormwater drainage systems; Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course, or increasing the rate or amount of flow, of a creek, river, or stream in a manner that would result in substantial erosion, siltation, or flooding, both on- or off-site	☒	☐	☐
d. Result in substantial flooding on- or off-site; Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, that would impede or redirect flood flows; Place within a 100-year flood hazard area structures which would impede or redirect flood flows; or Expose people or structures to a substantial risk of loss, injury, or death involving flooding.	☒	☐	☐

7.8.1 Previous CEQA Documents Findings

The Previous CEQA Documents found less-than-significant impacts related to hydrology or water quality, primarily given required adherence to existing regulatory requirements, many of which are incorporated in the City of Oakland's SCAs identified as applicable in the 2010 Housing Element Update EIR and its 2014 Addendum. The 2011 Renewal Plan Amendments EIR found less-than-significant effects regarding stormwater and 100-year flood hazard with implementation of applicable City of Oakland SCAs. The 1998 LUTE EIR acknowledged that areas considered under that EIR could potentially occur within a 100-year flood boundary. Adherence to existing regulatory requirements that are incorporated in the City of Oakland's SCAs would address potentially significant effects regarding flooding. No mitigation measures were warranted.

7.8.2 Project Analysis

7.8.2.1 Water Quality, Stormwater, and Drainages and Drainage Patterns (Criteria 8a and 8c)

The Project site is located in a densely developed, urban area and contains no lakes, creeks, or other surface waters on or adjacent to the site. Lake Merritt is the closest water body to the Project site and is located approximately 0.3 miles (four blocks) to the east. Thus, the Project is not located directly adjacent to a significant water body. The Project site is approximately 0.33 acres is currently entirely covered with impervious surfaces, including an existing commercial building and a partially constructed two-story concrete building. After construction, the Project site would contain approximately 95.2 percent impervious area and 4.8 percent pervious area. Best Management Practices (BMPs) proposed for on-site stormwater control include treatment control through a media filter that would treat stormwater runoff prior to discharge into the City's storm drain system. Therefore, the Project would not increase existing area of impervious surface on the site and would not substantially alter existing drainage patterns.

Further, since the Project would require a grading permit, the Project would be required to comply with SCA HYD-1, Erosion and Sedimentation Control Plan for Construction, relating to water quality and stormwater runoff from construction, and since the Project would create or replace 10,000 square feet or more of new or existing impervious surface area, the Project would be required to comply with SCA HYD-2, NPDES C.3 Stormwater Requirements for Regulated Projects, relating to water quality and stormwater runoff during operation. The Project would also be subject to SCA UTIL-6, Storm Drain System, which requires, to the maximum extent practicable, a peak stormwater runoff reduction from the Project site by at least 25 percent compared to the pre-Project condition.

7.8.2.2 Use of Groundwater (Criterion 8b)

Potable water is supplied by the East Bay Municipal Utility District (EBMUD), and groundwater in Oakland is generally not considered potable and is not utilized in the public drinking water supply. As noted above, the Project would not result in an increase in impervious surfaces and thus would not substantially affect groundwater recharge.

The Project would adhere to the City of Oakland's SCA GEO-1, Construction-Related Permit(s), that address all applicable regulatory standards and regulations pertaining to remediation and grading and excavation activities.

7.8.2.3 *Flooding and Substantial Risks from Flooding (Criteria 8d)*

As identified in the Previous EIRs, the Project site is not located within a flood hazard zone or tsunami-inundation zone.[45, 46] In addition, the Project site is not located near a levee or a dam. The Project site is not located in either a 100-year or 500-year flood boundary, and therefore would not be subject to a substantial risk from flooding.[47]

7.8.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, implementation of the Project would not result in any new or more severe significant impacts related to hydrology and water quality, groundwater, or flooding than those identified in the Previous CEQA Documents. Implementation of **SCA HYD-1**, **Erosion and Sedimentation Control Plan for Construction**; **SCA HYD-2, NPDES C.3 Stormwater Requirements for Regulated Projects**; **SCA GEO-1**, **Construction-Related Permit(s)**; and **SCA UTIL-6**, **Storm Drain System** (see Attachment A), would ensure that potential impacts to hydrology and water quality would be less than significant. No mitigation measures are required.

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45 Federal Emergency Management Agency (FEMA), National Flood Insurance Program Flood Insurance Rate Map, Alameda County, Panel 67 of 725, Map Number 06001C0067H, Map revised December 21, 2018.

46 Metropolitan Transportation Commission (MTC), MTC/ABAG Hazard Viewer Map, Tsunami Evacuation Zones, https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8, accessed August 6, 2020.

47 FEMA, National Flood Insurance Program Flood Insurance Rate Map, Alameda County, Panel 67 of 725, Map Number 06001C0067H, Map revised December 21, 2018.

7.9 Land Use, Plans, and Policies

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Physically divide an established community;	☒	☐	☐
b. Result in a fundamental conflict between adjacent or nearby land uses; or	☒	☐	☐
c. Fundamentally conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect and actually result in a physical change in the environment.	☒	☐	☐

7.9.1 Previous CEQA Documents Findings

The previous CEQA documents, including the 2011 Renewal Plan Amendments EIR and the Housing Element Update EIR and its 2014 Addendum, found less-than-significant impacts related to land use, plans, and policies, and no mitigation measures were warranted. The 1998 LUTE EIR, however, identified a significant and unavoidable effect associated with inconsistencies with policies in the Clean Air Plan (resulting from significant and unavoidable increases in criteria pollutants from increased traffic regionally). The 1998 LUTE EIR identified mitigation measures, which largely align with current City of Oakland SCAs involving Transportation Demand Management (TDM), and which apply to all projects within the City of Oakland.

7.9.2 Project Analysis

7.9.2.1 Division of Existing Community, Conflict with Land Uses, or Land Use Plans (Criteria 9a through 9c)

The Project would construct a new mixed use residential development with ground level office and retail uses adjacent to other mixed-use office and retail development to the north and south, parking and retail uses to the east, educational and institutional uses to the west of the Project site. The residential, office, and retail land uses would be consistent and compatible with nearby commercial office, retail, and restaurant uses, educational and institutional uses, as well as arts and entertainment uses and parking. Therefore, the Project would not physically divide an established community. As discussed in *Section 7.1*, *Aesthetics, Shadow, and Wind*, the Project would not result in a significant impact with respect to aesthetics (views) or shadows. The Project also would not result in a fundamental conflict with adjacent land uses, including adjacent historical resources.

The Project would not conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project site. The Project would redevelop an existing commercial building and abandoned construction site located wholly within the Central Business District (CBD) General Plan land use designation, and partially within two zoning designations. The parcel at 1510 Webster Street is zoned Central Business District General Commercial Zone (CBD-C) and the parcel at 1508 Webster Street is zoned Central Business District Pedestrian Retail Commercial Zone (CBD-P). The intent of the CBD zones is to create, maintain, and enhance areas of the Central Business District appropriate for a wide range of ground-floor retail, office and other commercial activities. Upper-story spaces are intended to be available for a wide range of residential and office or other commercial activities. The main difference between the CBD-C and CBD-P zones is that the CBD-P zone is intended to create ground-level, pedestrian-oriented, active storefront uses. The Project Site is located in CBD Height Area 6, which has no maximum height limit and an 85-foot maximum allowable building base height. As the Project would develop ground floor retail storefronts and an interior open air plaza, ground floor and basement-level office space, and upper level residential uses with a 65-foot podium, the Project would be consistent with the general plan and zoning designations.

The Project site is not within an adopted specific plan area but is located approximately one block north of the northern boundary of the Lake Merritt Station Area Plan, which was adopted in 2014. The Lake Merritt Station Area Plan aims to provide a roadmap for future development with the goal of increasing employment opportunities, accommodating future population growth, and encouraging local and regional Transit-Oriented Development. The Project site is also within the boundaries of the proposed Downtown Oakland Specific Plan. The City of Oakland is preparing the Downtown Oakland Specific Plan to ensure continued growth and revitalization to benefit both Downtown residents and the larger community by providing policy guidance on development, linking land use, transportation, economic development, housing, public spaces, cultural arts, and social equity. The City released the Draft Downtown Oakland Specific Plan and Draft Environmental Impact Report for the Specific Plan on August 30, 2019. While the Downtown Oakland Specific Plan has not yet been adopted by the City and specific proposed zoning-level detail is still under development, the Project would be consistent with the intent of the Downtown Oakland Specific Plan as it would develop a mixed use residential, office, and retail building less than a quarter mile from the 12th Street BART station.

7.9.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, the Project would not result in any new or more severe significant impacts related to land use and planning than those identified in the Previous CEQA Documents. The Previous CEQA Documents did not identify any mitigation measures related to land use, and no City of Oakland SCAs directly addressing land use and planning apply to the Project. Therefore, no mitigation measures are required.

7.10 Noise

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. 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. 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; Generate noise in violation of the City of Oakland nuisance standards (Oakland Municipal Code Section 8.18.020) regarding persistent construction-related noise;	☒	☐	☐
b. Generate noise in violation of the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding operational noise;	☒	☐	☐
c. 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);	☐	☐	☐
d. 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); 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 (see Figure 1); 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]); or	☒	☐	☐
e. 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).	☒	☐	☐

7.10.1 Previous CEQA Documents Findings

The 2011 Renewal Plan Amendments EIR identified less-than-significant effects related to roadway noise and found construction and operational noise impacts would be mitigated to a less-than-significant level with implementation of SCAs. The 2010 Housing Element Update EIR and its 2014 Addendum identified less-than-significant noise impacts with incorporation of SCAs. The 1998 LUTE EIR identified mitigation measures to address potential noise conflicts between different land uses. Regarding construction noise, the 1998 LUTE EIR identified a significant and unavoidable construction noise and vibration impact in Downtown, even after the implementation of mitigation measures.

7.10.2 Project Analysis

7.10.2.1 Construction and Operational Noise and Vibration, Exposure of Receptors to Noise (Criteria 10a, 10b, and 10e)

Construction Noise and Vibration

Construction activities for the Project are expected to occur over approximately 18 months and would entail demolition, site preparation and grading, building construction, paving, and interior/exterior finishing. Noise levels from construction activity at nearby sensitive receptors would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Construction-related material haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. **Table 7.10-1** shows typical noise levels in terms of the instantaneous maximum noise level for a specified period of time (L_{max}) and the energy-equivalent sound level over a period of one hour (L_{eq}) produced by the types of construction equipment that would likely be used during construction of the Project.

TABLE 7.10-1
REFERENCE CONSTRUCTION EQUIPMENT NOISE LEVELS (50 feet from Source)

Type of Equipment	L_{max}, dBA	Hourly L_{eq}, dBA/% Use
Grader	85	81/40%
Scraper	84	80/40%
Dozer	82	78/40%
Paver	77	74/50%
Roller	80	73/20%
Loader	78	74/40%
Air Compressor	78	74/40%
Excavator	81	77/40%

SOURCE: Federal Highway Administration, 2008. *FHWA Roadway Construction Noise Model, Version 1.1*, December 2008.

The operation of each piece of equipment would not be constant throughout the day, as equipment would be turned off when not in use. Over a typical workday, the equipment would be operating at different locations and all the equipment would not operate concurrently at the same location of the Project site. To quantify construction-related noise exposure that would occur at the nearest sensitive receptors, it was assumed that the two loudest pieces of construction equipment would operate at the closest location on the Project site to the nearest off-site sensitive receptors. The combined L_{eq} noise level associated with the two loudest pieces of construction equipment (i.e., grader and scraper) would be approximately 84 dBA at 50 feet. There are residences located as close as approximately 140 feet southwest of the Project site perimeter, and school uses at the adjacent Envision Academy of Arts and Technology across Webster Street. Assuming a grader and scraper would operate at the closest point to this residence, the closest residences to the Project site would be exposed to a construction noise level of up to approximately 75 dBA L_{eq}, which would exceed the City's Municipal Code noise exposure standard for residential uses of 65 dBA. However, this is conservative estimate as sound would also be attenuated for sensitive receptors located within an enclosed building and operable windows could be shut during louder events.

Ground-borne vibration from onsite equipment, such as large dozers, would produce vibration. The typical reference vibration level for a large dozer is 0.089 peak particle velocity (PPV) (in/sec) at 25 feet. The nearest existing structure to the Project site is located immediately adjacent to the south. The vibration level at the nearest structure could exceed the 0.12 PPV in/sec criterion established by the Federal Transit Administration (FTA) for buildings extremely susceptible to vibration damage.[48]

Required implementation of applicable City of Oakland SCAs would minimize construction noise impacts by limiting hours of construction activities, by requiring best available noise control technology and notification of any local residents of construction activities, and by tracking and responding to noise complaints; and required implementation of applicable SCAs would limit vibration impacts through the identification of design means and methods of construction to be utilized in order to not exceed vibration level thresholds. Specifically, Project construction would comply with the following SCAs: SCA NOI-1, Construction Days/Hours, limits construction hours mirroring Noise Ordinance requirements; SCA NOI-2, Construction Noise, requires projects to implement construction noise reduction measures; SCA NOI-3, Extreme Construction Noise, addresses extreme construction noise by requiring a Noise Management Plan and public notification of Project construction activities; SCA NOI-4, Construction Noise Complaints, sets a protocol for receiving and addressing construction noise complaints from the public; and SCA NOI-7, Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities, requires preparation of a Vibration Analysis 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.

There is nothing unique or peculiar about the Project or its construction that would suggest that the Project would have greater noise and vibration impacts than other typical mixed-use construction projects within the City. Required implementation of applicable City of Oakland SCAs would

[48] Federal Transit Administration, 2018. *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

minimize construction noise by limiting hours of construction activities, requiring best available noise control technology and notification of any local residents of construction activities, and by tracking and responding to noise complaints. With the implementation of SCAs, construction noise and vibration impacts of the Project would be less than significant.

Operational Noise

Once operational, the Project would include stationary sources such as heating, ventilating, and air conditioning (HVAC) mechanical equipment. The HVAC equipment would be located on the rooftop and would operate within the restrictions of the City's Noise Ordinance. These operational sources would result in negligible vibration levels, but may result in audible noise levels in the vicinity of the site. Chapter 17.120.050 of the City of Oakland Planning Code specifies the maximum sound level that could be received at residential, public open spaces, and commercial land uses. The Project would be required to comply with SCA NOI-6, Operational Noise, which ensures compliance with operational noise limits in the City's Noise Ordinance and would result in a less-than-significant impact with respect to noise from stationary sources on the Project site.

7.10.2.2 Project and Cumulative Traffic Noise (Criterion 10c)

For operational noise impacts from increases in Project-related traffic, the analysis relies on vehicle trip generation and distribution information prepared by Fehr & Peers (see **Appendix F**, *Additional Transportation Analysis*). Peak hour intersection turning data from the Transportation Analysis were analyzed to evaluate traffic volume increases and resulting traffic-generated noise increases on roadway links most affected by Project-related traffic. The roadway segments analyzed and the results of the noise increases determined by modeling are shown in **Table 7.10-2**, below.

TABLE 7.10-2
PEAK-HOUR TRAFFIC NOISE LEVELS IN THE VICINITY OF THE PROJECT

Roadway Segment[a,b]	(A) Existing	(B) Existing Plus Project	(B-A) Difference between Existing Plus Project and Existing[c]	(C) Cumulative No Project (2040)	(D) Cumulative Plus Project (2040)	(D-A) Difference between Cumulative Plus Project and Existing	(D-C) Difference between Cumulative Plus Project and Cumulative No Project[d]
15th Street west of Webster Street	58.0	58.2	0.2	59.6	59.7	1.7	0.1
17th Street west of Webster Street	63.6	63.7	0.1	65.1	65.2	1.6	0.1
Webster Street north of 15th Street	65.3	65.4	0.1	66.8	66.9	1.7	0.1
Webster Street south of 17th Street	63.6	63.7	0.1	65.1	65.2	1.6	0.1

NOTES:

a Road center to receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model.

b The analysis considered the vehicle mix based on 95 percent cars, three percent medium trucks, and two percent heavy trucks. Traffic speeds for all vehicle classes were set at 30 mph.

c Considered significant if the incremental increase in noise from traffic is greater than the existing ambient noise level by 5.0 dBA L_{eq}, per City of Oakland, CEQA Thresholds/Criteria of Significance Guidelines.

d Considered a cumulatively considerable contribution to a significant noise increase if the incremental increase in noise is greater than 3 dBA.

SOURCE: ESA, 2020.

As shown in Table 7.10-2, traffic from the Existing plus Project scenario compared to the Existing scenario would increase peak hour noise levels by less than 5.0 dBA at all roadway segments. The roadway segment of 15th Street west of Webster Street would experience the greatest increase in traffic noise due to the Project, which would be 0.2 dBA above existing traffic noise levels. As the noise increase would not exceed 5.0 dBA, the noise impact on these roadway segments is not considered to be significant. Overall, traffic noise impacts associated with the Project at all analyzed roadway segments in the Project vicinity would be less than significant.

As noted above, the Project would generate noise from heating, ventilating, and air conditioning (HVAC) mechanical equipment. The HVAC equipment would operate within the restrictions of the City's Noise Ordinance. Chapter 17.120.050 of the City of Oakland Planning Code specifies the maximum sound level received at residential, public open spaces, and commercial land uses. This restriction can be used in combination with the predicted roadway noise level increase presented in Table 7.10-1 above to estimate a worst-case prediction of cumulative noise increase from both stationary and roadway noise sources. **Table 7.10-3** presents the cumulative noise increase at the nearest existing sensitive receptor to the south of the Project site from both roadway and stationary sources. This determination assumes stationary sources on the Project site operating at the maximum property line limit allowed by the noise ordinance. When the contribution from maximum allowable stationary source noise is added to noise from cumulative traffic increase, the worst-case cumulative increase in noise level at this receptor would be 4.1 dBA, and thus would be considered less than significant.

TABLE 7.10-3
PEAK-HOUR CUMULATIVE NOISE LEVELS AT SENSITIVE RECEPTORS IN THE PROJECT AREA

Location	(A) Existing Noise Level (Leq, dBA)	(B) Stationary Source Restriction (L_{33}, dBA)	(C) Maximum Cumulative Traffic Noise Level (Leq)	(D) (A+B)+C Resultant Cumulative Noise Level (Leq)	(D-A) Increase in Noise Level over Existing
315 15th Street	58.0	60.0	+1.7	62.1	+4.1
SOURCE: ESA, 2020.					

7.10.2.3 Exposure to Project receptors (Criterion 10d)

Oakland's land use compatibility guidelines specify the community ambient noise level that would be considered "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable" for various uses. Based on modelled noise level estimates from existing traffic described above, and long-term day-night noise level (L_{dn}) measurements collected in the vicinity of the site adjusted to account for pre-Covid-19 conditions that range from 66 to 69 dBA (CSDA, 2020), the ambient noise environment in the vicinity of the Project site is in the "conditionally acceptable" range for development of residential, office buildings, business commercial, and professional land uses. However, the Project Applicant has adhered to the conditions of SCA NOI-5, Exposure to Community Noise, which requires the Project Applicant to submit a Noise Reduction Plan for City review that contains noise reduction measures (e.g., sound-rated window, wall and door assemblies) to achieve an acceptable interior noise level in compliance with the land use compatibility guidelines of the Noise Element of the Oakland General Plan.[49] Therefore, with the implementation of SCA NOI-5, this impact would be less that significant and no mitigation is required.

7.10.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents considered in this analysis, the Project would not result in any new or more significant impacts related to noise than those identified in the Previous CEQA Documents. Implementation of **SCA NOI-1**, **Construction Days/Hours**; **SCA NOI-2**, **Construction Noise**; **SCA NOI-3**, **Extreme Construction Noise**; **SCA NOI-4**, **Construction Noise Complaints**; **SCA NOI-5**, **Exposure to Community Noise; SCA NOI-6, Operational Noise, and SCA NOI-7, Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities** (see Attachment A)**,** would be applicable to, and would be implemented by, the Project, which would ensure that noise- and vibration-related impacts associated with the Project would be less than significant. Therefore, no mitigation measures are required.

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[49] CSDA Design Group, 2020. *Environmental Noise Study*, 1510 Webster Street, Oakland, CA, July 1, 2020.

7.11 Population and Housing

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Induce substantial population growth in a manner not contemplated in the General Plan, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extensions of roads or other infrastructure), such that additional infrastructure is required but the impacts of such were not previously considered or analyzed;	☒	☐	☐
f. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element; or Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element.	☒	☐	☐

7.11.1 Previous CEQA Documents Findings

The Previous CEQA Documents, including the 2011 Renewal Plan Amendments EIR and the 2010 Housing Element Update EIR and its 2014 Addendum, found less-than-significant impacts related to population and housing, as well as employment. The 1998 LUTE EIR identified mitigation measures to address unanticipated employment growth (compared to regional ABAG projections), and no other mitigation measures were warranted.

7.11.2 Project Analysis

7.11.2.1 Population Growth and Displacement of Housing and People (Criteria 11a and 11b)

The Project would redevelop an existing commercial building and abandoned construction site which contain no residential uses; therefore, the Project would not displace any housing or people. Using a population generation rate established for the surrounding area of 1.9 persons per household, the Project would generate up to 346 new residents. The approximately 11,400 square feet of office space and approximately 3,500 square feet of retail space would generate approximately 58 employees.[50] Construction of the Project also would involve temporary

[50] For the purposes of a conservative analysis, this analysis assumes a residential density of 1.9 residents per unit, 1 employee per 225 square feet of office space, and 1 employee per 500 square feet of retail space, as established in the Downtown Oakland Specific Plan EIR—an EIR currently in progress with a Plan Area boundary that includes the Project Site.

employees. However, the additional approximate 346 residents and 58 employees, plus the temporary construction employees, would not result in a significant population increase.

According to the Association of Bay Area Government's (ABAG's) *Plan Bay Area 2040*, the City of Oakland is projected to have an increase of approximately 50,200 households and 93,700 jobs between 2010 and 2040.[51] The approximately 346 residents and 58 employees added by the Project would, therefore, represent a marginal fraction of this projected and planned growth. In addition, the Project would comply with the requirements of the City of Oakland Affordable Housing Impact Fee Ordinance (chapter 15.72 of the Oakland Municipal Code) per City of Oakland SCA POP-1, Affordable Housing Impact Fee. As such, the Project would contain a minimum of eight affordable residential units. The Project would not be subject to the City of Oakland Jobs/Housing Impact Fee Ordinance (chapter 15.68 of the Oakland Municipal Code), as it would construct under than 25,000 square feet of office space.

7.11.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, the Project would not result in any new or more severe significant impacts related to population and housing than those identified in the Previous CEQA Documents. The Previous CEQA Documents did not identify any mitigation measures related to population and housing, and the Project would comply with City of Oakland SCA **POP-1, Affordable Housing Impact Fee** which addresses impacts to housing. Therefore, no mitigation measures are required.

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[51] Association of Bay Area Governments (ABAG), 2017. *Plan Bay Area 2040 Land Use Modeling Report.* July 2017.

7.12 Public Services, Parks and Recreation Facilities

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services: 3. Fire protection; 4. Police protection; 5. Schools; or 6. Other public facilities.	☒	☐	☐
b. Increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or Include recreational facilities or require the construction or expansion of recreational facilities which might have a substantial adverse physical effect on the environment.	☒	☐	☐

7.12.1 Previous CEQA Documents Findings

The 2011 Renewal Plan Amendments EIR found less-than-significant impacts related to public services and recreational facilities; no mitigation measures were warranted nor City of Oakland SCAs identified. The Housing Element Update EIR and its 2014 Addendum identified less-than-significant public services and recreation impacts with the exception of impacts related to police and fire protection, which were found to be less than significant with incorporation of SCAs and mitigation measures identified in the 1998 LUTE EIR. The 1998 LUTE EIR identified a significant and unavoidable impact for fire safety, with mitigation measures pertaining to the North Oakland Hills area. The 1998 LUTE EIR also identified a significant and unavoidable impact regarding increased student enrollment, particularly in Downtown (and the Waterfront), and identified mitigation measures but they would not reduce the effect to a less-than-significant level. Thus the impact was significant and unavoidable.[52]

[52] The 1998 LUTE EIR addressed effects on solid waste demand and infrastructure facilities for water, sanitary sewer and stormwater drainage under *Public Services*. These topics are addressed in this document under *14. Utilities and Service Systems*, consistent with current City approach.

7.12.2 Project Analysis

7.12.2.1 Public Services and Parks and Recreation (Criteria 12a and 12b)

The Project would create demands on public services typical of a mixed-use building containing approximately 182 residential units, approximately 11,400 square feet of office space and approximately 3,500 square feet of retail space. As noted above, the Previous CEQA Documents determined that the anticipated growth would not impose a burden on existing public services to create a significant impact with the exception of fire safety pertaining to the North Oakland Hills area and increased student enrollment (1998 LUTE EIR). The Project site is not in the North Oakland Hills and compliance with standard City practices would further ensure the less-than-significant impact. These include City practices and requirements, such as the Oakland Fire Services' review of Project plans, and Project Applicants' required contributions to school impact fees to offset any impacts to school facilities from the Project.

The Project would comply with the requirements of the City of Oakland Capital Improvements Fee Ordinance (chapter 15.74 of the Oakland Municipal Code) by incorporating City of Oakland SCA PUB-1, Capital Improvements Impact Fee, to address potential public services and park and recreation facilities impacts. In addition, adherence to the General Plan's Open Space, Conservation and Recreation Element policies 3.1, 3.3, and 3.10 would reduce potential impacts to recreational facilities. Further, any increases in need for police protection, fire protection, schools, or other public facilities would be mitigated by adherence to General Plan policies N.12.1, N.12.2, N.12.5, FI-1, and FI-2.

7.12.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, the Project would not result in any new or more severe significant impacts related to public services and parks and recreation services than those identified in the Previous CEQA Documents. The Project would also incorporate **SCA PUB-1**, **Capital Improvements Impact Fee**, which addresses impacts to public services, parks and recreation. Therefore, no mitigation measures are required.

7.13 Transportation and Circulation

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Conflict with a plan, ordinance, or policy addressing the safety or performance of the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths (except for automobile level of service or other measures of vehicle delay)	☒	☐	☐
b. Cause substantial additional vehicle miles traveled (VMT) per capita, per service population, or other appropriate efficiency measure	☒	☐	☐
c. Substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow lanes) or by adding new roadways to the network.	☒	☐	☐

7.13.1 Previous CEQA Documents Findings

The Previous EIRs considered for this analysis identified significant and unavoidable impacts regarding intersection and/or roadway segment operations. Various mitigation measures and City of Oakland SCAs are identified (except in the 1998 LUTE EIR, which does not identify SCAs). Other transportation/circulation effects identified in each of the documents are reduced to less than significant with adherence to City of Oakland SCAs or mitigation measure, as follows.

The 1998 LUTE EIR, the 2010 Housing Element Update EIR and its 2014 Addendum, and the 2011 Renewal Plan Amendments EIR identified significant and unavoidable impacts to roadway segment operations based on degradation of level of service (LOS) after the implementation of identified mitigation measures.

7.13.2 Project Analysis

This section describes the potential impacts of the Project on the transportation system consistent with the City's 2017 *Transportation Impact Review Guidelines* (TIRG).

Table 7.13-1 summarizes the automobile trip generation for the Project based on the methodology recommended in the TIRG. Appendix F provides details on the trip generation calculation. The Project is estimated to generate 650 daily, 44 AM peak hour, and 57 PM peak hour automobile trips.

The Project trip generation based on the TIRG process may overestimate the actual automobile trips generated by the Project because the Project would not provide any on-site automobile parking spaces. However, there are several parking facilities in the vicinity of the Project that are open to the public and can be used by the Project residents, employees, customers, and visitors.

Although many of these public parking facilities currently operate at or near capacity on most weekdays, this analysis assumes that parking would be available to Project residents, employees, customers, and visitors who choose to drive. Therefore, this analysis uses the TIRG-based trip generation to present a more conservative estimate of the automobile trips generated by the Project.

TABLE 7.13-1
AUTOMOBILE TRIP GENERATION

Land Use	Units[a]	ITE Code	Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
				In	Out	Total	In	Out	Total
Residential	182 DU	221[b]	990	17	49	66	49	31	80
Office	11.4 KSF	710[c]	110	12	2	14	2	12	14
Retail	3.5 KSF	820[d]	130	2	1	3	6	7	13
Subtotal			1,230	31	52	83	57	50	107
Non-Auto Adjustment (-46.9%)[e]			-580	-15	-24	-39	-27	-23	-50
Net New Project Trips			**650**	**16**	**28**	**44**	**30**	**27**	**57**

NOTES:

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

b ITE Trip Generation (10th Edition) land use category 221 (Multi-Family Housing [Mid-Rise]):
Daily: T = 5.45 * X
AM Peak Hour: T = 0.36 * X (26% in, 74% out)
PM Peak Hour: T = 0.44 * X (61% in, 39% out)

c ITE Trip Generation (10th Edition) land use category 710 (General Office Building):
Daily: T = 9.74 * X
AM Peak Hour: T = 1.16 * X (86% in, 14% out)
PM Peak Hour: T = 1.15 * X (16% in, 84% out)

d ITE Trip Generation (10th Edition) land use category 820 (Shopping Center):
Daily: T = 37.75 * X
AM Peak Hour: T = 0.94 * X (62% in, 38% out)
PM Peak Hour: T = 3.81 * X (48% in, 52% out)

e 46.9% reduction is based on the City of Oakland's Transportation Impact Review Guidelines for developments within 0.5 miles of a BART Station.

SOURCE: Fehr & Peers, 2020.

7.13.2.1 *Conflicts with Plans, Ordinances, or Policies Relating to Safety, or Performance of the Circulation System (Criterion a)*

The Project is consistent with applicable plans, ordinances, and policies, and would not cause a significant impact by conflicting with adopted plans, ordinances, or policies addressing the safety and performance of the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths (except for automobile LOS or other measures of vehicle delay).

The LUTE, as well as the City's *Public Transit and Alternative Mode and Complete Streets* policies, states a strong preference for encouraging the use of non-automobile transportation modes, such as transit, bicycling, and walking. The Project would encourage the use of non-automobile transportation modes by not providing any on-site automobile parking spaces and locating residential, office, and retail uses in a dense, walkable urban environment that is well-served by both local and regional transit.

The Project is consistent with both the City's 2017 Pedestrian Master Plan *(Oakland Walks)* and the 2019 Bicycle Master Plan (*Let's Bike Oakland*) as it would not make major modifications to the public right-of-way, including existing pedestrian or bicycle facilities in the surrounding areas and would not adversely affect installation of future facilities. Further, because the Project would generate more than 50 peak hour trips, preparation and implementation of a Transportation Demand Management Plan (TDM Plan) is required (see **Appendix G**). The TDM Plan includes on-going operational strategies, as well as infrastructure improvements, that encourage the use of non-automobile travel modes.

Overall, the Project would not conflict with adopted plans, ordinances, or policies addressing the safety and performance of the circulation system. This is a less-than-significant impact; no mitigation measures are required.

7.13.2.2 Vehicle Miles travelled (VMT) Assessment (Criterion b)

On September 21, 2016, the City of Oakland's Planning Commission directed staff to update the City of Oakland's CEQA Thresholds of Significance Guidelines related to transportation impacts in order to implement the directive from Senate Bill 743 (Steinberg 2013) to modify local environmental review processes by removing automobile delay, as described solely by LOS or similar measures of vehicular capacity or traffic congestion, as a significant impact on the environment pursuant to CEQA. The Planning Commission direction aligns with draft proposed guidance from the Governor's Office of Planning and Research and the City's approach to transportation impact analysis, with adopted plans and polices related to transportation, which promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses. Consistent with the Planning Commission direction and the Senate Bill 743 requirements, the City of Oakland published the revised TIRG on April 14, 2017 to guide the evaluation of the transportation impacts associated with land use development projects.

Many factors affect travel behavior, including density of development, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. Typically, low-density development that is located at a great distance from other land uses, in areas with poor access to non-single occupancy vehicle travel modes generate more vehicle travel compared to development located in urban areas, where a higher density of development, a mix of land uses, and non-single occupancy vehicle travel options are available.

Given these travel behavior factors, most of Oakland has lower VMT per capita and VMT per worker ratios than the nine-county San Francisco Bay Area region. Further, within the City of Oakland, some neighborhoods may have lower VMT ratios than others.

VMT Estimate

Estimating VMT generally requires the use of travel demand models to fully capture the length of trips on the transportation network, as well as the changes in VMT behavior that may occur with the introduction of the project. This analysis presents use of the Metropolitan Transportation

Commission (MTC) Travel Model to fully analyze the VMT impacts of the project. The following describes how the MTC Travel Model estimates VMT.

Neighborhoods within Oakland are expressed geographically in transportation analysis zones, or TAZs, which are used in transportation planning models for transportation analysis and other planning purposes. The MTC Travel Model includes 116 TAZs within Oakland that vary in size from a few city blocks in the downtown core, to multiple blocks in outer neighborhoods, to even larger geographic areas in lower-density neighborhoods.

The MTC Travel Model is a model that assigns all predicted trips within, across, or to/from the nine-county San Francisco Bay Area region onto the roadway network and the transit system by mode (single-driver and carpool vehicle, biking, walking, or transit) and transit carrier (bus, rail) for a particular scenario.

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

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

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

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

Thresholds of Significance for VMT

According to the City of Oakland TIRG, the following are thresholds of significance related to substantial additional VMT:

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

Screening Criteria

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

1. **Small Projects:** The project generates fewer than 100 vehicle trips per day.
2. **Low-VMT Areas:** The project meets map-based screening criteria by being located in an area that exhibits below threshold VMT, or 15-percent or more below the regional average.
3. **Near Transit Stations:** The project is located in a Transit Priority Area or within one-half mile of a Major Transit Corridor or Stop[53] and satisfies the following:
    - Has a Floor Area Ratio (FAR) of more than 0.75
    - Does not include more parking for use by residents, customers, or employees of the project than other typical nearby uses, or more than required by the City (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site).
    - and is consistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the MTC).

VMT Impact Analysis

The project would include 182 residential units, about 11,400 square-feet of office, and 3,500 square-feet of retail space. Per direction provided in the TIRG, the regional household VMT per capita is used as the threshold of significance for the residential use and the regional VMT per worker minus 15-percent is used as the threshold of significance for the office uses. According to the TIRG, commercial spaces less than 80,000 square feet are considered local serving and are not expected to contribute to an increase in VMT. Therefore, it is presumed that the retail component of the Project, which is about 3,500 square feet, would not result in substantial additional VMT and impacts of the retail component of the project with respect to VMT would be less than significant.

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

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

Criterion #1: Small Projects

As shown in Table 7.13-1, the Project would generate more than 100 vehicle trips per day and therefore does not meet Criterion #1.

Criterion #2: Low-VMT Area

Table 7.13-2 shows the estimated 2020 and 2040 VMT per capita and VMT per worker for TAZ 971, the TAZ in which the Project is located, as well as the applicable VMT thresholds of 15-percent below the regional averages. As shown in Table 7.13-2, the 2020 and 2040 estimated average daily VMT per capita and VMT per worker in the project TAZ are less than the regional averages minus 15-percent. The Project therefore meets Criterion #2.

TABLE 7.13-2
DAILY VEHICLE MILES TRAVELED SUMMARY

Land Use	Bay Area				TAZ 971	
	2020		2040			
	Regional Average	Regional Average minus 15%	Regional Average	Regional Average minus 15%	2020	2040
Residential (VMT per Capita)[a]	15.0	12.8	13.8	11.7	4.5	4.1
Office and Retail (VMT per Worker)[b]	21.8	18.5	20.3	17.3	12.7	12.0

NOTES:

a MTC Model results at analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerCapita and accessed in July 2020.

b MTC Model results at analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerWorker and accessed in July 2020.

SOURCE: Fehr & Peers, 2020.

Criterion #3: Near Transit Stations

The Project would be located within about 0.3 miles of the 12th Street Oakland City Center BART Station and about 0.4 miles of the 19th Street BART Station. The Project is also within 0.5 miles of frequent bus service along Broadway (Route 18 with 15-minute peak headways, and Route 51A with 10-minute peak headways) and 20th Street (Thomas L. Berkeley Way) (Route 6 with 10-minute peak headways and Routes 72/72M/72R with 10- to 12-minute peak headways). The Project would satisfy Criterion #3 because it would meet the following three conditions for this criterion:

- The Project would have a FAR of 13.7, which is greater than 0.75.
- The Project would not include any on-site automobile parking spaces. Therefore, it would not include more parking for use by residents, customers, or employees of the project than other typical nearby uses, or more than required by the City (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site).
- The Project is located within the Downtown and Jack London Square Priority Development Area (PDA) as defined by Plan Bay Area and is therefore consistent with the region's Sustainable Communities Strategy.

VMT Screening Conclusion

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

7.13.2.3 Induced Automobile Travel (Criteria c)

The Project would not modify the roadway network surrounding the Project site. Therefore, it would not increase the physical roadway capacity or add new roadways to the network, and therefore would not induce additional automobile traffic. This is a less-than-significant impact; no mitigation measures are required.

7.13.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, implementation of the Project would not substantially increase the severity of significant impacts identified in the Previous CEQA Documents, nor would it result in new significant impacts related to transportation and circulation that were not identified in the Previous CEQA Documents. The Project would not conflict with a plan, ordinance, or policy addressing the safety or performance of the circulation system, cause substantial additional VMT, or substantially induce additional automobile travel. Moreover, the Project would incorporate all applicable Oakland SCAs including **SCA TRA-1, Construction Activity in the Public Right-of-Way; SCA TRA-2, Bicycle Parking; SCA TRA-3, Transportation Improvements; SCA TRA-4, Transportation and Parking Demand Management, and SCA-TRA-5, Transportation Impact Fee** (see Attachment A). Therefore, the Project would have a less-than-significant impact according to the City of Oakland's *Transportation Impact Review Guidelines*.

While not required under the City's thresholds of significance, a trip generation analysis, a site plan review, and a collision analysis were provided for informational purposes. The analysis and recommendations that could improve multi-modal access, circulation, and safety are described in Appendix F.

7.14 Utilities and Service Systems

Would the project:	Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents	Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents	New Significant Impact
a. Exceed wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board; Require or result in construction of new storm water drainage facilities or expansion of existing facilities, construction of which could cause significant environmental effects; Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the providers' existing commitments and require or result in construction of new wastewater treatment facilities or expansion of existing facilities, construction of which could cause significant environmental effects;	☒	☐	☐
b. Exceed water supplies available to serve the project from existing entitlements and resources, and require or result in construction of water facilities or expansion of existing facilities, construction of which could cause significant environmental effects;	☒	☐	☐
c. Be served by a landfill with insufficient permitted capacity to accommodate the project’s solid waste disposal needs and require or result in construction of landfill facilities or expansion of existing facilities, construction of which could cause significant environmental effects; Violate applicable federal, state, and local statutes and regulations related to solid waste;	☒	☐	☐
d. Violate applicable federal, state and local statutes and regulations relating to energy standards; or Result in a determination by the energy provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the providers' existing commitments and require or result in construction of new energy facilities or expansion of existing facilities, construction of which could cause significant environmental effects.	☒	☐	☐
e. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation	☒	☐	☐
f. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	☒	☐	☐

Changes to Appendix G of the State CEQA Guidelines effective in December 2018 were intended to reflect recent changes to the CEQA statutes and court decisions. As a result, energy was added as a separate topic to the Appendix G checklist. The City of Oakland's thresholds of significance for Utilities and Service Systems include threshold questions related to energy (see [d] above); thus, the threshold questions related to energy from the Appendix G checklist are listed under this topic (see [e] and [f] above) and are discussed herein.

7.14.1 Previous CEQA Documents Findings

The 2011 Renewal Plan Amendments EIR and 2010 Housing Element Update EIR and its 2014 Addendum found less-than-significant impacts related to water, wastewater, or stormwater facilities, solid waste, and energy, finding no mitigation measures were warranted but adhering to certain City of Oakland SCAs. The 1998 LUTE EIR identified significant effects regarding these topics and identified mitigation measures that reduced the effects to less-than-significant levels.

The 1998 LUTE EIR analyzed energy under its own CEQA topic and found that higher density transit-oriented development, such as the Project, would consume less energy than lower-density development. The LUTE EIR noted that although energy consumption during construction and operation would increase, the Plan's elements would perpetuate the existing pattern of Oakland residents driving to suburban communities for work and shopping. The LUTE EIR concluded that the anticipated marginal increase in energy consumption would be less than significant.

The 2011 Renewal Plan Amendments EIR indicated that projects facilitated by the Renewal Plan Amendments would have to comply with all standards of Title 24 of the California Code of Regulations, which requires construction projects to incorporate energy-conserving design measures into projects. The 2011 Renewal Plan Amendments EIR concluded that impacts to energy services would be less than significant.

7.14.2 Project Analysis

7.14.2.1 Water, Wastewater, and Stormwater (Criteria 14a and 14b)

As discussed in Section 7.11 *Population and Housing*, above, given that the Project represents only a marginal increase in population captured by the ABAG population projections, the Project is not anticipated to exceed water supplies available to serve the Project from existing entitlements and resources and require or result in the expansion or construction of water facilities that would cause significant environmental effects.

As the Project is located in an already built out urban area, no new infrastructure would be required for the Project. The Project would connect to existing water, sewer, and storm drain service mains and laterals located in Webster and 15th Streets. Development of the Project would increase sewer demand; however, implementation of SCA UTIL-5, Sanitary Sewer System, and SCA UTIL-6, Storm Drain System, requiring stormwater control after construction would address any potential impacts on stormwater treatment and sanitary sewer as a result of the Project. Implementation of SCA UTIL-2, Underground Utilities would ensure that utility infrastructure is placed underground, improving service reliability, creating greater public safety, and enhancing aesthetics. In addition, **S**CA HYD-1, Erosion and Sedimentation Control Plan for Construction, and SCA HYD-2, NPDES C.3 Stormwater Requirements for Regulated Projects, would ensure that stormwater would be controlled during and after construction. The Project would also require minimal amounts of water for landscaping in common open space areas. Therefore, the Project would not result in any new or more substantial impacts on water, sewer, or stormwater services than those identified in the Previous CEQA Documents and, with the implementation of SCAs requiring stormwater control during and after construction, the impact on water, sewer, and stormwater services would remain less than significant.

7.14.2.2 Solid Waste Services (Criterion 14c)

The Project Applicant would be required to comply with the City's construction and demolition debris recycling ordinance (Municipal Code Chapter 15.34), which requires submittal of a plan to divert at least 50 percent of the construction waste generated by the Project from landfill disposal. The California Green Building Standards Code (CALGreen) also requires recycling and/or salvaging for reuse of a minimum of 65 percent of non-hazardous construction and demolition waste. The Project Applicant would be required to comply with the City of Oakland Recycling Space Allocation Ordinance (Planning Code Chapter 17.118) to ensure the provision of adequate, accessible, and convenient locations for the collection and storage of recyclable materials. In addition, the Project would comply with City of Oakland SCAs pertaining to waste reduction and recycling. Specifically, implementation of SCA UTIL-1, Construction and Demolition Waste Reduction and Recycling, would ensure that solid waste during construction is minimized and SCA UTIL-3, Recycling Collection and Storage Space, would ensure that operational solid waste is reduced. Thus, development of the Project would not impede the ability of the City to meet the waste diversion requirements or cause the City to violate other applicable federal, state, and local statutes and regulations related to solid waste. Therefore, the impacts associated with solid waste services and/or landfill capacity as a result of the Project would remain less than significant.

7.14.2.3 Energy (Criterion 14d through 14f)

During construction the Project would result in the consumption of fuel through the use of construction equipment, hauling truck trips, building material delivery truck trips, and worker trips to and from the Project site. SCA AIR-2, Criteria Air Pollutant Controls - Construction Related, requires limiting idling from diesel-fueled off-road vehicles over 25 horsepower and construction vehicles to two minutes, which would reduce the wasteful, inefficient, or unnecessary consumption of fuel during Project construction. Additionally, SCA AIR-2 requires portable equipment to be powered by grid electricity if available, and diesel engines are only allowed if grid electricity is not available and propane or natural gas generators cannot meet the electrical demand.

The Project would result in less-than-significant impacts related to energy standards and use, and would comply with the standards of the applicable Title 24 of the California Code of Regulations and the CALGreen Code, included in Title 24, Part 11. The Project is located within about 0.3 miles of the 12th Street Oakland City Center BART Station, 0.4 miles of the 19th Street BART Station, 0.5 miles of frequent bus service along Broadway and 20th Street, and does not include on-site parking. Therefore, transportation fuel use during operation would be minimized, furthering energy conservation. In addition, SCA UTIL-4, Green Building Requirements, pertaining to compliance with the green building ordinance, would require construction projects to incorporate energy-conserving design measures, which would ensure the Project's impacts on energy would remain less than significant.

7.14.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the Previous CEQA Documents, implementation of the Project would not substantially increase the severity of significant impacts identified in the Previous CEQA Documents, nor would it result in new significant impacts related to utilities and service systems that were not identified in the Previous CEQA Documents. Implementation of **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**; **SCA UTIL-6**, **Storm Drain System**; **UTIL-7, Water Efficient Landscape Ordinance (WELO)**; SCAs related to Air Quality and Hydrology and Water Quality, **SCA AIR-2, Criteria Air Pollutant Controls - Construction Related**; **SCA HYD-1, Erosion and Sedimentation Control Plan for Construction** and **SCA HYD-2, NPDES C.3 Stormwater Requirements for Regulated Projects** (see Section 7.8 and Attachment A), as well as compliance with Title 24 and CALGreen requirements, would ensure that impacts to sewer capacity, stormwater drainage facilities, solid waste services, and energy would be less than significant. Therefore, no mitigation measures are required.

8. References

(All references cited below are available at the Oakland Bureau of Planning, Agency, 250 Frank Ogawa Plaza, Suite 3330, Oakland, California, unless specified otherwise.)

Housing Element Update

City of Oakland, Draft EIR for the 2007-2015 Housing Element Update, 2009.

City of Oakland, Final EIR for the 2007-2015 Housing Element Update, 2010.

City of Oakland, 2015-2023 Housing Element Addendum to the 2010 Housing Element Update EIR, 2014.

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

Oakland Redevelopment Agency, Draft EIR for the Proposed Amendments to the Central District Urban Renewal Plan, March 2011.

Oakland Redevelopment Agency, Final EIR for the Proposed Amendments to the Central District Urban Renewal Plan, June 2011.

Oakland Redevelopment Agency, 2012. *Central District Urban Renewal Plan*, Adopted June 12, 1969, as amended through April 3, 2012.

General Plan Land Use and Transportation Element

City of Oakland, 1998 LUTE Draft EIR, October 1997.

City of Oakland, 1998 LUTE Final EIR, February 1998.

City of Oakland, 2007. Land Use and Transportation Element of the Oakland General Plan, March 24, 1998, amended to June 21, 2007.

City of Oakland Bicycle Plan

City of Oakland, 2019. *Let's Bike Oakland, 2019 Oakland Bike Plan. Part of the Land Use and Transportation Element of the Oakland General Plan*, adopted July 9, 2019.

City of Oakland Pedestrian Plan

City of Oakland, 2018. City of Oakland Department of Transportation, *Oakland Walks! 2017 Pedestrian Plan Update,* September 2018.

Plan Bay Area

Metropolitan Transportation Commission and Association of Bay Area Governments, 2017. Plan Bay Area 2040, Strategy for a Sustainable Region. Adopted July 11, 2017.

Oakland Planning Code

City of Oakland, 2020. City of Oakland Planning Code. https://cao-94612.s3.amazonaws.com/documents/Planning-Code-after-7-2-20-and-7-9-20-D-BV-Home-Occ-Auto-Repair.pdf, accessed August 11, 2020.

Downtown Oakland Specific Plan

City of Oakland, Draft EIR for the Downtown Oakland Specific Plan, 2019.

9. Attachments

A. Standard Conditions of Approval and Mitigation Monitoring and Reporting Program
B. Project Consistency with Community Plan or Zoning, Per CEQA Guidelines Section 15183
C. Infill Performance Standards, Per CEQA Guidelines Section 15183.3

10. Appendices

A. Shadow Diagrams
B. Wind Analysis
C. Construction Health Risk Assessment
D. Historical Resource Evaluation
E. Equitable Climate Action Plan Consistency Checklist
F. Additional Transportation Analysis
G. Transportation Demand Management Plan

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ATTACHMENT A

Standard Conditions of Approval Reporting Program

This Standard Conditions of Approval (SCAs) Reporting Program (SCARP) is based on the CEQA Checklist prepared for the 1510 Webster Street Project.

This SCARP is in compliance with Section 15097 of the CEQA Guidelines, which requires that the Lead Agency "adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects." The SCARP lists SCAs that apply to the Project. Specifically, on December 16, 2020, the City of Oakland released a revised set of all City of Oakland SCAs, which largely still include SCAs adopted by the City in 2008, along with supplemental, modified, and new SCAs. The SCAs are measures that would minimize potential adverse effects that could result from implementation of the Project, to ensure the conditions are implemented and monitored. The revised set of the City of Oakland SCAs includes new, modified, and reorganized SCAs; however, none of the revisions diminish or negate the ability of the SCAs considered "environmental protection measures" to minimize potential adverse environmental effects. As such, the SCAs identified in the SCARP reflect the current SCAs only. This SCAP also identifies the mitigation monitoring requirements for each mitigation measure and SCA.

This CEQA Checklist is also based on the analysis in the following Program EIRs that apply to the 1510 Webster Project: Oakland's 1998 General Plan Land Use and Transportation Element (LUTE) EIR (1998 LUTE EIR), the 2010 General Plan Housing Element Update EIR and 2014 Addendum, and the 2011 Renewal Plan Amendments EIR. None of the mitigation measures or SCAs from these Program EIRs are included in this SCARP because they, or an updated or equally effective SCA, are identified in this CEQA Checklist for the 1510 Webster Street Project.

To the extent that there is any inconsistency between any mitigation measures and/or SCAs, the more restrictive conditions shall govern; to the extent any mitigation measure and/or SCA identified in the CEQA Checklist were inadvertently omitted, they are automatically incorporated herein by reference.

- The first column of the SCARP table identifies the SCA applicable to that topic in the CEQA Checklist. While a mitigation measure or SCA can apply to more than one topic, it is listed in its entirety only under its primary topic (as indicated in the mitigation or SCA designator). The SCAs are numbered to specifically apply to the Project and this CEQA Checklist; however, the

SCAs as presented in the City's *Standard Conditions of Approval and Uniformly Applied Development Standards* document[54] are included in parenthesis for cross-reference purposes.

- 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.

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

[54] Dated December 16, 2020, as amended.

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	**Responsibility**
General		
SCA GEN-1 (Standard Condition Approval 15) *Regulatory Permits and Authorizations from Other Agencies* Requirement: The project applicant shall obtain all necessary regulatory permits and authorizations from applicable resource/regulatory agencies including, but not limited to, the Regional Water Quality Control Board, Bay Area Air Quality Management District, Bay Conservation and Development Commission, California Department of Fish and Wildlife, U. S. Fish and Wildlife Service, and Army Corps of Engineers and shall comply with all requirements and conditions of the permits/authorizations. The project applicant shall submit evidence of the approved permits/authorizations to the City, along with evidence demonstrating compliance with any regulatory permit/authorization conditions of approval.	Prior to activity requiring permit/authorization from regulatory agency.	City of Oakland Bureau of Planning and applicable regulatory agency with jurisdiction
Aesthetics, Shadow, and Wind		
SCA AES-1 (Standard Condition of Approval 16) Trash and Blight Removal The project applicant and his/her successors shall maintain the property free of blight, as defined in chapter 8.24 of the Oakland Municipal Code. For nonresidential and multi-family residential projects, the project applicant shall install and maintain trash receptacles near public entryways as needed to provide sufficient capacity for building users.	Ongoing.	City of Oakland Bureau of Building
SCA AES-2 (Standard Condition of Approval 17) *Graffiti Control* 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 the following: i. Removal through scrubbing, washing, sanding, and/or scraping (or similar method) without damaging the surface and without discharging wash water or cleaning detergents into the City storm drain system. ii. Covering with new paint to match the color of the surrounding surface. iii. Replacing with new surfacing (with City permits if required).	Ongoing.	City of Oakland Bureau of Building

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	**Responsibility**
Aesthetics, Shadow, and Wind (cont.)		
SCA AES-3 (Standard Condition of Approval 18) *Landscape Plan* ***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. Proposed plants shall be predominantly drought-tolerant. Specification of any street trees shall comply with the Master Street Tree List and Tree Planting Guidelines (which can be viewed at http://www2.oaklandnet.com/oakca1/groups/pwa/documents/report/oak042662.pdf and http://www2.oaklandnet.com/oakca1/groups/pwa/documents/form/oak025595.pdf, respectively), and with any applicable streetscape plan. ***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. ***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.	a. Prior to approval of construction-related permit. b. Prior to building permit final. c. Ongoing	a. City of Oakland Bureau of Planning b. City of Oakland Bureau of Building c. City of Oakland Bureau of Building
SCA AES-4 (Standard Condition of Approval 19): *Lighting* 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.	City of Oakland Bureau of Building
Air Quality		
SCA AIR-1 (Standard Condition of Approval 20) ***Dust Controls*** – *Construction-Related* The Project applicant shall implement all of the following applicable dust control measures during construction of the Project: a. Water all exposed surfaces of active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever feasible. b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. d. Limit vehicle speeds on unpaved roads to 15 miles per hour. e. All demolition activities (if any) shall be suspended when average wind speeds exceed 20 mph. f. All trucks and equipment, including tires, shall be washed off prior to leaving the site. g. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.	During construction.	City of Oakland Bureau of Building

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	**Responsibility**
Air Quality (cont.)		
SCA AIR-2 (Standard Condition of Approval 21) *Criteria Air Pollutant Controls – Construction Related* <u>Requirement</u>: The project applicant shall implement all of the following applicable basic control measures for criteria air pollutants during construction of the project as applicable: a. Idling times on all diesel-fueled commercial vehicles over 10,000 lbs. shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations). Clear signage to this effect shall be provided for construction workers at all access points. b. Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes and fleet operators must develop a written policy as required by Title 23, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations"). c. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. Equipment check documentation should be kept at the construction site and be available for review by the City and the Bay Area Air Quality District as needed. d. Portable equipment shall be powered by grid electricity if available. If electricity is not available, propane or natural gas generators shall be used if feasible. Diesel engines shall only be used if grid electricity is not available and use propane or natural gas generators cannot meet the electrical demand. e. Low VOC (i.e., ROG) coatings shall be used that comply with BAAQMD Regulation 8, Rule 3: Architectural Coatings.	During construction.	City of Oakland Bureau of Building
f. 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") and upon request by the City, the project applicant shall provide written documentation that fleet requirements have been met.		
SCA AIR-3 (Standard Condition of Approval 22) *Diesel Particulate Matter Controls-Construction Related* ***a. Diesel Particulate Matter Reduction Measures*** <u>Requirement</u>: The project applicant shall implement appropriate measures during construction to reduce potential health risks to sensitive receptors due to exposure to diesel particulate matter (DPM) from construction emissions. The project applicant shall choose one of the following methods: i. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with current guidance from the California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment to determine the health risk to sensitive receptors exposed to DPM from project construction emissions. The HRA shall be submitted to the City (and the Air District if specifically requested) for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then DPM reduction measures are not required. If the HRA concludes that the health risk exceeds acceptable levels, DPM reduction measures shall be identified to reduce the health risk to acceptable levels as set forth under subsection b below. Identified DPM reduction measures shall be submitted to the City for review and approval prior to the issuance of building permits and the approved DPM reduction measures shall be implemented during construction. - or -	a. Prior to issuance of a construction related permit (i), during construction (ii). b. Prior to issuance of a construction related permit.	a. City of Oakland Bureau of Planning and Bureau of Building. b. City of Oakland Bureau of Planning and Bureau of Building.

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	**Responsibility**
Air Quality (cont.)		
ii. All off-road diesel equipment shall be equipped with the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by CARB. The equipment shall be properly maintained and tuned in accordance with manufacturer specifications. This shall be verified through an equipment inventory submittal and Certification Statement that the Contractor agrees to compliance and acknowledges that a significant violation of this requirement shall constitute a material breach of contract. ***b. Construction Emissions Minimization Plan (if required by a above)*** <u>Requirement</u>: The project applicant shall prepare a Construction Emissions Minimization Plan (Emissions Plan) for all identified DPM reduction measures (if any). The Emissions Plan shall be submitted to the City (and the Bay Area Air Quality District if specifically requested) for review and approval prior to the issuance of building permits. The Emissions Plan shall include the following: i. An equipment inventory summarizing the type of off-road equipment required for each phase of construction, including the equipment manufacturer, equipment identification number, engine model year, engine certification (tier rating), horsepower, and engine serial number. For all VDECS, the equipment inventory shall also include the technology type, serial number, make, model, manufacturer, CARB verification number level, and installation date. ii. A Certification Statement that the Contractor agrees to comply fully with the Emissions Plan and acknowledges that a significant violation of the Emissions Plan shall constitute a material breach of contract.		
SCA AIR-4 (Standard Condition of Approval 23) *Exposure to Air Pollution (Toxic Air Contaminants)* ***a. Health Risk Reduction Measures*** <u>Requirement</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 shall choose <u>**one**</u> of the following methods: i. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents/occupants/users to air pollutants. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes that the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City. The approved risk reduction measures shall be implemented during construction and/or operations as applicable. - 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.	a. Prior to approval of a construction related permit b. Ongoing.	a. City of Oakland Bureau of Planning and Bureau of Building. b. City of Oakland Bureau of Building.

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
Air Quality (cont.)		
• 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 poplar (*Populus deltoids X trichocarpa*), and Redwood (*Sequoia sempervirens*). • Sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible. • Existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible. • Emissions from diesel trucks shall be reduced through implementing the following measures, if feasible: – Installing electrical hook-ups for diesel trucks at loading docks. – Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards. – Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels. – Prohibiting trucks from idling for more than two minutes. – Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented. ***b. 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.		
SCA AIR-5 (Standard Condition of Approval 24) *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: 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	Prior to approval of construction-related permit	City of Oakland Bureau of Planning and Bureau of Building.

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	**Responsibility**
Air Quality (cont.)		
on other documentation submitted to the City. The approved risk reduction measures shall be implemented during construction and/or operations as applicable. - 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-6 (Standard Condition of Approval 26) *Asbestos in Structures* Requirement: The project applicant shall comply with all applicable laws and regulations regarding demolition and renovation of Asbestos Containing Materials (ACM), including but not limited to California Code of Regulations, Title 8; California Business and Professions Code, Division 3; California Health and Safety Code sections 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended. Evidence of compliance shall be submitted to the City upon request.	Prior to approval of construction-related permit	Applicable regulatory agency with jurisdiction
Biological Resources		
SCA BIO-1 (Standard Condition of Approval 29) *Tree Removal During Bird Breeding Season* Requirement: To the extent feasible, removal of any tree and/or other vegetation suitable for nesting of birds shall not occur during the bird breeding season of February 1 to August 15 (or during December 15 to August 15 for trees located in or near marsh, wetland, or aquatic habitats). If tree removal must occur during the bird breeding season, all trees to be removed shall be surveyed by a qualified biologist to verify the presence or absence of nesting raptors or other birds. Pre-removal surveys shall be conducted within 15 days prior to the start of work and shall be submitted to the City for review and approval. If the survey indicates the potential presence of nesting raptors or other birds, the biologist shall determine an appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the California Department of Fish and Wildlife, and will be based to a large extent on the nesting species and its sensitivity to disturbance. In general, buffer sizes of 200 feet for raptors and 50 feet for other birds should suffice to prevent disturbance to birds nesting in the urban environment, but these buffers may be increased or decreased, as appropriate, depending on the bird species and the level of disturbance anticipated near the nest.	Prior to removal of trees.	City of Oakland Bureau of Planning

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<tr><td colspan="3">Biological Resources (cont.)</td></tr>
<tr><td>SCA BIO-2 (Standard Condition of Approval 30) Tree Permit
a. Tree Permit Required
<u>Requirement</u>: 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.
<u>When Required</u>: Prior to approval of construction-related permit
<u>Initial Approval</u>: Permit approval by Public Works Department, Tree Division; evidence of approval submitted to Bureau of Building
<u>Monitoring/Inspection</u>: Bureau of Building
b. Tree Protection During Construction
<u>Requirement</u>: 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, filling, 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, 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.</td><td>Prior to building permit final</td><td>Public Works Department, Tree Division
City of Oakland Bureau of Building</td></tr>
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Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
Biological Resources (cont.)		
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. When Required: During construction Initial Approval: Public Works Department, Tree Division Monitoring/Inspection: Bureau of Building c. ***Tree Replacement Plantings*** Requirement: 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 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.		
Also **SCA HYD-1, Erosion and Sedimentation Control Plan for Construction**. See *Hydrology and Water Quality*, below.		
Also **SCA HYD-2, NPDES C.3 Stormwater Requirements for Regulated Projects**. See *Hydrology and Water Quality*, below.		
Also **SCA UTIL-7, Water Efficient Landscape Ordinance (WELO)**. See *Utilities and Service Systems*, below.		

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	**Responsibility**
Cultural Resources		
SCA CUL-1 (Standard Condition of Approval 32): *Archaeological and Paleontological Resources – Discovery During Construction* Requirement: Pursuant to CEQA Guidelines section 15064.5(f), in the event that any historic or prehistoric subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the Project applicant shall notify the City and consult with a qualified archaeologist or paleontologist, as applicable, to assess the significance of the find. In the case of discovery of paleontological resources, the assessment shall be done in accordance with the Society of Vertebrate Paleontology standards. If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by the City must be followed unless avoidance is determined unnecessary or infeasible by the City. Feasibility of avoidance shall be determined with consideration of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. Work may proceed on other parts of the project site while measures for the cultural resources are implemented. In the event of data recovery of archaeological resources, the Project applicant shall submit an Archaeological Research Design and Treatment Plan (ARDTP) prepared by a qualified archaeologist for review and approval by the City. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practicable. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant. The Project applicant shall implement the ARDTP at his/her expense. In the event of excavation of paleontological resources, the Project applicant shall submit an excavation plan prepared by a qualified paleontologist to the City for review and approval. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by a qualified paleontologist, as appropriate, according to current professional standards and at the expense of the Project applicant.	During construction.	City of Oakland Bureau of Building
SCA CUL-2 (Standard Condition of Approval 33): *Archaeologically Sensitive Areas – Pre-Construction Measures* Requirement: The project applicant shall implement either Provision A (Intensive Pre-Construction Study) or Provision B (Construction ALERT Sheet) concerning archaeological resources. ***Provision A: Intensive Pre-Construction Study.*** The Project applicant shall retain a qualified archaeologist to conduct a site-specific, intensive archaeological resources study for review and approval by the City prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence of history-period archaeological resources on the project site. At a minimum, the study shall include: a. Subsurface presence/absence studies of the project site. Field studies may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources. b. A report disseminating the results of this research. c. Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources.	Prior to approval of construction-related permit; during construction.	City of Oakland Bureau of Planning and Bureau of Building

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
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Cultural Resources (cont.)		
If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction and prepare an ALERT sheet pursuant to Provision B below that details what could potentially be found at the project site. Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the ALERT sheet, required per Provision B below) and the procedures to follow if any artifacts are encountered, field recording and sampling in accordance with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation, notifying the appropriate officials if human remains or cultural resources are discovered, and preparing a report to document negative findings after construction is completed if no archaeological resources are discovered during construction. ***Provision B: Construction ALERT Sheet.*** The Project applicant shall prepare a construction "ALERT" sheet developed by a qualified archaeologist for review and approval by the City prior to soil-disturbing activities occurring on the project site. The ALERT sheet shall contain, at a minimum, visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the Project's prime contractor, any project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving), and utility firms involved in soil- disturbing activities within the project site. The ALERT sheet shall state, in addition to the basic archaeological resource protection measures contained in other standard conditions of approval, all work must stop and the City's Environmental Review Officer contacted in the event of discovery of the following cultural materials: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones. Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. The ALERT sheet shall also be posted in a visible location at the project site.		
SCA CUL-3 (Standard Condition of Approval SCA 34): *Human Remains – Discovery During Construction* <u>Requirement</u>: 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.	City of Oakland Bureau of Building

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	**Responsibility**
Geology, Soils, and Geohazards		
SCA GEO-1 (Standard Condition of Approval 36): *Construction-Related Permit(s)* Requirement: The Project applicant shall obtain all required construction-related permits/approvals from the City. The Project shall comply with all standards, requirements and conditions contained in construction-related codes, including but not limited to the Oakland Building Code and the Oakland Grading Regulations, to ensure structural integrity and safe construction.	Prior to approval of construction-related permit.	City of Oakland Bureau of Building
SCA GEO-2 (Standard Condition of Approval 37): *Soils Report* Requirement: The project applicant shall submit a soils report prepared by a registered geotechnical engineer for City review and approval. The soils report shall contain, at a minimum, field test results and observations regarding the nature, distribution and strength of existing soils, and recommendations for appropriate grading practices and project design. The project applicant shall implement the recommendations contained in the approved report during project design and construction.	Prior to approval of construction-related permit.	City of Oakland Bureau of Building
See SCA HYD-1, Erosion and Sedimentation Control Plan for Construction. See *Hydrology and Water Quality*, below.		
Greenhouse Gases and Climate Change		
SCA GHG-1 (Standard Condition of Approval 41): *Project Compliance with the Equitable Climate Action Plan (ECAP) Consistency Checklist* Requirement: The project applicant shall implement all the measures in the Equitable Climate Action Plan (ECAP) Consistency Checklist that was submitted during the Planning entitlement phase. a. For physical ECAP Consistency Checklist measures to be incorporated into the design of the project, the measures shall be included on the drawings submitted for construction-related permits. b. For physical ECAP Consistency Checklist measures to be incorporated into the design of the project, the measures shall be implemented during construction. c. For ECAP Consistency Checklist measures that are operational but not otherwise covered by these SCAs, including but not limited to the requirement for transit passes or additional Transportation Demand Management measures, the applicant shall provide notice of these measures to employees and/or residents and post these requirements in a public place such as a lobby or work area accessible to the employees and/or residents.	a. Prior to approval of construction-related permit b. During construction c. Ongoing	a. City of Oakland Bureau of Planning b. City of Oakland Bureau of Planning and Bureau of Building c. City of Oakland Bureau of Planning
See **SCA AES-3, Landscape Plan**. See *Aesthetics, Wind, and Shadow*, above.		
See **SCAs AIR-2, Criteria Air Pollutant Controls - Construction Related**. See *Air Quality*, above.		
See **SCA AIR-3, Diesel Particulate Matter Controls - Construction Related**. See *Air Quality*, above.		
See **SCA TRA-2, Bicycle Parking**. See *Transportation and Circulation*, below.		
See **SCA TRA-4, Transportation and Parking Demand Management**. See *Transportation and Circulation*, below.		
See **SCA UTIL-1, Construction and Demolition Waste Reduction and Recycling**. See *Utilities and Service Systems*, below.		
See **SCA UTIL-4**, **Green Building Requirements.** See *Utilities and Service Systems*, below.		
See **SCA UTIL-7, UTIL-7 Water Efficient Landscape Ordinance (WELO)**. See *Utilities and Service Systems*, below.		

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<tr><td>SCA HAZ-1 (Standard Condition of Approval 43): Hazards Materials Related to Construction
<u>Requirement</u>: The Project applicant shall ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to minimize potential negative effects on groundwater, soils, and human health. These shall include, at a minimum, the following:
a. Follow manufacture's recommendations for use, storage, and disposal of chemical products used in construction;
b. Avoid overtopping construction equipment fuel gas tanks;
c. During routine maintenance of construction equipment, properly contain and remove grease and oils;
d. Properly dispose of discarded containers of fuels and other chemicals;
e. Implement lead-safe work practices and comply with all local, regional, state, and federal requirements concerning lead (for more information refer to the Alameda County Lead Poisoning Prevention Program); and
f. If soil, groundwater, or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the project applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notifying the City and applicable regulatory agency(ies) and implementation of the actions described in the City's Standard Conditions of Approval, as necessary, to identify the nature and extent of contamination. Work shall not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.</td><td>During construction.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td>SCA HAZ-2 (Standard Condition of Approval 44): Hazardous Building Materials and Site Contamination
a. Hazardous Building Materials and Site Contamination
<u>Requirement</u>: The project applicant shall submit a comprehensive assessment report to the Bureau of Building, signed by a qualified environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACMs), lead-based paint, polychlorinated biphenyls (PCBs), and any other building materials or stored materials classified as hazardous materials by State or federal law. If lead-based paint, ACMs, PCBs, or any other building materials or stored materials classified as hazardous materials are present, the project applicant shall submit specifications prepared and signed by a qualified environmental professional, for the stabilization and/or removal of the identified hazardous materials in accordance with all applicable laws and regulations. The project applicant shall implement the approved recommendations and submit to the City evidence of approval for any proposed remedial action and required clearances by the applicable local, state, or federal regulatory agency.
b. Environmental Site Assessment Required
<u>Requirement</u>: The project applicant shall submit a Phase I Environmental Site Assessment report, and Phase II Environmental Site Assessment report if warranted by the Phase I report, for the project site for review and approval by the City. The report(s) shall be prepared by a qualified environmental assessment professional and include recommendations for remedial action, as appropriate, for hazardous materials. The project applicant shall implement the approved recommendations and submit to the City evidence of approval for any proposed remedial action and required clearances by the applicable local, state, or federal regulatory agency.</td><td>a. Prior to approval of demolition, grading, or building permits
b. Prior to approval of construction-related permit
c. Prior to approval of construction-related permit
d. During Construction</td><td>a. City of Oakland Bureau of Building
b. Applicable regulatory agency with jurisdiction
c. City of Oakland Bureau of Building
d. City of Oakland Bureau of Building</td></tr>
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<tr><td>c. Health and Safety Plan Required
<u>Requirement</u>: 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.
d. Best Management Practices (BMPs) Required for Contaminated Sites
<u>Requirement</u>: 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.</td><td></td><td></td></tr>
<tr><td>SCA AIR-6, Asbestos in Structures. See Air Quality, above.</td><td></td><td></td></tr>
<tr><td>SCA TRA-1, Construction Activity in the Public Right-of-Way. See Transportation and Traffic, below.</td><td></td><td></td></tr>
<tr><td colspan="3">Hydrology and Water Quality</td></tr>
<tr><td>SCA HYD-1 (Standard Condition of Approval 48): Erosion and Sedimentation Control Plan for Construction
a. Erosion and Sedimentation Control Plan Required
<u>Requirement</u>: The Project applicant shall submit an Erosion and Sedimentation Control Plan to the City for review and approval. The Erosion and Sedimentation Control Plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading and/or construction operations. The Plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the City. The Plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the Project applicant shall clear the system of any debris or sediment.</td><td>a. Prior to approval of construction-related permit.
b. During construction.</td><td>City of Oakland Bureau of Building</td></tr>
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Hydrology and Water Quality (cont.)		
b. Erosion and Sedimentation Control During Construction Requirement: The Project applicant shall implement the approved Erosion and Sedimentation Control Plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Bureau of Building.		
SCA HYD-2 (Standard Condition of Approval 54): *NPDES C.3 Stormwater Requirements for Regulated Projects* ***a. Post-Construction Stormwater Management Plan Required*** Requirement: The Project applicant shall comply with the requirements of Provision C.3 of the Municipal Regional Stormwater Permit issued under the National Pollutant Discharge Elimination System (NPDES). The project applicant shall submit a Post-Construction Stormwater Management Plan to the City for review and approval with the project drawings submitted for site improvements, and shall implement the approved Plan during construction. The Post-Construction Stormwater Management Plan shall include and identify the following: i. Location and size of new and replaced impervious surface; ii. Directional surface flow of stormwater runoff; iii. Location of proposed on-site storm drain lines; iv. Site design measures to reduce the amount of impervious surface area; v. Source control measures to limit stormwater pollution; vi. Stormwater treatment measures to remove pollutants from stormwater runoff, including the method used to hydraulically size the treatment measures; and vii. Hydromodification management measures, if required by Provision C.3, so that post-Project stormwater runoff flow and duration match pre-Project runoff. ***b. Maintenance Agreement Required*** Requirement: The project applicant shall enter into a maintenance agreement with the City, based on the Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement, in accordance with Provision C.3, which provides, in part, for the following: i. The Project applicant accepting responsibility for the adequate installation/construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures being incorporated into the Project until the responsibility is legally transferred to another entity; and ii. Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water 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.	a. Prior to approval of construction-related permit. b. Prior to building permit final.	a. City of Oakland Bureau of Building b. City of Oakland Bureau of Building
Also **SCA GEO-1, Construction-Related Permit(s).** See *Geology, Soils, and Geohazards*, above.		
Also **SCA UTIL-6, Storm Drain System**. See *Utilities and Service Systems*, below.		

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	**Responsibility**
Noise		
SCA NOI-1 (Standard Condition of Approval 62) *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. 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.	City of Oakland Bureau of Building
SCA NOI-2: (Standard Condition of Approval 63) *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.	During construction.	City of Oakland Bureau of Building

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<tr><th rowspan="2">Standard Conditions of Approval/Mitigation Measures</th><th colspan="2">Mitigation Implementation/Monitoring</th></tr>
<tr><th>Schedule</th><th>Responsibility</th></tr>
<tr><td colspan="3">Noise (cont.)</td></tr>
<tr><td>SCA NOI-3 (Standard Condition of Approval 64) Extreme Construction Noise
a. Construction Noise Management Plan Required
<u>Requirement</u>: 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 <u>include, but are not limited to, the following</u>:
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 <u>and implement such measure if such measures are feasible and would noticeably reduce noise impacts;</u> and
v. Monitor the effectiveness of noise attenuation measures by taking noise measurements.
b. Public Notification Required
<u>Requirement</u>: 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.</td><td>a. Prior to approval of construction-related permit.
b. During construction.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td>SCA NOI-4 (Standard Condition of Approval 66) Construction Noise Complaints
<u>Requirement</u>: 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.</td><td>Prior to approval of construction-related permit.</td><td>City of Oakland Bureau of Building</td></tr>
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<tr><td colspan="3">Noise (cont.)</td></tr>
<tr><td>SCA NOI-5 (Standard Condition of Approval 67) Exposure to Community Noise
<u>Requirement</u>: 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</td><td>Prior to approval of construction-related permit.</td><td>City of Oakland Bureau of Planning and Bureau of Building</td></tr>
<tr><td>SCA NOI-6 (Standard Condition of Approval 68) Operational Noise
<u>Requirement</u>: 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.</td><td>Ongoing.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td>SCA NOI-7 (Standard Condition of Approval 70) Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities
<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 at the Thompson Building at 330-336 15th Street and 1515 Webster Street. 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.</td><td>Prior to construction</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td colspan="3">Population and Housing</td></tr>
<tr><td>SCA POP-1 (Standard Condition of Approval 71) Affordable Housing Impact Fee
<u>Requirement</u>: The project applicant shall comply with the requirements of the City of Oakland Affordable Housing Impact Fee Ordinance (chapter 15.72 of the Oakland Municipal Code).</td><td>Prior to issuance of building permit; subsequent milestones pursuant to ordinance.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td colspan="3">Public Services, Parks, and Recreation Facilities</td></tr>
<tr><td>SCA PUB-1 (Standard Condition of Approval 73) Capital Improvements Impact Fee
<u>Requirement</u>: The project applicant shall comply with the requirements of the City of Oakland Capital Improvements Fee Ordinance (chapter 15.74 of the Oakland Municipal Code).</td><td>Prior to issuance of building permit</td><td>City of Oakland Bureau of Building</td></tr>
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<tr><td colspan="3">Transportation and Circulation</td></tr>
<tr><td>SCA TRA-1 (Standard Condition of Approval 75) Construction Activity in the Public Right-of-Way
a. Obstruction Permit Required
<u>Requirement</u>: The project applicant shall obtain an obstruction permit from the City prior to placing any temporary construction-related obstruction in the public right-of-way, including City streets, sidewalks, bicycle facilities, and bus stops.
b. Traffic Control Plan Required
<u>Requirement</u>: In the event of obstructions to vehicle or bicycle travel lanes, bus stops, or sidewalks, the project applicant shall submit a Traffic Control Plan to the City for review and approval prior to obtaining an obstruction permit. The project applicant shall submit evidence of City approval of the Traffic Control Plan with the application for an obstruction permit. The Traffic Control Plan shall contain a set of comprehensive traffic control measures for auto, transit, bicycle, and pedestrian accommodations (or Detours, if accommodations are not feasible), including detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. The Traffic Control Plan shall be in conformance with the City's Supplemental Design Guidance for Accommodating Pedestrians, Bicyclists, and Bus Facilities in Construction Zones. The project applicant shall implement the approved Plan during construction.
c. Repair of City Streets
<u>Requirement</u>: 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.</td><td>a. Prior to approval of construction-related permit.
b. Prior to approval of construction-related permit.
c. Prior to building permit final.</td><td>City of Oakland Department of Transportation</td></tr>
<tr><td>SCA TRA-2 (Standard Condition of Approval 76) Bicycle Parking
<u>Requirement</u>: 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.</td><td>Prior to approval of construction-related permit.</td><td>City of Oakland Bureau of Planning and Bureau of Building</td></tr>
<tr><td>SCA TRA-3 (Standard Condition of Approval 77): Transportation Improvements.
The project applicant shall implement the recommended on- and off-site transportation-related improvements contained within the Transportation Impact Review for the project (e.g., signal timing adjustments, restriping, signalization, traffic control devices, roadway reconfigurations, transportation demand management measures, and transit, pedestrian, and bicyclist amenities). The project applicant is responsible for funding and installing the improvements, and shall obtain all necessary permits and approvals from the City and/or other applicable regulatory agencies such as, but not limited to, Caltrans (for improvements related to Caltrans facilities) and the California Public Utilities Commission (for improvements related to railroad crossings), prior to installing the improvements. To implement this measure for intersection modifications, the project applicant shall submit Plans, Specifications, and Estimates (PS&E) to the City for review and approval. All elements shall be designed to applicable City standards in effect at the time of construction and all new or upgraded signals shall include these enhancements as required by the City. All other facilities supporting vehicle travel and alternative modes through the intersection shall be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below:
a. 2070L Type Controller with cabinet accessory
b. GPS communication (clock)</td><td>Prior to building permit final or as otherwise specified</td><td>City of Oakland Bureau of Building and City of Oakland Department of Transportation</td></tr>
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<tr><td colspan="3">Transportation and Circulation (cont.)</td></tr>
<tr><td>c. Accessible pedestrian crosswalks according to Federal and State Access Board guidelines with signals (audible and tactile)
d. Countdown pedestrian head module switch out
e. City Standard ADA wheelchair ramps
f. Video detection on existing (or new, if required)
g. Mast arm poles, full activation (where applicable)
h. Polara Push buttons (full activation)
i. Bicycle detection (full activation)
j. Pull boxes
k. Signal interconnect and communication with trenching (where applicable), or through existing conduit (where applicable), 600 feet maximum
l. Conduit replacement contingency
m. Fiber switch
n. PTZ camera (where applicable)
o. Transit Signal Priority (TSP) equipment consistent with other signals along corridor
p. Signal timing plans for the signals in the coordination group
q. Bi-directional curb ramps (where feasible, and if project is on a street corner)
r. Upgrade ramps on receiving curb (where feasible, and if project is on a street corner)</td><td></td><td></td></tr>
<tr><td>SCA TRA-4 (Standard Condition of Approval 78) Transportation and Parking Demand Management
a. Transportation and Parking Demand Management (TDM) Plan Required
<u>Requirement</u>: The project applicant shall submit a Transportation and Parking Demand Management (TDM) Plan for review and approval by the City.
i. The goals of the TDM Plan shall be the following:
• Reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable.
• Achieve the following project vehicle trip reductions (VTR):
– Projects generating 50-99 net new a.m. or p.m. peak hour vehicle trips: 10 percent VTR
– Projects generating 100 or more net new a.m. or p.m. peak hour vehicle trips: 20 percent VTR
• Increase pedestrian, bicycle, transit, and carpool/vanpool modes of travel. All four modes of travel shall be considered, as appropriate
• Enhance the City’s transportation system, consistent with City policies and programs.
ii. The TDM Plan should include the following:
• Baseline existing conditions of parking and curbside regulations within the surrounding neighborhood that could affect the effectiveness of TDM strategies, including inventory of parking spaces and occupancy if applicable.</td><td>a. Prior to approval of planning application.
b. Prior to building permit final
c. Ongoing</td><td>a. City of Oakland Bureau of Planning
b. City of Oakland Bureau of Building
c. City of Oakland Department of Transportation</td></tr>
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Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
Transportation and Circulation (cont.)		
• Proposed TDM strategies to achieve VTR goals (see below). iii. For employers with 100 or more employees at the subject site, the TDM Plan shall also comply with the requirements of Oakland Municipal Code Chapter 10.68 Employer-Based Trip Reduction Program. iv. The following TDM strategies **must** be incorporated into a TDM Plan based on a project location or other characteristics. When required, these mandatory strategies should be identified as a credit toward a project's VTR		

Improvement	Required by code or when…
Bus boarding bulbs or islands	• A bus boarding bulb or island does not already exist and a bus stop is located along the project frontage; and/or • A bus stop along the project frontage serves a route with 15 minutes or better peak hour service and has a shared bus-bike lane curb
Bus shelter	• A stop with no shelter is located within the project frontage, or • The project is located within 0.10 miles of a flag stop with 25 or more boardings per day
Concrete bus pad	• A bus stop is located along the project frontage and a concrete bus pad does not already exist
Curb extensions or bulb-outs	• Identified as an improvement within site analysis
Implementation of a corridor-level bikeway improvement	• A buffered Class II or Class IV bikeway facility is in a local or county adopted plan within 0.10 miles of the project location; and • The project would generate 500 or more daily bicycle trips
Implementation of a corridor-level transit capital improvement	• A high-quality transit facility is in a local or county adopted plan within 0.25 miles of the project location; and • The project would generate 400 or more peak period transit trips
Installation of amenities such as lighting; pedestrian-oriented green infrastructure, trees, or other greening landscape; and trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan.	• Always required

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
Transportation and Circulation (cont.)		

Improvement	Required by code or when…
In-street bicycle corral	• A project includes more than 10,000 square feet of ground floor retail, is located along a Tier 1 bikeway, and on-street vehicle parking is provided along the project frontages.
Intersection improvements[55]	• Identified as an improvement within site analysis
New sidewalk, curb ramps, curb and gutter meeting current City and ADA standards	• Always required
No monthly permits and establish minimum price floor for public parking[56]	• If proposed parking ratio exceeds 1:1000 sf. (commercial)
Parking garage is designed with retrofit capability	• Optional if proposed parking ratio exceeds 1:1.25 (residential) or 1:1000 sf. (commercial)
Parking space reserved for car share	• If a project is providing parking and a project is located within downtown. One car share space reserved for buildings between 50 – 200 units, then one car share space per 200 units.
Paving, lane striping or restriping (vehicle and bicycle), and signs to midpoint of street section	• Typically required
Pedestrian crossing improvements	• Identified as an improvement within site analysis
Pedestrian-supportive signal changes[57]	• Identified as an improvement within operations analysis
Real-time transit information system	• A project frontage block includes a bus stop or BART station and is along a Tier 1 transit route with 2 or more routes or peak period frequency of 15 minutes or better
Relocating bus stops to far side	• A project is located within 0.10 mile of any active bus stop that is currently near-side

55 Including but not limited to visibility improvements, shortening corner radii, pedestrian safety islands, accounting for pedestrian desire lines.

56 May also provide a cash incentive or transit pass alternative to a free parking space in commercial properties.

57 Including but not limited to reducing signal cycle lengths to less than 90 seconds to avoid pedestrian crossings against the signal, providing a leading pedestrian interval, provide a “scramble” signal phase where appropriate.

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
Transportation and Circulation (cont.)		

Improvement	Required by code or when…
Signal upgrades[58]	• Project size exceeds 100 residential units, 80,000 sf. of retail, or 100,000 sf. of commercial; and • Project frontage abuts an intersection with signal infrastructure older than 15 years
Transit queue jumps	• Identified as a needed improvement within operations analysis of a project with frontage along a Tier 1 transit route with 2 or more routes or peak period frequency of 15 minutes or better
Trenching and placement of conduit for providing traffic signal interconnect	• Project size exceeds 100 units, 80,000 sf. of retail, or 100,000 sf. of commercial; and • Project frontage block is identified for signal interconnect improvements as part of a planned ITS improvement; and • A major transit improvement is identified within operations analysis requiring traffic signal interconnect
Unbundled parking	• If proposed parking ratio exceeds 1:1.25 (residential)

v. Other TDM strategies to consider include, but are not limited to, the following:

- Inclusion of additional long-term and short-term bicycle parking that meets the design standards set forth in chapter five of the Bicycle Master Plan and the Bicycle Parking Ordinance (chapter 17.117 of the Oakland Planning Code), and shower and locker facilities in commercial developments that exceed the requirement.
- Construction of and/or access to bikeways per the Bicycle Master Plan; construction of priority bikeways, on-site signage and bike lane striping.
- Installation of safety elements per the Pedestrian Master Plan (such as crosswalk striping, curb ramps, count down signals, bulb outs, etc.) to encourage convenient and safe crossing at arterials, in addition to safety elements required to address safety impacts of the project.
- Installation of amenities such as lighting, street trees, and trash receptacles per the Pedestrian Master Plan, the Master Street Tree List, Tree Planting Guidelines (which can be viewed at http://www2.oaklandnet.com/oakca1/groups/pwa/documents/report/oak042662.pdf and http://www2.oaklandnet.com/oakca1/groups/pwa/documents/form/oak025595.pdf, respectively), and any applicable streetscape plan.

58 Including typical traffic lights, pedestrian signals, bike actuated signals, transit-only signals

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
Transportation and Circulation (cont.)		
• Construction and development of transit stops/shelters, pedestrian access, way finding signage, and lighting around transit stops per transit agency plans or negotiated improvements. • Direct on-site sales of transit passes purchased and sold at a bulk group rate (through programs such as AC Transit Easy Pass or a similar program through another transit agency). • Provision of a transit subsidy to employees or residents, determined by the project applicant and subject to review by the City, if employees or residents use transit or commute by other alternative modes. • Provision of an ongoing contribution to transit service to the area between the project and nearest mass transit station prioritized as follows: 1) Contribution to AC Transit bus service; 2) Contribution to an existing area shuttle service; and 3) Establishment of new shuttle service. The amount of contribution (for any of the above scenarios) would be based upon the cost of establishing new shuttle service (Scenario 3). • Guaranteed ride home program for employees, either through 511.org or through separate program. • Pre-tax commuter benefits (commuter checks) for employees. • Free designated parking spaces for on-site car-sharing program (such as City Car Share, Zip Car, etc.) and/or car-share membership for employees or tenants. • On-site carpooling and/or vanpool program that includes preferential (discounted or free) parking for carpools and vanpools. • Distribution of information concerning alternative transportation options. • Parking spaces sold/leased separately for residential units. Charge employees for parking, or provide a cash incentive or transit pass alternative to a free parking space in commercial properties. • Parking management strategies including attendant/valet parking and shared parking spaces. • Requiring tenants to provide opportunities and the ability to work off-site. • Allow employees or residents to adjust their work schedule in order to complete the basic work requirement of five eight-hour workdays by adjusting their schedule to reduce vehicle trips to the worksite (e.g., working four, ten-hour days; allowing employees to work from home two days per week). • Provide or require tenants to provide employees with staggered work hours involving a shift in the set work hours of all employees at the workplace or flexible work hours involving individually determined work hours. The TDM Plan shall indicate the estimated VTR for each strategy, based on published research or guidelines where feasible. For TDM Plans containing ongoing operational VTR strategies, the Plan shall include an ongoing monitoring and enforcement program to ensure the Plan is implemented on an ongoing basis during project operation. If an annual compliance report is required, as explained below, the TDM Plan shall also specify the topics to be addressed in the annual report. ***b. TDM Implementation – Physical Improvements*** Requirement: For VTR strategies involving physical improvements, the project applicant shall obtain the necessary permits/ approvals from the City and install the improvements prior to the completion of the project.		

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<tr><td colspan="3">Transportation and Circulation (cont.)</td></tr>
<tr><td>c. TDM Implementation – Operational Strategies
Requirement: For projects that generate 100 or more net new a.m. or p.m. peak hour vehicle trips and contain ongoing operational VTR strategies, the project applicant shall submit an annual compliance report for the first five years following completion of the project (or completion of each phase for phased projects) for review and approval by the City. The annual report shall document the status and effectiveness of the TDM program, including the actual VTR achieved by the project during operation. If deemed necessary, the City may elect to have a peer review consultant, paid for by the project applicant, review the annual report. If timely reports are not submitted and/or the annual reports indicate that the project applicant has failed to implement the TDM Plan, the project will be considered in violation of the Conditions of Approval and the City may initiate enforcement action as provided for in these Conditions of Approval. The project shall not be considered in violation of this Condition if the TDM Plan is implemented but the VTR goal is not achieved.
NOTE: This measure has been implemented by the project applicant and no further action is required.</td><td></td><td></td></tr>
<tr><td>SCA TRA-5 (Standard Condition of Approval 79) Transportation Impact Fee
Requirement: The project applicant shall comply with the requirements of the City of Oakland Transportation Impact Fee Ordinance (chapter 15.74 of the Oakland Municipal Code).</td><td>Prior to issuance of building permit.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td colspan="3">Utilities and Service Systems</td></tr>
<tr><td>SCA UTIL-1 (Standard Condition of Approval 82) Construction and Demolition Waste Reduction and Recycling
Requirement: The Project applicant shall comply with the City of Oakland Construction and Demolition Waste Reduction and Recycling Ordinance (chapter 15.34 of the Oakland Municipal Code) by submitting a Construction and Demolition Waste Reduction and Recycling Plan (WRRP) for City review and approval, and shall implement the approved WRRP. Projects subject to these requirements include all new construction, renovations/alterations/modifications with construction values of $50,000 or more (except R-3 type construction), and all demolition (including soft demolition) except demolition of type R-3 construction. The WRRP must specify the methods by which the Project will divert construction and demolition debris waste from landfill disposal in accordance with current City requirements. The WRRP may be submitted electronically at www.greenhalosystems.com or manually at the City's Green Building Resource Center. Current standards, FAQs, and forms are available on the City's website and in the Green Building Resource Center.</td><td>Prior to approval of construction-related permit</td><td>City of Oakland Public Works Department, Environmental Services Division</td></tr>
<tr><td>SCA UTIL-2 (Standard Condition of Approval 83) Underground Utilities
Requirement: The Project applicant shall place underground all new utilities serving the Project and under the control of the Project applicant and the City, including all new gas, electric, cable, and telephone facilities, fire alarm conduits, street light wiring, and other wiring, conduits, and similar facilities. The new facilities shall be placed underground along the Project's street frontage and from the Project structures to the point of service. Utilities under the control of other agencies, such as PG&E, shall be placed underground if feasible. All utilities shall be installed in accordance with standard specifications of the serving utilities.</td><td>During construction.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td>SCA UTIL-3 (Standard Condition of Approval 84) Recycling Collection and Storage Space
Requirement: The Project applicant shall comply with the City of Oakland Recycling Space Allocation Ordinance (chapter 17.118 of the Oakland Planning Code). The Project drawings submitted for construction-related permits shall contain recycling collection and storage areas in compliance with the Ordinance. For residential projects, at least two 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.</td><td>Prior to approval of construction-related permit.</td><td>City of Oakland Bureau of Planning and Bureau of Building</td></tr>
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<tr><td colspan="3">Utilities and Service Systems (cont.)</td></tr>
<tr><td>
SCA UTIL-4 (Standard Condition of Approval 85) Green Building Requirements
a. Compliance with Green Building Requirements During Plan-Check
<u>Requirement</u>: The Project applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (chapter 18.02 of the Oakland Municipal Code).
i. The following information shall be submitted to the City for review and approval with the application for a building permit:
• Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards.
• Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit.
• Copy of the Unreasonable Hardship Exemption, if granted, during the review of the Planning and Zoning permit.
• Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (ii) below.
• Copy of the signed statement by the Green Building Certifier approved during the review of the Planning and Zoning permit that the project complied with the requirements of the Green Building Ordinance.
• Signed statement by the Green Building Certifier that the project still complies with the requirements of the Green Building Ordinance, unless an Unreasonable Hardship Exemption was granted during the review of the Planning and Zoning permit.
• Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.
ii. The set of plans in subsection (i) shall demonstrate compliance with the following:
• CALGreen mandatory measures.
• Compliance with the appropriate and applicable checklist approved during the Planning entitlement process.
• All green building points identified on the checklist approved during review of the Planning and Zoning permit, unless a Request for Revision Plan-check application is submitted and approved by the Bureau of Planning that shows the previously approved points that will be eliminated or substituted.
• The required green building point minimums in the appropriate credit categories.
b. Compliance with Green Building Requirements During Construction
<u>Requirement</u>: 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.
</td><td>
a. Prior to approval of construction-related permit.
b. During construction.
c. Prior to Final Approval.
</td><td>
a. City of Oakland Bureau of Building
b. City of Oakland Bureau of Building
c. City of Oakland Bureau of Planning and Bureau of Building
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</table>

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
Utilities and Service Systems (cont.)		
c. ***Compliance with Green Building Requirements After Construction*** Requirement: Prior to the finalizing the Building Permit, the Green Building Certifier shall submit the appropriate documentation to City staff and attain the minimum required point level.		
SCA UTIL-5 (Standard Condition of Approval 87) *Sanitary Sewer System* Requirement: The Project applicant shall prepare and submit a Sanitary Sewer Impact Analysis to the City for review and approval in accordance with the City of Oakland Sanitary Sewer Design Guidelines. The Impact Analysis shall include an estimate of pre-Project and post-Project wastewater flow from the Project site. In the event that the Impact Analysis indicates that the net increase in Project wastewater flow exceeds City-projected increases in wastewater flow in the sanitary sewer system, the Project applicant shall pay the Sanitary Sewer Impact Fee in accordance with the City's Master Fee Schedule for funding improvements to the sanitary sewer system.	Prior to approval of construction-related permit.	City of Oakland Public Works Department, Department of Engineering and Construction
SCA UTIL-6 (Standard Condition of Approval 88) *Storm Drain System* Requirement: The Project storm drainage system shall be designed in accordance with the City of Oakland's Storm Drainage Design Guidelines. To the maximum extent practicable, peak stormwater runoff from the project site shall be reduced by at least 25 percent compared to the pre-Project condition.	Prior to approval of construction-related permit.	City of Oakland Bureau of Building
A UTIL-7 (Standard Condition of Approval 90) *Water Efficient Landscape Ordinance (WELO)* Requirement: The project applicant shall comply with California's Water Efficient Landscape Ordinance (WELO) in order to reduce landscape water usage. For any landscape project with an aggregate (total noncontiguous) landscape area equal to 2,500 sq. ft. or less. The project applicant may implement either the Prescriptive Measures or the Performance Measures, of, and in accordance with the California's Model Water Efficient Landscape Ordinance. For any landscape project with an aggregate (total noncontiguous) landscape area over 2,500 sq. ft., the project applicant shall implement the Performance Measures in accordance with the WELO. *Prescriptive Measures:* Prior to construction, the project applicant shall submit documentation showing compliance with Appendix D of California's Model Water Efficient Landscape Ordinance (see website below starting on page 23): http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/Title%2023%20extract%20-%20Official%20CCR%20pages.pdf *Performance Measures*: Prior to construction, the project applicant shall prepare and submit a Landscape Documentation Package for review and approval, which includes the following: a. Project Information: i. Date, ii. Applicant and property owner name, iii. Project address, iv. Total landscape area, v. Project type (new, rehabilitated, cemetery, or home owner installed), vi. Water supply type and water purveyor, vii. Checklist of documents in the package, and viii. Applicant signature and date with the statement: "I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package."	Prior to approval of construction-related permit.	City of Oakland Bureau of Planning

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
Utilities and Service Systems (cont.)		
b. Water Efficient Landscape Worksheet i. Hydrozone Information Table ii. Water Budget Calculations with Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use c. Soil Management Report d. Landscape Design Plan e. Irrigation Design Plan, and f. Grading Plan Upon installation of the landscaping and irrigation systems, the Project applicant shall submit a Certificate of Completion and landscape and irrigation maintenance schedule for review and approval by the City. The Certificate of Compliance shall also be submitted to the local water purveyor and property owner or his or her designee. i. For the specific requirements within the Water Efficient Landscape Worksheet, Soil Management Report, Landscape Design Plan, Irrigation Design Plan and Grading Plan, see the link below. Effective May 1, 2018 Page 77 http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/Title%2023%20extract%20-%20Official%20CCR%20pages.pdf		
Also **SCA AIR-2, Criteria Air Pollutant Controls - Construction Related**. See *Air Quality*, above.		
Also **SCA HYD-1, Erosion and Sedimentation Control Plan for Construction**. See *Hydrology and Water Quality*, above.		
Also **SCA HYD-2 NPDES C.3 Stormwater Requirements for Regulated Projects.** See *Hydrology and Water Quality*, above.		

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ATTACHMENT B

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

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

Further, Section 15183 states,

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

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

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

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

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

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

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

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

- The General Plan land use designation for the site is Central Business District (CBD). This designation applies to areas suitable for high density mixed-use urban center with a mix of large-scale offices, commercial, urban (high-rise) residential, and infill hotel uses, among many others, in the central Downtown core of the City. The proposed residential, office, and retail mixed-use development would be consistent with this designation.
- The site is zoned Central Business District Pedestrian Retail Commercial Zone (CBD-P) and Central Business District General Commercial Zone (CBD-C). The Project would be consistent with the purposes of the CBD-P zone, which is generally intended to create, maintain, and enhance areas Central Business District appropriate for a wide range of ground-floor retail, office and other commercial activities. Upper story spaces are intended to be available for a wide range of office and residential activities. The Project would also be consistent with the purposes of the CBD-C zone, which is generally intended 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. As the Project would develop ground floor retail storefronts and an interior open air plaza, ground floor and basement-level office space, and upper level residential uses, the Project would be consistent with the CBD-P and CBD-C zoning designations.
- The Project site is located in CBD Height Area 6, which has no maximum height limit and an 85-foot maximum allowable building base height. Towers in CBD Height Area 6 also have a maximum tower elevation length of 195 feet. The Project would construct a 195-foot tall tower with a 65-foot podium, consistent with these maximum limits. CBD Height Area 6 also has a maximum FAR of 20.0, with which the Project's FAR of 13.7 would be consistent.
- CBD Height Area 6 also has a maximum density of 90 square feet of lot area per dwelling unit. The Project would construct approximately 182 units on a 14,106 square foot lot. However, since the Project would include at least 8 affordable units, the Project is seeking to utilize a density bonus to realize the additional units proposed.
- In addition, there are no peculiar aspects that would increase the severity of any of the previously identified significant cumulative effects in the 1998 LUTE EIR.
- The Project is consistent with the development goals in the Central District Urban Renewal Plan (2011 Renewal Plan Amendments EIR). The 2011 Renewal Plan Amendments EIR details particular projects and programs that are anticipated to include targeting investments and activities toward certain catalyst projects, infrastructure improvement projects and infill development projects that are consistent with the General Plan. The Project is consistent with at least six major goals of these projects and programs:
  - Re-establishment of residential area for all economic levels within specific portions of the Redevelopment Project Area.
  - Revitalization and strengthening of the Oakland Central District's historical role as the major regional retail center for the Metropolitan Oakland Area.
  - Provisions of employment and other economic benefits to disadvantaged persons living within or near the Redevelopment Project Area.
  - Improved environmental design within the Project Area, including creation of a definite sense of place, clear gateways, emphatic focal points and physical design which expresses and respects the special nature of each sub-area.

Project-specific impacts peculiar to the project or site, or those not analyzed in a prior EIR. Because the Project is consistent with the policies, land use designation, and development parameters in the 1998 LUTE EIR and 2010 Housing Element Update EIR and its 2014 Addendum, the Project's potential contribution to cumulatively significant effects has already been addressed in those Previous EIRs. In addition, the 2011 Renewal Plan Amendments EIR analyzed the cumulative effects of development projects that would occur absent the Renewal Plan Amendments, which would include the Project, 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.

New Significant Effects

The Project would not cause new specific effects that were not addressed in the 1998 LUTE EIR, the 2010 Housing Element Update EIR and its 2014 Addendum, or the 2011 Renewal Plan Amendments EIR. The analysis of the Project in the CEQA Checklist analysis includes all the resource topics identified as potentially incurring significant unavoidable impacts, and concludes that there would be no impacts that were not analyzed in Previous EIRs.

As these analyses demonstrate, the Project would not substantially increase the severity of the significant impacts identified in the 1998 LUTE EIR, the 2010 Housing Element Update EIR and its 2014 Addendum, or 2011 Renewal Plan Amendments EIR, nor would it result in new significant impacts that were not identified in these Previous EIRs. Further, there have been no substantial changes in circumstances following certification of the Previous EIRs that would result in any new specific significant effects of the Project.

Substantial New Information

There is no new information that was not known at the time the 2011 Renewal Plan Amendments EIR or the 2010 Housing Element Update EIR and its 2014 Addendum were certified that would cause more severe adverse impacts than discussed in the Previous EIRs. There have been no significant changes in the underlying development assumptions, nor in the applicability or feasibility of mitigation measures or SCAs included in the Previous EIRs.

Standard Conditions of Approval

SCAs incorporate policies and standards from various adopted plans, policies, and ordinances, which have been found to substantially mitigate environmental effects. The SCAs are adopted as requirements of an individual project when it is approved by the City and are designed to, and will, substantially mitigate environmental effects, thus meeting the provision of Section 15183 (f), which states that impacts that are addressed by uniformly applied development standards (in this case, City of Oakland SCAs) are not considered peculiar to the parcel for the purpose of requiring further environmental review. Therefore, the Project requires no additional environmental review under California Public Resources Code Section 21083.3 and Section 15183 of the CEQA Guidelines.

ATTACHMENT C

Infill Performance Standards, Per CEQA Guidelines Section 15183.3

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

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

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

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

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

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

Table C-1 below shows how the Project satisfies each of the applicable requirements.

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 Renewal Plan Amendments EIR (2011), the Housing Element EIR and Addendum (2007-1014 and Update 2015-2023), or by uniformly applicable development policies (Standard Conditions of Approval) which mitigate such impacts. As the analysis in the section above titled "Consistency with Community Plan" demonstrates, the Project would not substantially increase the severity of the significant impacts identified in the Previous EIRs, nor would it result in new significant impacts that were not identified in the Previous EIRs. Further, there have been no substantial changes in circumstances following certification of the 2011 Renewal Plan Amendments EIR or the 2010 Housing Element Update EIR that would result in any new specific effects. Therefore, this document fulfills the review requirements for the Project pursuant to Section 15183.3.

TABLE C-1
PROJECT INFILL ELIGIBILITY

	CEQA Eligibility Criteria	Eligible?/Notes for 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 seventy-five 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 with an existing vacant commercial building and an abandoned construction site on a former parking lot. The Project site adjoins existing urban uses, including surface parking lots, commercial buildings, and, educational and institutional uses, as described in the Project Description (Section 5).
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 **<u>all</u>** 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 on site renewable power generation.	The Project would not include renewable power generation. 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 on-site 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.	As discussed in Section 7.7, Hazards and Hazardous Materials, listed as a Cleanup Program site on the State Water Resources Control Board's (SWRCB) Geotracker Database. A Phase I Environmental Site Assessment (ESA) prepared for the Project site identified environmental concerns associated with former operations on and adjacent to the Project site. A Phase II ESA prepared for the Project site indicated that Tetrachloroethylene (PCE), Trichloroethylene (TCE), and benzene are pollutants of concern on the Project site. The Phase II concluded that, in conjunction with future site use and development, oversight agencies would likely require further evaluation of subsurface conditions, possible remediation of discovered VOCs, engineering controls (e.g., vapor intrusion mitigation system), and institutional controls (e.g., land use covenant). The Project Applicant also prepared a Draft Corrective Action Plan dated September 23, 2020. The Draft Corrective Action Plan proposes: (1) remedial excavation in select areas where elevated concentrations of metals including lead and arsenic have been detected in soil, and where benzene and PCE have been detected in soil vapor for off-site disposal at a permitted disposal facility; (2) removal of a limited

TABLE C-1
PROJECT INFILL ELIGIBILITY

	CEQA Eligibility Criteria	Eligible?/Notes for Project
2. (cont.)		volume of groundwater, if encountered, during excavation activities; and (3) installation of vapor mitigation engineering controls to control potential vapor intrusion to indoor air of the proposed residential structures and migration along new utility corridors. Based on their preliminary review, ACDEH concurred that the proposed approach in the Draft Corrective Action Plan will address environmental concerns for on- and off-site receptors. The Project would be required to implement **SCA HAZ-2, Hazardous Building Materials and Site Contamination**, which obligates the Project Applicant to submit the Phase I/II to the City for approval. Once approved, SCA HAZ-2 further requires the Project Applicant to submit to the City evidence of approval for any proposed remedial action, including potential vapor intrusion mitigation systems, and required clearances by the applicable local, state, or federal regulatory agency.
	Residential Units Near High-Volume Roadways and Stationary Sources. If a project includes residential units located within 500 feet, or other distance determined to be appropriate by the local agency or air district based on local conditions, of a high volume roadway or other significant sources of air pollution, the project shall comply with any policies and standards identified in the local general plan, specific plan, zoning code, or community risk reduction plan for the protection of public health from such sources of air pollution. 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.	Yes. A backup diesel emergency generator is proposed as part of the Project to comply with the California Building Code requirement for elevator safety in all buildings in excess of 70 feet in height. Installation and operation of the back-up diesel generator would require a permit and an Authority to Construct from the Bay Area Air Quality Management District (BAAQMD), which would involve an evaluation of emissions based on size and require Best Available Control Technology, if warranted. A site-specific HRA would be conducted as part of the BAAQMD's permitting process and the BAAQMD would deny an Authority to Construct or a Permit to Operate for any new or modified source of TACs that exceeds a cancer risk of 10 in one million or a chronic or acute hazard index of 1.0. This would be consistent with the requirements of **SCA AIR-5, Stationary Sources of Air Pollution (Toxic Air Contaminants)** and therefore, operation of the emergency generator would result in a less than significant impact. As the Project includes sensitive residential uses, **SCA AIR-4, Exposure to Air Pollution (Toxic Air Contaminants)**, is applicable to the Project. This SCA requires the Project Applicant to either prepare a Health Risk Assessment to determine the health risk from exposure of Project residents to air pollutants to be submitted to the City for review and approval, or incorporate City's recommended

TABLE C-1
PROJECT INFILL ELIGIBILITY

CEQA Eligibility Criteria		Eligible?/Notes for Project
2. (cont.)		health risk measures into the Project such as install, operate, and maintain a central heating and ventilation system or other air take system in the building or in each individual residential unit, that meets or exceeds an efficiency standard of MERV 13. Consistent with SCA AIR-4, the Project would install air filtration units rated MERV-13 or higher to reduce cancer risks and PM exposure of Project residents to sources of air pollution. With implementation of the SCA, the health risk impact to Project residents would be reduced to a less than significant level (see Section 7.2, Air Quality).
	2b. *Additional Performance Standards by Project Type.* In addition to implementing all the features described in 2a above, the project must meet eligibility requirements provided below by project type.	
	Residential. A residential project must meet **one** of the following: A. *Projects achieving below average regional per capita vehicle miles traveled (VMT).* 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. The Project is eligible under Sections (A) and (B). The Project is eligible under Section (A). As summarized in the transportation and circulation section above, the Project is located in TAZ 971. The 2020 and 2040 VMT for TAZ 971, are 15 percent below the regional average. The Project is eligible under Section (B). The Project site is well-served by multiple transit providers. Transit service providers in the Project vicinity include Bay Area Rapid Transit (BART) and AC Transit. The Project would be located within about 0.3 miles of the 12th Street Oakland City Center BART Station and about 0.4 miles of the 19th Street BART Station. The Project is also within 0.5 miles of frequent bus service along Broadway (Route 18 with 15-minute peak headways, and Route 51A with 10-minute peak headways) and 20th Street (Thomas L. Berkeley Way) (Route 6 with 10-minute peak headways and Routes 72/72M/72R with 10- to 12-minute peak headways).
	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. The Project is mixed-use with predominant building uses of residential, as described above.

TABLE C-1
PROJECT INFILL ELIGIBILITY

	CEQA Eligibility Criteria	Eligible?/Notes for Project
2. (cont.)	**Office Building.** An office building project must meeting **<u>one</u>** of the following: A. *Regional Location.* Office buildings, both commercial and public, are eligible if they locate in a low vehicle travel area; **<u>or</u>** B. *Proximity to a Major Transit Stop.* Office buildings, both commercial and public, within ½ mile of an existing major transit stop, or ¼ mile of an existing stop along a high quality transit corridor, are eligible.	Not Applicable. The Project is mixed-use with predominant building uses of residential, as described above.
	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. The Project is mixed-use with predominant building uses of residential, as described above.
	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 (f)(5), that implement the project features in 2a above are eligible.	Not Applicable.
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, **<u>except</u>** 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; **<u>or</u>** (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 §15183.3(f)(5). (CEQA Guidelines Section 15183.3[b][3])	Yes. (see explanation below table)

NOTE:

[a] Where a project includes some combination of residential, commercial and retail, office building, transit station, and/or schools, the performance standards in this section that apply to the predominant use shall govern the entire project.

Explanation for Eligibility Criterion 3 (from Table C-1 above)

The adopted Plan Bay Area 2040 (2017) 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 located within the “Oakland Downtown & Jack London Square” PDA—the area bounded generally by I-580 on the north, I-980 on the west, the Oakland Estuary on the south, and Lake Merritt and 5th Avenue on the east. The Project is consistent with the Oakland General Plan and the Planning Code, as discussed in Attachment B and noted below.

- The General Plan land use designation for the site is Central Business District (CBD). This designation applies to areas suitable for high density mixed-use urban center with a mix of large-scale offices, commercial, urban (high-rise) residential, and infill hotel uses, among many others, in the central Downtown core of the City. The proposed residential, office, and retail mixed-use development would be consistent with this designation.
- The site is zoned Central Business District Pedestrian Retail Commercial Zone (CBD-P) and Central Business District General Commercial Zone (CBD-C). The Project would be consistent with the purposes of the CBD-P zone, which is generally intended to create, maintain, and enhance areas Central Business District appropriate for a wide range of ground-floor retail, office and other commercial activities. Upper story spaces are intended to be available for a wide range of office and residential activities. The Project would also be consistent with the purposes of the CBD-C zone, which is generally intended 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. As the Project would develop ground floor retail storefronts and an interior indoor plaza, ground floor and basement-level office space, and upper level residential uses, the Project would be consistent with the CBD-P and CBD-C zoning designations.
- The Project site is located in CBD Height Area 6, which has no maximum height limit and an 85-foot maximum allowable building base height. Towers in CBD Height Area 6 also have a maximum tower elevation length of 195 feet. The Project would construct a 195-foot tall tower with a 65-foot podium, consistent with these maximum limits. CBD Height Area 6 also has a maximum FAR of 20.0, with which the Project’s FAR of 13.7 would be consistent.
- CBD Height Area 6 also has a maximum density of 90 square feet of lot area per dwelling unit. The Project would construct approximately 182 units on a 14,106 square foot lot. However, since the Project would include at least 8 affordable units, the Project is seeking to utilize a density bonus to realize the additional units proposed.

APPENDIX A
Shadow Diagrams

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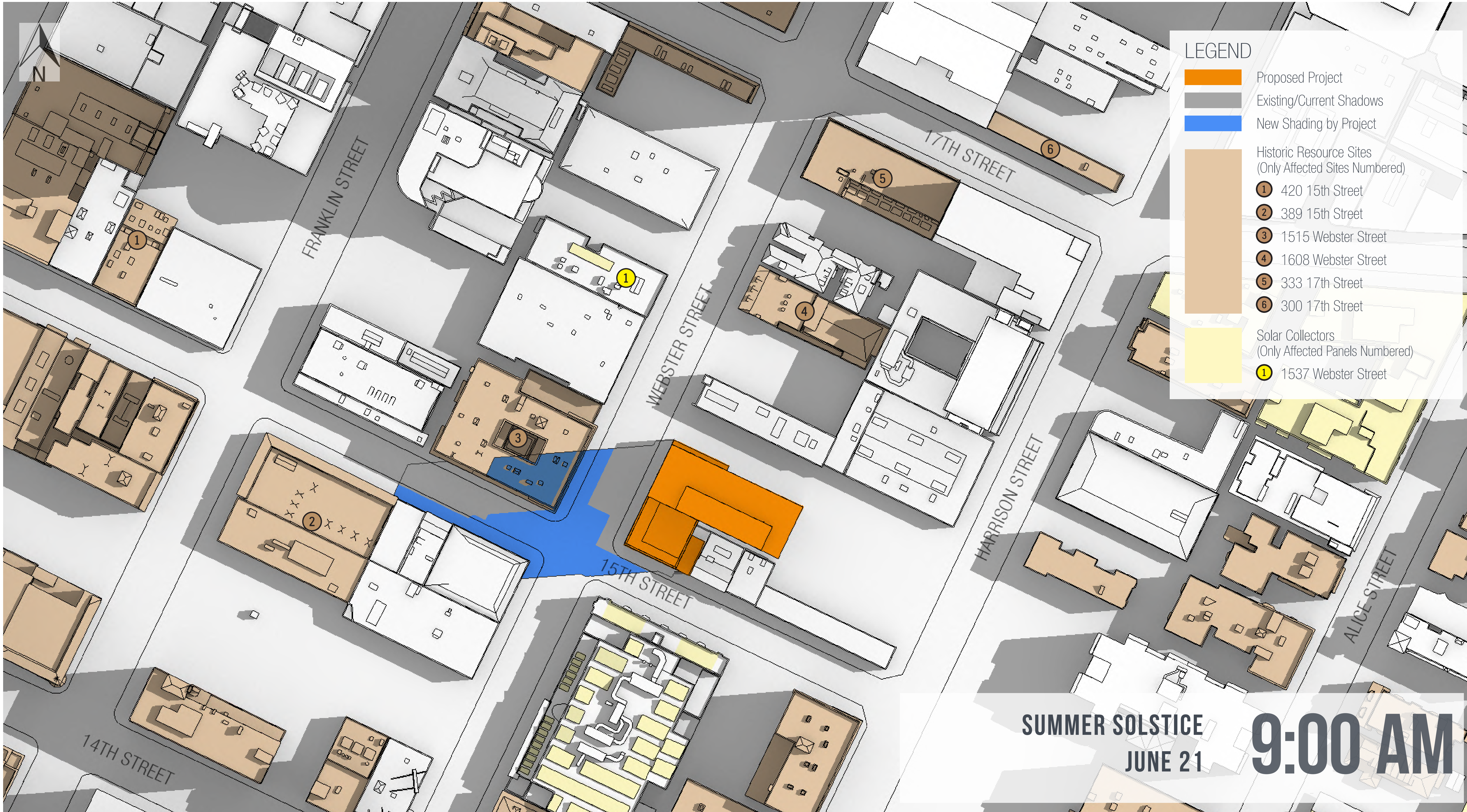
PREVISION DESIGN

1510 WEBSTER STREET

Shading diagrams on the Summer Solstice

A1-P

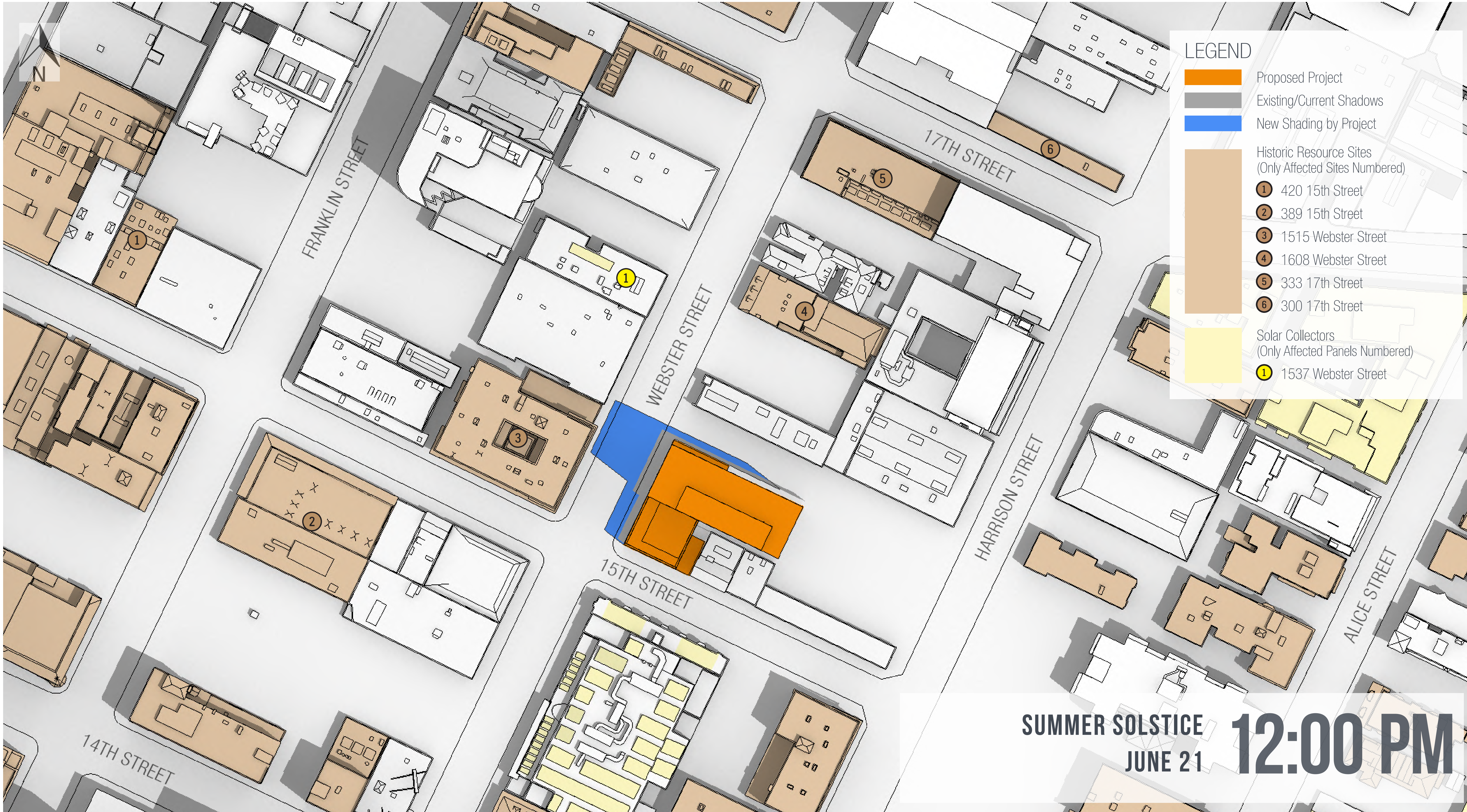


PREVISION DESIGN

1510 WEBSTER STREET

Shading diagrams on the Summer Solstice

A2-P

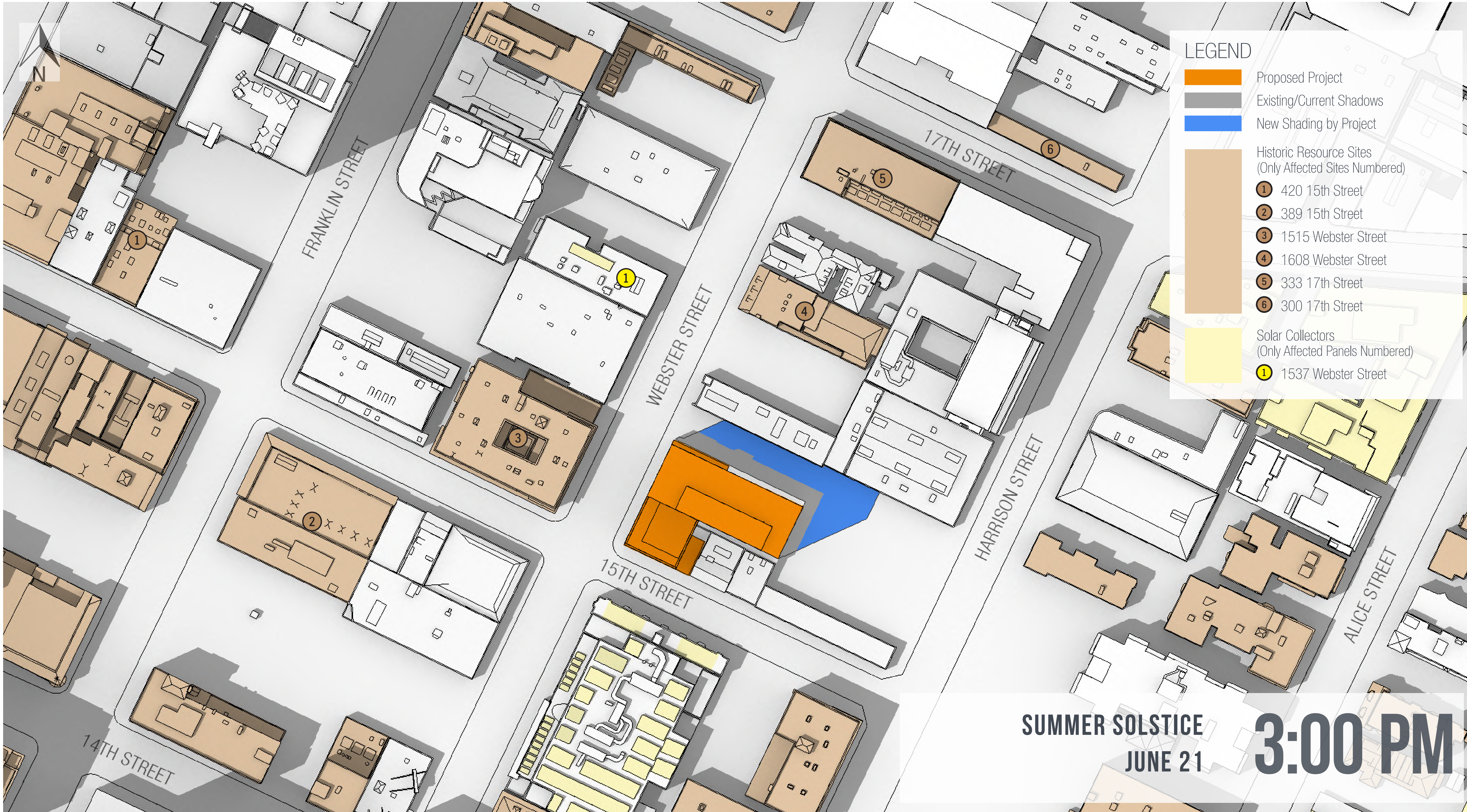


PREVISION DESIGN

1510 WEBSTER STREET

Shading diagrams on the Summer Solstice

A3-P

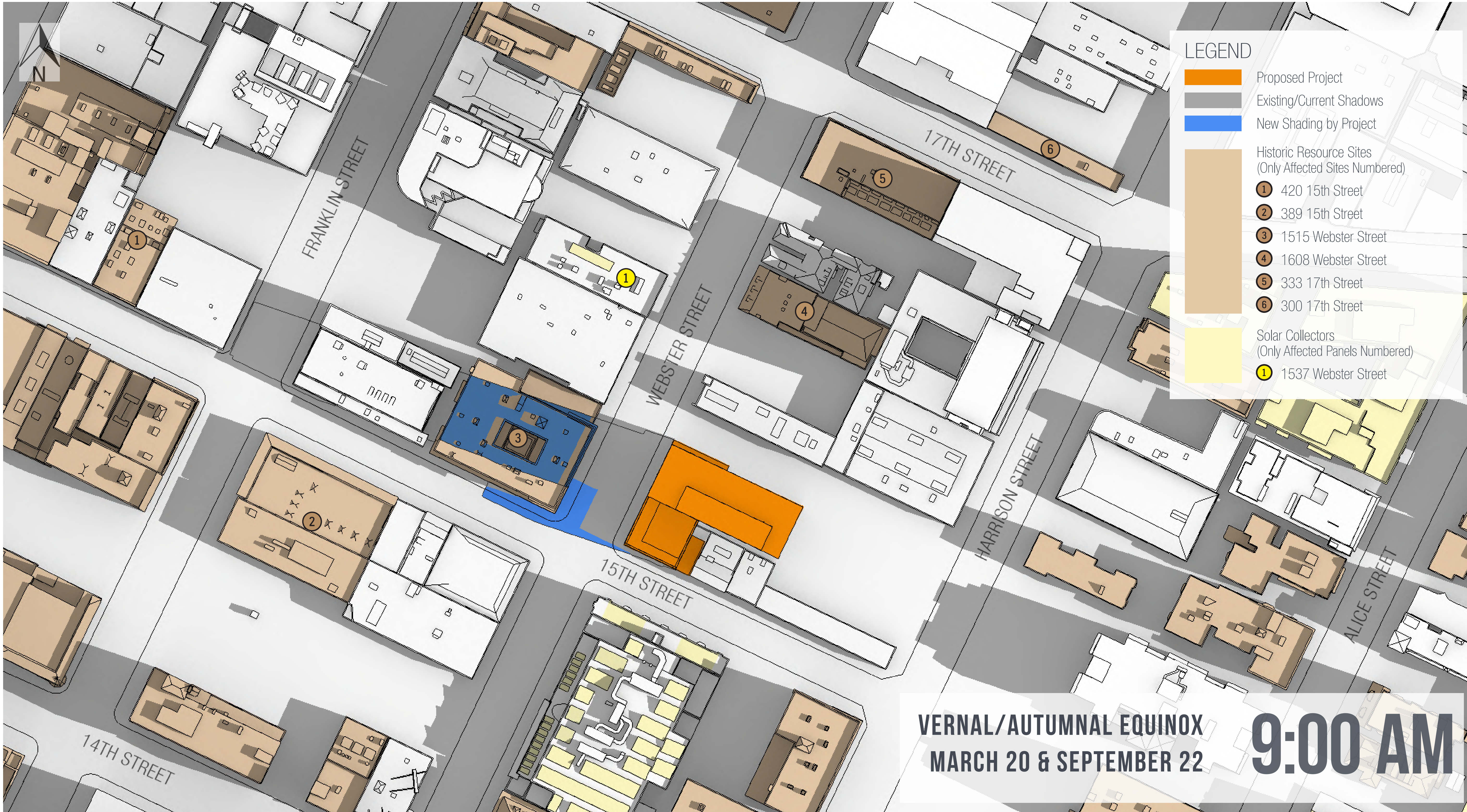


PREVISION DESIGN

1510 WEBSTER STREET

Shading diagrams on the Vernal/Autumnal Equinoxes

B1-P

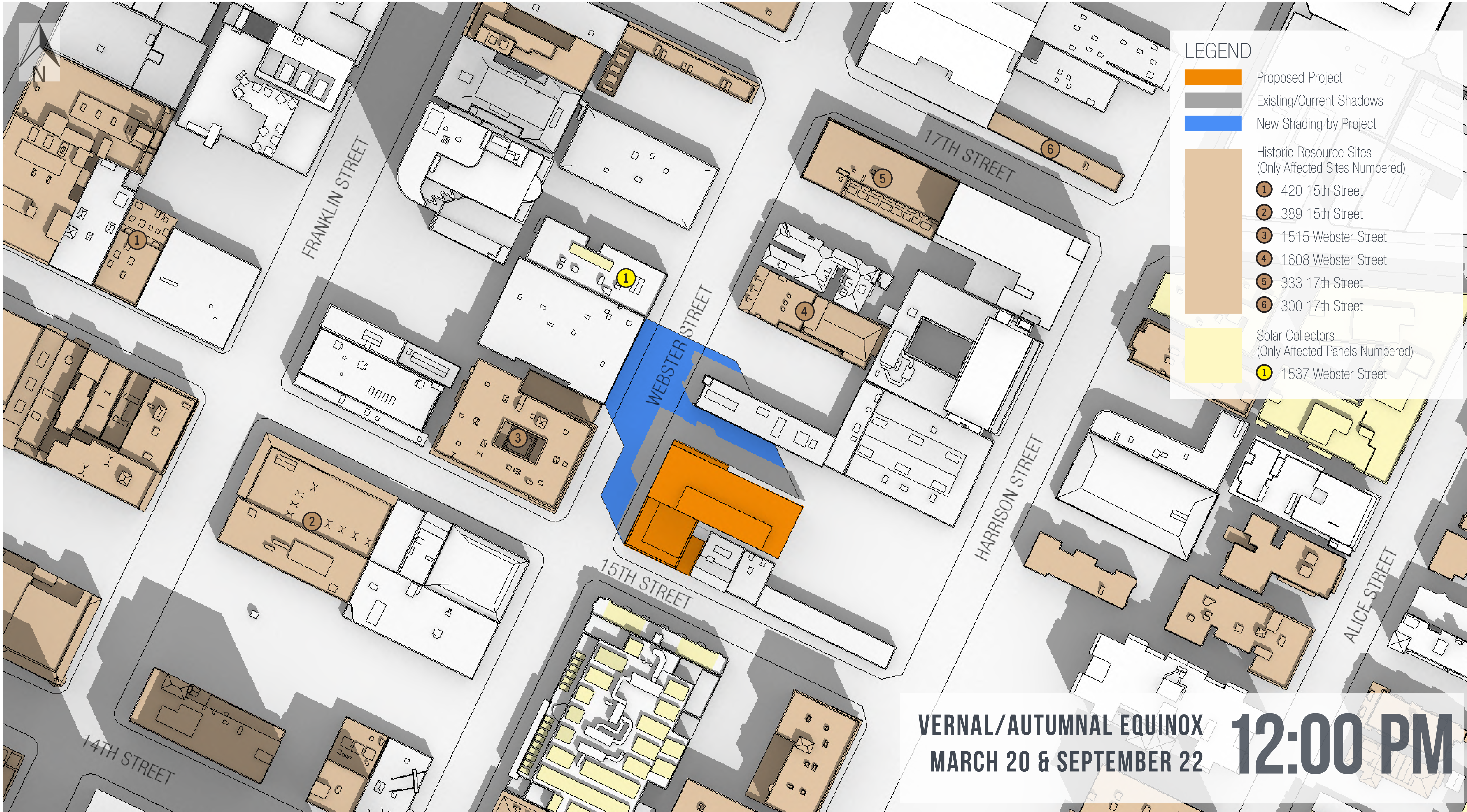


PREVISION DESIGN

1510 WEBSTER STREET

Shading diagrams on the Vernal/Autumnal Equinoxes

B2-P



VERNAL/AUTUMNAL EQUINOX
MARCH 20 & SEPTEMBER 22

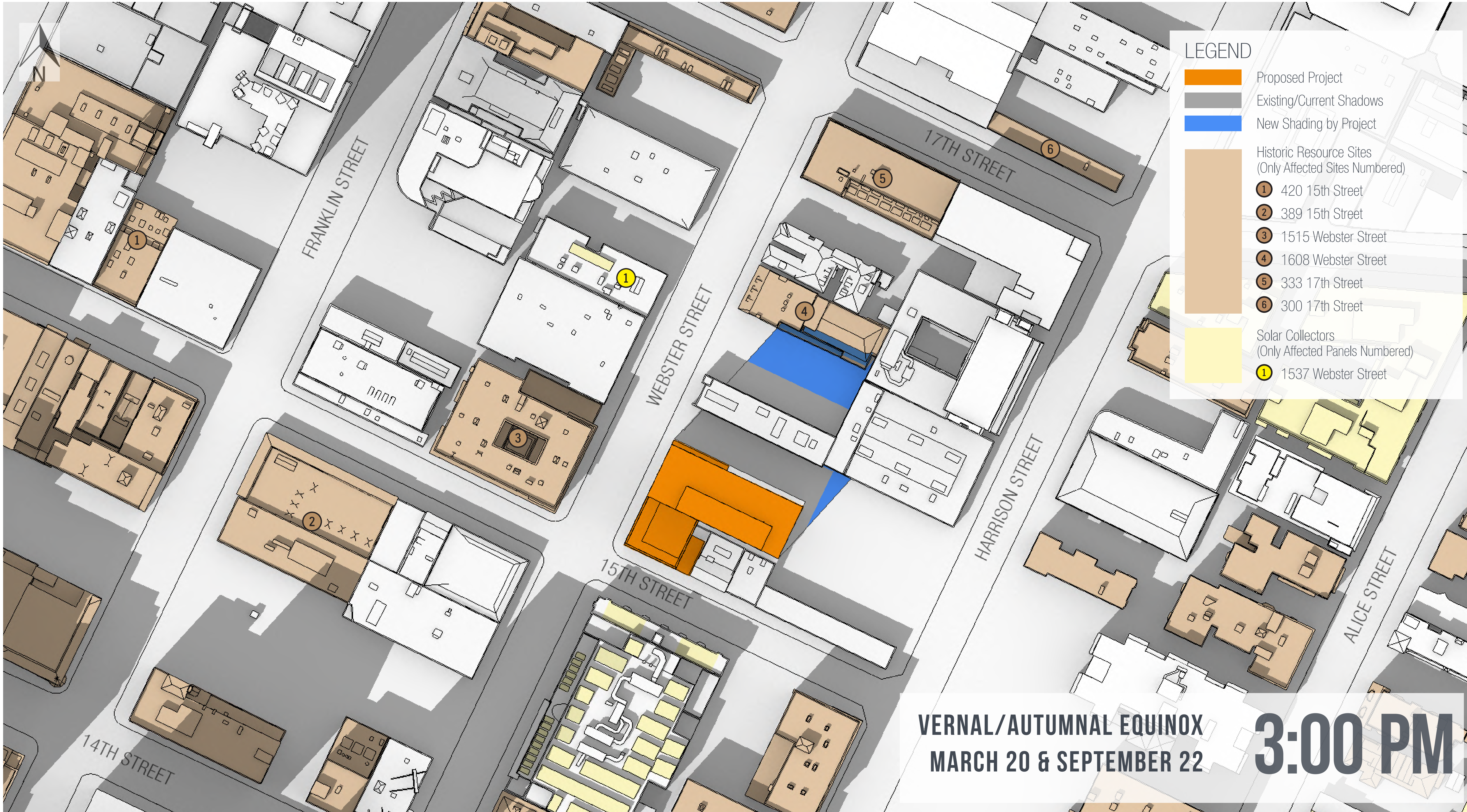
12:00 PM

PREVISION DESIGN

1510 WEBSTER STREET

Shading diagrams on the Vernal/Autumnal Equinoxes

B3-P



PREVISION DESIGN

1510 WEBSTER STREET

Shading diagrams on the Winter Solstice

C1-P

PREVISION DESIGN

1510 WEBSTER STREET

Shading diagrams on the Winter Solstice

C2-P

PREVISION DESIGN

1510 WEBSTER STREET

Shading diagrams on the Winter Solstice

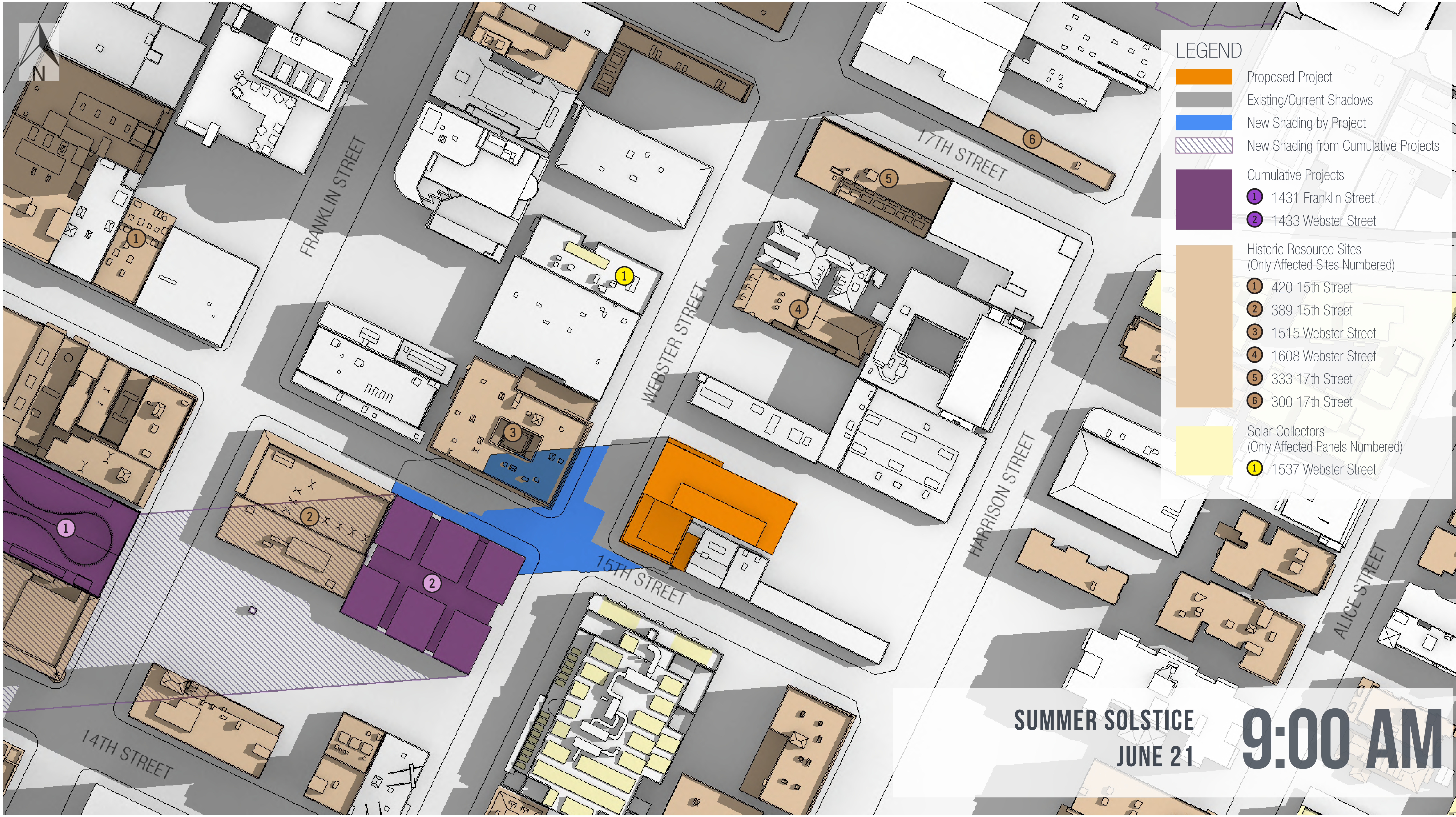
C3-P

PREVISION DESIGN

1510 WEBSTER STREET

Cumulative shading diagrams on the Summer Solstice

A1-C

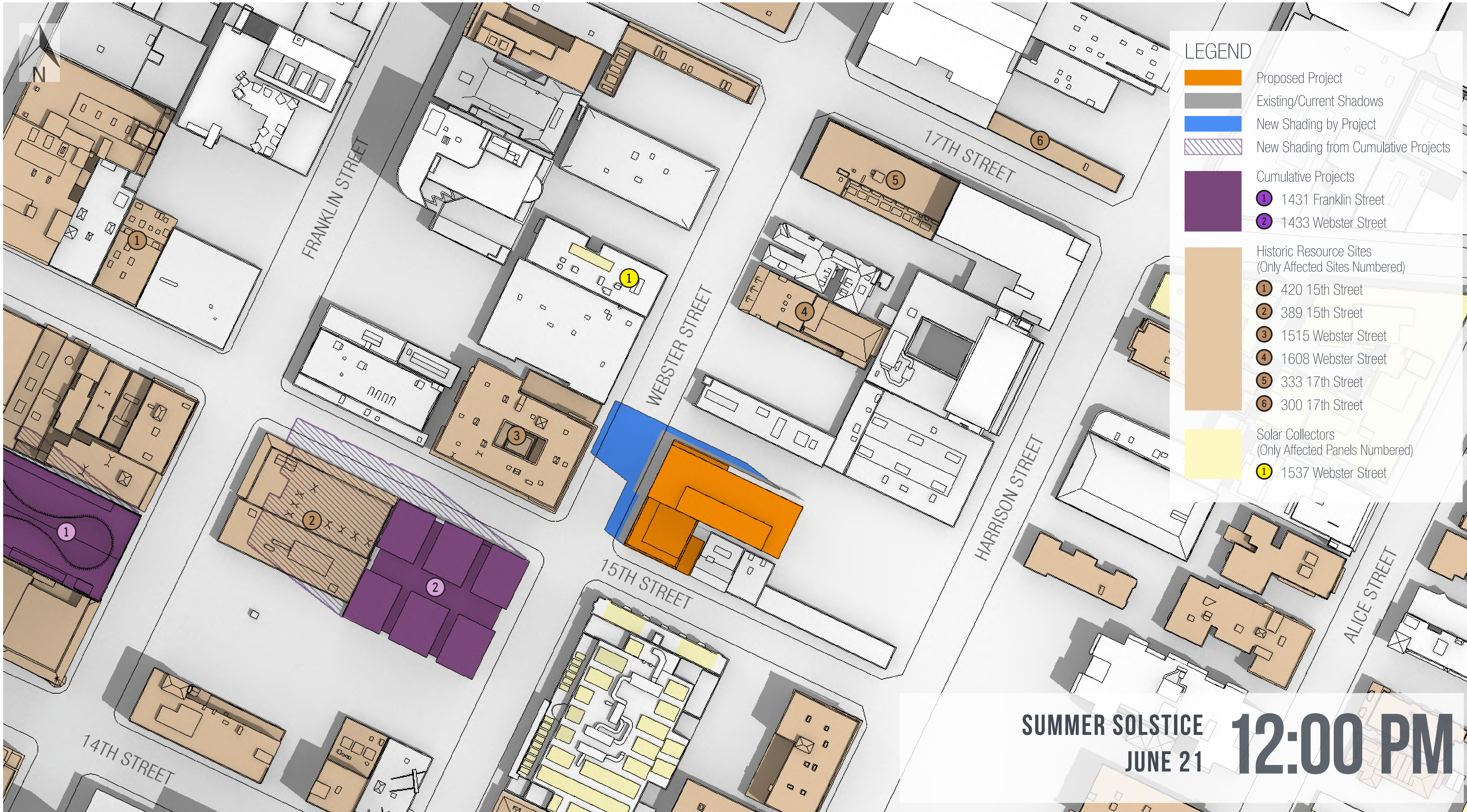


PREVISION DESIGN

1510 WEBSTER STREET

Cumulative shading diagrams on the Summer Solstice

A2-C

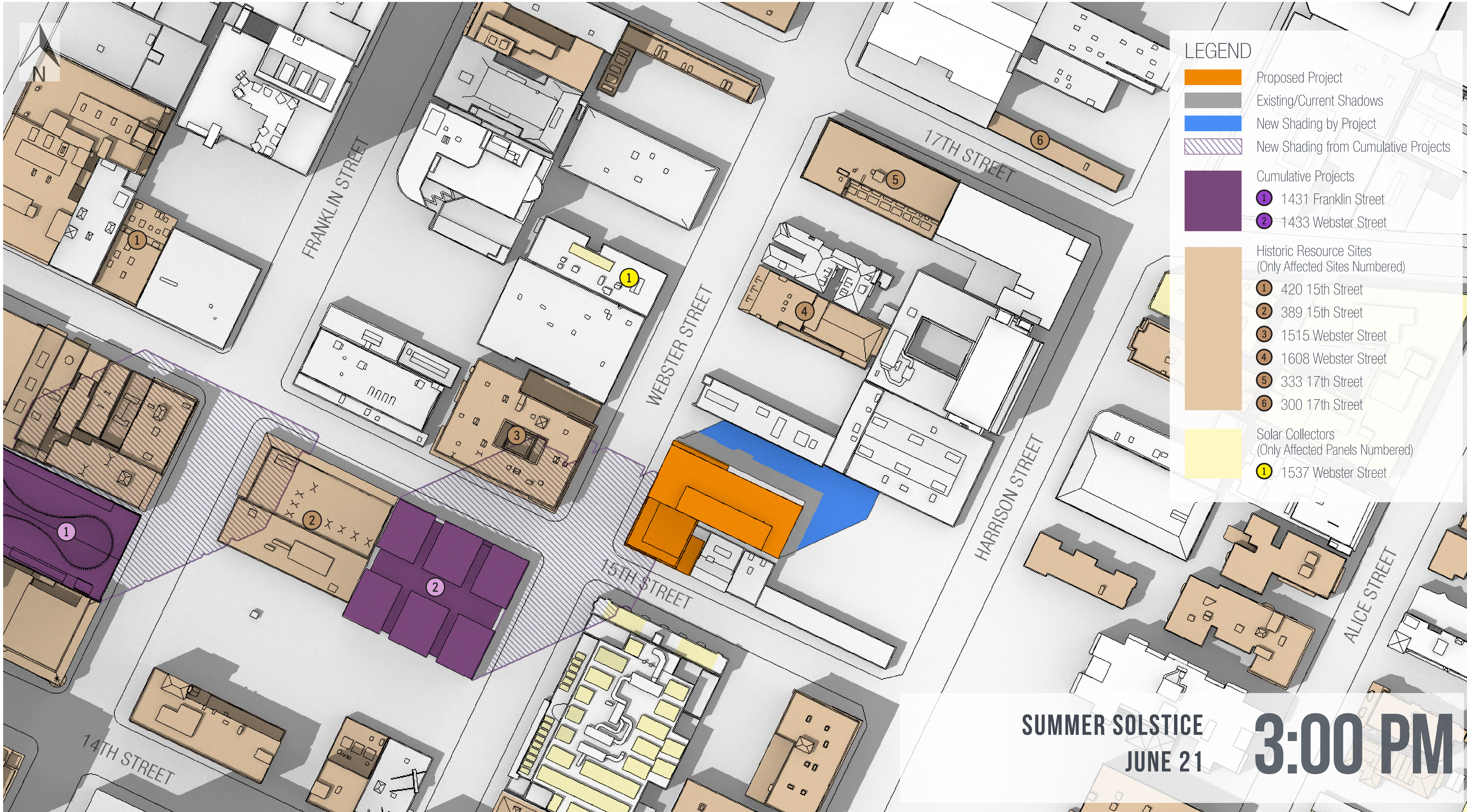


PREVISION DESIGN

1510 WEBSTER STREET

Cumulative shading diagrams on the Summer Solstice

A3-C



PREVISION DESIGN

1510 WEBSTER STREET

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

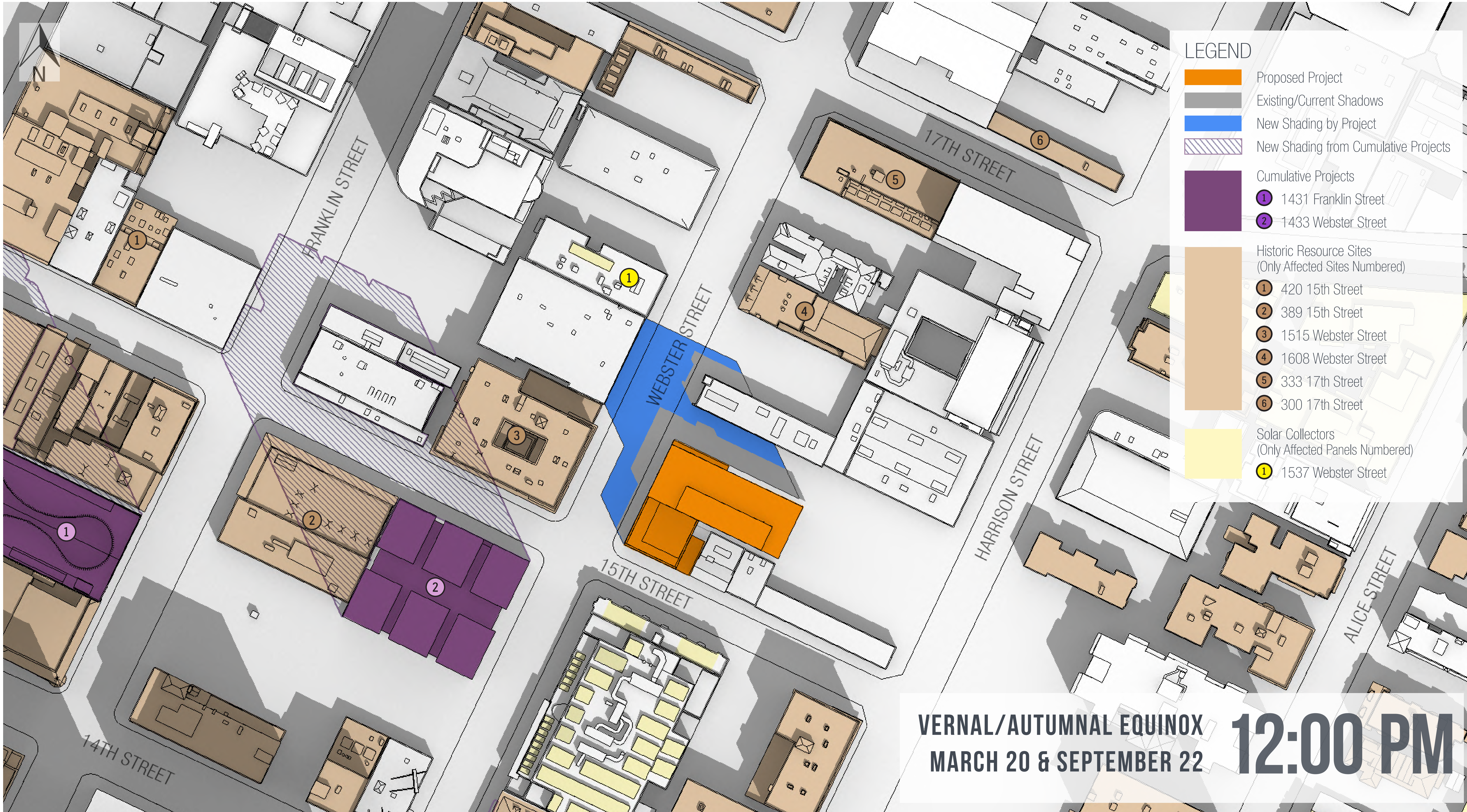
B1-C

PREVISION DESIGN

1510 WEBSTER STREET

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

B2-C



PREVISION DESIGN

1510 WEBSTER STREET

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

B3-C

1510 WEBSTER STREET

Cumulative shading diagrams on the Winter Solstice

C1-C

PREVISION DESIGN

1510 WEBSTER STREET

Cumulative shading diagrams on the Winter Solstice

C2-C

PREVISION DESIGN

1510 WEBSTER STREET

Cumulative shading diagrams on the Winter Solstice

C3-C

CEQA SHADOW TECHNICAL ANALYSIS:
1510 WEBSTER STREET PROJECT, OAKLAND CA

September 3, 2020

SHADE AND SHADOW

Under City of Oakland thresholds of significance, a project would be considered to have a significant shadow impact if, between the hours of 9 a.m. and 3 p.m., it would:

A. introduce landscape that would now or in the future cast substantial shadows on existing solar collectors;

B. cast shadow that substantially impairs the function of a building using passive solar heat collection, solar collectors for hot water heating, or photovoltaic solar collectors;

C. cast shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space; or

D. cast 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 graphical shadow analysis has been prepared for the proposed 1510 Webster project (the "proposed project") which shows shadows that would be cast by the proposed project at 9:00 a.m., 12:00 p.m., and 3:00 p.m. for the summer solstice (June 21st), spring/fall equinoxes (March 20th and September 22nd), and winter solstice (December 21st). Exhibits A1-P to C3-P depict this progression and additionally, graphics showing the extents of net new shading that would be generated by the proposed projects as well as other future planned projects in the vicinity (the "cumulative condition"), are presented as Exhibits A1-C to C3-C.

Project Shadow Effects:

The shadow analysis demonstrates that between the hours of 9 a.m. and 3 p.m. annually (the "analysis period"), the proposed project would cast net new shadow westward across Franklin Street between 16th and 17th Street, northward across the intersection of Webster and 17th Street and northeast across the intersection of Harrison and 17th Streets. Within this area, there exist several qualifying sites per City of Oakland criteria that have been evaluated for the effects of net new shadow that would be generated from the construction of the proposed project, as described below.

PREVISION DESIGN

Solar Collectors: Within the analysis period, one building with solar collectors (1537 Webster Street) would be shaded by the proposed project's net new shadow. Net new shadows would occur over late fall and winter months only and affect these panels during morning hours only. Accordingly, the effect of shading on the solar collectors will be evaluated further in the environmental review document for the proposed project.

Public Parks and Open Spaces: The proposed project would generate no net new shadow on any existing public or quasi-public park, lawn, garden, or open space. Accordingly, the effect of shading on public open spaces would be considered less than significant.

Historic Resources: The proposed project would cast shadow for periods of time throughout the year between the hours of 9am and 3pm on six buildings that are either landmark structures, historic resources or eligible for historic resource status (with rating "B" or higher and with rating "C" if also located within an area of primary importance or National or California Register-listed Historic District). These sites include:

1. 420 15th Street
2. 389 15th Street
3. 1515 Webster Street
4. 1608 Webster Street
5. 333 17th Street
6. 300 17th Street

Based on a review of the affected historic resources, it has been determined, with the exception of the YWCA building on 1515 Webster street, they do not possess shadow-sensitive features that contribute and/or justify their designation as an historic resource (such as stained glass windows, historic atriums, etc.) and therefore would not have the potential for the project's net new shadow to materially alter features that would impair their historical designations. The shadow effects of the proposed project on the YWCA building will be evaluated further in the environmental review document for the proposed project.

<u>Cumulative Condition Scenario:</u>

The cumulative condition scenario analysis assesses the proposed project's potential impacts along with other reasonably foreseeable projects in the vicinity that would have the potential to cast shadow on sites affected by project shading. The planned projects in the vicinity of the proposed project that were included as part of the cumulative condition analysis were[1]:

1. 1431 Franklin Street
2. 1433 Webster Street

[1] Many of the listed cumulative condition projects analysis fall outside of the area depicted in the shadow graphics. 1431 Franklin Street and 1433 Webster Street are the only ones represented due to their proximity to the proposed project, however all the listed cumulative projects were modelled and considered as part of the cumulative condition analysis.

3. 222 19th Street
4. 1750 Broadway
5. 2 Kaiser
6. 88 Grand Avenue
7. 1261 Harrison
8. 1331 Harrison
9. 1431 Jefferson
10. 1601 San Pablo
11. 2015 Telegraph
12. 2016 Telegraph
13. 2044 Franklin
14. 2100 Broadway
15. 2201 Valley
16. Kaiser Center
17. Parcel 5B
18. 2305 Webster

Many the above listed cumulative projects would the same historic resource sites as the proposed project at various times of day and year.

APPENDIX B

1510 Webster Street Pedestrian Wind Assessment

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1510 WEBSTER STREET

OAKLAND, CA

PEDESTRIAN WIND ASSESSMENT

PROJECT #1901178
AUGUST 14, 2020

SUBMITTED TO

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1. INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) was retained to conduct a qualitative assessment of the pedestrian wind conditions expected around the proposed project at 1510 Webster Street in Oakland, California. This effort is intended to inform good design and has been conducted in support of Zoning By-Law Amendment Application for the project.

A previous wind tunnel study was conducted on a previous design by RWDI in August 2016.

The proposed site is located at the south side of the block bound by Webster Street, Harrison Street, and 15th Street (Image 1). The site is located within downtown Oakland and is currently surrounded by low and medium-rise commercial and residential developments.

The project consists of a 19-storey residence with an L-shaped footprint open to the southeast, as shown in Image 2. The main entrances are located along Webster Street. Other areas of interest include pedestrian walkways around the building . The study focused on these key pedestrian areas, shown in Image 2.

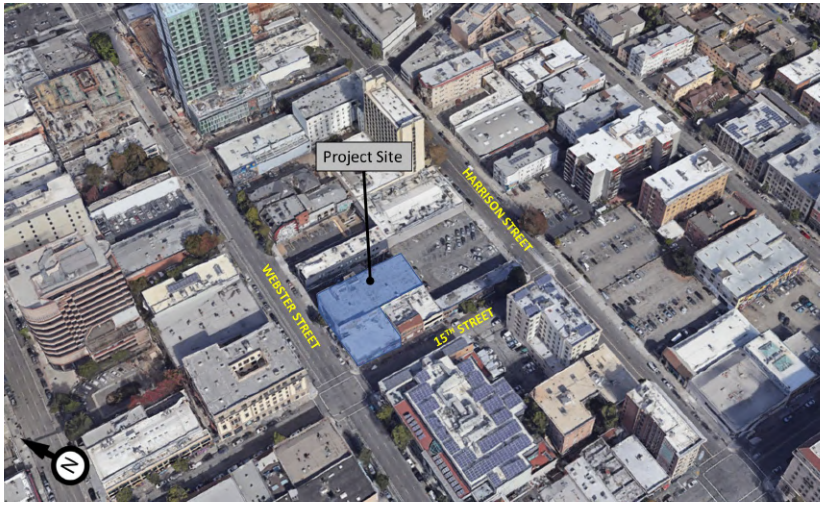


Image 1: Aerial View of the Existing Site and Surroundings (Credit: Google Maps)

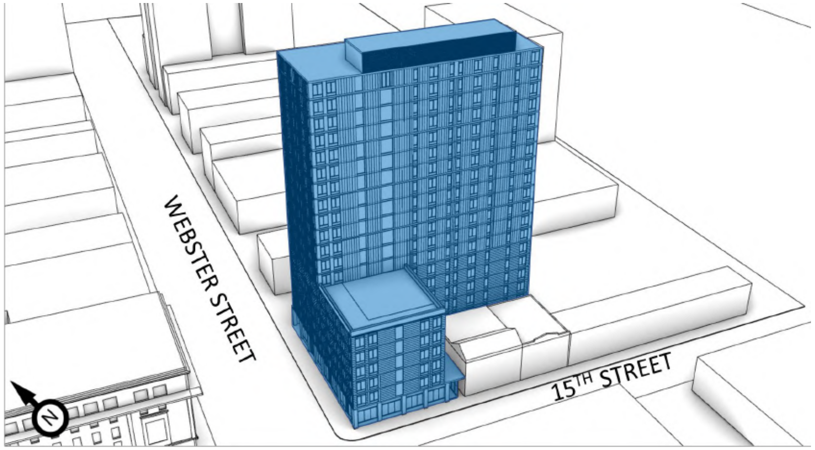


Image 2: Project Rendering

2. METHODOLOGY

Predicting wind speeds and occurrence frequencies is complex. It involves the combined assessment of building geometry, orientation, position and height of surrounding buildings, upstream terrain and the local wind climate.

Over the years, RWDI has conducted thousands of wind-tunnel model studies on pedestrian wind conditions around buildings, yielding a broad knowledge base. In some situations, this knowledge and experience, together with literature, allow for a reliable, consistent and efficient desktop estimation of pedestrian wind conditions without wind-tunnel testing. This approach provides a screening-level estimation of potential wind conditions and offers conceptual wind control measures for improved wind comfort/safety, where necessary.

In order to quantify and confirm the predicted conditions or refine any of the suggested conceptual wind control measures, physical scale model tests in a boundary-layer wind tunnel would be required.

RWDI's assessment is based on the following:

- E-model received from ESA on July 29, 2020;
- A review of the regional long-term meteorological data from Metropolitan Oakland International Airport;
- Use of RWDI's proprietary software (*WindEstimator*[1]) for providing a screening-level numerical estimation of potential wind conditions around generalized building forms;
- Wind tunnel testing of a previous design on this site, presented in RWDI's report dated August 16th, 2016.
- Wind-tunnel studies and desktop assessments undertaken by RWDI for projects in the Oakland area;
- RWDI's engineering judgement and knowledge of wind flows around buildings[2, 3]; and,
- Oakland Criteria for pedestrian wind hazards.

Note that other microclimate issues such as those relating to cladding and structural wind loads, door operability, building air quality, noise, vibration, etc. are not part of the scope of this assessment.

---

1. H. Wu and F. Kriksic (2012). "Designing for Pedestrian Comfort in Response to Local Climate", *Journal of Wind Engineering and Industrial Aerodynamics*, vol.104-106, pp.397-407.
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.
3. 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.

3. METEOROLOGICAL DATA

Meteorological data from Metropolitan Oakland International Airport for the period from 1986 to 2016 were used as a reference for wind conditions in the area as this is the nearest station to the site with long-term, hourly wind data. The distributions of wind frequency and directionality for the year are shown in the wind rose in Image 3.

When all winds are considered, winds from the westerly directions are predominant throughout the year, with secondary winds from the southeast.

Strong winds of a speed greater than 20 mph measured at the airport, are shown in red and yellow bands. Winds from the west-southwest through north-northwest and southeast directions potentially could be the source of uncomfortable or severe wind conditions, depending upon the site exposure and development design.

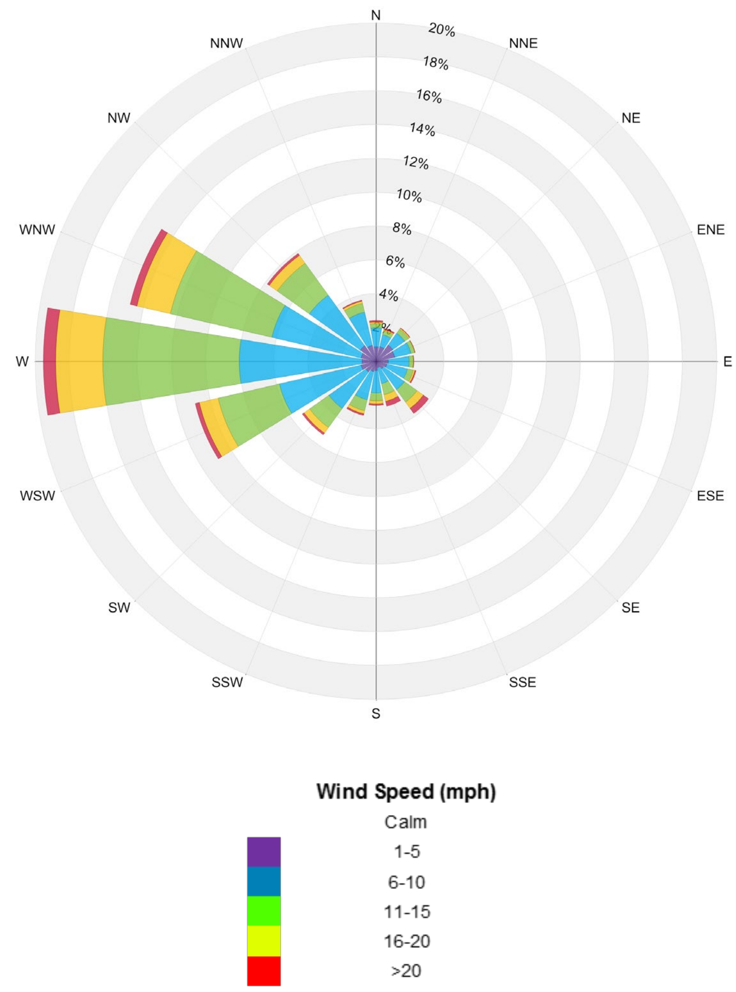


Image 3: Directional distribution of winds approaching from Metropolitan Oakland International Airport from 1986 to 2016

4. WIND CRITERIA

4.1 Significance Threshold

A wind analysis needs to be done if the height of the project is 100 feet or greater (measured to the roof) and one of the following conditions exists: (a) the project is located adjacent to a substantial water body (i.e. Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the project is located Downtown. Since the proposed project (approximately 195 feet tall) exceeds 100 feet in height and is located Downtown, it is subject to the thresholds of significance.

For the purposes of this study, the City of Oakland considers a significant wind impact to occur if a project were to “Create winds exceeding 36 mph for more than one hour during daylight hours during the year”.

Equivalent wind speeds (EWS) are calculated using the average wind speed (mean velocity) adjusted to include the level of gustiness and turbulence, are used to determine significant wind impacts. EWS is calculated using the formula provided below, wherein the mean wind speed is increased when the turbulence intensity is greater than 15%:

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

where $\boldsymbol{EWS}$ = equivalent wind speed

$\boldsymbol{V_m}$ = mean pedestrian-level wind speed

$\boldsymbol{TI}$ = turbulence intensity

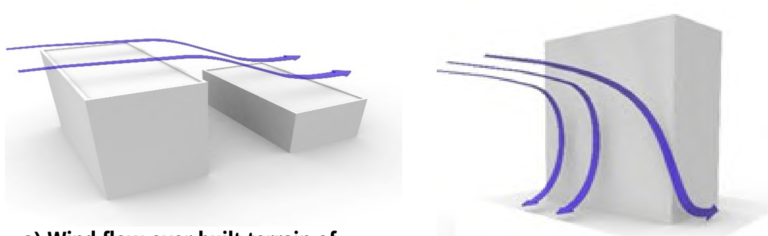
For locations where winds exceed 36 mph for more than on hour during daylight hours during the year, wind conditions are considered potentially hazardous. Image 8 presents the anticipated wind hazard results for the current development. A ‘red circle’ in Image 8 indicates a location where wind speeds are expected to exceed the hazard criterion.

5. RESULTS AND DISCUSSION

5.1 Wind Flow Around Buildings

Short buildings do not redirect winds significantly to cause adverse wind conditions at pedestrian areas (**Image 4a**). Tall buildings tend to intercept the stronger winds at higher elevations and redirect them to the ground level. (Downwashing). These winds subsequently move around exposed building corners, causing a localized increase in wind activity due to Corner Acceleration (**Images 4b**). If these building / wind combinations occur for prevailing winds, there is a greater potential for increased wind activity and *uncomfortable* conditions.

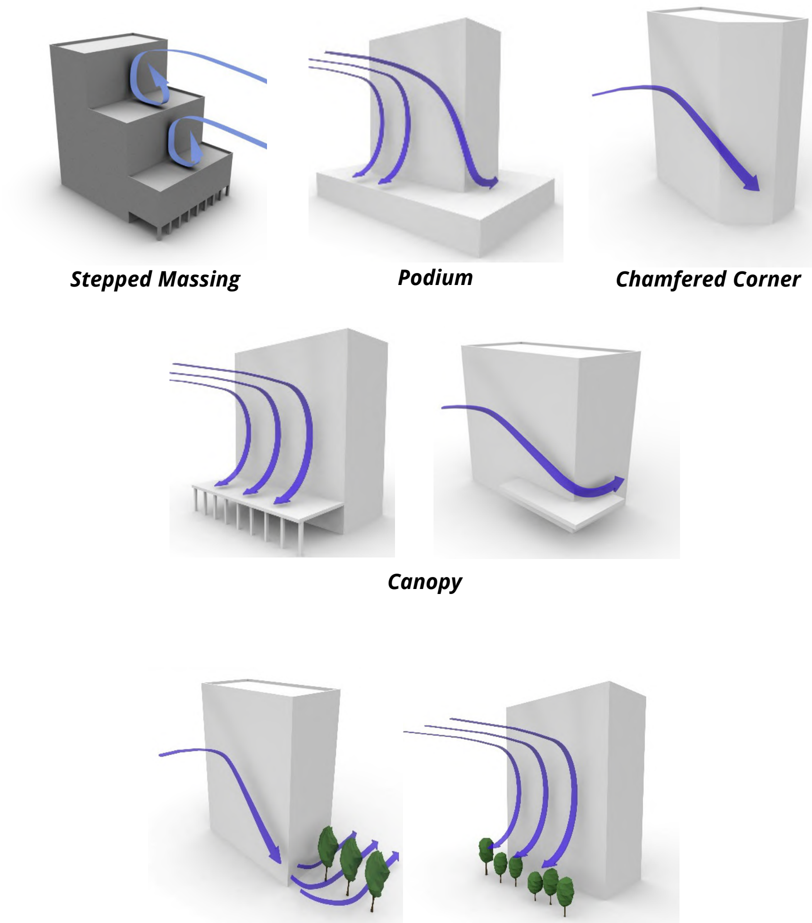
Design details such as stepped massing, tower step-back from a podium edge, deep canopies close to ground level, wind screens / tall trees with dense underplanting, etc. (**Image 5**) can help reduce wind speeds. The choice and effectiveness of these measures would depend on the exposure and orientation of the site with respect to the prevailing wind directions and the size and massing of the proposed buildings.



a) Wind flow over built terrain of uniform height

b) Downwashing and Corner Acceleration

Image 4: Generalized Wind Flows



Stepped Massing

Podium

Chamfered Corner

Canopy

Trees help reduce wind impact at ground level

Image 5: Examples of Common Wind Control Measures

5. RESULTS AND DISCUSSION

5.2 Existing Scenario

The site is currently occupied by low-rise buildings and surrounded by dense low and medium-rise buildings and parking lots in all directions. Wind speeds on and around the site are generally expected to meet the wind hazard criteria.

5.3 Proposed Scenario

With the addition of the proposed development, wind speeds at some locations on the site are expected to increase. These localized increases in wind speeds are mostly due to winds downwashing off the building facades and accelerating around building corners and through the space between the proposed building and the existing developments.

All grade level areas are expected to meet the hazard criterion. The hazard criterion may be exceeded at some above grade locations that are prone to accelerating flows. A more detailed discussion of these potential wind conditions are provided in the following sections of this report.

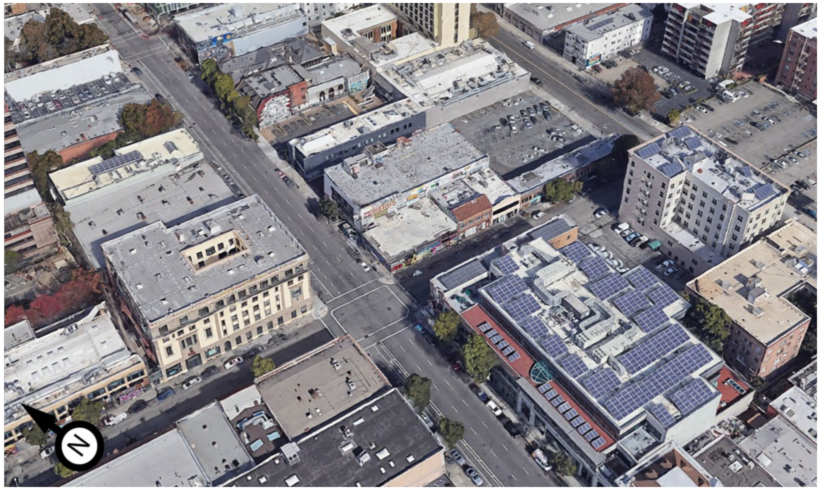


Image 6: No Build Configuration – View from Southwest

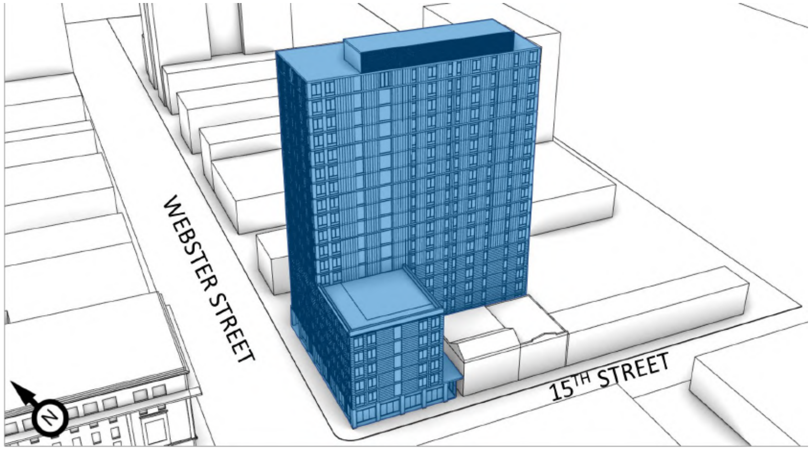


Image 7: Build Configuration – Rendered View from Southwest

5. RESULTS AND DISCUSSION

5.3 Proposed Scenario: Predicted Wind Conditions

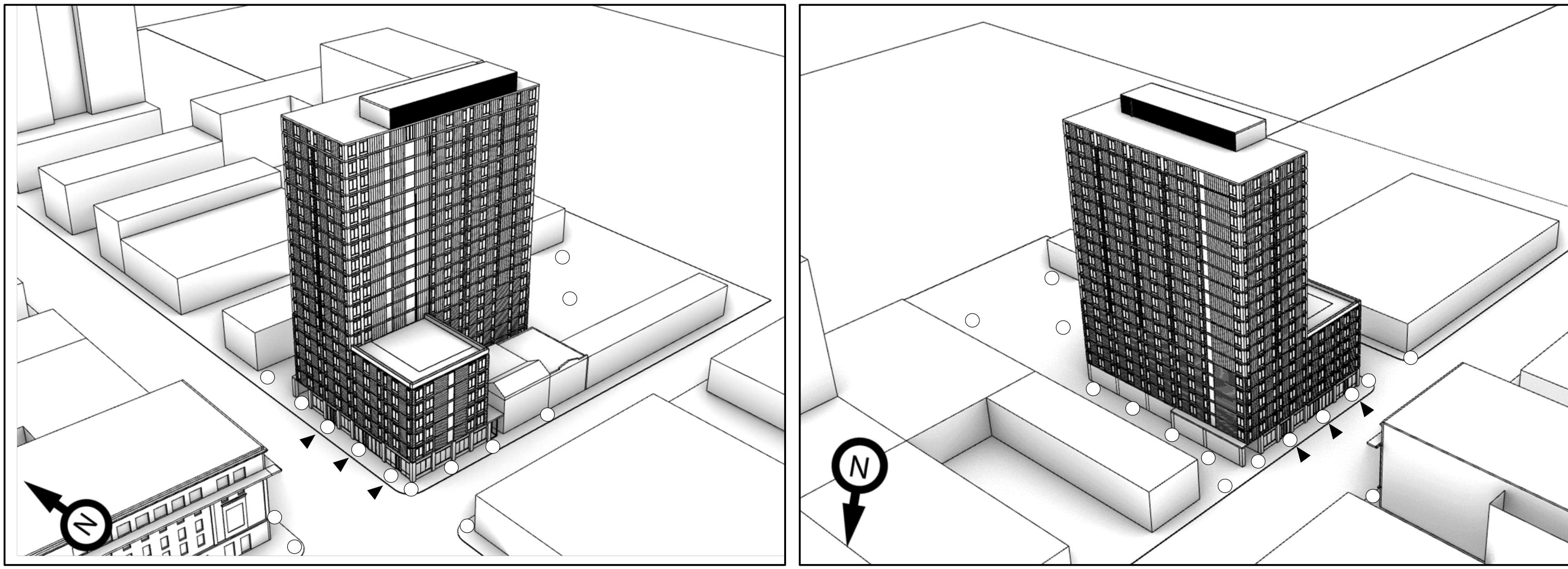


Image 8: Predicted Wind Hazard Conditions – View from Southwest (left) and north (right)

HAZARD CATEGORIES

PASS

EXCEEDED

5.3.1 Building Entrances

The primary entrances of the building are located along Webster Street on the west side of the building (marked with black triangles in Image 8). The wind hazard criterion is not anticipated to be exceeded at any entrance locations.

5.3.2 Perimeter Sidewalks

Wind speeds on the surrounding sidewalks close to the project site are expected to be moderate, with no areas expected to exceed the hazard criterion.

5.3.3 East Parking Lot

Due to the sheltering provided by the existing buildings and the proposed development, wind conditions within the parking lot to the east of the site are expected to be mostly calm, with no locations expected to exceed the hazard criterion.

5.3.4 Off Site

Existing wind conditions in the surrounding off-site area are not expected to be significantly impacted by this project. The height of the existing buildings will limit impacts to the sidewalks and roadways around the immediate perimeter of the properties by providing obstruction to the wind flows.

5.4 Previous Wind Tunnel Study

In August of 2016 Rowan Williams Davies & Irwin Inc. (RWDI) was retained by Webster Development Corp. to conduct a Pedestrian Wind Study for the proposed development project at 1510 Webster Street in Oakland, California. The purpose of the study was to assess the wind environment around the development in terms of wind metrics specified in the City of Oakland Significant Wind Impact Criterion. The study objective was achieved through wind tunnel testing of a 1:400 (1″ = 33′) scale model for the development in three configurations:

- Existing: all existing buildings on-site and in the surroundings;
- Existing plus Project: proposed 1510 Webster project present with existing surrounding buildings; and,
- Project plus Cumulative: proposed 1510 Webster project present with cumulative surrounding buildings.

In that report, dated August 16th, 2016, it was found that of the 37 grade level locations tested for the Existing Configuration, none were expected to exceed the hazard criterion (presented in Table 2 and Figure 4a of that report). The number of locations exceeding the hazard criterion was expected to remain zero for the Existing plus Project and Project plus Cumulative Configurations (Figures 4b and 4c and Table 2 in the same report). **Overall, similar wind conditions are expected around the current updated building design.**

6. SUMMARY

RWDI was retained to provide an assessment of the potential pedestrian level wind impact of the proposed project at 1510 Webster Street in Oakland, California. Our assessment was based on the local wind climate, the current design of the proposed development, the existing surrounding buildings, our experience with wind tunnel testing of similar buildings, and screening-level modelling.

Our findings are summarized as follows:

- No grade level locations including entrances are expected to exceed the hazard criterion.

- Overall, wind conditions around the development are expected to be similar to the previous design tested in RWDI's atmospheric boundary layer wind tunnel, presented in the report dated August 16th, 2016.

7. APPLICABILITY OF RESULTS

The assessment presented in this report are for the proposed project at 1510 Webster Street based on the information provided by ESA, listed in the table below. In the event of any 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 pedestrian wind conditions discussed in this report. It is the responsibility of others to contact RWDI to initiate this process.

File Name	File Type	Date Received (mm/dd/yyyy)
100714_1510 Webster	.3ds	29/07/2020
20_0213-Schematic Design Package	.pdf	22/06/2020

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N1G 4P6

1510 Webster

Oakland, CA

Report

Pedestrian Wind Study

RWDI # 1601037
August 16, 2016

SUBMITTED TO

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Figures

Tables

Appendix

1. INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by Webster Development Corp. to conduct a Pedestrian Wind Study for the proposed development project at 1510 Webster Street in Oakland, California. The purpose of the study was to assess the wind environment around the development in terms of pedestrian comfort and hazard relative to wind metrics specified in the City of Oakland Significant Wind Impact Criterion. The study objective was achieved through wind tunnel testing of a 1:400 (1” = 33’) scale model for the following three development configurations:

A – Existing: all existing buildings on-site and in the surroundings;

B – Existing plus Project: proposed 1510 Webster project present with existing surrounding buildings; and,

C – Project plus Cumulative: proposed 1510 Webster project present with cumulative surrounding buildings.

The development site is located at the southwest corner of 15th Street and Webster Street in Oakland, CA. The proposed tower is approximately 262 feet tall. The test model was constructed using the design information and drawings listed in Appendix A.

This report summarizes the methodology of the wind tunnel studies for pedestrian wind conditions, describes the wind comfort and wind hazard criteria associated with wind force, as used in the current study, and presents the test results and recommendations of conceptual wind control measures, where necessary.

The placement for wind measurement locations was based on our experience and understanding of pedestrian usage for this site.

2. PRINCIPAL RESULTS

The results of the tests are discussed in detail in Section 5 of this report and may be summarized as follows:

- Wind speeds on the Existing project site are currently low and met the 11 mph criterion at all locations. The hazard criterion was also met at all locations in the Existing Configuration.
- For the Existing plus Project Configuration, wind speeds at 6 locations exceed the comfort criterion while the number of locations exceeding the hazard criterion remains zero.
- For the Project plus Cumulative Configuration, the average wind speeds and number of locations exceeding the comfort and hazard criterion remain similar to the Existing plus Project Configuration.

3. METHODOLOGY

3.1 Wind Tunnel Testing

As shown in Figures 1a through 1c, the wind tunnel model included the project site and all relevant surrounding buildings and topography within a 1500 ft radius of the study site. The mean speed profile and turbulence of the natural wind approaching the modelled area were simulated in RWDI's boundary-layer wind tunnel. The model was instrumented with 41 wind speed sensors to measure mean and gust wind speeds at a full-scale height of approximately 5 ft. Four (4) of these measurement locations were on the podium (Locations 38 and 39) and roof (Location 40 and 41) of the proposed development and are not applicable to the Existing configuration. These measurements were recorded for 36 equally incremented wind directions.

3.2 Local Climate

Wind statistics recorded at the Metropolitan Oakland International Airport between 1980 and 2014 were analyzed for annual wind conditions. Figure 2 graphically depicts the directional distributions of annual wind frequencies and speeds. Winds are frequent from the west-southwest through northwest directions throughout the year, as indicated by the wind rose. Strong winds of a mean speed greater than 20 mph measured at the airport (at an anemometer height of 33ft) occur 2.5% of the time annually.

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

3.3 Planning Code Requirements

For the purposes of this study, the City of Oakland considers a significant wind impact to occur if a project were to “Create winds exceeding 36 mph for more than one hour during daylight hours during the year”. A wind analysis only need to be done if the project’s height is 100 feet or greater (Measured to the roof) and one of the following conditions exists: (a) the project is located adjacent to a substantial water body (i.e. Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the project is located in Downtown. Since the proposed project exceeds 100 feet in height and is located in Downtown, it is subject to the thresholds of significance.

The equivalent wind speeds were calculated according to the specifications in the City of Oakland Significant Wind Impact Criterion, whereby the mean hourly wind speed is increased when the turbulence intensity is greater than 15% according to the following formula:

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

where $\boldsymbol{EWS}$ = equivalent wind speed
$\boldsymbol{V_m}$ = mean pedestrian-level wind speed
$\boldsymbol{TI}$ = turbulence intensity

4. TEST RESULTS

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

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

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

4.1 Wind Comfort Conditions

For the Existing Configuration in the vicinity of the project site, wind conditions were generally low with 90th percentile wind speeds averaging 7 mph for all 37 measurement locations. The 11 mph comfort threshold was met all locations (Figure 3a). On average, wind speeds in the Existing Configuration exceed the 11 mph criterion 1% of the time (see page 2 of Table 1).

For the Existing plus Project Configuration, the average 90th percentile wind speed for all measurement locations increased by 2 mph compared to the Existing Configuration (average of 9 mph). Wind speeds exceeding the 11 mph comfort threshold are expected at 6 out of 37 locations. These areas are; (1) the northern areas of the project site (Locations 6 to 9 in Figure 3b); (2) a localized location to the north of the project site along Webster Street (Location 30 in Figure 3b); and (3) a localized area to the south along 15th street (Location 3 in Figure 3b). The frequency that the 11 mph criterion was exceeded increased from 1% in the Existing Configuration to 5% in the Existing plus Project Configuration (see Figure 3b and Table 1).

For the Project plus Cumulative Configuration, wind speeds generally remained similar with the average 90th percentile wind speed for all test locations remaining at 9 mph. In comparison to the Existing plus Project Configuration, exceedance of the 11 mph criterion increased marginally from 5% to 7% of the time (see Table 1). Wind speeds exceeding the 11mph comfort threshold are expected at 6 out of 37 locations. Areas where exceedances of the 11 mph criterion are predicted includes a localized location to the north of the project site and localized areas on 15th and Webster Streets (Locations 8, 23, 25, 27, 33 and 36 in Figure 3c).

Overall, as indicated in Table 1, wind conditions were slightly increased in the Existing plus Project Configuration and Project plus Cumulative Configuration when compared with the conditions in the Existing Configuration. However, the number of hazard exceedance locations remained at zero for all configurations tested.

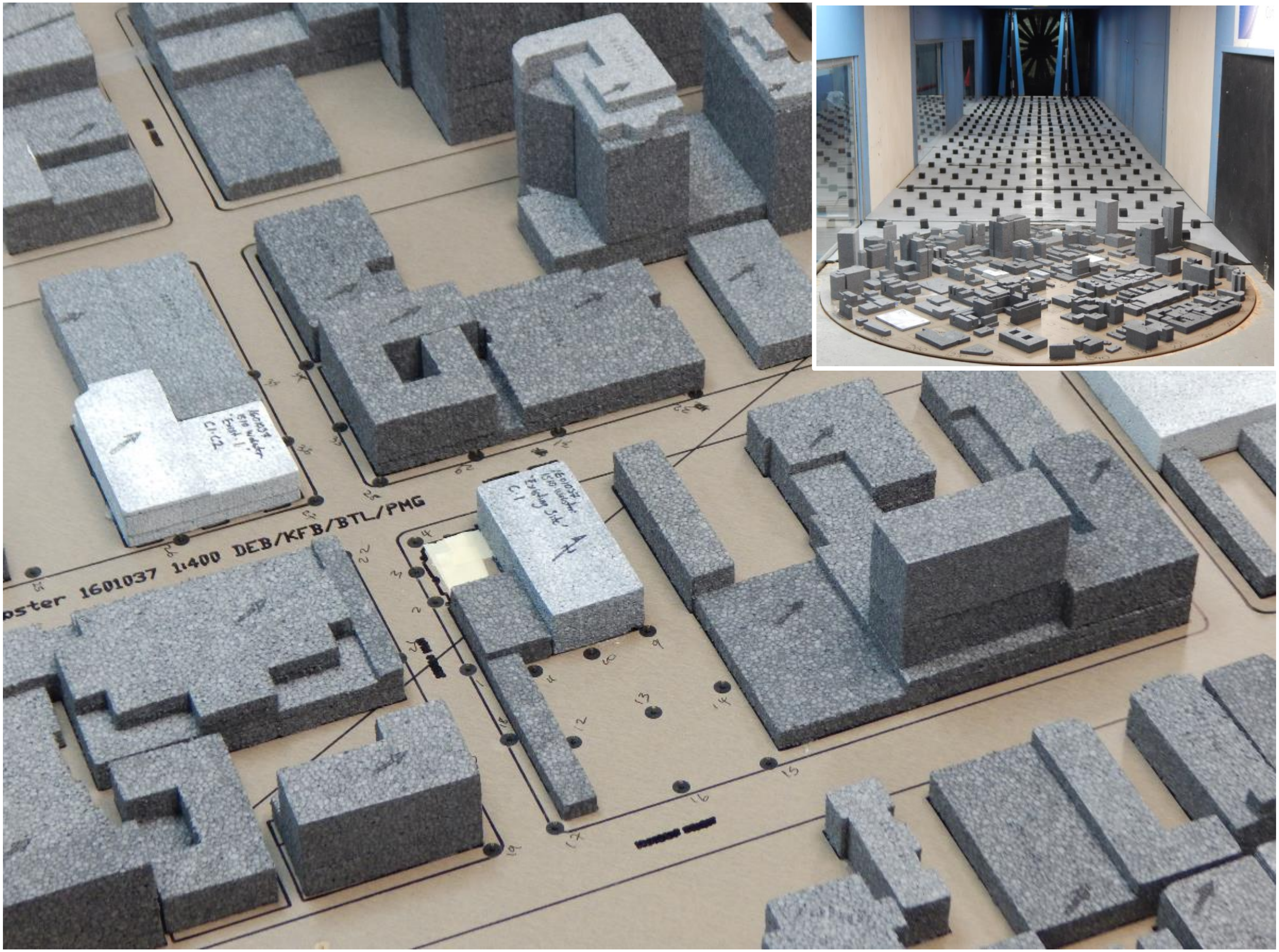
4.2 Wind Hazard Conditions

Of the 37 grade level locations tested for the Existing Configuration, none currently exceed the hazard criterion (presented in Table 2 and Figure 4a). The number of locations exceeding the hazard criterion is expected to remain zero for the Existing plus Project and Project plus Cumulative Configurations (Figures 4b and 4c and Table 2).

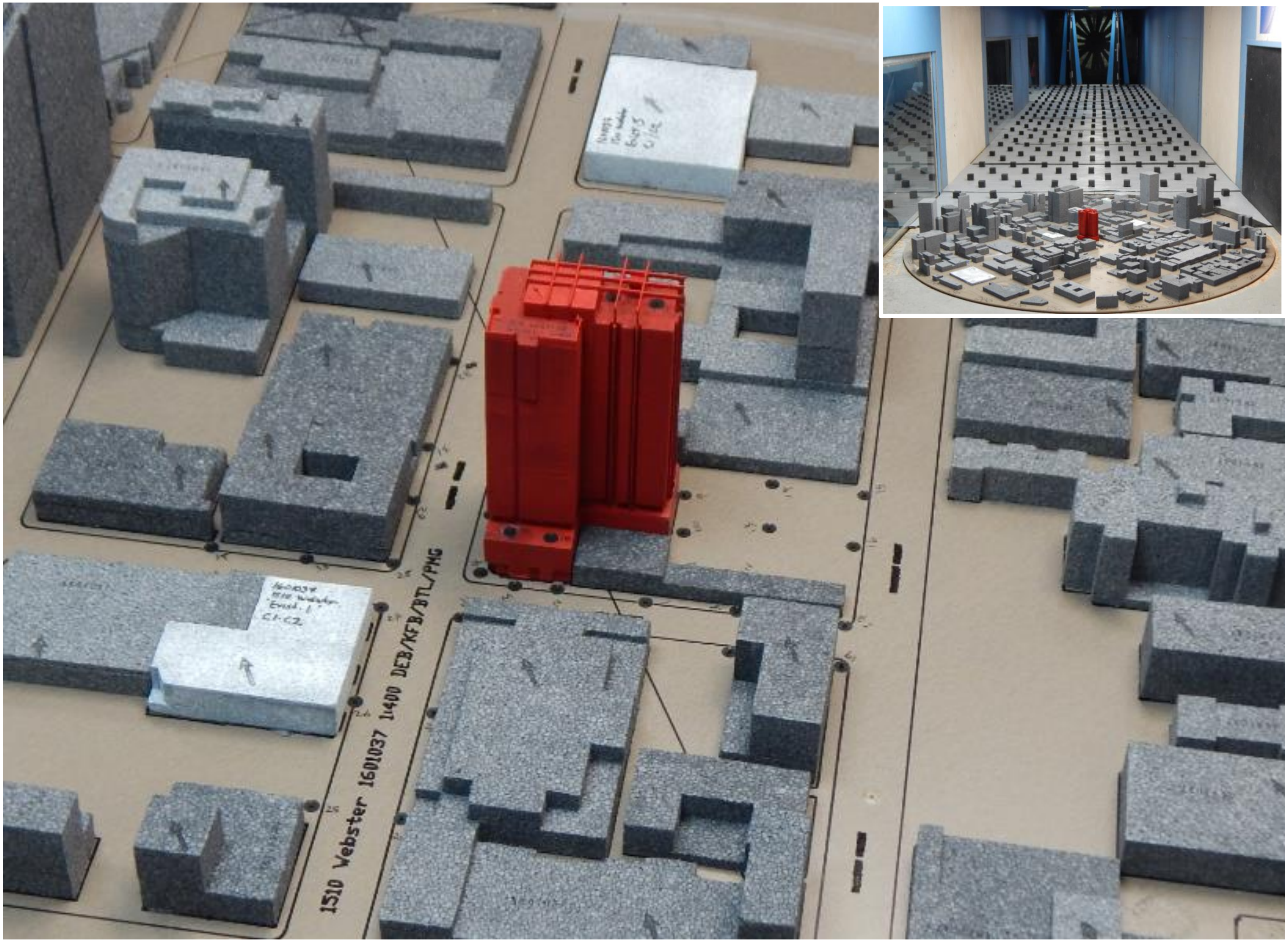
5. APPLICABILITY OF RESULTS

The results presented in this report pertain to the model of the proposed 1510 Webster project constructed using the architectural design drawings listed in Appendix A. Should there be design changes that deviate from this list of drawings, the results presented may change. Therefore, if substantial changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

FIGURES



Wind Tunnel Study Model **Existing**	Figure No. 1a	RWDI
1510 Webster – Oakland, CA Project #1601037	Date: July 29, 2016	



Wind Tunnel Study Model
Existing + Project

1510 Webster – Oakland, CA

Project #1601037

Figure No. 1b

Date: July 29, 2016

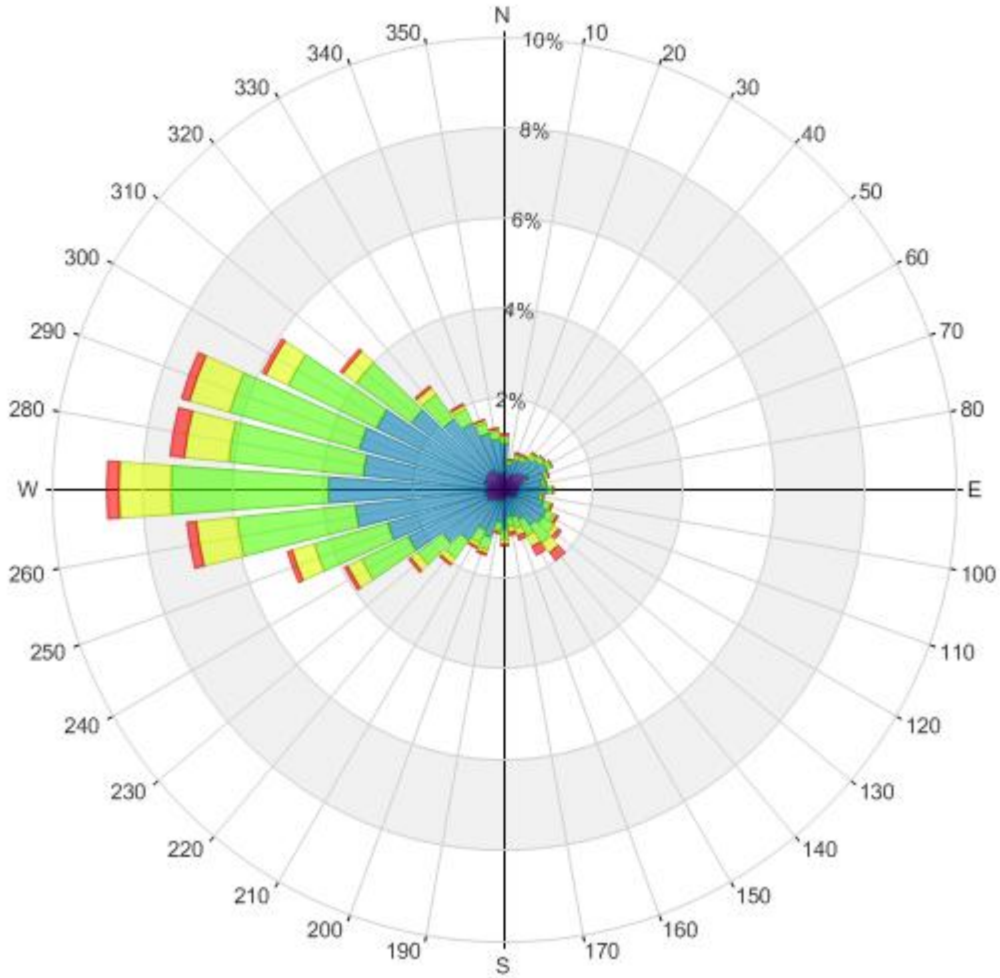
Wind Tunnel Study Model
Project + Cumulative

1510 Webster – Oakland, CA

Project #1601037

Figure No. 1c

Date: July 29, 2016



Annual Winds

Wind Speed (mph)	Probability (%)
Calm	11.6
1-5	13.0
6-10	39.4
11-15	25.4
16-20	8.1
>20	2.5

Directional Distribution (%) of Winds (Blowing From)
Metropolitan Oakland International Airport (1980 - 2014)

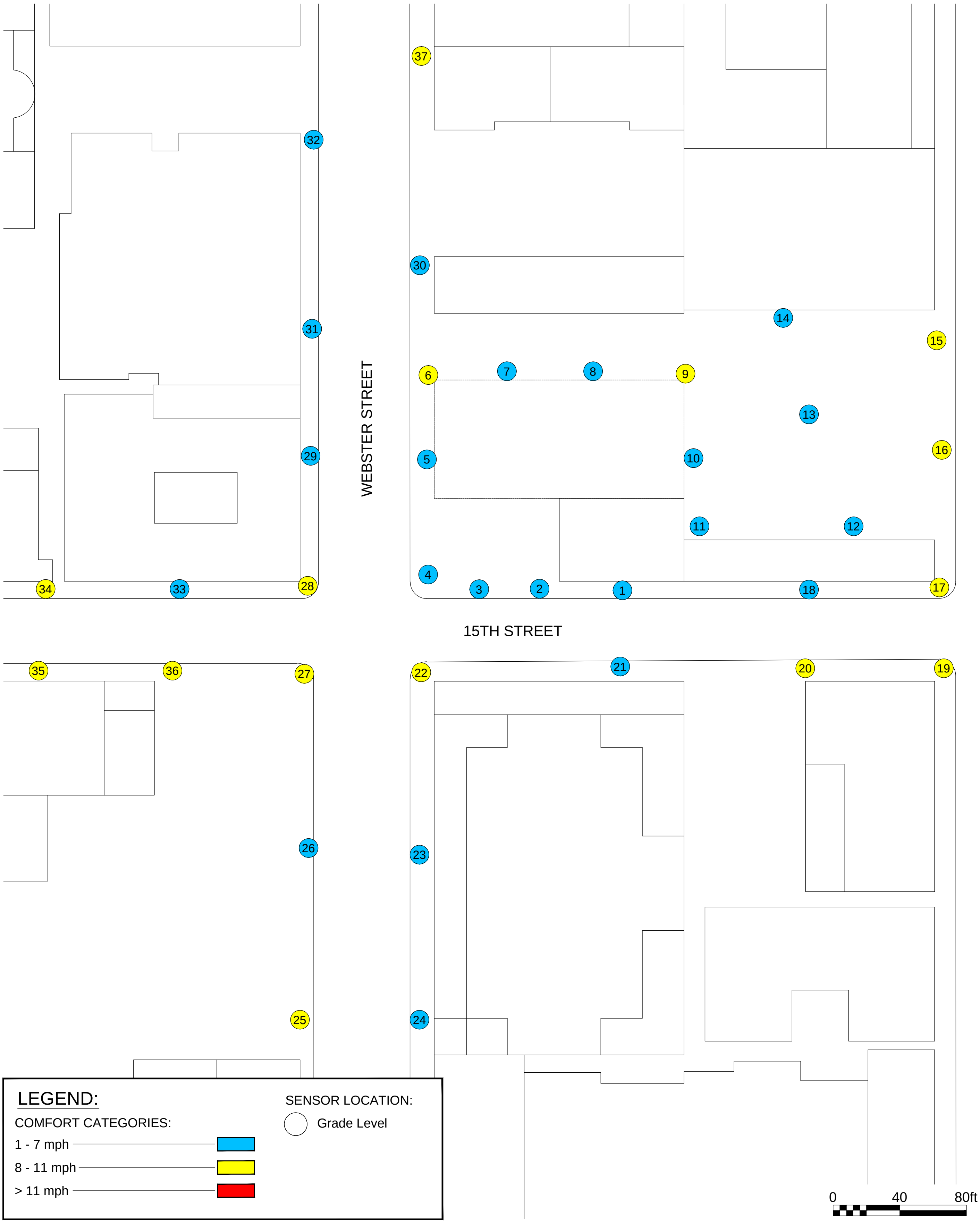
1510 Webster – Oakland, CA

Project #1601037

Figure No. 2

Date: July 29, 2016

RWDI



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

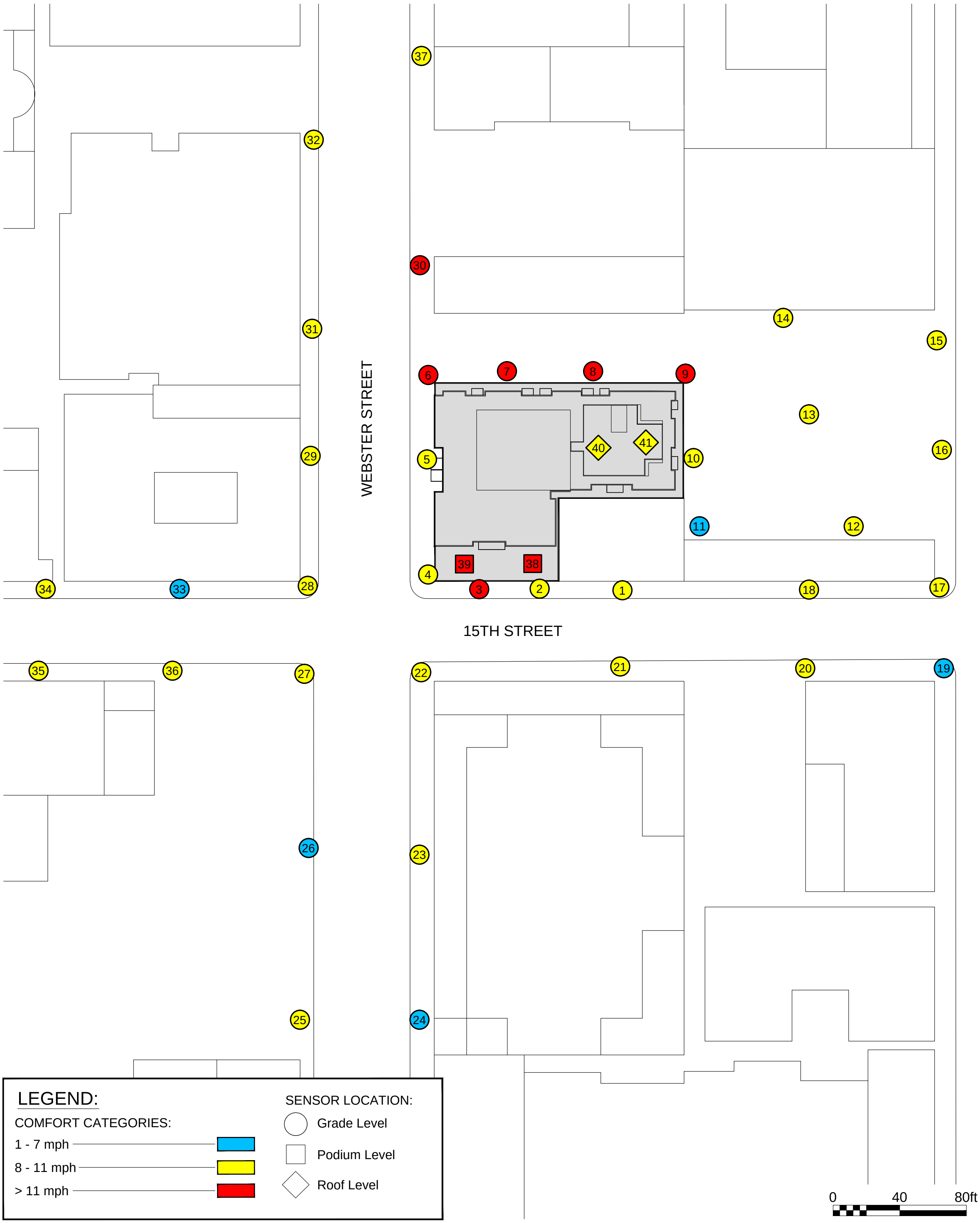
1510 Webster - Oakland, CA

True North

Project #1601037

Drawn by: ck	Figure: 3a
Approx. Scale:	1"=80'
Date Revised:	July 27, 2016

RWDI



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

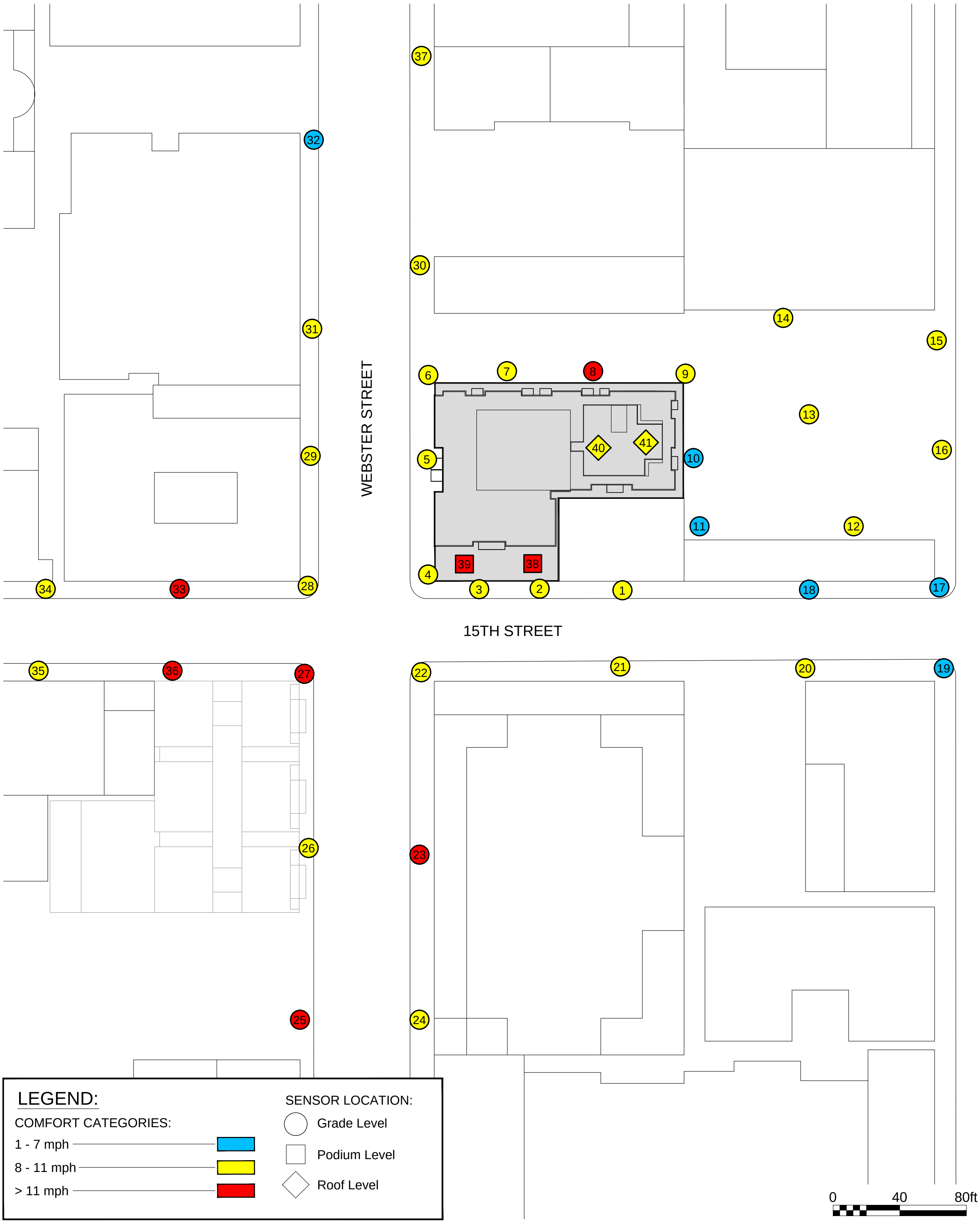
1510 Webster - Oakland, CA

True North

Project #1601037

Drawn by: ck	Figure: 3b
Approx. Scale:	1"=80'
Date Revised:	July 27, 2016

RWDI



LEGEND:

COMFORT CATEGORIES:

1 - 7 mph

8 - 11 mph

> 11 mph

SENSOR LOCATION:

Grade Level

Podium Level

Roof Level

Pedestrian Wind Comfort Conditions - Project + Cumulative

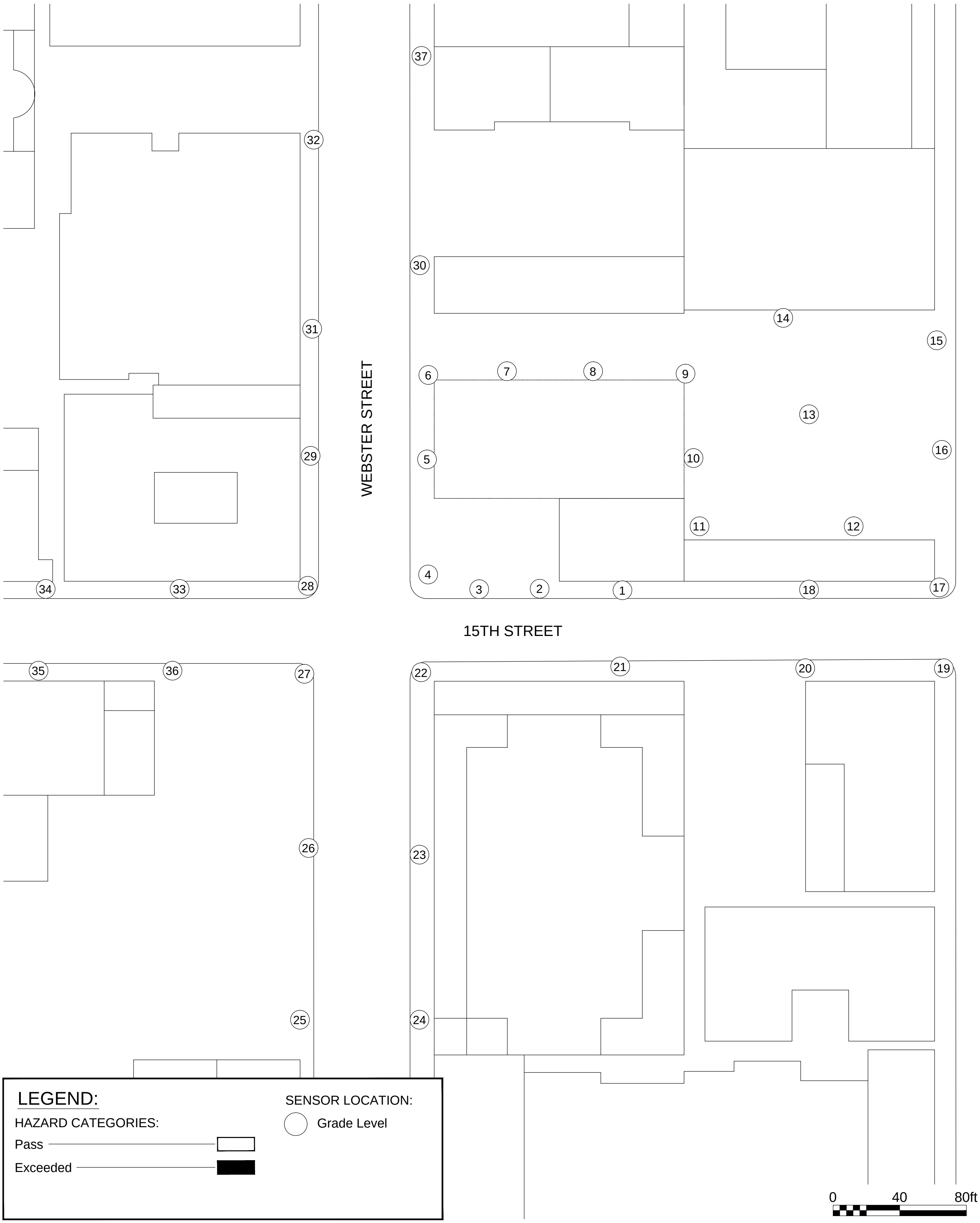
Annual (January to December)

True North

Project #1601037

Drawn by:	ck	Figure:	3c
Approx. Scale:	1"=80'		
Date Revised:	July 27, 2016		

1510 Webster - Oakland, CA



LEGEND:

HAZARD CATEGORIES:

Pass

Exceeded

SENSOR LOCATION:

Grade Level

Pedestrian Wind Hazard Conditions - Existing
Winter (November to April, 6:00 to 23:00)

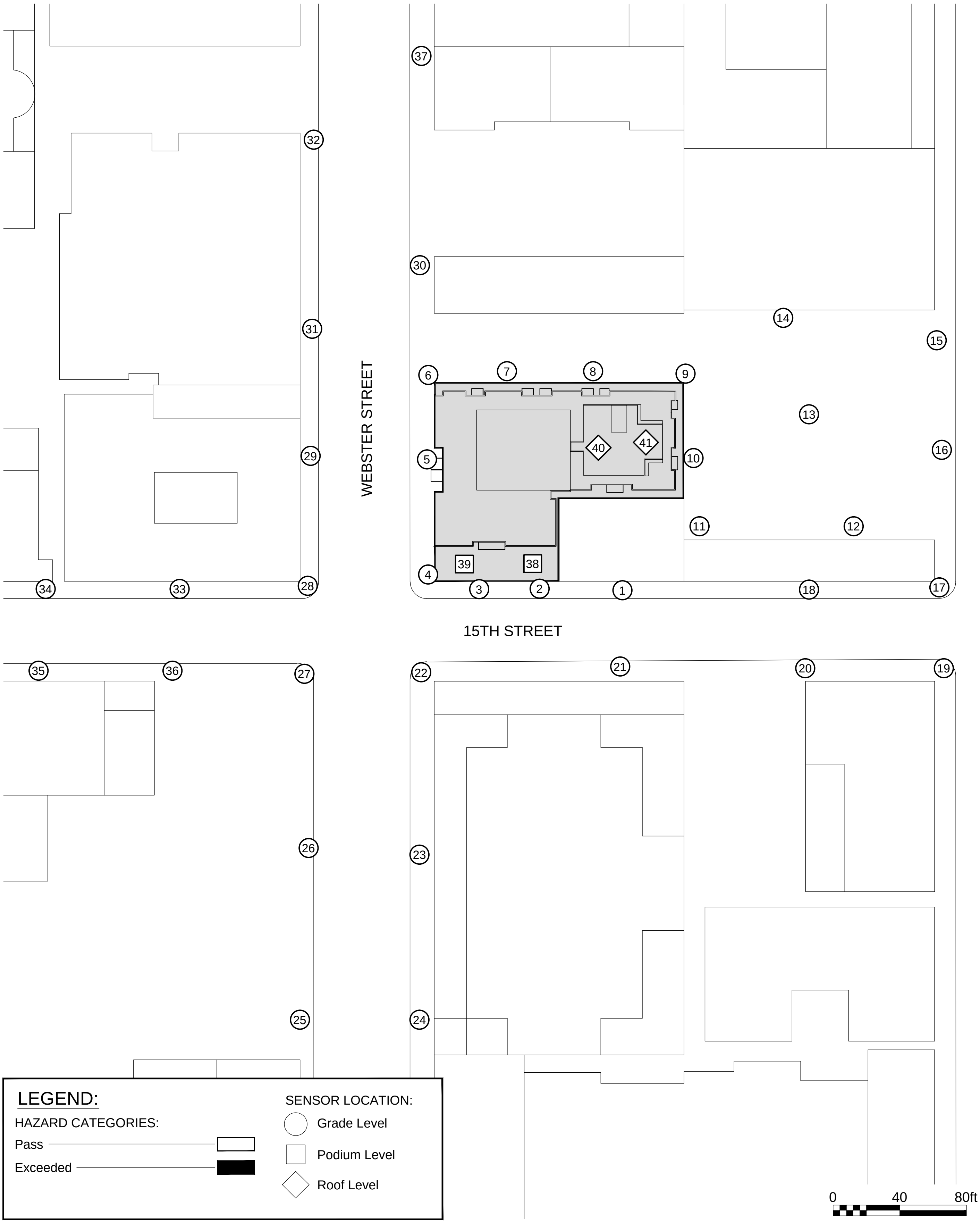
1510 Webster - Oakland, CA

True North

Project #1601037

Drawn by:	ck	Figure:	4a
Approx. Scale:			1"=80'
Date Revised:			July 27, 2016

RWDI



LEGEND:

HAZARD CATEGORIES:

Pass

Exceeded

SENSOR LOCATION:

Grade Level

Podium Level

Roof Level

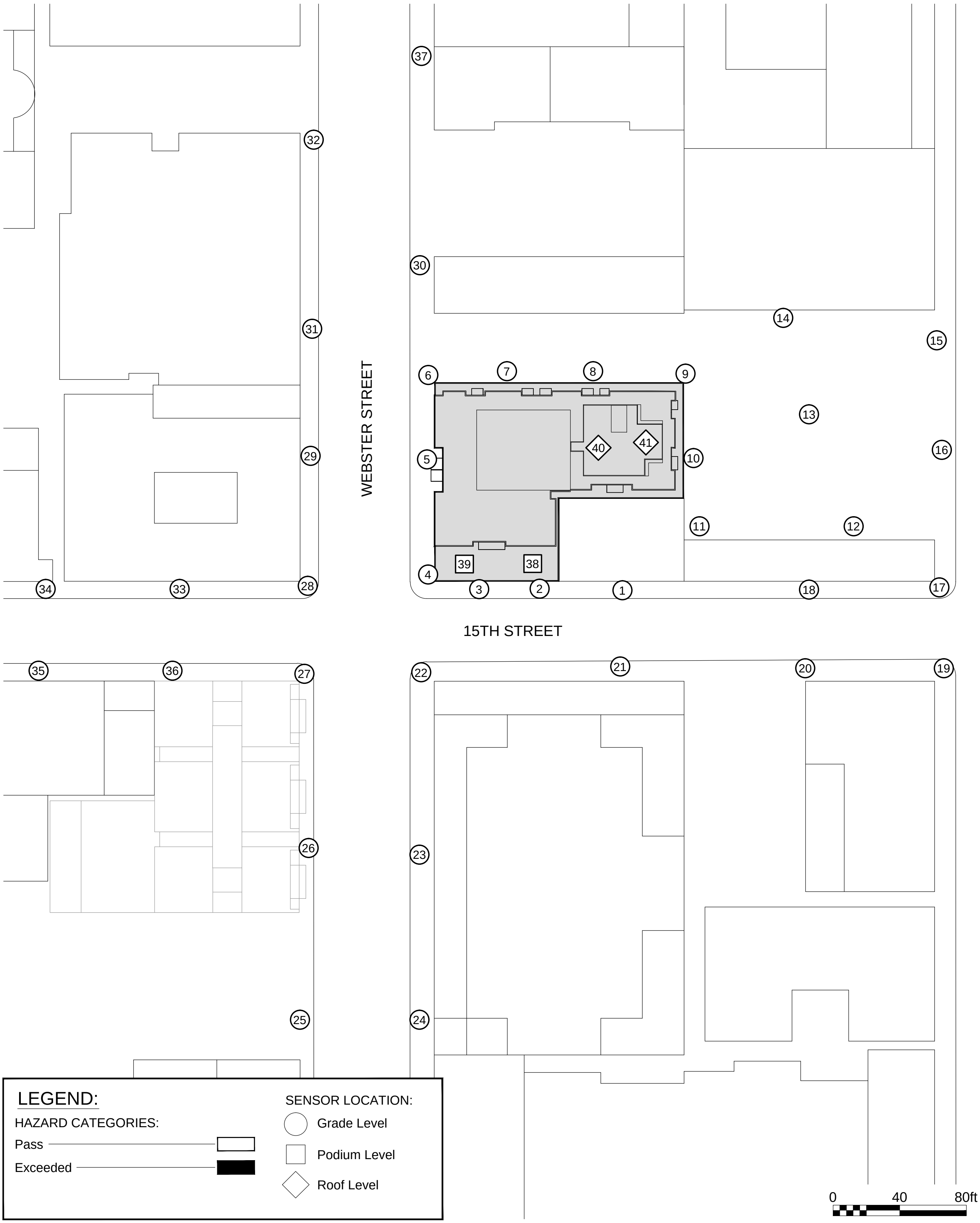
Pedestrian Wind Hazard Conditions - Existing + Project
Annual (January to December)

True North

1510 Webster - Oakland, CA

Project #1601037

Drawn by: ck	Figure: 4b
Approx. Scale:	1"=80'
Date Revised:	July 27, 2016



Pedestrian Wind Hazard Conditions - Project + Cumulative Annual (January to December)	True North	Drawn by: ck	Figure: 4c
		Approx. Scale: 1"=80'	
1510 Webster - Oakland, CA	Project #1601037	Date Revised: July 27, 2016	

TABLES

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

Gradel Level Locations

References	A Existing			B Existing + Project				C Project + Cumulative			
Location Number	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Speed Change Relative to Existing (mph)	Exceeds
1	7	0		9	4	2		8	2	1	
2	7	1		10	5	3		8	2	1	
3	7	0		13	16	6	e	11	10	4	
4	7	1		10	7	3		10	6	3	
5	7	1		9	5	2		8	4	1	
6	8	1		12	14	4	e	11	10	3	
7	5	0		12	12	7	e	11	10	6	
8	6	0		13	19	7	e	12	16	6	e
9	8	1		12	14	4	e	11	10	3	
10	5	0		8	4	3		6	2	1	
11	4	0		7	3	3		6	1	2	
12	6	0		9	5	3		8	4	2	
13	7	1		10	6	3		9	5	2	
14	7	0		10	5	3		10	6	3	
15	8	2		9	4	1		9	3	1	
16	8	2		10	5	2		9	3	1	
17	8	1		8	2	0		7	1	-1	
18	7	1		9	3	2		7	2	0	
19	8	2		7	1	-1		6	1	-2	
20	8	2		9	4	1		8	2	0	
21	6	0		9	4	3		8	2	2	
22	8	2		10	6	2		11	10	3	
23	7	0		8	1	1		12	12	5	e
24	7	1		7	1	0		8	2	1	
25	8	2		8	2	0		13	16	5	e
26	6	1		6	1	0		10	7	4	
27	8	1		8	2	0		13	18	5	e
28	9	2		10	7	1		11	10	2	
29	5	0		9	5	4		9	4	4	
30	7	1		12	15	5	e	11	10	4	
31	6	1		10	7	4		9	4	3	
32	6	1		8	1	2		7	1	1	
33	7	0		7	1	0		12	13	5	e
34	9	2		9	3	0		9	4	0	
35	9	3		9	3	0		11	10	2	
36	8	1		8	2	0		13	20	5	e
37	8	2		8	2	0		8	2	0	

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

References	A Existing			B Existing + Project				C Project + Cumulative			
Location Number	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Speed Change Relative to Existing (mph)	Exceeds
Average speed, Average %, Total exceedances	**7mph**	**1%**	**0 of 37**	**9 mph**	**5 %**	**2 mph**	**6 of 37**	**9 mph**	**7 %**	**2 mph**	**6 of 37**

Above Gradel Level Locations

References	A Existing			B Existing + Project				C Project + Cumulative			
Location Number	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of Time (mph)	Percent of Time Wind Speed Exceeds 11mph	Speed Change Relative to Existing (mph)	Exceeds
38	Data Not Available			14	22	N/A	e	13	20	N/A	e
39	Data Not Available			15	24	N/A	e	15	26	N/A	e
40	Data Not Available			10	6	N/A		10	6	N/A	
41	Data Not Available			11	10	N/A		11	10	N/A	
Average speed, Total Hours, Total exceedances	**Data Not Available**			**13 mph**	**16 %**	**N/A**	**2 of 4**	**12 mph**	**16 %**	**N/A**	**2 of 4**

CONSULTING ENGINEERS & SCIENTISTS

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

Grade Level Locations

References	A Existing			B Existing + Project				C Project + Cumulative			
Location Number	Wind Speed Exceeded 1 hour/year (mph)	Hours per Year Wind Speeds Exceed Hazard Criteria	Exceeds	Wind Speed Exceeded 1 hour/year (mph)	Hours per Year Wind Speeds Exceed Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 hour/year (mph)	Hours per Year Wind Speeds Exceed Hazard Criteria	Hours Change Relative to Existing	Exceeds
1	16	0	-	22	0	0	-	21	0	0	-
2	17	0	-	24	0	0	-	22	0	0	-
3	15	0	-	28	0	0	-	26	0	0	-
4	17	0	-	32	0	0	-	31	0	0	-
5	20	0	-	33	0	0	-	28	0	0	-
6	17	0	-	27	0	0	-	25	0	0	-
7	15	0	-	25	0	0	-	23	0	0	-
8	16	0	-	28	0	0	-	26	0	0	-
9	18	0	-	35	0	0	-	30	0	0	-
10	14	0	-	32	0	0	-	25	0	0	-
11	12	0	-	27	0	0	-	22	0	0	-
12	13	0	-	30	0	0	-	28	0	0	-
13	16	0	-	30	0	0	-	28	0	0	-
14	14	0	-	26	0	0	-	24	0	0	-
15	19	0	-	26	0	0	-	26	0	0	-
16	18	0	-	25	0	0	-	25	0	0	-
17	18	0	-	23	0	0	-	19	0	0	-
18	17	0	-	23	0	0	-	21	0	0	-
19	20	0	-	23	0	0	-	19	0	0	-
20	18	0	-	21	0	0	-	19	0	0	-
21	18	0	-	30	0	0	-	26	0	0	-
22	18	0	-	25	0	0	-	24	0	0	-
23	16	0	-	23	0	0	-	24	0	0	-
24	18	0	-	20	0	0	-	21	0	0	-
25	19	0	-	22	0	0	-	27	0	0	-
26	17	0	-	18	0	0	-	22	0	0	-
27	17	0	-	21	0	0	-	29	0	0	-
28	19	0	-	24	0	0	-	25	0	0	-
29	17	0	-	28	0	0	-	28	0	0	-
30	20	0	-	28	0	0	-	25	0	0	-
31	16	0	-	26	0	0	-	24	0	0	-
32	20	0	-	17	0	0	-	17	0	0	-
33	14	0	-	20	0	0	-	31	0	0	-
34	18	0	-	20	0	0	-	24	0	0	-

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

References	A Existing			B Existing + Project				C Project + Cumulative			
Location Number	Wind Speed Exceeded 1 hour/year (mph)	Hours per Year Wind Speeds Exceed Hazard Criteria	Exceeds	Wind Speed Exceeded 1 hour/year (mph)	Hours per Year Wind Speeds Exceed Hazard Criteria	Hours Change Relative to Existing	Exceeds	Wind Speed Exceeded 1 hour/year (mph)	Hours per Year Wind Speeds Exceed Hazard Criteria	Hours Change Relative to Existing	Exceeds
35	20	0	-	19	0	0	-	25	0	0	-
36	18	0	-	21	0	0	-	28	0	0	-
37	19	0	-	22	0	0	-	24	0	0	-
Average speed, Total Hours, Total exceedances	**17 mph**	**0 hr**	**0 of 37**	**25 mph**	**0 hr**	**0 hr**	**0 of 37**	**25 mph**	**0 hr**	**0 hr**	**0 of 37**

Above Grade Level Locations

References	A Existing			B Existing + Project				C Project + Cumulative			
Location Number	Wind Speed Exceeded 1 hour/year (mph)	Hours per Year Wind Speeds Exceed Hazard Criteria	Exceeds	Wind Speed Exceeded 1 hour/year (mph)	Hours per Year Wind Speeds Exceed Hazard Criteria	Hours Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 1 hour/year (mph)	Hours per Year Wind Speeds Exceed Hazard Criteria	Hours Change Relative to Existing (mph)	Exceeds
38	Data Not Available			31	0	N/A	-	24	0	N/A	-
39	Data Not Available			33	0	N/A	-	25	0	N/A	-
40	Data Not Available			32	0	N/A	-	28	0	N/A	-
41	Data Not Available			31	0	N/A	-	24	0	N/A	-
Average speed, Total Hours, Total exceedances	**Data Not Available**			**32 mph**	**0 hr**	**N/A**	**0 of 4**	**31 mph**	**0 hr**	**N/A**	**0 of 4**

APPENDIX A

CONSULTING ENGINEERS & SCIENTISTS

APPENDIX A: DRAWING LIST FOR MODEL CONSTRUCTION

The drawings and information listed below were received from Heller Manus Architects and were used to construct the scale model of the proposed 1510 Webster project. Should there be any design changes that deviate from this list of drawings, the results may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

Description	File Name	File Type	Date Received (dd/mm/yyyy)
DWG's	A-Plan.dwg	AutoCAD drawing	6/23/2016

APPENDIX C

Air Quality and Health Risk Assessment Information

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1510 Webster Street - Modeling Assumptions AQ/GHG/HRA

Construction

Proposed Land	Area	Units
Residential	182	dwelling units
Office	11397	sqft
Retail	3489	sqft
Office and Retail	14,886	
Project Site Area	0.33	acres
Area to be demolished	30,000	sqft
Total Demo Volume (off-haul)	2,250	tons
Total Proposed building area	193,817	sqft
Volume of infill to be brought in	550	cubic yards
Volume of material to be exported	575	cubic yards
Off-site Lot paving area	3,500	sqft

Construction schedule

Start date of construction	4/1/2021
First year of operation	10/1/2022

Construction Phase	From	To	No. of workdays
Demolition	4/1/2021	4/15/2021	11
Site Preparation	4/16/2021	4/23/2021	6
Grading	4/23/2021	5/15/2021	16
Building	5/16/2021	5/31/2022	272
Paving	6/1/2022	8/1/2022	44
Architectural Coating	8/2/2022	9/1/2022	23
Total*			371

*Total days minus 1 (4/23/2021 overlap for Site Preperation and Grading)

Construction Equipment

Demolition

Equipment	Number	No. of Days used	Hrs/day used
Crushing/Proc. Equipment	1	11	8
Other Construction Equipment	2	11	8
Other General Industrial Equipment	2	11	8
Rubber Tired Loaders	2	11	8

Site Preparation

Equipment	Number	No. of Days used	Hrs/day used
Scrapers	1	6	8
Pressure Washers	1	6	8

Grading

Equipment	Number	No. of Days used	Hrs/day used
Rollers	1	16	8
Excavators	1	16	8
Graders	1	16	8
Rubber Tired Dozers	1	16	8
Rubber Tired Loaders	1	16	8
Sweepers/Scrubbers	1	16	8
Skid Steer Loaders	1	16	8

Building Construction

Equipment	Number	No. of Days used	Hrs/day used	Average Hrs/day
Plate Compactors	2	10	8	0.29
Welders	4	60	8	1.76
Aerial Lifts	2	147	8	4.32
Air Compressors	2	84	8	2.47
Cement and Mortar Mixers	8	21	8	0.62
Concrete/Industrial Saws	1	10	8	0.29

Forklifts	1	84	8	2.47

Paving

Equipment	Number	No. of Days used	Hrs/day used	Average Hrs/day
Pavers	4	44	8	8.00
Paving Equipment	1	10	8	1.82

Architectural Coating

Equipment	Number	No. of Days used	Hrs/day used	Average Hrs/day
Pressure Washers	2	10	8	3.48

Construction Vehicle Trips

Construction Phase	worker trips/day	One-way worker trips/day	Vendor Truck Trips/day	One-way Vendor Truck Trips/day	Hauling Truck trips/day	Total one-way trips
Demolition	15	30	6	12	2	44
Site Preparation	20	40	4	8	1	12
Grading	40	80	6	12	2	64
Building	80	160	10	20	4	2,176
Paving	55	110	4	8	2	176
Architectural	30	60	2	4	0	0

From F&P

Land Use	size	units	Daily	Daily Adjusted	Daily Adjusted (size/day)
Residential	182	DU	990	526	2.9
Office	11.4	KSF	110	58	5.1
Retail	3.5	KSF	130	69	19.7
Total			1,230	653	

Emissions Summary

Construction Year	ROG	NO_x	PM_{10}	$PM_{2.5}$
Project				
2021 Emissions (tons)	0.1415	1.1322	0.0358	0.0342
2022 Emissions (tons)	1.4057	0.7231	0.0199	0.019
Total (tons)	1.5472	1.8553	0.0557	0.0532
Total (pounds)	3,094	3,711	111	106
Average Daily Construction Emissions*	8.3	10.0	0.3	0.3
City of Oakland Thresholds	54	54	82	54
Significant (Yes or No)?	**No**	**No**	**No**	**No**

*Average daily emissions are estimated by dividing the total emissions by the number of workdays, estimated to be 371 days.

PM Exhaust Emissions (tons)

Source	Location	Exhaust Emissions	
		PM_{10}	$PM_{2.5}$
Demolition - 2021	on-site	0.0066	0.0061
	off-site	0.0000	0.0000
Site Preparation - 2021	on-site	0.0013	0.0012
	off-site	0.0000	0.0000
Grading - 2021	on-site	0.0098	0.0090
	off-site	0.0001	0.0001
Building Construction -2021	on-site	0.0165	0.0162
	off-site	0.0016	0.0015
Building Construction -2022	on-site	0.0093	0.0091
	off-site	0.0010	0.0009
Paving - 2022	on-site	0.0092	0.0085
	off-site	0.0002	0.0002
Architectural Coating -2022	on-site	0.0001	0.0001
	off-site	0.0001	0.0001
Total Emissions	**on-site**	**0.0528**	**0.0503**
	off-site	**0.0031**	**0.0029**

PM Exhaust Emissions with Tier 4 Off-road Equipment (tons)

Source	Location	Exhaust Emissions	
		PM_{10}	$PM_{2.5}$
Demolition - 2021	on-site	0.0003	0.0003
	off-site	0.0000	0.0000
Site Preparation - 2021	on-site	0.0001	0.0001
	off-site	0.0000	0.0000
Grading - 2021	on-site	0.0004	0.0004
	off-site	0.0001	0.0001

Building Construction -2021	on-site	0.0008	0.0008
	off-site	0.0016	0.0015
Building Construction -2022	on-site	0.0005	0.0005
	off-site	0.0010	0.0009
Paving - 2022	on-site	0.0007	0.0007
	off-site	0.0002	0.0002
Architectural Coating -2022	on-site	0.0000	0.0000
	off-site	0.0001	0.0001
Total Emissions	**on-site**	**0.0029**	**0.0029**
	off-site	**0.0031**	**0.0029**

GHG Emissions (Metric Tons)

Project Component	**CO_2e**	**Adjusted for 2019 Title 24***
Area Source Emissions	5.7	
Energy Emissions	225.4	210.8
Mobile Emissions	765.3	
Stationary Sources	12.8	
Solid Waste	49.3	
Water and Wastewater	23.1	
Total GHG Emissions	1,081.6	1,067.0

*CalEEMod defaults account for 2016 Title 24. Title 24 electricity and lighting electricity use rates were reduced by 10.7 percent and Title 24 natural gas use rates were reduced by 1.0 percent per the California Energy Commission (CEC) 2019 Title 24 Impact Analysis.

1510 Webster Mixed-Use Project

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	11.40	1000sqft	0.26	11,400.00	0
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Apartments Mid Rise	182.00	Dwelling Unit	0.33	182,000.00	521
Regional Shopping Center	3.50	1000sqft	0.08	3,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	294	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project Characteristics; CO2 intensity based on PG&E's rate for 2016

Land Use - Per Project Description; assumed 1-acre of paving.

Construction Phase - Per Const_RFI_AQ-GHG 070720

Off-road Equipment - Per Construction RFI

Off-road Equipment - Per Construction RFI

Off-road Equipment - Per Construction RFI

Off-road Equipment - Per Construction RFI

Off-road Equipment - Per Construction RFI

Off-road Equipment - Per Construction RFI

Trips and VMT - Per Construction RFI

Demolition - Per Construction RFI

Grading - Per Construction RFI

Architectural Coating - Assumes super-compliant coating with a VOC content below 10 g/L are used fro all indoor non-residential coating. Residential indoor coating and all outdoor coatings are assumed to comply with BAAQMD paint VOC regulations.

Vehicle Trips - Per F&P trip rates for the Project.

Woodstoves - No wood burning fireplaces.

Water And Wastewater - All wastewater generated was assumed to be aerobically processed at teh EBMUD plant. Septic and lagoons contributions were set to a zero precentage.

Construction Off-road Equipment Mitigation - Tier 4 per SCA-AIR-3 a) ii.; water at least twice daily per SCA-AIR-1 Dust Controls.

Stationary Sources - Emergency Generators and Fire Pumps - Model similar to used for the 1510 project.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	2,614.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	10.00
tblAreaCoating	Area_Parking	2614	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	11.00
tblConstructionPhase	NumDays	2.00	6.00
tblConstructionPhase	NumDays	4.00	16.00
tblConstructionPhase	NumDays	200.00	272.00
tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	NumDays	10.00	23.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberWood	30.94	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.56	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.19	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.2020e-003	0.00
tblFleetMix	MCY	5.5240e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	7.2100e-004	0.00

tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.1840e-003	0.00
tblFleetMix	SBUS	3.2600e-004	0.00
tblFleetMix	UBUS	2.5610e-003	0.00
tblGrading	AcresOfGrading	8.00	0.00
tblGrading	AcresOfGrading	6.00	0.50
tblGrading	MaterialExported	0.00	575.00
tblGrading	MaterialImported	0.00	550.00
tblLandUse	LotAcreage	4.79	0.33
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	8.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	PhaseName		Demolition

tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	UsageHours	6.00	2.50
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	1.80
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	1.80
tblProjectCharacteristics	CO2IntensityFactor	641.35	294
tblTripsAndVMT	HaulingTripNumber	222.00	44.00
tblTripsAndVMT	HaulingTripNumber	0.00	12.00
tblTripsAndVMT	HaulingTripNumber	111.00	64.00
tblTripsAndVMT	HaulingTripNumber	0.00	2,176.00
tblTripsAndVMT	HaulingTripNumber	0.00	176.00
tblTripsAndVMT	VendorTripNumber	0.00	12.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	12.00
tblTripsAndVMT	VendorTripNumber	29.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	30.00
tblTripsAndVMT	WorkerTripNumber	5.00	40.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	154.00	160.00
tblTripsAndVMT	WorkerTripNumber	13.00	110.00
tblTripsAndVMT	WorkerTripNumber	31.00	60.00
tblVehicleTrips	DV_TP	11.00	0.00

tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	77.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	2.90
tblVehicleTrips	ST_TR	2.46	5.10
tblVehicleTrips	ST_TR	49.97	19.70
tblVehicleTrips	SU_TR	5.86	2.90
tblVehicleTrips	SU_TR	1.05	5.10
tblVehicleTrips	SU_TR	25.24	19.70
tblVehicleTrips	WD_TR	6.65	2.90
tblVehicleTrips	WD_TR	11.03	5.10
tblVehicleTrips	WD_TR	42.70	19.70
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00

tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	3.64	0.00
tblWoodstoves	NumberNoncatalytic	3.64	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					
2021	0.1415	1.1322	1.0675	3.2700e-003	0.2139	0.0358	0.2497	0.0680	0.0342	0.1022	0.0000	294.7864	294.7864	0.0298	0.0000	295.5312
2022	1.4057	0.7231	0.8477	2.5600e-003	0.1206	0.0199	0.1405	0.0322	0.0190	0.0512	0.0000	231.3678	231.3678	0.0238	0.0000	231.9628
Maximum	**1.4057**	**1.1322**	**1.0675**	**3.2700e-003**	**0.2139**	**0.0358**	**0.2497**	**0.0680**	**0.0342**	**0.1022**	**0.0000**	**294.7864**	**294.7864**	**0.0298**	**0.0000**	**295.5312**

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					
2021	0.0726	0.6295	1.0949	3.2700e-003	0.1740	3.3900e-003	0.1774	0.0515	3.2900e-003	0.0547	0.0000	294.7863	294.7863	0.0298	0.0000	295.5311
2022	1.3686	0.4586	0.8991	2.5600e-003	0.1206	2.5400e-003	0.1231	0.0322	2.4600e-003	0.0347	0.0000	231.3677	231.3677	0.0238	0.0000	231.9627
Maximum	**1.3686**	**0.6295**	**1.0949**	**3.2700e-003**	**0.1740**	**3.3900e-003**	**0.1774**	**0.0515**	**3.2900e-003**	**0.0547**	**0.0000**	**294.7863**	**294.7863**	**0.0298**	**0.0000**	**295.5311**

	ROG	**NOx**	**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	**6.85**	**41.35**	**-4.12**	**0.00**	**11.92**	**89.36**	**22.99**	**16.54**	**89.18**	**41.69**	**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	4-1-2021	6-30-2021	0.6196	0.2065
2	7-1-2021	9-30-2021	0.3222	0.2431
3	10-1-2021	12-31-2021	0.3278	0.2487
4	1-1-2022	3-31-2022	0.3000	0.2314
5	4-1-2022	6-30-2022	0.3296	0.1935
6	7-1-2022	9-30-2022	1.4540	1.3551
		Highest	1.4540	1.3551

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	0.9489	0.0186	1.3542	9.0000e-005		7.7100e-003	7.7100e-003		7.7100e-003	7.7100e-003	0.0000	5.6158	5.6158	2.2000e-003	6.0000e-005	5.6894
Energy	9.8400e-003	0.0848	0.0409	5.4000e-004		6.8000e-003	6.8000e-003		6.8000e-003	6.8000e-003	0.0000	223.7458	223.7458	0.0143	4.3600e-003	225.4046
Mobile	0.1855	1.2756	2.1148	8.2900e-003	0.6489	7.8700e-003	0.6568	0.1744	7.4000e-003	0.1818	0.0000	764.5232	764.5232	0.0315	0.0000	765.3110
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Waste						0.0000	0.0000		0.0000	0.0000	19.8931	0.0000	19.8931	1.1757	0.0000	49.2844
Water						0.0000	0.0000		0.0000	0.0000	5.0040	14.3488	19.3528	0.0186	0.0112	23.1489
Total	**1.1717**	**1.4557**	**3.5800**	**9.0500e-003**	**0.6489**	**0.0264**	**0.6753**	**0.1744**	**0.0260**	**0.2004**	**24.8971**	**1,020.9904**	**1,045.8875**	**1.2441**	**0.0156**	**1,081.6396**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.9489	0.0186	1.3542	9.0000e-005		7.7100e-003	7.7100e-003		7.7100e-003	7.7100e-003	0.0000	5.6158	5.6158	2.2000e-003	6.0000e-005	5.6894
Energy	9.8400e-003	0.0848	0.0409	5.4000e-004		6.8000e-003	6.8000e-003		6.8000e-003	6.8000e-003	0.0000	223.7458	223.7458	0.0143	4.3600e-003	225.4046
Mobile	0.1855	1.2756	2.1148	8.2900e-003	0.6489	7.8700e-003	0.6568	0.1744	7.4000e-003	0.1818	0.0000	764.5232	764.5232	0.0315	0.0000	765.3110
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Waste						0.0000	0.0000		0.0000	0.0000	19.8931	0.0000	19.8931	1.1757	0.0000	49.2844
Water						0.0000	0.0000		0.0000	0.0000	5.0040	14.3488	19.3528	0.0186	0.0112	23.1489
Total	**1.1717**	**1.4557**	**3.5800**	**9.0500e-003**	**0.6489**	**0.0264**	**0.6753**	**0.1744**	**0.0260**	**0.2004**	**24.8971**	**1,020.9904**	**1,045.8875**	**1.2441**	**0.0156**	**1,081.6396**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2021	4/15/2021	5	11	
2	Site Preparation	Site Preparation	4/16/2021	4/23/2021	5	6	
3	Grading	Grading	4/23/2021	5/15/2021	5	16	
4	Building Construction	Building Construction	5/16/2021	5/31/2022	5	272	
5	Paving	Paving	6/1/2022	8/1/2022	5	44	
6	Architectural Coating	Architectural Coating	8/2/2022	9/1/2022	5	23	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 368,550; Residential Outdoor: 122,850; Non-Residential Indoor: 22,350; Non-Residential Outdoor: 7,450; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Crushing/Proc. Equipment	1	8.00	85	0.78
Demolition	Other Construction Equipment	2	8.00	172	0.42
Demolition	Other General Industrial Equipment	2	8.00	88	0.34
Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Site Preparation	Pressure Washers	1	8.00	13	0.30
Site Preparation	Scrapers	1	8.00	367	0.48
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Building Construction	Aerial Lifts	2	4.30	63	0.31
Building Construction	Air Compressors	2	2.50	78	0.48
Building Construction	Cement and Mortar Mixers	8	0.60	9	0.56
Building Construction	Concrete/Industrial Saws	1	0.30	81	0.73
Building Construction	Forklifts	1	2.50	89	0.20
Building Construction	Plate Compactors	2	0.30	8	0.43
Building Construction	Welders	4	1.80	46	0.45
Paving	Pavers	4	8.00	130	0.42
Paving	Paving Equipment	1	1.80	132	0.36
Architectural Coating	Pressure Washers	2	3.50	13	0.30

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	7	30.00	12.00	44.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	40.00	8.00	12.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	80.00	12.00	64.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	20	160.00	20.00	2,176.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	110.00	8.00	176.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	60.00	40.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2021

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					0.0241	0.0000	0.0241	3.6500e-003	0.0000	3.6500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0136	0.1315	0.1078	2.0000e-004		6.5700e-003	6.5700e-003		6.1300e-003	6.1300e-003	0.0000	17.8029	17.8029	4.9100e-003	0.0000	17.9258
Total	**0.0136**	**0.1315**	**0.1078**	**2.0000e-004**	**0.0241**	**6.5700e-003**	**0.0306**	**3.6500e-003**	**6.1300e-003**	**9.7800e-003**	**0.0000**	**17.8029**	**17.8029**	**4.9100e-003**	**0.0000**	**17.9258**

3.2 Demolition - 2021

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	1.8000e-004	5.9300e-003	1.1000e-003	2.0000e-005	3.7000e-004	2.0000e-005	3.9000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.6633	1.6633	8.0000e-005	0.0000	1.6654
Vendor	2.0000e-004	7.0600e-003	1.5000e-003	2.0000e-005	4.3000e-004	1.0000e-005	4.5000e-004	1.3000e-004	1.0000e-005	1.4000e-004	0.0000	1.7290	1.7290	9.0000e-005	0.0000	1.7314
Worker	5.3000e-004	3.8000e-004	3.9300e-003	1.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.1195	1.1195	3.0000e-005	0.0000	1.1202
Total	**9.1000e-004**	**0.0134**	**6.5300e-003**	**5.0000e-005**	**2.1000e-003**	**4.0000e-005**	**2.1500e-003**	**5.8000e-004**	**4.0000e-005**	**6.2000e-004**	**0.0000**	**4.5118**	**4.5118**	**2.0000e-004**	**0.0000**	**4.5169**

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					0.0108	0.0000	0.0108	1.6400e-003	0.0000	1.6400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4300e-003	0.0105	0.1283	2.0000e-004		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	17.8029	17.8029	4.9100e-003	0.0000	17.9257
Total	**2.4300e-003**	**0.0105**	**0.1283**	**2.0000e-004**	**0.0108**	**3.2000e-004**	**0.0112**	**1.6400e-003**	**3.2000e-004**	**1.9600e-003**	**0.0000**	**17.8029**	**17.8029**	**4.9100e-003**	**0.0000**	**17.9257**

3.2 Demolition - 2021

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	1.8000e-004	5.9300e-003	1.1000e-003	2.0000e-005	3.7000e-004	2.0000e-005	3.9000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.6633	1.6633	8.0000e-005	0.0000	1.6654
Vendor	2.0000e-004	7.0600e-003	1.5000e-003	2.0000e-005	4.3000e-004	1.0000e-005	4.5000e-004	1.3000e-004	1.0000e-005	1.4000e-004	0.0000	1.7290	1.7290	9.0000e-005	0.0000	1.7314
Worker	5.3000e-004	3.8000e-004	3.9300e-003	1.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.1195	1.1195	3.0000e-005	0.0000	1.1202
Total	**9.1000e-004**	**0.0134**	**6.5300e-003**	**5.0000e-005**	**2.1000e-003**	**4.0000e-005**	**2.1500e-003**	**5.8000e-004**	**4.0000e-005**	**6.2000e-004**	**0.0000**	**4.5118**	**4.5118**	**2.0000e-004**	**0.0000**	**4.5169**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9200e-003	0.0330	0.0217	5.0000e-005		1.2900e-003	1.2900e-003		1.1900e-003	1.1900e-003	0.0000	4.1014	4.1014	1.3000e-003	0.0000	4.1340
Total	**2.9200e-003**	**0.0330**	**0.0217**	**5.0000e-005**	**2.7000e-004**	**1.2900e-003**	**1.5600e-003**	**3.0000e-005**	**1.1900e-003**	**1.2200e-003**	**0.0000**	**4.1014**	**4.1014**	**1.3000e-003**	**0.0000**	**4.1340**

3.3 Site Preparation - 2021

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	5.0000e-005	1.6200e-003	3.0000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4536	0.4536	2.0000e-005	0.0000	0.4542
Vendor	7.0000e-005	2.5700e-003	5.4000e-004	1.0000e-005	1.6000e-004	1.0000e-005	1.6000e-004	5.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.6287	0.6287	3.0000e-005	0.0000	0.6296
Worker	3.8000e-004	2.7000e-004	2.8600e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8142	0.8142	2.0000e-005	0.0000	0.8147
Total	**5.0000e-004**	**4.4600e-003**	**3.7000e-003**	**2.0000e-005**	**1.2100e-003**	**2.0000e-005**	**1.2300e-003**	**3.3000e-004**	**2.0000e-005**	**3.4000e-004**	**0.0000**	**1.8965**	**1.8965**	**7.0000e-005**	**0.0000**	**1.8984**

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					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6000e-004	2.4200e-003	0.0205	5.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	4.1014	4.1014	1.3000e-003	0.0000	4.1340
Total	**5.6000e-004**	**2.4200e-003**	**0.0205**	**5.0000e-005**	**1.2000e-004**	**7.0000e-005**	**1.9000e-004**	**1.0000e-005**	**7.0000e-005**	**8.0000e-005**	**0.0000**	**4.1014**	**4.1014**	**1.3000e-003**	**0.0000**	**4.1340**

3.3 Site Preparation - 2021

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	5.0000e-005	1.6200e-003	3.0000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4536	0.4536	2.0000e-005	0.0000	0.4542
Vendor	7.0000e-005	2.5700e-003	5.4000e-004	1.0000e-005	1.6000e-004	1.0000e-005	1.6000e-004	5.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.6287	0.6287	3.0000e-005	0.0000	0.6296
Worker	3.8000e-004	2.7000e-004	2.8600e-003	1.0000e-005	9.5000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.8142	0.8142	2.0000e-005	0.0000	0.8147
Total	**5.0000e-004**	**4.4600e-003**	**3.7000e-003**	**2.0000e-005**	**1.2100e-003**	**2.0000e-005**	**1.2300e-003**	**3.3000e-004**	**2.0000e-005**	**3.4000e-004**	**0.0000**	**1.8965**	**1.8965**	**7.0000e-005**	**0.0000**	**1.8984**

3.4 Grading - 2021

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					0.0482	0.0000	0.0482	0.0265	0.0000	0.0265	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0199	0.2152	0.1161	2.5000e-004		9.7800e-003	9.7800e-003		9.0000e-003	9.0000e-003	0.0000	22.3147	22.3147	7.2200e-003	0.0000	22.4951
Total	**0.0199**	**0.2152**	**0.1161**	**2.5000e-004**	**0.0482**	**9.7800e-003**	**0.0580**	**0.0265**	**9.0000e-003**	**0.0355**	**0.0000**	**22.3147**	**22.3147**	**7.2200e-003**	**0.0000**	**22.4951**

3.4 Grading - 2021

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	2.6000e-004	8.6300e-003	1.6000e-003	3.0000e-005	5.4000e-004	3.0000e-005	5.7000e-004	1.5000e-004	3.0000e-005	1.7000e-004	0.0000	2.4193	2.4193	1.2000e-004	0.0000	2.4223
Vendor	3.0000e-004	0.0103	2.1700e-003	3.0000e-005	6.3000e-004	2.0000e-005	6.5000e-004	1.8000e-004	2.0000e-005	2.0000e-004	0.0000	2.5149	2.5149	1.4000e-004	0.0000	2.5184
Worker	2.0400e-003	1.4600e-003	0.0153	5.0000e-005	5.0600e-003	3.0000e-005	5.0900e-003	1.3500e-003	3.0000e-005	1.3800e-003	0.0000	4.3422	4.3422	1.0000e-004	0.0000	4.3448
Total	**2.6000e-003**	**0.0204**	**0.0190**	**1.1000e-004**	**6.2300e-003**	**8.0000e-005**	**6.3100e-003**	**1.6800e-003**	**8.0000e-005**	**1.7500e-003**	**0.0000**	**9.2765**	**9.2765**	**3.6000e-004**	**0.0000**	**9.2855**

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					0.0217	0.0000	0.0217	0.0119	0.0000	0.0119	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3700e-003	0.0238	0.1397	2.5000e-004		4.2000e-004	4.2000e-004		4.2000e-004	4.2000e-004	0.0000	22.3147	22.3147	7.2200e-003	0.0000	22.4951
Total	**3.3700e-003**	**0.0238**	**0.1397**	**2.5000e-004**	**0.0217**	**4.2000e-004**	**0.0221**	**0.0119**	**4.2000e-004**	**0.0123**	**0.0000**	**22.3147**	**22.3147**	**7.2200e-003**	**0.0000**	**22.4951**

3.4 Grading - 2021

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	2.6000e-004	8.6300e-003	1.6000e-003	3.0000e-005	5.4000e-004	3.0000e-005	5.7000e-004	1.5000e-004	3.0000e-005	1.7000e-004	0.0000	2.4193	2.4193	1.2000e-004	0.0000	2.4223
Vendor	3.0000e-004	0.0103	2.1700e-003	3.0000e-005	6.3000e-004	2.0000e-005	6.5000e-004	1.8000e-004	2.0000e-005	2.0000e-004	0.0000	2.5149	2.5149	1.4000e-004	0.0000	2.5184
Worker	2.0400e-003	1.4600e-003	0.0153	5.0000e-005	5.0600e-003	3.0000e-005	5.0900e-003	1.3500e-003	3.0000e-005	1.3800e-003	0.0000	4.3422	4.3422	1.0000e-004	0.0000	4.3448
Total	**2.6000e-003**	**0.0204**	**0.0190**	**1.1000e-004**	**6.2300e-003**	**8.0000e-005**	**6.3100e-003**	**1.6800e-003**	**8.0000e-005**	**1.7500e-003**	**0.0000**	**9.2765**	**9.2765**	**3.6000e-004**	**0.0000**	**9.2855**

3.5 Building Construction - 2021

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	0.0485	0.3299	0.4077	6.4000e-004		0.0165	0.0165		0.0162	0.0162	0.0000	52.2003	52.2003	8.7300e-003	0.0000	52.4185
Total	**0.0485**	**0.3299**	**0.4077**	**6.4000e-004**		**0.0165**	**0.0165**		**0.0162**	**0.0162**	**0.0000**	**52.2003**	**52.2003**	**8.7300e-003**	**0.0000**	**52.4185**

3.5 Building Construction - 2021

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	5.2900e-003	0.1780	0.0330	5.2000e-004	0.0166	5.4000e-004	0.0171	4.4100e-003	5.2000e-004	4.9300e-003	0.0000	49.8987	49.8987	2.4700e-003	0.0000	49.9606
Vendor	5.1100e-003	0.1765	0.0374	4.5000e-004	0.0108	3.7000e-004	0.0112	3.1300e-003	3.5000e-004	3.4900e-003	0.0000	43.2252	43.2252	2.3700e-003	0.0000	43.2845
Worker	0.0422	0.0300	0.3146	9.9000e-004	0.1044	7.0000e-004	0.1051	0.0278	6.5000e-004	0.0284	0.0000	89.5584	89.5584	2.1400e-003	0.0000	89.6119
Total	**0.0526**	**0.3845**	**0.3850**	**1.9600e-003**	**0.1318**	**1.6100e-003**	**0.1334**	**0.0353**	**1.5200e-003**	**0.0368**	**0.0000**	**182.6823**	**182.6823**	**6.9800e-003**	**0.0000**	**182.8570**

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	9.6400e-003	0.1700	0.3920	6.4000e-004		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	52.2003	52.2003	8.7300e-003	0.0000	52.4185
Total	**9.6400e-003**	**0.1700**	**0.3920**	**6.4000e-004**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**52.2003**	**52.2003**	**8.7300e-003**	**0.0000**	**52.4185**

3.5 Building Construction - 2021

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	5.2900e-003	0.1780	0.0330	5.2000e-004	0.0166	5.4000e-004	0.0171	4.4100e-003	5.2000e-004	4.9300e-003	0.0000	49.8987	49.8987	2.4700e-003	0.0000	49.9606
Vendor	5.1100e-003	0.1765	0.0374	4.5000e-004	0.0108	3.7000e-004	0.0112	3.1300e-003	3.5000e-004	3.4900e-003	0.0000	43.2252	43.2252	2.3700e-003	0.0000	43.2845
Worker	0.0422	0.0300	0.3146	9.9000e-004	0.1044	7.0000e-004	0.1051	0.0278	6.5000e-004	0.0284	0.0000	89.5584	89.5584	2.1400e-003	0.0000	89.6119
Total	**0.0526**	**0.3845**	**0.3850**	**1.9600e-003**	**0.1318**	**1.6100e-003**	**0.1334**	**0.0353**	**1.5200e-003**	**0.0368**	**0.0000**	**182.6823**	**182.6823**	**6.9800e-003**	**0.0000**	**182.8570**

3.5 Building Construction - 2022

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	0.0292	0.2015	0.2628	4.2000e-004		9.2900e-003	9.2900e-003		9.1400e-003	9.1400e-003	0.0000	33.8511	33.8511	5.5200e-003	0.0000	33.9891
Total	**0.0292**	**0.2015**	**0.2628**	**4.2000e-004**		**9.2900e-003**	**9.2900e-003**		**9.1400e-003**	**9.1400e-003**	**0.0000**	**33.8511**	**33.8511**	**5.5200e-003**	**0.0000**	**33.9891**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.2300e-003	0.1063	0.0209	3.3000e-004	0.0156	3.0000e-004	0.0159	4.0400e-003	2.9000e-004	4.3300e-003	0.0000	31.9315	31.9315	1.5600e-003	0.0000	31.9704
Vendor	3.1000e-003	0.1087	0.0227	2.9000e-004	7.0300e-003	2.1000e-004	7.2300e-003	2.0300e-003	2.0000e-004	2.2300e-003	0.0000	27.7568	27.7568	1.4700e-003	0.0000	27.7936
Worker	0.0254	0.0174	0.1868	6.2000e-004	0.0677	4.4000e-004	0.0681	0.0180	4.1000e-004	0.0184	0.0000	55.9607	55.9607	1.2400e-003	0.0000	55.9918
Total	**0.0317**	**0.2324**	**0.2304**	**1.2400e-003**	**0.0903**	**9.5000e-004**	**0.0913**	**0.0241**	**9.0000e-004**	**0.0250**	**0.0000**	**115.6489**	**115.6489**	**4.2700e-003**	**0.0000**	**115.7557**

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	6.2500e-003	0.1103	0.2542	4.2000e-004		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004	0.0000	33.8511	33.8511	5.5200e-003	0.0000	33.9891
Total	**6.2500e-003**	**0.1103**	**0.2542**	**4.2000e-004**		**5.3000e-004**	**5.3000e-004**		**5.3000e-004**	**5.3000e-004**	**0.0000**	**33.8511**	**33.8511**	**5.5200e-003**	**0.0000**	**33.9891**

3.5 Building Construction - 2022

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	3.2300e-003	0.1063	0.0209	3.3000e-004	0.0156	3.0000e-004	0.0159	4.0400e-003	2.9000e-004	4.3300e-003	0.0000	31.9315	31.9315	1.5600e-003	0.0000	31.9704
Vendor	3.1000e-003	0.1087	0.0227	2.9000e-004	7.0300e-003	2.1000e-004	7.2300e-003	2.0300e-003	2.0000e-004	2.2300e-003	0.0000	27.7568	27.7568	1.4700e-003	0.0000	27.7936
Worker	0.0254	0.0174	0.1868	6.2000e-004	0.0677	4.4000e-004	0.0681	0.0180	4.1000e-004	0.0184	0.0000	55.9607	55.9607	1.2400e-003	0.0000	55.9918
Total	**0.0317**	**0.2324**	**0.2304**	**1.2400e-003**	**0.0903**	**9.5000e-004**	**0.0913**	**0.0241**	**9.0000e-004**	**0.0250**	**0.0000**	**115.6489**	**115.6489**	**4.2700e-003**	**0.0000**	**115.7557**

3.6 Paving - 2022

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	0.0191	0.1933	0.2664	4.3000e-004		9.2000e-003	9.2000e-003		8.4600e-003	8.4600e-003	0.0000	38.1157	38.1157	0.0123	0.0000	38.4238
Paving	1.3100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0204**	**0.1933**	**0.2664**	**4.3000e-004**		**9.2000e-003**	**9.2000e-003**		**8.4600e-003**	**8.4600e-003**	**0.0000**	**38.1157**	**38.1157**	**0.0123**	**0.0000**	**38.4238**

3.6 Paving - 2022

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	0.0219	4.2900e-003	7.0000e-005	1.4900e-003	6.0000e-005	1.5500e-003	4.1000e-004	6.0000e-005	4.7000e-004	0.0000	6.5654	6.5654	3.2000e-004	0.0000	6.5734
Vendor	5.1000e-004	0.0179	3.7400e-003	5.0000e-005	1.1600e-003	3.0000e-005	1.1900e-003	3.3000e-004	3.0000e-005	3.7000e-004	0.0000	4.5656	4.5656	2.4000e-004	0.0000	4.5717
Worker	7.1800e-003	4.9300e-003	0.0528	1.7000e-004	0.0191	1.3000e-004	0.0193	5.0900e-003	1.2000e-004	5.2100e-003	0.0000	15.8207	15.8207	3.5000e-004	0.0000	15.8295
Total	**8.3500e-003**	**0.0447**	**0.0608**	**2.9000e-004**	**0.0218**	**2.2000e-004**	**0.0220**	**5.8300e-003**	**2.1000e-004**	**6.0500e-003**	**0.0000**	**26.9516**	**26.9516**	**9.1000e-004**	**0.0000**	**26.9745**

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	5.3300e-003	0.0231	0.3289	4.3000e-004		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	38.1156	38.1156	0.0123	0.0000	38.4238
Paving	1.3100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.6400e-003**	**0.0231**	**0.3289**	**4.3000e-004**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**38.1156**	**38.1156**	**0.0123**	**0.0000**	**38.4238**

3.6 Paving - 2022

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	6.6000e-004	0.0219	4.2900e-003	7.0000e-005	1.4900e-003	6.0000e-005	1.5500e-003	4.1000e-004	6.0000e-005	4.7000e-004	0.0000	6.5654	6.5654	3.2000e-004	0.0000	6.5734
Vendor	5.1000e-004	0.0179	3.7400e-003	5.0000e-005	1.1600e-003	3.0000e-005	1.1900e-003	3.3000e-004	3.0000e-005	3.7000e-004	0.0000	4.5656	4.5656	2.4000e-004	0.0000	4.5717
Worker	7.1800e-003	4.9300e-003	0.0528	1.7000e-004	0.0191	1.3000e-004	0.0193	5.0900e-003	1.2000e-004	5.2100e-003	0.0000	15.8207	15.8207	3.5000e-004	0.0000	15.8295
Total	**8.3500e-003**	**0.0447**	**0.0608**	**2.9000e-004**	**0.0218**	**2.2000e-004**	**0.0220**	**5.8300e-003**	**2.1000e-004**	**6.0500e-003**	**0.0000**	**26.9516**	**26.9516**	**9.1000e-004**	**0.0000**	**26.9745**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3123					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	3.0400e-003	2.4400e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	0.3568	0.3568	4.0000e-005	0.0000	0.3577
Total	**1.3127**	**3.0400e-003**	**2.4400e-003**	**1.0000e-005**		**1.3000e-004**	**1.3000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**0.3568**	**0.3568**	**4.0000e-005**	**0.0000**	**0.3577**

3.7 Architectural Coating - 2022

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	1.3300e-003	0.0467	9.7600e-003	1.2000e-004	3.0200e-003	9.0000e-005	3.1100e-003	8.7000e-004	8.0000e-005	9.6000e-004	0.0000	11.9328	11.9328	6.3000e-004	0.0000	11.9486
Worker	2.0500e-003	1.4100e-003	0.0151	5.0000e-005	5.4600e-003	4.0000e-005	5.4900e-003	1.4500e-003	3.0000e-005	1.4800e-003	0.0000	4.5109	4.5109	1.0000e-004	0.0000	4.5134
Total	**3.3800e-003**	**0.0481**	**0.0248**	**1.7000e-004**	**8.4800e-003**	**1.3000e-004**	**8.6000e-003**	**2.3200e-003**	**1.1000e-004**	**2.4400e-003**	**0.0000**	**16.4437**	**16.4437**	**7.3000e-004**	**0.0000**	**16.4620**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3123					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	1.0000e-005		0.0000	0.0000		0.0000	0.0000	0.0000	0.3568	0.3568	4.0000e-005	0.0000	0.3577
Total	**1.3123**	**0.0000**	**0.0000**	**1.0000e-005**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.3568**	**0.3568**	**4.0000e-005**	**0.0000**	**0.3577**

3.7 Architectural Coating - 2022

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	1.3300e-003	0.0467	9.7600e-003	1.2000e-004	3.0200e-003	9.0000e-005	3.1100e-003	8.7000e-004	8.0000e-005	9.6000e-004	0.0000	11.9328	11.9328	6.3000e-004	0.0000	11.9486
Worker	2.0500e-003	1.4100e-003	0.0151	5.0000e-005	5.4600e-003	4.0000e-005	5.4900e-003	1.4500e-003	3.0000e-005	1.4800e-003	0.0000	4.5109	4.5109	1.0000e-004	0.0000	4.5134
Total	**3.3800e-003**	**0.0481**	**0.0248**	**1.7000e-004**	**8.4800e-003**	**1.3000e-004**	**8.6000e-003**	**2.3200e-003**	**1.1000e-004**	**2.4400e-003**	**0.0000**	**16.4437**	**16.4437**	**7.3000e-004**	**0.0000**	**16.4620**

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	0.1855	1.2756	2.1148	8.2900e-003	0.6489	7.8700e-003	0.6568	0.1744	7.4000e-003	0.1818	0.0000	764.5232	764.5232	0.0315	0.0000	765.3110
Unmitigated	0.1855	1.2756	2.1148	8.2900e-003	0.6489	7.8700e-003	0.6568	0.1744	7.4000e-003	0.1818	0.0000	764.5232	764.5232	0.0315	0.0000	765.3110

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	527.80	527.80	527.80	1,372,884	1,372,884
General Office Building	58.14	58.14	58.14	169,854	169,854
Other Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	68.95	68.95	68.95	192,214	192,214
Total	654.89	654.89	654.89	1,734,952	1,734,952

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	100	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	100	0	0
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.560371	0.039285	0.190378	0.108244	0.016023	0.005202	0.023981	0.045200	0.002184	0.002561	0.005524	0.000326	0.000721
General Office Building	0.560371	0.039285	0.190378	0.108244	0.016023	0.005202	0.023981	0.045200	0.002184	0.002561	0.005524	0.000326	0.000721
Other Asphalt Surfaces	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Regional Shopping Center	0.560371	0.039285	0.190378	0.108244	0.016023	0.005202	0.023981	0.045200	0.002184	0.002561	0.005524	0.000326	0.000721

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	126.3355	126.3355	0.0125	2.5800e-003	127.4154
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	126.3355	126.3355	0.0125	2.5800e-003	127.4154
NaturalGas Mitigated	9.8400e-003	0.0848	0.0409	5.4000e-004		6.8000e-003	6.8000e-003		6.8000e-003	6.8000e-003	0.0000	97.4103	97.4103	1.8700e-003	1.7900e-003	97.9892
NaturalGas Unmitigated	9.8400e-003	0.0848	0.0409	5.4000e-004		6.8000e-003	6.8000e-003		6.8000e-003	6.8000e-003	0.0000	97.4103	97.4103	1.8700e-003	1.7900e-003	97.9892

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.58894e+006	8.5700e-003	0.0732	0.0312	4.7000e-004		5.9200e-003	5.9200e-003		5.9200e-003	5.9200e-003	0.0000	84.7918	84.7918	1.6300e-003	1.5500e-003	85.2957
General Office Building	220362	1.1900e-003	0.0108	9.0700e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	11.7594	11.7594	2.3000e-004	2.2000e-004	11.8292
Other Asphalt Surfaces	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
Regional Shopping Center	16100	9.0000e-005	7.9000e-004	6.6000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8592	0.8592	2.0000e-005	2.0000e-005	0.8643
Total		**9.8500e-003**	**0.0848**	**0.0409**	**5.3000e-004**		**6.8000e-003**	**6.8000e-003**		**6.8000e-003**	**6.8000e-003**	**0.0000**	**97.4103**	**97.4103**	**1.8800e-003**	**1.7900e-003**	**97.9892**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.58894e+006	8.5700e-003	0.0732	0.0312	4.7000e-004		5.9200e-003	5.9200e-003		5.9200e-003	5.9200e-003	0.0000	84.7918	84.7918	1.6300e-003	1.5500e-003	85.2957
General Office Building	220362	1.1900e-003	0.0108	9.0700e-003	6.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	11.7594	11.7594	2.3000e-004	2.2000e-004	11.8292
Other Asphalt Surfaces	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
Regional Shopping Center	16100	9.0000e-005	7.9000e-004	6.6000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8592	0.8592	2.0000e-005	2.0000e-005	0.8643
Total		**9.8500e-003**	**0.0848**	**0.0409**	**5.3000e-004**		**6.8000e-003**	**6.8000e-003**		**6.8000e-003**	**6.8000e-003**	**0.0000**	**97.4103**	**97.4103**	**1.8800e-003**	**1.7900e-003**	**97.9892**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	768402	102.4712	0.0101	2.0900e-003	103.3471
General Office Building	142272	18.9729	1.8700e-003	3.9000e-004	19.1350
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	36680	4.8915	4.8000e-004	1.0000e-004	4.9333
Total		**126.3355**	**0.0125**	**2.5800e-003**	**127.4154**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	768402	102.4712	0.0101	2.0900e-003	103.3471
General Office Building	142272	18.9729	1.8700e-003	3.9000e-004	19.1350
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	36680	4.8915	4.8000e-004	1.0000e-004	4.9333
Total		**126.3355**	**0.0125**	**2.5800e-003**	**127.4154**

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	0.9489	0.0186	1.3542	9.0000e-005		7.7100e-003	7.7100e-003		7.7100e-003	7.7100e-003	0.0000	5.6158	5.6158	2.2000e-003	6.0000e-005	5.6894
Unmitigated	0.9489	0.0186	1.3542	9.0000e-005		7.7100e-003	7.7100e-003		7.7100e-003	7.7100e-003	0.0000	5.6158	5.6158	2.2000e-003	6.0000e-005	5.6894

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	0.1359					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4000e-004	2.9400e-003	1.2500e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	3.4081	3.4081	7.0000e-005	6.0000e-005	3.4284
Landscaping	0.0409	0.0156	1.3530	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2077	2.2077	2.1300e-003	0.0000	2.2610
Total	**0.9489**	**0.0185**	**1.3542**	**9.0000e-005**		**7.7200e-003**	**7.7200e-003**		**7.7200e-003**	**7.7200e-003**	**0.0000**	**5.6158**	**5.6158**	**2.2000e-003**	**6.0000e-005**	**5.6894**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1359					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7718					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4000e-004	2.9400e-003	1.2500e-003	2.0000e-005		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	3.4081	3.4081	7.0000e-005	6.0000e-005	3.4284
Landscaping	0.0409	0.0156	1.3530	7.0000e-005		7.4800e-003	7.4800e-003		7.4800e-003	7.4800e-003	0.0000	2.2077	2.2077	2.1300e-003	0.0000	2.2610
Total	**0.9489**	**0.0185**	**1.3542**	**9.0000e-005**		**7.7200e-003**	**7.7200e-003**		**7.7200e-003**	**7.7200e-003**	**0.0000**	**5.6158**	**5.6158**	**2.2000e-003**	**6.0000e-005**	**5.6894**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	19.3528	0.0186	0.0112	23.1489
Unmitigated	19.3528	0.0186	0.0112	23.1489

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	11.858 / 7.47572	16.2413	0.0156	9.3700e-003	19.4241
General Office Building	2.02616 / 1.24184	2.7586	2.6700e-003	1.6000e-003	3.3023
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.259254 / 0.158898	0.3530	3.4000e-004	2.0000e-004	0.4225
Total		**19.3528**	**0.0186**	**0.0112**	**23.1489**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	11.858 / 7.47572	16.2413	0.0156	9.3700e-003	19.4241
General Office Building	2.02616 / 1.24184	2.7586	2.6700e-003	1.6000e-003	3.3023
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0.259254 / 0.158898	0.3530	3.4000e-004	2.0000e-004	0.4225
Total		**19.3528**	**0.0186**	**0.0112**	**23.1489**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	19.8931	1.1757	0.0000	49.2844
Unmitigated	19.8931	1.1757	0.0000	49.2844

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	83.72	16.9944	1.0043	0.0000	42.1029
General Office Building	10.6	2.1517	0.1272	0.0000	5.3308
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.68	0.7470	0.0442	0.0000	1.8507
Total		**19.8931**	**1.1757**	**0.0000**	**49.2844**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	83.72	16.9944	1.0043	0.0000	42.1029
General Office Building	10.6	2.1517	0.1272	0.0000	5.3308
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	3.68	0.7470	0.0442	0.0000	1.8507
Total		**19.8931**	**1.1757**	**0.0000**	**49.2844**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	2	50	670	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (600 - 750 HP)	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Total	**0.0275**	**0.0768**	**0.0701**	**1.3000e-004**		**4.0400e-003**	**4.0400e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**12.7567**	**12.7567**	**1.7900e-003**	**0.0000**	**12.8014**

11.0 Vegetation

1510 Webster Mixed-Use Project

Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	11.40	1000sqft	0.26	11,400.00	0
Other Asphalt Surfaces	1.00	Acre	1.00	43,560.00	0
Apartments Mid Rise	182.00	Dwelling Unit	0.33	182,000.00	521
Regional Shopping Center	3.50	1000sqft	0.08	3,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project Characteristics

Land Use - Per Project Description; assumed 1-acre of paving.

Construction Phase - Per Const_RFI_AQ-GHG 070720

Off-road Equipment - Per Construction RFI

Off-road Equipment - Per Construction RFI

Off-road Equipment - Per Construction RFI

Off-road Equipment - Per Construction RFI

Off-road Equipment - Per Construction RFI

Off-road Equipment - Per Construction RFI

Trips and VMT - Per Construction RFI

Demolition - Per Construction RFI

Grading - Per Construction RFI

Architectural Coating - Assumes super-compliant coating with a VOC content below 10 g/L are used fro all indoor non-residential coating. Residential indoor coating and all outdoor coatings are assumed to comply with BAAQMD paint VOC regulations.

Vehicle Trips - Per F&P trip rates for the Project.

Woodstoves - No wood burning fireplaces.

Water And Wastewater - All wastewater generated was assumed to be aerobically processed at teh EBMUD plant. Septic and lagoons contributions were set to a zero precentage.

Construction Off-road Equipment Mitigation - Tier 4 per SCA-AIR-3 a) ii.; water at least twice daily per SCA-AIR-1 Dust Controls.

Stationary Sources - Emergency Generators and Fire Pumps - Model similar to used for the 1510 project.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	2,614.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	10.00
tblAreaCoating	Area_Parking	2614	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	11.00
tblConstructionPhase	NumDays	2.00	6.00
tblConstructionPhase	NumDays	4.00	16.00
tblConstructionPhase	NumDays	200.00	272.00
tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	NumDays	10.00	23.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberWood	30.94	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.56	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.19	0.00
tblFleetMix	LHD1	0.02	0.00
tblFleetMix	LHD2	5.2020e-003	0.00
tblFleetMix	MCY	5.5240e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	7.2100e-004	0.00

tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.1840e-003	0.00
tblFleetMix	SBUS	3.2600e-004	0.00
tblFleetMix	UBUS	2.5610e-003	0.00
tblGrading	AcresOfGrading	8.00	0.00
tblGrading	AcresOfGrading	6.00	0.50
tblGrading	MaterialExported	0.00	575.00
tblGrading	MaterialImported	0.00	550.00
tblLandUse	LotAcreage	4.79	0.33
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	6.00	2.50
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	1.80
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	1.80
tblTripsAndVMT	HaulingTripNumber	222.00	44.00
tblTripsAndVMT	HaulingTripNumber	0.00	12.00
tblTripsAndVMT	HaulingTripNumber	111.00	64.00
tblTripsAndVMT	HaulingTripNumber	0.00	2,176.00
tblTripsAndVMT	HaulingTripNumber	0.00	176.00
tblTripsAndVMT	VendorTripNumber	0.00	12.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	12.00
tblTripsAndVMT	VendorTripNumber	29.00	20.00
tblTripsAndVMT	VendorTripNumber	0.00	8.00

tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripNumber	18.00	30.00
tblTripsAndVMT	WorkerTripNumber	5.00	40.00
tblTripsAndVMT	WorkerTripNumber	15.00	80.00
tblTripsAndVMT	WorkerTripNumber	154.00	160.00
tblTripsAndVMT	WorkerTripNumber	13.00	110.00
tblTripsAndVMT	WorkerTripNumber	31.00	60.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	77.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	2.90
tblVehicleTrips	ST_TR	2.46	5.10
tblVehicleTrips	ST_TR	49.97	19.70
tblVehicleTrips	SU_TR	5.86	2.90
tblVehicleTrips	SU_TR	1.05	5.10
tblVehicleTrips	SU_TR	25.24	19.70
tblVehicleTrips	WD_TR	6.65	2.90
tblVehicleTrips	WD_TR	11.03	5.10
tblVehicleTrips	WD_TR	42.70	19.70
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	3.64	0.00
tblWoodstoves	NumberNoncatalytic	3.64	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2021	3.9984	41.9591	25.5004	0.0664	7.3368	1.6685	9.0053	3.6491	1.5365	5.1855	0.0000	6,535.0190	6,535.0190	1.5539	0.0000	6,573.8653
2022	114.4625	10.8389	14.9612	0.0328	1.7531	0.4281	1.9445	0.4661	0.3940	0.6685	0.0000	3,246.7013	3,246.7013	0.6647	0.0000	3,263.3199
Maximum	**114.4625**	**41.9591**	**25.5004**	**0.0664**	**7.3368**	**1.6685**	**9.0053**	**3.6491**	**1.5365**	**5.1855**	**0.0000**	**6,535.0190**	**6,535.0190**	**1.5539**	**0.0000**	**6,573.8653**

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	lb/day										lb/day					
2021	1.1432	7.8414	28.0482	0.0664	3.9760	0.0928	4.0688	1.8232	0.0918	1.9150	0.0000	6,535.0189	6,535.0189	1.5539	0.0000	6,573.8653
2022	114.4248	6.4369	17.8025	0.0328	1.7531	0.0424	1.7809	0.4661	0.0418	0.4929	0.0000	3,246.7013	3,246.7013	0.6647	0.0000	3,263.3199
Maximum	**114.4248**	**7.8414**	**28.0482**	**0.0664**	**3.9760**	**0.0928**	**4.0688**	**1.8232**	**0.0918**	**1.9150**	**0.0000**	**6,535.0189**	**6,535.0189**	**1.5539**	**0.0000**	**6,573.8653**

	ROG	**NOx**	**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	**2.44**	**72.96**	**-13.32**	**0.00**	**36.97**	**93.55**	**46.58**	**44.37**	**93.08**	**58.87**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	5.4897	0.7017	15.2579	4.1700e-003		0.1258	0.1258		0.1258	0.1258	0.0000	701.5106	701.5106	0.0390	0.0124	706.1710
Energy	0.0539	0.4647	0.2241	2.9400e-003		0.0373	0.0373		0.0373	0.0373		588.3643	588.3643	0.0113	0.0108	591.8607
Mobile	1.0103	7.0953	12.1760	0.0451	3.7014	0.0435	3.7449	0.9917	0.0409	1.0326		4,585.9137	4,585.9137	0.1975		4,590.8519
Stationary	2.1990	6.1462	5.6071	0.0106		0.3235	0.3235		0.3235	0.3235		1,124.9489	1,124.9489	0.1577		1,128.8919
Total	**8.7529**	**14.4079**	**33.2650**	**0.0628**	**3.7014**	**0.5300**	**4.2314**	**0.9917**	**0.5274**	**1.5191**	**0.0000**	**7,000.7375**	**7,000.7375**	**0.4056**	**0.0232**	**7,017.7754**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.4897	0.7017	15.2579	4.1700e-003		0.1258	0.1258		0.1258	0.1258	0.0000	701.5106	701.5106	0.0390	0.0124	706.1710
Energy	0.0539	0.4647	0.2241	2.9400e-003		0.0373	0.0373		0.0373	0.0373		588.3643	588.3643	0.0113	0.0108	591.8607
Mobile	1.0103	7.0953	12.1760	0.0451	3.7014	0.0435	3.7449	0.9917	0.0409	1.0326		4,585.9137	4,585.9137	0.1975		4,590.8519
Stationary	2.1990	6.1462	5.6071	0.0106		0.3235	0.3235		0.3235	0.3235		1,124.9489	1,124.9489	0.1577		1,128.8919
Total	**8.7529**	**14.4079**	**33.2650**	**0.0628**	**3.7014**	**0.5300**	**4.2314**	**0.9917**	**0.5274**	**1.5191**	**0.0000**	**7,000.7375**	**7,000.7375**	**0.4056**	**0.0232**	**7,017.7754**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2021	4/15/2021	5	11	
2	Site Preparation	Site Preparation	4/16/2021	4/23/2021	5	6	
3	Grading	Grading	4/23/2021	5/15/2021	5	16	
4	Building Construction	Building Construction	5/16/2021	5/31/2022	5	272	
5	Paving	Paving	6/1/2022	8/1/2022	5	44	
6	Architectural Coating	Architectural Coating	8/2/2022	9/1/2022	5	23	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 1

Residential Indoor: 368,550; Residential Outdoor: 122,850; Non-Residential Indoor: 22,350; Non-Residential Outdoor: 7,450; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Crushing/Proc. Equipment	1	8.00	85	0.78
Demolition	Other Construction Equipment	2	8.00	172	0.42
Demolition	Other General Industrial Equipment	2	8.00	88	0.34
Demolition	Rubber Tired Loaders	2	8.00	203	0.36
Site Preparation	Pressure Washers	1	8.00	13	0.30
Site Preparation	Scrapers	1	8.00	367	0.48
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Sweepers/Scrubbers	1	8.00	64	0.46
Building Construction	Aerial Lifts	2	4.30	63	0.31
Building Construction	Air Compressors	2	2.50	78	0.48
Building Construction	Cement and Mortar Mixers	8	0.60	9	0.56
Building Construction	Concrete/Industrial Saws	1	0.30	81	0.73
Building Construction	Forklifts	1	2.50	89	0.20
Building Construction	Plate Compactors	2	0.30	8	0.43
Building Construction	Welders	4	1.80	46	0.45
Paving	Pavers	4	8.00	130	0.42
Paving	Paving Equipment	1	1.80	132	0.36
Architectural Coating	Pressure Washers	2	3.50	13	0.30

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	7	30.00	12.00	44.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	40.00	8.00	12.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	80.00	12.00	64.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	20	160.00	20.00	2,176.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	110.00	8.00	176.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	60.00	40.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2021

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	lb/day										lb/day					
Fugitive Dust					4.3771	0.0000	4.3771	0.6627	0.0000	0.6627			0.0000			0.0000
Off-Road	2.4639	23.9082	19.5945	0.0370		1.1941	1.1941		1.1152	1.1152		3,568.0678	3,568.0678	0.9847		3,592.6845
Total	**2.4639**	**23.9082**	**19.5945**	**0.0370**	**4.3771**	**1.1941**	**5.5711**	**0.6627**	**1.1152**	**1.7779**		**3,568.0678**	**3,568.0678**	**0.9847**		**3,592.6845**

3.2 Demolition - 2021

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	lb/day										lb/day					
Hauling	0.0326	1.0819	0.2099	3.1000e-003	0.0700	3.3300e-003	0.0734	0.0192	3.1800e-003	0.0224		329.7481	329.7481	0.0172		330.1780
Vendor	0.0384	1.2804	0.2940	3.2300e-003	0.0813	2.7200e-003	0.0840	0.0234	2.6100e-003	0.0260		340.9351	340.9351	0.0201		341.4373
Worker	0.1057	0.0749	0.7353	2.2300e-003	0.2464	1.5900e-003	0.2480	0.0654	1.4700e-003	0.0668		222.6126	222.6126	5.3700e-003		222.7468
Total	**0.1767**	**2.4372**	**1.2391**	**8.5600e-003**	**0.3978**	**7.6400e-003**	**0.4054**	**0.1080**	**7.2600e-003**	**0.1153**		**893.2958**	**893.2958**	**0.0427**		**894.3621**

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	lb/day										lb/day					
Fugitive Dust					1.9697	0.0000	1.9697	0.2982	0.0000	0.2982			0.0000			0.0000
Off-Road	0.4410	1.9112	23.3310	0.0370		0.0588	0.0588		0.0588	0.0588	0.0000	3,568.0678	3,568.0678	0.9847		3,592.6845
Total	**0.4410**	**1.9112**	**23.3310**	**0.0370**	**1.9697**	**0.0588**	**2.0285**	**0.2982**	**0.0588**	**0.3570**	**0.0000**	**3,568.0678**	**3,568.0678**	**0.9847**		**3,592.6845**

3.2 Demolition - 2021

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	lb/day										lb/day					
Hauling	0.0326	1.0819	0.2099	3.1000e-003	0.0700	3.3300e-003	0.0734	0.0192	3.1800e-003	0.0224		329.7481	329.7481	0.0172		330.1780
Vendor	0.0384	1.2804	0.2940	3.2300e-003	0.0813	2.7200e-003	0.0840	0.0234	2.6100e-003	0.0260		340.9351	340.9351	0.0201		341.4373
Worker	0.1057	0.0749	0.7353	2.2300e-003	0.2464	1.5900e-003	0.2480	0.0654	1.4700e-003	0.0668		222.6126	222.6126	5.3700e-003		222.7468
Total	**0.1767**	**2.4372**	**1.2391**	**8.5600e-003**	**0.3978**	**7.6400e-003**	**0.4054**	**0.1080**	**7.2600e-003**	**0.1153**		**893.2958**	**893.2958**	**0.0427**		**894.3621**

3.3 Site Preparation - 2021

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	lb/day										lb/day					
Fugitive Dust					0.0884	0.0000	0.0884	9.5400e-003	0.0000	9.5400e-003			0.0000			0.0000
Off-Road	0.9731	11.0083	7.2476	0.0157		0.4302	0.4302		0.3969	0.3969		1,507.0015	1,507.0015	0.4787		1,518.9684
Total	**0.9731**	**11.0083**	**7.2476**	**0.0157**	**0.0884**	**0.4302**	**0.5186**	**9.5400e-003**	**0.3969**	**0.4064**		**1,507.0015**	**1,507.0015**	**0.4787**		**1,518.9684**

3.3 Site Preparation - 2021

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	lb/day										lb/day					
Hauling	0.0163	0.5410	0.1049	1.5500e-003	0.0350	1.6600e-003	0.0367	9.6000e-003	1.5900e-003	0.0112		164.8741	164.8741	8.6000e-003		165.0890
Vendor	0.0256	0.8536	0.1960	2.1500e-003	0.0542	1.8200e-003	0.0560	0.0156	1.7400e-003	0.0173		227.2901	227.2901	0.0134		227.6249
Worker	0.1410	0.0999	0.9804	2.9800e-003	0.3286	2.1300e-003	0.3307	0.0872	1.9600e-003	0.0891		296.8167	296.8167	7.1600e-003		296.9958
Total	**0.1829**	**1.4944**	**1.2813**	**6.6800e-003**	**0.4178**	**5.6100e-003**	**0.4234**	**0.1124**	**5.2900e-003**	**0.1177**		**688.9809**	**688.9809**	**0.0292**		**689.7097**

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	lb/day										lb/day					
Fugitive Dust					0.0398	0.0000	0.0398	4.2900e-003	0.0000	4.2900e-003			0.0000			0.0000
Off-Road	0.1864	0.8078	6.8353	0.0157		0.0249	0.0249		0.0249	0.0249	0.0000	1,507.0015	1,507.0015	0.4787		1,518.9684
Total	**0.1864**	**0.8078**	**6.8353**	**0.0157**	**0.0398**	**0.0249**	**0.0646**	**4.2900e-003**	**0.0249**	**0.0292**	**0.0000**	**1,507.0015**	**1,507.0015**	**0.4787**		**1,518.9684**

3.3 Site Preparation - 2021

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	lb/day										lb/day					
Hauling	0.0163	0.5410	0.1049	1.5500e-003	0.0350	1.6600e-003	0.0367	9.6000e-003	1.5900e-003	0.0112		164.8741	164.8741	8.6000e-003		165.0890
Vendor	0.0256	0.8536	0.1960	2.1500e-003	0.0542	1.8200e-003	0.0560	0.0156	1.7400e-003	0.0173		227.2901	227.2901	0.0134		227.6249
Worker	0.1410	0.0999	0.9804	2.9800e-003	0.3286	2.1300e-003	0.3307	0.0872	1.9600e-003	0.0891		296.8167	296.8167	7.1600e-003		296.9958
Total	**0.1829**	**1.4944**	**1.2813**	**6.6800e-003**	**0.4178**	**5.6100e-003**	**0.4234**	**0.1124**	**5.2900e-003**	**0.1177**		**688.9809**	**688.9809**	**0.0292**		**689.7097**

3.4 Grading - 2021

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	lb/day										lb/day					
Fugitive Dust					6.0221	0.0000	6.0221	3.3102	0.0000	3.3102			0.0000			0.0000
Off-Road	2.4896	26.8944	14.5069	0.0317		1.2224	1.2224		1.1246	1.1246		3,074.7198	3,074.7198	0.9944		3,099.5805
Total	**2.4896**	**26.8944**	**14.5069**	**0.0317**	**6.0221**	**1.2224**	**7.2445**	**3.3102**	**1.1246**	**4.4348**		**3,074.7198**	**3,074.7198**	**0.9944**		**3,099.5805**

3.4 Grading - 2021

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	lb/day										lb/day					
Hauling	0.0326	1.0819	0.2099	3.1000e-003	0.0700	3.3300e-003	0.0734	0.0192	3.1800e-003	0.0224		329.7481	329.7481	0.0172		330.1780
Vendor	0.0384	1.2804	0.2940	3.2300e-003	0.0813	2.7200e-003	0.0840	0.0234	2.6100e-003	0.0260		340.9351	340.9351	0.0201		341.4373
Worker	0.2819	0.1998	1.9608	5.9600e-003	0.6572	4.2500e-003	0.6614	0.1743	3.9200e-003	0.1782		593.6335	593.6335	0.0143		593.9915
Total	**0.3529**	**2.5620**	**2.4646**	**0.0123**	**0.8085**	**0.0103**	**0.8188**	**0.2169**	**9.7100e-003**	**0.2266**		**1,264.3167**	**1,264.3167**	**0.0516**		**1,265.6068**

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	lb/day										lb/day					
Fugitive Dust					2.7099	0.0000	2.7099	1.4896	0.0000	1.4896			0.0000			0.0000
Off-Road	0.4210	2.9772	17.4671	0.0317		0.0520	0.0520		0.0520	0.0520	0.0000	3,074.7198	3,074.7198	0.9944		3,099.5805
Total	**0.4210**	**2.9772**	**17.4671**	**0.0317**	**2.7099**	**0.0520**	**2.7619**	**1.4896**	**0.0520**	**1.5416**	**0.0000**	**3,074.7198**	**3,074.7198**	**0.9944**		**3,099.5805**

3.4 Grading - 2021

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	lb/day										lb/day					
Hauling	0.0326	1.0819	0.2099	3.1000e-003	0.0700	3.3300e-003	0.0734	0.0192	3.1800e-003	0.0224		329.7481	329.7481	0.0172		330.1780
Vendor	0.0384	1.2804	0.2940	3.2300e-003	0.0813	2.7200e-003	0.0840	0.0234	2.6100e-003	0.0260		340.9351	340.9351	0.0201		341.4373
Worker	0.2819	0.1998	1.9608	5.9600e-003	0.6572	4.2500e-003	0.6614	0.1743	3.9200e-003	0.1782		593.6335	593.6335	0.0143		593.9915
Total	**0.3529**	**2.5620**	**2.4646**	**0.0123**	**0.8085**	**0.0103**	**0.8188**	**0.2169**	**9.7100e-003**	**0.2266**		**1,264.3167**	**1,264.3167**	**0.0516**		**1,265.6068**

3.5 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	0.5882	3.9982	4.9412	7.7600e-003		0.1994	0.1994		0.1963	0.1963		697.4666	697.4666	0.1166		700.3821
Total	**0.5882**	**3.9982**	**4.9412**	**7.7600e-003**		**0.1994**	**0.1994**		**0.1963**	**0.1963**		**697.4666**	**697.4666**	**0.1166**		**700.3821**

3.5 Building Construction - 2021

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	lb/day										lb/day					
Hauling	0.0651	2.1638	0.4197	6.2000e-003	0.2087	6.6500e-003	0.2153	0.0552	6.3600e-003	0.0616		659.4963	659.4963	0.0344		660.3560
Vendor	0.0640	2.1339	0.4900	5.3800e-003	0.1355	4.5400e-003	0.1401	0.0390	4.3400e-003	0.0434		568.2252	568.2252	0.0335		569.0622
Worker	0.5639	0.3995	3.9215	0.0119	1.3144	8.5000e-003	1.3229	0.3486	7.8300e-003	0.3565		1,187.2670	1,187.2670	0.0286		1,187.9830
Total	**0.6930**	**4.6973**	**4.8312**	**0.0235**	**1.6585**	**0.0197**	**1.6782**	**0.4429**	**0.0185**	**0.4614**		**2,414.9884**	**2,414.9884**	**0.0965**		**2,417.4012**

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	lb/day										lb/day					
Off-Road	0.1169	2.0611	4.7519	7.7600e-003		9.9900e-003	9.9900e-003		9.9900e-003	9.9900e-003	0.0000	697.4666	697.4666	0.1166		700.3820
Total	**0.1169**	**2.0611**	**4.7519**	**7.7600e-003**		**9.9900e-003**	**9.9900e-003**		**9.9900e-003**	**9.9900e-003**	**0.0000**	**697.4666**	**697.4666**	**0.1166**		**700.3820**

3.5 Building Construction - 2021

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	lb/day										lb/day					
Hauling	0.0651	2.1638	0.4197	6.2000e-003	0.2087	6.6500e-003	0.2153	0.0552	6.3600e-003	0.0616		659.4963	659.4963	0.0344		660.3560
Vendor	0.0640	2.1339	0.4900	5.3800e-003	0.1355	4.5400e-003	0.1401	0.0390	4.3400e-003	0.0434		568.2252	568.2252	0.0335		569.0622
Worker	0.5639	0.3995	3.9215	0.0119	1.3144	8.5000e-003	1.3229	0.3486	7.8300e-003	0.3565		1,187.267 0	1,187.267 0	0.0286		1,187.983 0
Total	**0.6930**	**4.6973**	**4.8312**	**0.0235**	**1.6585**	**0.0197**	**1.6782**	**0.4429**	**0.0185**	**0.4614**		**2,414.988 4**	**2,414.988 4**	**0.0965**		**2,417.401 2**

3.5 Building Construction - 2022

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	lb/day										lb/day					
Off-Road	0.5455	3.7671	4.9124	7.7600e-003		0.1736	0.1736		0.1709	0.1709		697.4666	697.4666	0.1137		700.3102
Total	**0.5455**	**3.7671**	**4.9124**	**7.7600e-003**		**0.1736**	**0.1736**		**0.1709**	**0.1709**		**697.4666**	**697.4666**	**0.1137**		**700.3102**

3.5 Building Construction - 2022

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	lb/day										lb/day					
Hauling	0.0614	1.9919	0.4086	6.1200e-003	0.3032	5.6900e-003	0.3089	0.0784	5.4400e-003	0.0839		650.7318	650.7318	0.0334		651.5655
Vendor	0.0598	2.0262	0.4590	5.3300e-003	0.1355	3.9300e-003	0.1395	0.0390	3.7600e-003	0.0428		562.6180	562.6180	0.0320		563.4181
Worker	0.5240	0.3577	3.5851	0.0115	1.3144	8.2800e-003	1.3226	0.3486	7.6300e-003	0.3563		1,144.0016	1,144.0016	0.0256		1,144.6418
Total	**0.6452**	**4.3758**	**4.4528**	**0.0229**	**1.7531**	**0.0179**	**1.7710**	**0.4661**	**0.0168**	**0.4829**		**2,357.3514**	**2,357.3514**	**0.0910**		**2,359.6253**

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	lb/day										lb/day					
Off-Road	0.1169	2.0611	4.7519	7.7600e-003		9.9900e-003	9.9900e-003		9.9900e-003	9.9900e-003	0.0000	697.4666	697.4666	0.1137		700.3102
Total	**0.1169**	**2.0611**	**4.7519**	**7.7600e-003**		**9.9900e-003**	**9.9900e-003**		**9.9900e-003**	**9.9900e-003**	**0.0000**	**697.4666**	**697.4666**	**0.1137**		**700.3102**

3.5 Building Construction - 2022

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	lb/day										lb/day					
Hauling	0.0614	1.9919	0.4086	6.1200e-003	0.3032	5.6900e-003	0.3089	0.0784	5.4400e-003	0.0839		650.7318	650.7318	0.0334		651.5655
Vendor	0.0598	2.0262	0.4590	5.3300e-003	0.1355	3.9300e-003	0.1395	0.0390	3.7600e-003	0.0428		562.6180	562.6180	0.0320		563.4181
Worker	0.5240	0.3577	3.5851	0.0115	1.3144	8.2800e-003	1.3226	0.3486	7.6300e-003	0.3563		1,144.0016	1,144.0016	0.0256		1,144.6418
Total	**0.6452**	**4.3758**	**4.4528**	**0.0229**	**1.7531**	**0.0179**	**1.7710**	**0.4661**	**0.0168**	**0.4829**		**2,357.3514**	**2,357.3514**	**0.0910**		**2,359.6253**

3.6 Paving - 2022

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	lb/day										lb/day					
Off-Road	0.8677	8.7865	12.1085	0.0197		0.4180	0.4180		0.3845	0.3845		1,909.7871	1,909.7871	0.6177		1,925.2287
Paving	0.0596					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9272**	**8.7865**	**12.1085**	**0.0197**		**0.4180**	**0.4180**		**0.3845**	**0.3845**		**1,909.7871**	**1,909.7871**	**0.6177**		**1,925.2287**

3.6 Paving - 2022

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	lb/day										lb/day					
Hauling	0.0307	0.9960	0.2043	3.0600e-003	0.0700	2.8400e-003	0.0729	0.0192	2.7200e-003	0.0219		325.3659	325.3659	0.0167		325.7828
Vendor	0.0239	0.8105	0.1836	2.1300e-003	0.0542	1.5700e-003	0.0558	0.0156	1.5000e-003	0.0171		225.0472	225.0472	0.0128		225.3672
Worker	0.3603	0.2459	2.4648	7.8900e-003	0.9036	5.6900e-003	0.9093	0.2397	5.2500e-003	0.2449		786.5011	786.5011	0.0176		786.9412
Total	**0.4149**	**2.0523**	**2.8527**	**0.0131**	**1.0279**	**0.0101**	**1.0380**	**0.2745**	**9.4700e-003**	**0.2840**		**1,336.9142**	**1,336.9142**	**0.0471**		**1,338.0912**

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	lb/day										lb/day					
Off-Road	0.2424	1.0505	14.9498	0.0197		0.0323	0.0323		0.0323	0.0323	0.0000	1,909.7871	1,909.7871	0.6177		1,925.2287
Paving	0.0596					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3020**	**1.0505**	**14.9498**	**0.0197**		**0.0323**	**0.0323**		**0.0323**	**0.0323**	**0.0000**	**1,909.7871**	**1,909.7871**	**0.6177**		**1,925.2287**

3.6 Paving - 2022

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	lb/day										lb/day					
Hauling	0.0307	0.9960	0.2043	3.0600e-003	0.0700	2.8400e-003	0.0729	0.0192	2.7200e-003	0.0219		325.3659	325.3659	0.0167		325.7828
Vendor	0.0239	0.8105	0.1836	2.1300e-003	0.0542	1.5700e-003	0.0558	0.0156	1.5000e-003	0.0171		225.0472	225.0472	0.0128		225.3672
Worker	0.3603	0.2459	2.4648	7.8900e-003	0.9036	5.6900e-003	0.9093	0.2397	5.2500e-003	0.2449		786.5011	786.5011	0.0176		786.9412
Total	**0.4149**	**2.0523**	**2.8527**	**0.0131**	**1.0279**	**0.0101**	**1.0380**	**0.2745**	**9.4700e-003**	**0.2840**		**1,336.9142**	**1,336.9142**	**0.0471**		**1,338.0912**

3.7 Architectural Coating - 2022

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	lb/day										lb/day					
Archit. Coating	114.1087					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0377	0.2642	0.2118	4.8000e-004		0.0116	0.0116		0.0116	0.0116		34.2038	34.2038	3.3700e-003		34.2880
Total	**114.1463**	**0.2642**	**0.2118**	**4.8000e-004**		**0.0116**	**0.0116**		**0.0116**	**0.0116**		**34.2038**	**34.2038**	**3.3700e-003**		**34.2880**

3.7 Architectural Coating - 2022

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	lb/day										lb/day					
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
Vendor	0.1196	4.0524	0.9180	0.0107	0.2710	7.8600e-003	0.2789	0.0780	7.5200e-003	0.0856		1,125.2361	1,125.2361	0.0640		1,126.8361
Worker	0.1965	0.1341	1.3444	4.3000e-003	0.4929	3.1100e-003	0.4960	0.1307	2.8600e-003	0.1336		429.0006	429.0006	9.6000e-003		429.2407
Total	**0.3161**	**4.1866**	**2.2624**	**0.0150**	**0.7639**	**0.0110**	**0.7749**	**0.2088**	**0.0104**	**0.2192**		**1,554.2367**	**1,554.2367**	**0.0736**		**1,556.0768**

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	lb/day										lb/day					
Archit. Coating	114.1087					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	4.8000e-004		0.0000	0.0000		0.0000	0.0000	0.0000	34.2038	34.2038	3.3700e-003		34.2880
Total	**114.1087**	**0.0000**	**0.0000**	**4.8000e-004**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**34.2038**	**34.2038**	**3.3700e-003**		**34.2880**

3.7 Architectural Coating - 2022

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	lb/day										lb/day					
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
Vendor	0.1196	4.0524	0.9180	0.0107	0.2710	7.8600e-003	0.2789	0.0780	7.5200e-003	0.0856		1,125.2361	1,125.2361	0.0640		1,126.8361
Worker	0.1965	0.1341	1.3444	4.3000e-003	0.4929	3.1100e-003	0.4960	0.1307	2.8600e-003	0.1336		429.0006	429.0006	9.6000e-003		429.2407
Total	**0.3161**	**4.1866**	**2.2624**	**0.0150**	**0.7639**	**0.0110**	**0.7749**	**0.2088**	**0.0104**	**0.2192**		**1,554.2367**	**1,554.2367**	**0.0736**		**1,556.0768**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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
	lb/day										lb/day					
Mitigated	1.0103	7.0953	12.1760	0.0451	3.7014	0.0435	3.7449	0.9917	0.0409	1.0326		4,585.9137	4,585.9137	0.1975		4,590.8519
Unmitigated	1.0103	7.0953	12.1760	0.0451	3.7014	0.0435	3.7449	0.9917	0.0409	1.0326		4,585.9137	4,585.9137	0.1975		4,590.8519

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	527.80	527.80	527.80	1,372,884	1,372,884
General Office Building	58.14	58.14	58.14	169,854	169,854
Other Asphalt Surfaces	0.00	0.00	0.00		
Regional Shopping Center	68.95	68.95	68.95	192,214	192,214
Total	654.89	654.89	654.89	1,734,952	1,734,952

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	100	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	100	0	0
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.560371	0.039285	0.190378	0.108244	0.016023	0.005202	0.023981	0.045200	0.002184	0.002561	0.005524	0.000326	0.000721
General Office Building	0.560371	0.039285	0.190378	0.108244	0.016023	0.005202	0.023981	0.045200	0.002184	0.002561	0.005524	0.000326	0.000721
Other Asphalt Surfaces	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Regional Shopping Center	0.560371	0.039285	0.190378	0.108244	0.016023	0.005202	0.023981	0.045200	0.002184	0.002561	0.005524	0.000326	0.000721

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	lb/day										lb/day					
NaturalGas Mitigated	0.0539	0.4647	0.2241	2.9400e-003		0.0373	0.0373		0.0373	0.0373		588.3643	588.3643	0.0113	0.0108	591.8607
NaturalGas Unmitigated	0.0539	0.4647	0.2241	2.9400e-003		0.0373	0.0373		0.0373	0.0373		588.3643	588.3643	0.0113	0.0108	591.8607

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	lb/day										lb/day					
Apartments Mid Rise	4353.26	0.0470	0.4012	0.1707	2.5600e-003		0.0324	0.0324		0.0324	0.0324		512.1477	512.1477	9.8200e-003	9.3900e-003	515.1911
General Office Building	603.732	6.5100e-003	0.0592	0.0497	3.6000e-004		4.5000e-003	4.5000e-003		4.5000e-003	4.5000e-003		71.0272	71.0272	1.3600e-003	1.3000e-003	71.4493
Other Asphalt Surfaces	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
Regional Shopping Center	44.1096	4.8000e-004	4.3200e-003	3.6300e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004		5.1894	5.1894	1.0000e-004	1.0000e-004	5.2202
Total		**0.0539**	**0.4647**	**0.2241**	**2.9500e-003**		**0.0373**	**0.0373**		**0.0373**	**0.0373**		**588.3643**	**588.3643**	**0.0113**	**0.0108**	**591.8607**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	4.35326	0.0470	0.4012	0.1707	2.5600e-003		0.0324	0.0324		0.0324	0.0324		512.1477	512.1477	9.8200e-003	9.3900e-003	515.1911
General Office Building	0.603732	6.5100e-003	0.0592	0.0497	3.6000e-004		4.5000e-003	4.5000e-003		4.5000e-003	4.5000e-003		71.0272	71.0272	1.3600e-003	1.3000e-003	71.4493
Other Asphalt Surfaces	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
Regional Shopping Center	0.0441096	4.8000e-004	4.3200e-003	3.6300e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004		5.1894	5.1894	1.0000e-004	1.0000e-004	5.2202
Total		**0.0539**	**0.4647**	**0.2241**	**2.9500e-003**		**0.0373**	**0.0373**		**0.0373**	**0.0373**		**588.3643**	**588.3643**	**0.0113**	**0.0108**	**591.8607**

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	lb/day										lb/day					
Mitigated	5.4897	0.7017	15.2579	4.1700e-003		0.1258	0.1258		0.1258	0.1258	0.0000	701.5106	701.5106	0.0390	0.0124	706.1710
Unmitigated	5.4897	0.7017	15.2579	4.1700e-003		0.1258	0.1258		0.1258	0.1258	0.0000	701.5106	701.5106	0.0390	0.0124	706.1710

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	lb/day										lb/day					
Architectural Coating	0.7446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2291					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0618	0.5283	0.2248	3.3700e-003		0.0427	0.0427		0.0427	0.0427	0.0000	674.4706	674.4706	0.0129	0.0124	678.4786
Landscaping	0.4542	0.1734	15.0330	7.9000e-004		0.0831	0.0831		0.0831	0.0831		27.0400	27.0400	0.0261		27.6923
Total	**5.4897**	**0.7017**	**15.2578**	**4.1600e-003**		**0.1258**	**0.1258**		**0.1258**	**0.1258**	**0.0000**	**701.5106**	**701.5106**	**0.0390**	**0.0124**	**706.1710**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7446					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	4.2291					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0618	0.5283	0.2248	3.3700e-003		0.0427	0.0427		0.0427	0.0427	0.0000	674.4706	674.4706	0.0129	0.0124	678.4786
Landscaping	0.4542	0.1734	15.0330	7.9000e-004		0.0831	0.0831		0.0831	0.0831		27.0400	27.0400	0.0261		27.6923
Total	**5.4897**	**0.7017**	**15.2578**	**4.1600e-003**		**0.1258**	**0.1258**		**0.1258**	**0.1258**	**0.0000**	**701.5106**	**701.5106**	**0.0390**	**0.0124**	**706.1710**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	2	50	670	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (600 - 750 HP)	2.1990	6.1462	5.6071	0.0106		0.3235	0.3235		0.3235	0.3235		1,124.948 9	1,124.948 9	0.1577		1,128.891 9
Total	**2.1990**	**6.1462**	**5.6071**	**0.0106**		**0.3235**	**0.3235**		**0.3235**	**0.3235**		**1,124.948 9**	**1,124.948 9**	**0.1577**		**1,128.891 9**

11.0 Vegetation

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 9.8.3
** Lakes Environmental Software Inc.
** Date: 8/3/2020
** File: C:\Model\1510 Webster\1510Webster_Construction\1510Webster_Construction.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Model\1510 Webster\1510Webster_Construction\1510Webster_Construct
   MODELOPT DFAULT CONC
   AVERTIME 1 PERIOD
   URBANOPT 4335391 San_Francisco-Oakland-Berkeley,_CA_MSA
   POLLUTID PM_10
   FLAGPOLE 1.80
   RUNORNOT RUN
   ERRORFIL 1510Webster_Construction.err
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION CONST        AREAPOLY   564437.098  4184365.253       11.600
** DESCRSRC Construction
** --------------------------------------------------------------------
** Line Source Represented by Area Sources
** LINE AREA Source ID = HAUL1
** DESCRSRC Haul Route, Webster to 14th
** PREFIX
** Length of Side = 9.00
** Ratio = 10
** Vertical Dimension = 2.37
** Emission Rate = 0.000152207
** Nodes = 3
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** 564574.177, 4184676.837, 7.15, 2.55
** 564368.142, 4184254.404, 11.99, 2.55
** 564134.456, 4184368.380, 12.87, 2.55
** ------------------------------------------------------------------------
   LOCATION A0000020     AREA     564570.132 4184678.810 7.03
   LOCATION A0000021     AREA     564535.793 4184608.404 9.07
   LOCATION A0000022     AREA     564501.454 4184537.999 10.76
   LOCATION A0000023     AREA     564467.115 4184467.593 11.35
   LOCATION A0000024     AREA     564432.776 4184397.188 11.54
   LOCATION A0000025     AREA     564398.437 4184326.782 11.71
   LOCATION A0000026     AREA     564370.115 4184258.448 11.95
   LOCATION A0000027     AREA     564292.220 4184296.441 12.50
   LOCATION A0000028     AREA     564214.324 4184334.433 12.69
** End of LINE AREA Source ID = HAUL1
** ------------------------------------------------------------------------
** Line Source Represented by Area Sources
** LINE AREA Source ID = HAUL2
** DESCRSRC
** PREFIX
** Length of Side = 9.00
** Ratio = 10
** Vertical Dimension = 2.37
** Emission Rate = 0.0001495321
** Nodes = 4
** 564188.590, 4184148.855, 13.21, 2.55
** 564390.498, 4184562.827, 11.36, 2.55
** 564493.860, 4184512.415, 11.27, 2.55
** 564420.445, 4184361.892, 11.60, 2.55
** ------------------------------------------------------------------------
   LOCATION A0000029     AREA     564192.635 4184146.882 13.21
   LOCATION A0000030     AREA     564226.286 4184215.877 12.86
   LOCATION A0000031     AREA     564259.938 4184284.873 12.59
   LOCATION A0000032     AREA     564293.589 4184353.868 12.35
   LOCATION A0000033     AREA     564327.240 4184422.864 11.96
   LOCATION A0000034     AREA     564360.892 4184491.859 11.63
   LOCATION A0000035     AREA     564388.526 4184558.783 11.38
   LOCATION A0000036     AREA     564440.206 4184533.576 11.46
   LOCATION A0000037     AREA     564489.815 4184514.387 11.23
   LOCATION A0000038     AREA     564453.108 4184439.126 11.38
** End of LINE AREA Source ID = HAUL2
** Source Parameters **
   SRCPARAM CONST        0.0007748908     5.000         6     1.400
   AREAVERT CONST        564437.098 4184365.253 564452.441 4184396.711
   AREAVERT CONST        564494.209 4184376.339 564485.003 4184357.464
   AREAVERT CONST        564463.432 4184367.985 564457.295 4184355.402
** LINE AREA Source ID = HAUL1
   SRCPARAM A0000020     0.000152207     2.550    78.333     9.000   116.000
2.372
```

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   SRCPARAM A0000021     0.000152207     2.550    78.333     9.000   116.000
2.372
   SRCPARAM A0000022     0.000152207     2.550    78.333     9.000   116.000
2.372
   SRCPARAM A0000023     0.000152207     2.550    78.333     9.000   116.000
2.372
   SRCPARAM A0000024     0.000152207     2.550    78.333     9.000   116.000
2.372
   SRCPARAM A0000025     0.000152207     2.550    78.333     9.000   116.000
2.372
   SRCPARAM A0000026     0.000152207     2.550    86.667     9.000  -154.000
2.372
   SRCPARAM A0000027     0.000152207     2.550    86.667     9.000  -154.000
2.372
   SRCPARAM A0000028     0.000152207     2.550    86.667     9.000  -154.000
2.372
** ------------------------------------------------------------------------
** LINE AREA Source ID = HAUL2
   SRCPARAM A0000029     0.0001495321     2.550    76.764     9.000   -64.000
2.372
   SRCPARAM A0000030     0.0001495321     2.550    76.764     9.000   -64.000
2.372
   SRCPARAM A0000031     0.0001495321     2.550    76.764     9.000   -64.000
2.372
   SRCPARAM A0000032     0.0001495321     2.550    76.764     9.000   -64.000
2.372
   SRCPARAM A0000033     0.0001495321     2.550    76.764     9.000   -64.000
2.372
   SRCPARAM A0000034     0.0001495321     2.550    76.764     9.000   -64.000
2.372
   SRCPARAM A0000035     0.0001495321     2.550    57.500     9.000    26.000
2.372
   SRCPARAM A0000036     0.0001495321     2.550    57.500     9.000    26.000
2.372
   SRCPARAM A0000037     0.0001495321     2.550    83.736     9.000   116.000
2.372
   SRCPARAM A0000038     0.0001495321     2.550    83.736     9.000   116.000
2.372
** ------------------------------------------------------------------------
   URBANSRC ALL

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "Scenario 1"
   EMISFACT CONST        HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT CONST        HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
   EMISFACT CONST        HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
   EMISFACT CONST        HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
   EMISFACT A0000020     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
```

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EMISFACT A0000020     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000020     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000020     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
EMISFACT A0000021     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT A0000021     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000021     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000021     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
EMISFACT A0000022     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT A0000022     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000022     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000022     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
EMISFACT A0000023     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT A0000023     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000023     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000023     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
EMISFACT A0000024     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT A0000024     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000024     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000024     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
EMISFACT A0000025     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT A0000025     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000025     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000025     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
EMISFACT A0000026     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT A0000026     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000026     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000026     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
EMISFACT A0000027     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT A0000027     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000027     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000027     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
EMISFACT A0000028     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT A0000028     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000028     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000028     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
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EMISFACT A0000029     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000029     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
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EMISFACT A0000030     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000030     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000030     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
EMISFACT A0000031     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT A0000031     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000031     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
EMISFACT A0000031     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
EMISFACT A0000032     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
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   EMISFACT A0000032     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000032     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000032     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
   EMISFACT A0000033     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000033     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000033     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000033     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
   EMISFACT A0000034     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000034     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000034     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000034     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
   EMISFACT A0000035     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000035     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000035     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000035     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
   EMISFACT A0000036     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000036     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000036     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000036     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
   EMISFACT A0000037     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000037     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000037     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000037     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
   EMISFACT A0000038     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT A0000038     HROFDY 0.0 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000038     HROFDY 1.71 1.71 1.71 1.71 1.71 1.71
   EMISFACT A0000038     HROFDY 1.71 1.71 1.71 0.0 0.0 0.0
   SRCGROUP CONST    CONST
   SRCGROUP HAUL1    A0000020 A0000021 A0000022 A0000023 A0000024 A0000025
   SRCGROUP HAUL1    A0000026 A0000027 A0000028
   SRCGROUP HAUL2    A0000029 A0000030 A0000031 A0000032 A0000033 A0000034
   SRCGROUP HAUL2    A0000035 A0000036 A0000037 A0000038
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED 1510Webster_Construction.rou
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
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**
ME STARTING
   SURFFILE 1510Webster_Construction.SFC
   PROFFILE 1510Webster_Construction.PFL
   SURFDATA 23230 2013 OAKLAND/WSO_AP
   UAIRDATA 23230 2013 OAKLAND/WSO_AP
   PROFBASE 1.8 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST 1510Webster_Construction.AD\01H1GALL.PLT 31
   PLOTFILE 1 CONST 1ST 1510Webster_Construction.AD\01H1G001.PLT 32
   PLOTFILE 1 HAUL1 1ST 1510Webster_Construction.AD\01H1G002.PLT 33
   PLOTFILE 1 HAUL2 1ST 1510Webster_Construction.AD\01H1G003.PLT 34
   PLOTFILE PERIOD ALL 1510Webster_Construction.AD\PE00GALL.PLT 35
   PLOTFILE PERIOD CONST 1510Webster_Construction.AD\PE00G001.PLT 36
   PLOTFILE PERIOD HAUL1 1510Webster_Construction.AD\PE00G002.PLT 37
   PLOTFILE PERIOD HAUL2 1510Webster_Construction.AD\PE00G003.PLT 38
   SUMMFILE 1510Webster_Construction.sum
OU FINISHED
**
****************************************
** Project Parameters
****************************************
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     10
** ZONEINX  0
**
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All Receptors - Construction Cancer Risk

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	7.3	miles
	32187	11748	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Route1	0.02	0.06
Route2	0.02	0.06

Modeled Routes

	Route1	Route2	
Trip Length	730	743.1	meters

from AERMOD

			Days			Total Uncontrolled DPM (tons)			Total Controlled DPM (tons)		
Construction Year	Start Date	End Date	3rd Trimester	Age 0<2	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2021	4/1/2021	12/31/2021	91	184.00	275	3.41E-02	5.90E-04	4.10E-04	1.63E-03	5.90E-04	4.10E-04
2022	1/1/2022	9/1/2022	0	244.00	244	1.86E-02	3.60E-04	3.30E-04	1.24E-03	3.60E-04	3.30E-04

			Total Uncontrolled DPM (g/s)			Total Controlled DPM (g/s)		
Construction Year	Start Date	End Date	Construction	Route1	Route2	Construction	Route1	Route2
2021	4/1/2021	12/31/2021	1.30E-03	1.48E-06	1.51E-06	6.22E-05	1.48E-06	1.51E-06
2022	1/1/2022	9/1/2022	8.01E-04	1.23E-06	1.26E-06	5.34E-05	1.23E-06	1.26E-06

Risk Factors

	Abbreviation	UOM	3rd Trimester	0<2
Daily Breathing Rate (95th %'ile)	DBR	L/kg-day	361	1090
Fraction Of Time At Home	FAH	unitless	1	1
Exposure Frequency	EF	days/year	0.96	0.96
Age Sensitivity Factor	ASF	unitless	10	10
Inhalation Absorption Factor	A	unitless	1	1
Conversion Factor	CF_1	m^3/L	0.001	0.001
Conversion Factor	CF_2	$\mu g/m^3$	0.001	0.001
Cancer Potency Factor (diesel exhau	CPF	$mg/kg\text{-}day^{-1}$	1.1	1.1
Averaging Time (for residential expo	AT	years	70.00	70.00

Intake Factor for Inhalation, IF (m^3/kg-day)

	Year	Equation	3rd Trimester	0<2
1510 Webster Construction	2021	DBR*FAH*EF*ED*ASF*A*CF/AT	0.012	0.075
	2022		0.000	0.100

Risk Calculation Part 1, R1

Year		3rd Trimester	0<2
2021	IF*CPF*CF	1.36E-05	8.28E-05
2022		0.00E+00	1.10E-04

MAX	Cancer Risk	UTM X	UTM Y
Unmitigated	28.38	564560	4184360
Mitigated	1.59	564560	4184360

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3) / Uncontrolled Cancer Risk, Risk Calculation Part 2 / Controlled Cancer Risk, Risk Calculation Part

			Unmitigated		Mitigated		$\sum R1*C_{DPM}$			$\sum R1*C_{DPM}$		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	3rd Trimester	0<2	Total	3rd Trimester	0<2	Total
564460_418404C	564460	4184040	3.19E-03	1.96E-03	1.65E-04	1.41E-04	4.33E-08	4.80E-07	0.52	2.24E-09	2.92E-08	0.03
564360_418406C	564360	4184060	2.84E-03	1.75E-03	1.49E-04	1.27E-04	3.85E-08	4.27E-07	0.47	2.02E-09	2.63E-08	0.03
564380_418406C	564380	4184060	2.95E-03	1.81E-03	1.55E-04	1.32E-04	4.00E-08	4.43E-07	0.48	2.10E-09	2.73E-08	0.03
564400_418406C	564400	4184060	3.07E-03	1.89E-03	1.61E-04	1.38E-04	4.17E-08	4.62E-07	0.50	2.18E-09	2.84E-08	0.03
564420_418406C	564420	4184060	3.22E-03	1.98E-03	1.68E-04	1.44E-04	4.36E-08	4.84E-07	0.53	2.28E-09	2.97E-08	0.03
564440_418406C	564440	4184060	3.37E-03	2.08E-03	1.76E-04	1.50E-04	4.57E-08	5.07E-07	0.55	2.38E-09	3.10E-08	0.03
564460_418406C	564460	4184060	3.55E-03	2.18E-03	1.84E-04	1.58E-04	4.81E-08	5.33E-07	0.58	2.50E-09	3.25E-08	0.04
564480_418406C	564480	4184060	3.74E-03	2.30E-03	1.93E-04	1.65E-04	5.07E-08	5.62E-07	0.61	2.62E-09	3.42E-08	0.04
564500_418406C	564500	4184060	3.95E-03	2.43E-03	2.04E-04	1.74E-04	5.36E-08	5.94E-07	0.65	2.76E-09	3.60E-08	0.04
564520_418406C	564520	4184060	4.19E-03	2.58E-03	2.15E-04	1.84E-04	5.68E-08	6.30E-07	0.69	2.92E-09	3.81E-08	0.04
564540_418406C	564540	4184060	4.45E-03	2.74E-03	2.28E-04	1.95E-04	6.04E-08	6.69E-07	0.73	3.09E-09	4.03E-08	0.04
564560_418406C	564560	4184060	4.74E-03	2.92E-03	2.42E-04	2.07E-04	6.42E-08	7.12E-07	0.78	3.28E-09	4.27E-08	0.05
564320_418408C	564320	4184080	2.93E-03	1.80E-03	1.55E-04	1.33E-04	3.97E-08	4.40E-07	0.48	2.11E-09	2.75E-08	0.03
564340_418408C	564340	4184080	3.03E-03	1.87E-03	1.61E-04	1.37E-04	4.11E-08	4.56E-07	0.50	2.18E-09	2.84E-08	0.03
564360_418408C	564360	4184080	3.14E-03	1.93E-03	1.66E-04	1.42E-04	4.26E-08	4.73E-07	0.52	2.26E-09	2.94E-08	0.03
564380_418408C	564380	4184080	3.27E-03	2.01E-03	1.72E-04	1.47E-04	4.43E-08	4.91E-07	0.54	2.34E-09	3.04E-08	0.03
564400_418408C	564400	4184080	3.41E-03	2.10E-03	1.80E-04	1.53E-04	4.63E-08	5.13E-07	0.56	2.43E-09	3.17E-08	0.03
564420_418408C	564420	4184080	3.58E-03	2.20E-03	1.88E-04	1.61E-04	4.85E-08	5.38E-07	0.59	2.55E-09	3.32E-08	0.04
564440_418408C	564440	4184080	3.77E-03	2.32E-03	1.97E-04	1.68E-04	5.11E-08	5.66E-07	0.62	2.67E-09	3.48E-08	0.04
564460_418408C	564460	4184080	3.97E-03	2.45E-03	2.07E-04	1.77E-04	5.39E-08	5.98E-07	0.65	2.81E-09	3.65E-08	0.04
564480_418408C	564480	4184080	4.20E-03	2.59E-03	2.18E-04	1.86E-04	5.70E-08	6.32E-07	0.69	2.96E-09	3.85E-08	0.04
564500_418408C	564500	4184080	4.46E-03	2.75E-03	2.30E-04	1.97E-04	6.05E-08	6.71E-07	0.73	3.13E-09	4.07E-08	0.04
564520_418408C	564520	4184080	4.75E-03	2.92E-03	2.44E-04	2.09E-04	6.44E-08	7.15E-07	0.78	3.31E-09	4.32E-08	0.05
564540_418408C	564540	4184080	5.07E-03	3.12E-03	2.59E-04	2.22E-04	6.87E-08	7.62E-07	0.83	3.52E-09	4.58E-08	0.05
564560_418408C	564560	4184080	5.41E-03	3.33E-03	2.76E-04	2.36E-04	7.34E-08	8.14E-07	0.89	3.74E-09	4.87E-08	0.05
564580_418408C	564580	4184080	5.77E-03	3.55E-03	2.93E-04	2.51E-04	7.83E-08	8.68E-07	0.95	3.97E-09	5.18E-08	0.06
564600_418408C	564600	4184080	6.17E-03	3.80E-03	3.12E-04	2.67E-04	8.36E-08	9.27E-07	1.01	4.23E-09	5.51E-08	0.06
564620_418408C	564620	4184080	6.56E-03	4.04E-03	3.30E-04	2.83E-04	8.90E-08	9.87E-07	1.08	4.48E-09	5.84E-08	0.06
564280_418410C	564280	4184100	3.01E-03	1.86E-03	1.63E-04	1.39E-04	4.09E-08	4.53E-07	0.49	2.21E-09	2.88E-08	0.03
564300_418410C	564300	4184100	3.13E-03	1.93E-03	1.69E-04	1.44E-04	4.25E-08	4.71E-07	0.51	2.29E-09	2.99E-08	0.03
564320_418410C	564320	4184100	3.25E-03	2.00E-03	1.75E-04	1.50E-04	4.41E-08	4.90E-07	0.53	2.37E-09	3.09E-08	0.03
564340_418410C	564340	4184100	3.37E-03	2.08E-03	1.81E-04	1.54E-04	4.57E-08	5.07E-07	0.55	2.45E-09	3.19E-08	0.03
564360_418410C	564360	4184100	3.50E-03	2.16E-03	1.87E-04	1.59E-04	4.75E-08	5.27E-07	0.57	2.53E-09	3.30E-08	0.04
564380_418410C	564380	4184100	3.64E-03	2.24E-03	1.94E-04	1.65E-04	4.94E-08	5.48E-07	0.60	2.62E-09	3.42E-08	0.04
564400_418410C	564400	4184100	3.81E-03	2.35E-03	2.02E-04	1.72E-04	5.17E-08	5.74E-07	0.63	2.74E-09	3.56E-08	0.04
564420_418410C	564420	4184100	4.01E-03	2.47E-03	2.11E-04	1.81E-04	5.44E-08	6.04E-07	0.66	2.87E-09	3.73E-08	0.04
564440_418410C	564440	4184100	4.23E-03	2.61E-03	2.22E-04	1.90E-04	5.74E-08	6.37E-07	0.69	3.01E-09	3.92E-08	0.04
564460_418410C	564460	4184100	4.49E-03	2.76E-03	2.34E-04	2.00E-04	6.08E-08	6.75E-07	0.74	3.18E-09	4.14E-08	0.04
564480_418410C	564480	4184100	4.77E-03	2.94E-03	2.48E-04	2.12E-04	6.47E-08	7.18E-07	0.78	3.36E-09	4.38E-08	0.05
564500_418410C	564500	4184100	5.08E-03	3.13E-03	2.63E-04	2.25E-04	6.89E-08	7.64E-07	0.83	3.56E-09	4.64E-08	0.05
564520_418410C	564520	4184100	5.43E-03	3.34E-03	2.79E-04	2.39E-04	7.36E-08	8.16E-07	0.89	3.78E-09	4.93E-08	0.05
564540_418410C	564540	4184100	5.83E-03	3.59E-03	2.98E-04	2.55E-04	7.90E-08	8.76E-07	0.96	4.04E-09	5.27E-08	0.06
564560_418410C	564560	4184100	6.26E-03	3.85E-03	3.18E-04	2.72E-04	8.49E-08	9.41E-07	1.03	4.32E-09	5.63E-08	0.06
564580_418410C	564580	4184100	6.70E-03	4.12E-03	3.39E-04	2.90E-04	9.09E-08	1.01E-06	1.10	4.60E-09	6.00E-08	0.06
564600_418410C	564600	4184100	7.17E-03	4.41E-03	3.61E-04	3.09E-04	9.72E-08	1.08E-06	1.18	4.90E-09	6.39E-08	0.07
564620_418410C	564620	4184100	7.67E-03	4.72E-03	3.85E-04	3.29E-04	1.04E-07	1.15E-06	1.26	5.22E-09	6.80E-08	0.07
564640_418410C	564640	4184100	8.12E-03	5.00E-03	4.06E-04	3.48E-04	1.10E-07	1.22E-06	1.33	5.51E-09	7.18E-08	0.08
564260_418412C	564260	4184120	3.19E-03	1.96E-03	1.78E-04	1.52E-04	4.32E-08	4.79E-07	0.52	2.42E-09	3.15E-08	0.03

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

Uncontrolled Cancer Risk, Risk Calculation Part 2

Controlled Cancer Risk, Risk Calculation Part

			Unmitigated		Mitigated		Uncontrolled $\sum R1*C_{DPM}$			Controlled $\sum R1*C_{DPM}$		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	3rd Trimester	0<2	Total	3rd Trimester	0<2	Total
564280_4184120	564280	4184120	3.34E-03	2.06E-03	1.85E-04	1.58E-04	4.53E-08	5.03E-07	0.55	2.52E-09	3.27E-08	0.04
564300_4184120	564300	4184120	3.49E-03	2.15E-03	1.92E-04	1.64E-04	4.73E-08	5.25E-07	0.57	2.60E-09	3.39E-08	0.04
564320_4184120	564320	4184120	3.64E-03	2.24E-03	1.98E-04	1.69E-04	4.94E-08	5.48E-07	0.60	2.69E-09	3.50E-08	0.04
564340_4184120	564340	4184120	3.78E-03	2.33E-03	2.05E-04	1.75E-04	5.13E-08	5.69E-07	0.62	2.77E-09	3.61E-08	0.04
564360_4184120	564360	4184120	3.93E-03	2.42E-03	2.11E-04	1.81E-04	5.33E-08	5.92E-07	0.65	2.87E-09	3.73E-08	0.04
564380_4184120	564380	4184120	4.11E-03	2.53E-03	2.19E-04	1.87E-04	5.57E-08	6.18E-07	0.67	2.97E-09	3.87E-08	0.04
564400_4184120	564400	4184120	4.30E-03	2.65E-03	2.29E-04	1.95E-04	5.83E-08	6.47E-07	0.71	3.10E-09	4.04E-08	0.04
564420_4184120	564420	4184120	4.53E-03	2.79E-03	2.40E-04	2.05E-04	6.15E-08	6.82E-07	0.74	3.25E-09	4.24E-08	0.05
564440_4184120	564440	4184120	4.80E-03	2.96E-03	2.53E-04	2.16E-04	6.52E-08	7.23E-07	0.79	3.43E-09	4.46E-08	0.05
564460_4184120	564460	4184120	5.11E-03	3.15E-03	2.67E-04	2.29E-04	6.93E-08	7.68E-07	0.84	3.63E-09	4.72E-08	0.05
564480_4184120	564480	4184120	5.45E-03	3.36E-03	2.84E-04	2.43E-04	7.39E-08	8.20E-07	0.89	3.85E-09	5.01E-08	0.05
564500_4184120	564500	4184120	5.83E-03	3.59E-03	3.02E-04	2.58E-04	7.91E-08	8.77E-07	0.96	4.09E-09	5.33E-08	0.06
564520_4184120	564520	4184120	6.26E-03	3.85E-03	3.22E-04	2.75E-04	8.49E-08	9.42E-07	1.03	4.37E-09	5.69E-08	0.06
564540_4184120	564540	4184120	6.77E-03	4.16E-03	3.46E-04	2.96E-04	9.18E-08	1.02E-06	1.11	4.69E-09	6.11E-08	0.07
564560_4184120	564560	4184120	7.33E-03	4.51E-03	3.72E-04	3.18E-04	9.94E-08	1.10E-06	1.20	5.05E-09	6.58E-08	0.07
564580_4184120	564580	4184120	7.89E-03	4.85E-03	3.98E-04	3.41E-04	1.07E-07	1.19E-06	1.29	5.40E-09	7.04E-08	0.08
564600_4184120	564600	4184120	8.47E-03	5.21E-03	4.26E-04	3.64E-04	1.15E-07	1.27E-06	1.39	5.77E-09	7.52E-08	0.08
564620_4184120	564620	4184120	9.07E-03	5.58E-03	4.53E-04	3.88E-04	1.23E-07	1.36E-06	1.49	6.15E-09	8.02E-08	0.09
564640_4184120	564640	4184120	9.61E-03	5.91E-03	4.79E-04	4.10E-04	1.30E-07	1.44E-06	1.57	6.49E-09	8.46E-08	0.09
564660_4184120	564660	4184120	1.01E-02	6.21E-03	5.01E-04	4.29E-04	1.37E-07	1.52E-06	1.65	6.80E-09	8.86E-08	0.10
564680_4184120	564680	4184120	1.05E-02	6.46E-03	5.20E-04	4.46E-04	1.42E-07	1.58E-06	1.72	7.06E-09	9.20E-08	0.10
564240_4184140	564240	4184140	3.34E-03	2.06E-03	2.02E-04	1.72E-04	4.52E-08	5.02E-07	0.55	2.74E-09	3.56E-08	0.04
564260_4184140	564260	4184140	3.52E-03	2.18E-03	2.07E-04	1.76E-04	4.78E-08	5.31E-07	0.58	2.80E-09	3.64E-08	0.04
564280_4184140	564280	4184140	3.72E-03	2.30E-03	2.13E-04	1.81E-04	5.05E-08	5.60E-07	0.61	2.88E-09	3.75E-08	0.04
564300_4184140	564300	4184140	3.91E-03	2.41E-03	2.19E-04	1.87E-04	5.31E-08	5.89E-07	0.64	2.97E-09	3.87E-08	0.04
564320_4184140	564320	4184140	4.10E-03	2.53E-03	2.26E-04	1.93E-04	5.56E-08	6.17E-07	0.67	3.07E-09	3.99E-08	0.04
564340_4184140	564340	4184140	4.28E-03	2.64E-03	2.34E-04	2.00E-04	5.81E-08	6.44E-07	0.70	3.17E-09	4.13E-08	0.04
564360_4184140	564360	4184140	4.46E-03	2.75E-03	2.42E-04	2.06E-04	6.05E-08	6.72E-07	0.73	3.28E-09	4.27E-08	0.05
564380_4184140	564380	4184140	4.67E-03	2.87E-03	2.51E-04	2.14E-04	6.33E-08	7.02E-07	0.77	3.40E-09	4.43E-08	0.05
564400_4184140	564400	4184140	4.90E-03	3.02E-03	2.62E-04	2.24E-04	6.65E-08	7.37E-07	0.80	3.55E-09	4.62E-08	0.05
564420_4184140	564420	4184140	5.18E-03	3.19E-03	2.75E-04	2.35E-04	7.02E-08	7.78E-07	0.85	3.73E-09	4.86E-08	0.05
564440_4184140	564440	4184140	5.50E-03	3.39E-03	2.90E-04	2.48E-04	7.46E-08	8.27E-07	0.90	3.94E-09	5.13E-08	0.06
564460_4184140	564460	4184140	5.87E-03	3.61E-03	3.08E-04	2.63E-04	7.96E-08	8.83E-07	0.96	4.18E-09	5.44E-08	0.06
564480_4184140	564480	4184140	6.28E-03	3.86E-03	3.27E-04	2.80E-04	8.51E-08	9.44E-07	1.03	4.43E-09	5.78E-08	0.06
564500_4184140	564500	4184140	6.77E-03	4.16E-03	3.50E-04	2.99E-04	9.18E-08	1.02E-06	1.11	4.75E-09	6.18E-08	0.07
564520_4184140	564520	4184140	7.34E-03	4.52E-03	3.77E-04	3.22E-04	9.95E-08	1.10E-06	1.20	5.11E-09	6.66E-08	0.07
564540_4184140	564540	4184140	7.99E-03	4.92E-03	4.07E-04	3.48E-04	1.08E-07	1.20E-06	1.31	5.52E-09	7.20E-08	0.08
564560_4184140	564560	4184140	8.70E-03	5.36E-03	4.41E-04	3.77E-04	1.18E-07	1.31E-06	1.43	5.98E-09	7.79E-08	0.08
564580_4184140	564580	4184140	9.43E-03	5.80E-03	4.74E-04	4.06E-04	1.28E-07	1.42E-06	1.55	6.43E-09	8.38E-08	0.09
564600_4184140	564600	4184140	1.02E-02	6.25E-03	5.08E-04	4.35E-04	1.38E-07	1.53E-06	1.66	6.89E-09	8.98E-08	0.10
564620_4184140	564620	4184140	1.09E-02	6.68E-03	5.41E-04	4.63E-04	1.47E-07	1.63E-06	1.78	7.34E-09	9.57E-08	0.10
564640_4184140	564640	4184140	1.15E-02	7.06E-03	5.69E-04	4.88E-04	1.56E-07	1.72E-06	1.88	7.72E-09	1.01E-07	0.11
564660_4184140	564660	4184140	1.20E-02	7.38E-03	5.94E-04	5.09E-04	1.63E-07	1.80E-06	1.97	8.05E-09	1.05E-07	0.11
564680_4184140	564680	4184140	1.24E-02	7.64E-03	6.13E-04	5.25E-04	1.68E-07	1.87E-06	2.03	8.31E-09	1.08E-07	0.12
564700_4184140	564700	4184140	1.27E-02	7.80E-03	6.25E-04	5.35E-04	1.72E-07	1.91E-06	2.08	8.47E-09	1.10E-07	0.12
564220_4184160	564220	4184160	3.46E-03	2.14E-03	2.54E-04	2.16E-04	4.69E-08	5.22E-07	0.57	3.45E-09	4.47E-08	0.05
564240_4184160	564240	4184160	3.67E-03	2.27E-03	2.43E-04	2.06E-04	4.98E-08	5.54E-07	0.60	3.29E-09	4.27E-08	0.05
564260_4184160	564260	4184160	3.90E-03	2.41E-03	2.40E-04	2.04E-04	5.29E-08	5.88E-07	0.64	3.26E-09	4.23E-08	0.05
564280_4184160	564280	4184160	4.15E-03	2.56E-03	2.44E-04	2.08E-04	5.63E-08	6.25E-07	0.68	3.32E-09	4.31E-08	0.05
564300_4184160	564300	4184160	4.41E-03	2.72E-03	2.52E-04	2.15E-04	5.98E-08	6.63E-07	0.72	3.41E-09	4.44E-08	0.05
564320_4184160	564320	4184160	4.65E-03	2.87E-03	2.60E-04	2.22E-04	6.31E-08	7.00E-07	0.76	3.53E-09	4.59E-08	0.05
564340_4184160	564340	4184160	4.89E-03	3.01E-03	2.69E-04	2.30E-04	6.63E-08	7.35E-07	0.80	3.65E-09	4.75E-08	0.05
564360_4184160	564360	4184160	5.12E-03	3.16E-03	2.79E-04	2.38E-04	6.95E-08	7.71E-07	0.84	3.79E-09	4.93E-08	0.05
564380_4184160	564380	4184160	5.36E-03	3.30E-03	2.90E-04	2.48E-04	7.27E-08	8.07E-07	0.88	3.93E-09	5.12E-08	0.06
564400_4184160	564400	4184160	5.63E-03	3.47E-03	3.02E-04	2.58E-04	7.63E-08	8.47E-07	0.92	4.10E-09	5.34E-08	0.06
564420_4184160	564420	4184160	5.95E-03	3.67E-03	3.18E-04	2.72E-04	8.07E-08	8.96E-07	0.98	4.31E-09	5.61E-08	0.06
564440_4184160	564440	4184160	6.36E-03	3.92E-03	3.37E-04	2.88E-04	8.63E-08	9.57E-07	1.04	4.57E-09	5.96E-08	0.06
564460_4184160	564460	4184160	6.84E-03	4.21E-03	3.60E-04	3.08E-04	9.28E-08	1.03E-06	1.12	4.88E-09	6.36E-08	0.07
564480_4184160	564480	4184160	7.37E-03	4.54E-03	3.85E-04	3.29E-04	1.00E-07	1.11E-06	1.21	5.22E-09	6.79E-08	0.07
564500_4184160	564500	4184160	8.01E-03	4.93E-03	4.14E-04	3.54E-04	1.09E-07	1.20E-06	1.31	5.62E-09	7.32E-08	0.08
564520_4184160	564520	4184160	8.77E-03	5.39E-03	4.49E-04	3.84E-04	1.19E-07	1.32E-06	1.44	6.09E-09	7.93E-08	0.09
564540_4184160	564540	4184160	9.62E-03	5.92E-03	4.88E-04	4.18E-04	1.30E-07	1.45E-06	1.58	6.62E-09	8.63E-08	0.09
564560_4184160	564560	4184160	1.05E-02	6.47E-03	5.30E-04	4.53E-04	1.43E-07	1.58E-06	1.72	7.19E-09	9.37E-08	0.10
564580_4184160	564580	4184160	1.14E-02	7.04E-03	5.73E-04	4.91E-04	1.55E-07	1.72E-06	1.88	7.77E-09	1.01E-07	0.11
564600_4184160	564600	4184160	1.23E-02	7.59E-03	6.15E-04	5.27E-04	1.67E-07	1.86E-06	2.02	8.34E-09	1.09E-07	0.12
564620_4184160	564620	4184160	1.32E-02	8.10E-03	6.53E-04	5.59E-04	1.79E-07	1.98E-06	2.16	8.86E-09	1.15E-07	0.12
564640_4184160	564640	4184160	1.38E-02	8.52E-03	6.85E-04	5.86E-04	1.88E-07	2.08E-06	2.27	9.29E-09	1.21E-07	0.13
564660_4184160	564660	4184160	1.44E-02	8.87E-03	7.11E-04	6.09E-04	1.96E-07	2.17E-06	2.36	9.64E-09	1.26E-07	0.14
564680_4184160	564680	4184160	1.48E-02	9.08E-03	7.27E-04	6.22E-04	2.00E-07	2.22E-06	2.42	9.85E-09	1.28E-07	0.14
564700_4184160	564700	4184160	1.49E-02	9.16E-03	7.32E-04	6.27E-04	2.02E-07	2.24E-06	2.44	9.93E-09	1.29E-07	0.14
564720_4184160	564720	4184160	1.48E-02	9.10E-03	7.27E-04	6.23E-04	2.01E-07	2.22E-06	2.43	9.86E-09	1.29E-07	0.14
564220_4184180	564220	4184180	3.77E-03	2.35E-03	3.03E-04	2.56E-04	5.11E-08	5.70E-07	0.62	4.11E-09	5.32E-08	0.06
564240_4184180	564240	4184180	4.03E-03	2.50E-03	2.82E-04	2.39E-04	5.47E-08	6.08E-07	0.66	3.82E-09	4.96E-08	0.05
564260_4184180	564260	4184180	4.33E-03	2.68E-03	2.76E-04	2.35E-04	5.87E-08	6.52E-07	0.71	3.75E-09	4.87E-08	0.05
564280_4184180	564280	4184180	4.64E-03	2.87E-03	2.80E-04	2.38E-04	6.30E-08	6.99E-07	0.76	3.80E-09	4.94E-08	0.05
564300_4184180	564300	4184180	4.98E-03	3.07E-03	2.89E-04	2.47E-04	6.76E-08	7.50E-07	0.82	3.92E-09	5.10E-08	0.05
564320_4184180	564320	4184180	5.31E-03	3.27E-03	3.00E-04	2.56E-04	7.20E-08	7.99E-07	0.87	4.07E-09	5.30E-08	0.06
564340_4184180	564340	4184180	5.62E-03	3.47E-03	3.12E-04	2.67E-04	7.63E-08	8.46E-07	0.92	4.24E-09	5.51E-08	0.06
564360_4184180	564360	4184180	5.93E-03	3.65E-03	3.25E-04	2.78E-04	8.04E-08	8.92E-07	0.97	4.41E-09	5.74E-08	0.06
564380_4184180	564380	4184180	6.22E-03	3.83E-03	3.39E-04	2.89E-04	8.44E-08	9.36E-07	1.02	4.59E-09	5.98E-08	0.06
564400_4184180	564400	4184180	6.55E-03	4.04E-03	3.55E-04	3.03E-04	8.89E-08	9.86E-07	1.07	4.81E-09	6.26E-08	0.07
564420_4184180	564420	4184180	6.95E-03	4.28E-03	3.74E-04	3.19E-04	9.43E-08	1.05E-06	1.14	5.07E-09	6.60E-08	0.07
564440_4184180	564440	4184180	7.47E-03	4.60E-03	3.98E-04	3.40E-04	1.01E-07	1.12E-06	1.22	5.39E-09	7.03E-08	0.08
564460_4184180	564460	4184180	8.08E-03	4.97E-03	4.26E-04	3.64E-04	1.10E-07	1.22E-06	1.32	5.78E-09	7.52E-08	0.08
564480_4184180	564480	4184180	8.80E-03	5.42E-03	4.58E-04	3.92E-04	1.19E-07	1.32E-06	1.44	6.22E-09	8.10E-08	0.09
564500_4184180	564500	4184180	9.66E-03	5.94E-03	4.98E-04	4.26E-04	1.31E-07	1.45E-06	1.58	6.75E-09	8.80E-08	0.09
564520_4184180	564520	4184180	1.06E-02	6.55E-03	5.43E-04	4.65E-04	1.44E-07	1.60E-06	1.74	7.36E-09	9.60E-08	0.10
564540_4184180	564540	4184180	1.18E-02	7.24E-03	5.95E-04	5.09E-04	1.60E-07	1.77E-06	1.93	8.07E-09	1.05E-07	0.11
564560_4184180	564560	4184180	1.30E-02	7.97E-03	6.49E-04	5.56E-04	1.76E-07	1.95E-06	2.12	8.81E-09	1.15E-07	0.12
564580_4184180	564580	4184180	1.42E-02	8.72E-03	7.07E-04	6.05E-04	1.92E-07	2.13E-06	2.32	9.58E-09	1.25E-07	0.13
564600_4184180	564600	4184180	1.53E-02	9.42E-03	7.59E-04	6.50E-04	2.08E-07	2.30E-06	2.51	1.03E-08	1.34E-07	0.14
564620_4184180	564620	4184180	1.62E-02	9.98E-03	8.01E-04	6.86E-04	2.20E-07	2.44E-06	2.66	1.09E-08	1.42E-07	0.15
564640_4184180	564640	4184180	1.69E-02	1.04E-02	8.32E-04	7.13E-04	2.29E-07	2.54E-06	2.77	1.13E-08	1.47E-07	0.16

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

Uncontrolled Cancer Risk, Risk Calculation Part 2

Controlled Cancer Risk, Risk Calculation Part

			Unmitigated		Mitigated		$\sum R1*C_{DPM}$			$\sum R1*C_{DPM}$		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	3rd Trimester	0<2	Total	3rd Trimester	0<2	Total
564660_418418C	564660	4184180	1.74E-02	1.07E-02	8.57E-04	7.34E-04	2.36E-07	2.62E-06	2.86	1.16E-08	1.51E-07	0.16
564680_418418C	564680	4184180	1.76E-02	1.08E-02	8.64E-04	7.40E-04	2.39E-07	2.65E-06	2.88	1.17E-08	1.53E-07	0.16
564700_418418C	564700	4184180	1.74E-02	1.07E-02	8.56E-04	7.33E-04	2.37E-07	2.62E-06	2.86	1.16E-08	1.51E-07	0.16
564720_418418C	564720	4184180	1.71E-02	1.05E-02	8.36E-04	7.16E-04	2.31E-07	2.56E-06	2.80	1.13E-08	1.48E-07	0.16
564180_418420C	564180	4184200	3.33E-03	2.05E-03	1.92E-04	1.63E-04	4.51E-08	5.01E-07	0.55	2.60E-09	3.38E-08	0.04
564200_418420C	564200	4184200	3.66E-03	2.26E-03	2.32E-04	1.97E-04	4.96E-08	5.51E-07	0.60	3.14E-09	4.08E-08	0.04
564240_418420C	564240	4184200	4.40E-03	2.73E-03	3.21E-04	2.72E-04	5.97E-08	6.65E-07	0.72	4.35E-09	5.65E-08	0.06
564260_418420C	564260	4184200	4.78E-03	2.96E-03	3.14E-04	2.67E-04	6.48E-08	7.20E-07	0.78	4.26E-09	5.53E-08	0.06
564280_418420C	564280	4184200	5.19E-03	3.21E-03	3.19E-04	2.71E-04	7.04E-08	7.82E-07	0.85	4.32E-09	5.62E-08	0.06
564300_418420C	564300	4184200	5.63E-03	3.48E-03	3.31E-04	2.82E-04	7.64E-08	8.48E-07	0.92	4.49E-09	5.84E-08	0.06
564320_418420C	564320	4184200	6.08E-03	3.75E-03	3.47E-04	2.96E-04	8.25E-08	9.15E-07	1.00	4.71E-09	6.13E-08	0.07
564340_418420C	564340	4184200	6.53E-03	4.03E-03	3.66E-04	3.12E-04	8.85E-08	9.82E-07	1.07	4.97E-09	6.46E-08	0.07
564360_418420C	564360	4184200	6.95E-03	4.28E-03	3.85E-04	3.28E-04	9.42E-08	1.05E-06	1.14	5.22E-09	6.79E-08	0.07
564380_418420C	564380	4184200	7.34E-03	4.53E-03	4.04E-04	3.45E-04	9.96E-08	1.10E-06	1.20	5.47E-09	7.13E-08	0.08
564400_418420C	564400	4184200	7.79E-03	4.80E-03	4.26E-04	3.63E-04	1.06E-07	1.17E-06	1.28	5.77E-09	7.51E-08	0.08
564420_418420C	564420	4184200	8.27E-03	5.10E-03	4.48E-04	3.83E-04	1.12E-07	1.24E-06	1.36	6.08E-09	7.92E-08	0.09
564440_418420C	564440	4184200	8.91E-03	5.49E-03	4.77E-04	4.08E-04	1.21E-07	1.34E-06	1.46	6.47E-09	8.42E-08	0.09
564460_418420C	564460	4184200	9.71E-03	5.98E-03	5.12E-04	4.38E-04	1.32E-07	1.46E-06	1.59	6.95E-09	9.05E-08	0.10
564480_418420C	564480	4184200	1.07E-02	6.56E-03	5.54E-04	4.74E-04	1.45E-07	1.60E-06	1.75	7.52E-09	9.80E-08	0.11
564520_418420C	564520	4184200	1.32E-02	8.12E-03	6.69E-04	5.73E-04	1.79E-07	1.98E-06	2.16	9.08E-09	1.18E-07	0.13
564540_418420C	564540	4184200	1.47E-02	9.06E-03	7.40E-04	6.34E-04	2.00E-07	2.21E-06	2.41	1.00E-08	1.31E-07	0.14
564560_418420C	564560	4184200	1.63E-02	1.01E-02	8.15E-04	6.98E-04	2.22E-07	2.46E-06	2.68	1.11E-08	1.44E-07	0.16
564580_418420C	564580	4184200	1.79E-02	1.10E-02	8.89E-04	7.62E-04	2.43E-07	2.70E-06	2.94	1.21E-08	1.57E-07	0.17
564600_418420C	564600	4184200	1.94E-02	1.19E-02	9.55E-04	8.18E-04	2.62E-07	2.91E-06	3.17	1.29E-08	1.69E-07	0.18
564620_418420C	564620	4184200	2.03E-02	1.25E-02	9.99E-04	8.56E-04	2.76E-07	3.05E-06	3.33	1.36E-08	1.77E-07	0.19
564640_418420C	564640	4184200	2.09E-02	1.28E-02	1.03E-03	8.78E-04	2.83E-07	3.14E-06	3.42	1.39E-08	1.81E-07	0.20
564660_418420C	564660	4184200	2.11E-02	1.30E-02	1.03E-03	8.86E-04	2.86E-07	3.17E-06	3.46	1.40E-08	1.83E-07	0.20
564680_418420C	564680	4184200	2.09E-02	1.29E-02	1.02E-03	8.77E-04	2.84E-07	3.14E-06	3.43	1.39E-08	1.81E-07	0.19
564700_418420C	564700	4184200	2.03E-02	1.25E-02	9.94E-04	8.51E-04	2.75E-07	3.05E-06	3.33	1.35E-08	1.76E-07	0.19
564720_418420C	564720	4184200	1.95E-02	1.20E-02	9.52E-04	8.16E-04	2.64E-07	2.93E-06	3.19	1.29E-08	1.68E-07	0.18
564740_418420C	564740	4184200	1.85E-02	1.14E-02	9.04E-04	7.74E-04	2.50E-07	2.78E-06	3.03	1.23E-08	1.60E-07	0.17
564180_418422C	564180	4184220	3.50E-03	2.16E-03	1.98E-04	1.69E-04	4.74E-08	5.27E-07	0.57	2.68E-09	3.49E-08	0.04
564200_418422C	564200	4184220	3.86E-03	2.38E-03	2.31E-04	1.97E-04	5.24E-08	5.81E-07	0.63	3.13E-09	4.07E-08	0.04
564240_418422C	564240	4184220	4.78E-03	2.97E-03	3.63E-04	3.08E-04	6.48E-08	7.22E-07	0.79	4.92E-09	6.38E-08	0.07
564260_418422C	564260	4184220	5.24E-03	3.24E-03	3.53E-04	3.00E-04	7.11E-08	7.90E-07	0.86	4.79E-09	6.22E-08	0.07
564280_418422C	564280	4184220	5.77E-03	3.56E-03	3.60E-04	3.07E-04	7.82E-08	8.69E-07	0.95	4.89E-09	6.35E-08	0.07
564300_418422C	564300	4184220	6.35E-03	3.92E-03	3.79E-04	3.23E-04	8.62E-08	9.57E-07	1.04	5.14E-09	6.68E-08	0.07
564320_418422C	564320	4184220	6.98E-03	4.31E-03	4.05E-04	3.45E-04	9.47E-08	1.05E-06	1.15	5.49E-09	7.14E-08	0.08
564340_418422C	564340	4184220	7.63E-03	4.71E-03	4.34E-04	3.70E-04	1.03E-07	1.15E-06	1.25	5.89E-09	7.66E-08	0.08
564360_418422C	564360	4184220	8.25E-03	5.08E-03	4.64E-04	3.96E-04	1.12E-07	1.24E-06	1.35	6.30E-09	8.19E-08	0.09
564380_418422C	564380	4184220	8.82E-03	5.44E-03	4.94E-04	4.22E-04	1.20E-07	1.33E-06	1.45	6.70E-09	8.72E-08	0.09
564400_418422C	564400	4184220	9.39E-03	5.79E-03	5.23E-04	4.47E-04	1.27E-07	1.41E-06	1.54	7.10E-09	9.24E-08	0.10
564420_418422C	564420	4184220	1.00E-02	6.18E-03	5.50E-04	4.70E-04	1.36E-07	1.51E-06	1.64	7.46E-09	9.71E-08	0.10
564440_418422C	564440	4184220	1.08E-02	6.67E-03	5.82E-04	4.97E-04	1.47E-07	1.63E-06	1.78	7.89E-09	1.03E-07	0.11
564460_418422C	564460	4184220	1.19E-02	7.32E-03	6.26E-04	5.35E-04	1.61E-07	1.79E-06	1.95	8.49E-09	1.11E-07	0.12
564540_418422C	564540	4184220	1.90E-02	1.17E-02	9.51E-04	8.14E-04	2.58E-07	2.86E-06	3.12	1.29E-08	1.68E-07	0.18
564560_418422C	564560	4184220	2.13E-02	1.31E-02	1.06E-03	9.04E-04	2.89E-07	3.20E-06	3.49	1.43E-08	1.87E-07	0.20
564620_418422C	564620	4184220	2.58E-02	1.59E-02	1.26E-03	1.08E-03	3.50E-07	3.88E-06	4.23	1.71E-08	2.23E-07	0.24
564640_418422C	564640	4184220	2.59E-02	1.59E-02	1.27E-03	1.08E-03	3.51E-07	3.89E-06	4.24	1.72E-08	2.24E-07	0.24
564660_418422C	564660	4184220	2.54E-02	1.56E-02	1.24E-03	1.06E-03	3.45E-07	3.82E-06	4.17	1.69E-08	2.20E-07	0.24
564680_418422C	564680	4184220	2.46E-02	1.51E-02	1.20E-03	1.03E-03	3.33E-07	3.70E-06	4.03	1.63E-08	2.12E-07	0.23
564700_418422C	564700	4184220	2.33E-02	1.44E-02	1.14E-03	9.77E-04	3.16E-07	3.51E-06	3.82	1.55E-08	2.02E-07	0.22
564720_418422C	564720	4184220	2.19E-02	1.35E-02	1.07E-03	9.17E-04	2.97E-07	3.29E-06	3.59	1.45E-08	1.89E-07	0.20
564740_418422C	564740	4184220	2.04E-02	1.25E-02	9.97E-04	8.54E-04	2.76E-07	3.06E-06	3.34	1.35E-08	1.76E-07	0.19
564760_418422C	564760	4184220	1.89E-02	1.16E-02	9.24E-04	7.92E-04	2.56E-07	2.84E-06	3.10	1.25E-08	1.63E-07	0.18
564160_418424C	564160	4184240	3.31E-03	2.04E-03	1.81E-04	1.54E-04	4.49E-08	4.98E-07	0.54	2.45E-09	3.19E-08	0.03
564180_418424C	564180	4184240	3.66E-03	2.26E-03	2.04E-04	1.74E-04	4.96E-08	5.50E-07	0.60	2.77E-09	3.61E-08	0.04
564200_418424C	564200	4184240	4.06E-03	2.50E-03	2.36E-04	2.01E-04	5.50E-08	6.11E-07	0.67	3.20E-09	4.16E-08	0.04
564220_418424C	564220	4184240	4.54E-03	2.80E-03	2.85E-04	2.43E-04	6.15E-08	6.83E-07	0.74	3.87E-09	5.03E-08	0.05
564260_418424C	564260	4184240	5.70E-03	3.53E-03	3.97E-04	3.37E-04	7.73E-08	8.60E-07	0.94	5.38E-09	6.98E-08	0.08
564280_418424C	564280	4184240	6.37E-03	3.94E-03	4.08E-04	3.47E-04	8.64E-08	9.60E-07	1.05	5.53E-09	7.18E-08	0.08
564300_418424C	564300	4184240	7.14E-03	4.41E-03	4.35E-04	3.70E-04	9.68E-08	1.08E-06	1.17	5.90E-09	7.67E-08	0.08
564320_418424C	564320	4184240	8.01E-03	4.94E-03	4.75E-04	4.05E-04	1.09E-07	1.21E-06	1.31	6.44E-09	8.38E-08	0.09
564340_418424C	564340	4184240	8.95E-03	5.52E-03	5.26E-04	4.48E-04	1.21E-07	1.35E-06	1.47	7.13E-09	9.27E-08	0.10
564360_418424C	564360	4184240	9.91E-03	6.11E-03	5.83E-04	4.97E-04	1.34E-07	1.49E-06	1.63	7.91E-09	1.03E-07	0.11
564380_418424C	564380	4184240	1.08E-02	6.67E-03	6.40E-04	5.46E-04	1.47E-07	1.63E-06	1.77	8.68E-09	1.13E-07	0.12
564400_418424C	564400	4184240	1.16E-02	7.16E-03	6.68E-04	5.70E-04	1.57E-07	1.75E-06	1.90	9.06E-09	1.18E-07	0.13
564420_418424C	564420	4184240	1.24E-02	7.66E-03	6.88E-04	5.88E-04	1.69E-07	1.87E-06	2.04	9.34E-09	1.22E-07	0.13
564440_418424C	564440	4184240	1.35E-02	8.31E-03	7.24E-04	6.19E-04	1.83E-07	2.03E-06	2.21	9.82E-09	1.28E-07	0.14
564460_418424C	564460	4184240	1.50E-02	9.21E-03	7.83E-04	6.70E-04	2.03E-07	2.25E-06	2.45	1.06E-08	1.38E-07	0.15
564480_418424C	564480	4184240	1.69E-02	1.04E-02	8.70E-04	7.44E-04	2.30E-07	2.55E-06	2.78	1.18E-08	1.54E-07	0.17
564620_418424C	564620	4184240	3.27E-02	2.01E-02	1.60E-03	1.37E-03	4.44E-07	4.92E-06	5.37	2.17E-08	2.83E-07	0.30
564640_418424C	564640	4184240	3.19E-02	1.96E-02	1.55E-03	1.33E-03	4.32E-07	4.79E-06	5.22	2.11E-08	2.75E-07	0.30
564660_418424C	564660	4184240	3.03E-02	1.86E-02	1.48E-03	1.27E-03	4.11E-07	4.56E-06	4.97	2.01E-08	2.62E-07	0.28
564680_418424C	564680	4184240	2.84E-02	1.75E-02	1.39E-03	1.19E-03	3.85E-07	4.27E-06	4.66	1.88E-08	2.45E-07	0.26
564700_418424C	564700	4184240	2.63E-02	1.62E-02	1.29E-03	1.10E-03	3.57E-07	3.96E-06	4.32	1.74E-08	2.27E-07	0.24
564720_418424C	564720	4184240	2.42E-02	1.49E-02	1.18E-03	1.01E-03	3.28E-07	3.64E-06	3.96	1.60E-08	2.09E-07	0.22
564740_418424C	564740	4184240	2.21E-02	1.36E-02	1.08E-03	9.26E-04	3.00E-07	3.33E-06	3.63	1.47E-08	1.91E-07	0.21
564760_418424C	564760	4184240	2.02E-02	1.24E-02	9.88E-04	8.47E-04	2.74E-07	3.04E-06	3.31	1.34E-08	1.75E-07	0.19
564160_418426C	564160	4184260	3.41E-03	2.10E-03	1.86E-04	1.59E-04	4.63E-08	5.13E-07	0.56	2.53E-09	3.29E-08	0.04
564180_418426C	564180	4184260	3.79E-03	2.34E-03	2.11E-04	1.80E-04	5.14E-08	5.70E-07	0.62	2.86E-09	3.72E-08	0.04
564200_418426C	564200	4184260	4.23E-03	2.61E-03	2.42E-04	2.07E-04	5.73E-08	6.36E-07	0.69	3.29E-09	4.27E-08	0.05
564220_418426C	564220	4184260	4.75E-03	2.93E-03	2.86E-04	2.44E-04	6.44E-08	7.16E-07	0.78	3.88E-09	5.05E-08	0.05
564260_418426C	564260	4184260	6.15E-03	3.82E-03	4.49E-04	3.81E-04	8.34E-08	9.28E-07	1.01	6.09E-09	7.89E-08	0.09
564280_418426C	564280	4184260	6.96E-03	4.31E-03	4.64E-04	3.94E-04	9.45E-08	1.05E-06	1.14	6.29E-09	8.17E-08	0.09
564300_418426C	564300	4184260	7.95E-03	4.92E-03	5.05E-04	4.30E-04	1.08E-07	1.20E-06	1.31	6.85E-09	8.90E-08	0.10
564320_418426C	564320	4184260	9.13E-03	5.65E-03	5.73E-04	4.87E-04	1.24E-07	1.38E-06	1.50	7.77E-09	1.01E-07	0.11
564380_418426C	564380	4184260	1.35E-02	8.35E-03	9.05E-04	7.69E-04	1.83E-07	2.03E-06	2.22	1.23E-08	1.59E-07	0.17
564400_418426C	564400	4184260	1.47E-02	9.05E-03	8.67E-04	7.38E-04	1.99E-07	2.21E-06	2.41	1.18E-08	1.53E-07	0.16
564420_418426C	564420	4184260	1.58E-02	9.77E-03	8.79E-04	7.51E-04	2.15E-07	2.38E-06	2.60	1.19E-08	1.55E-07	0.17
564440_418426C	564440	4184260	1.73E-02	1.07E-02	9.24E-04	7.90E-04	2.35E-07	2.60E-06	2.84	1.25E-08	1.63E-07	0.18
564460_418426C	564460	4184260	1.95E-02	1.20E-02	1.01E-03	8.65E-04	2.64E-07	2.93E-06	3.19	1.37E-08	1.79E-07	0.19
564480_418426C	564480	4184260	2.25E-02	1.38E-02	1.15E-03	9.80E-04	3.05E-07	3.38E-06	3.69	1.55E-08	2.02E-07	0.22

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3) | Uncontrolled Cancer Risk, Risk Calculation Part 2 | Controlled Cancer Risk, Risk Calculation Part

			Unmitigated		Mitigated		∑R1*C_{DPM}			∑R1*C_{DPM}		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	3rd Trimester	0<2	Total	3rd Trimester	0<2	Total
564580_4184260	564580	4184260	4.22E-02	2.60E-02	2.06E-03	1.76E-03	5.73E-07	6.35E-06	6.92	2.79E-08	3.64E-07	0.39
564600_4184260	564600	4184260	4.26E-02	2.62E-02	2.07E-03	1.78E-03	5.78E-07	6.40E-06	6.98	2.81E-08	3.67E-07	0.40
564620_4184260	564620	4184260	4.11E-02	2.53E-02	2.00E-03	1.72E-03	5.58E-07	6.18E-06	6.74	2.72E-08	3.54E-07	0.38
564640_4184260	564640	4184260	3.86E-02	2.37E-02	1.88E-03	1.61E-03	5.23E-07	5.80E-06	6.32	2.55E-08	3.32E-07	0.36
564660_4184260	564660	4184260	3.54E-02	2.18E-02	1.72E-03	1.48E-03	4.80E-07	5.32E-06	5.80	2.34E-08	3.05E-07	0.33
564680_4184260	564680	4184260	3.21E-02	1.98E-02	1.57E-03	1.34E-03	4.36E-07	4.83E-06	5.27	2.12E-08	2.77E-07	0.30
564700_4184260	564700	4184260	2.90E-02	1.79E-02	1.42E-03	1.21E-03	3.94E-07	4.37E-06	4.76	1.92E-08	2.51E-07	0.27
564720_4184260	564720	4184260	2.62E-02	1.61E-02	1.28E-03	1.10E-03	3.55E-07	3.94E-06	4.29	1.73E-08	2.26E-07	0.24
564740_4184260	564740	4184260	2.36E-02	1.45E-02	1.15E-03	9.88E-04	3.20E-07	3.55E-06	3.87	1.56E-08	2.04E-07	0.22
564760_4184260	564760	4184260	2.13E-02	1.31E-02	1.04E-03	8.93E-04	2.89E-07	3.20E-06	3.49	1.41E-08	1.84E-07	0.20
564160_4184280	564160	4184280	3.48E-03	2.15E-03	1.91E-04	1.63E-04	4.73E-08	5.24E-07	0.57	2.59E-09	3.38E-08	0.04
564180_4184280	564180	4184280	3.89E-03	2.40E-03	2.18E-04	1.86E-04	5.27E-08	5.85E-07	0.64	2.95E-09	3.84E-08	0.04
564200_4184280	564200	4184280	4.37E-03	2.70E-03	2.51E-04	2.14E-04	5.92E-08	6.58E-07	0.72	3.41E-09	4.43E-08	0.05
564220_4184280	564220	4184280	4.94E-03	3.05E-03	2.97E-04	2.53E-04	6.71E-08	7.45E-07	0.81	4.02E-09	5.23E-08	0.06
564240_4184280	564240	4184280	5.65E-03	3.50E-03	3.66E-04	3.11E-04	7.67E-08	8.52E-07	0.93	4.96E-09	6.45E-08	0.07
564280_4184280	564280	4184280	7.54E-03	4.68E-03	5.44E-04	4.61E-04	1.02E-07	1.14E-06	1.24	7.37E-09	9.56E-08	0.10
564340_4184280	564340	4184280	1.21E-02	7.50E-03	7.97E-04	6.77E-04	1.64E-07	1.83E-06	1.99	1.08E-08	1.40E-07	0.15
564360_4184280	564360	4184280	1.43E-02	8.80E-03	8.57E-04	7.30E-04	1.93E-07	2.15E-06	2.34	1.16E-08	1.51E-07	0.16
564400_4184280	564400	4184280	1.90E-02	1.17E-02	1.10E-03	9.36E-04	2.58E-07	2.86E-06	3.12	1.49E-08	1.94E-07	0.21
564460_4184280	564460	4184280	2.65E-02	1.63E-02	1.36E-03	1.16E-03	3.60E-07	3.99E-06	4.35	1.84E-08	2.40E-07	0.26
564480_4184280	564480	4184280	3.16E-02	1.94E-02	1.59E-03	1.36E-03	4.28E-07	4.75E-06	5.18	2.15E-08	2.81E-07	0.30
564500_4184280	564500	4184280	3.86E-02	2.37E-02	1.91E-03	1.64E-03	5.24E-07	5.80E-06	6.33	2.60E-08	3.38E-07	0.36
564580_4184280	564580	4184280	5.80E-02	3.56E-02	2.82E-03	2.41E-03	7.86E-07	8.71E-06	9.50	3.82E-08	4.98E-07	0.54
564600_4184280	564600	4184280	5.51E-02	3.39E-02	2.67E-03	2.29E-03	7.47E-07	8.28E-06	9.03	3.63E-08	4.73E-07	0.51
564620_4184280	564620	4184280	5.04E-02	3.10E-02	2.45E-03	2.10E-03	6.84E-07	7.58E-06	8.27	3.32E-08	4.33E-07	0.47
564640_4184280	564640	4184280	4.52E-02	2.78E-02	2.20E-03	1.88E-03	6.13E-07	6.80E-06	7.41	2.98E-08	3.89E-07	0.42
564660_4184280	564660	4184280	4.01E-02	2.46E-02	1.95E-03	1.67E-03	5.43E-07	6.02E-06	6.56	2.64E-08	3.45E-07	0.37
564680_4184280	564680	4184280	3.54E-02	2.18E-02	1.72E-03	1.48E-03	4.80E-07	5.32E-06	5.80	2.34E-08	3.05E-07	0.33
564700_4184280	564700	4184280	3.13E-02	1.93E-02	1.53E-03	1.31E-03	4.25E-07	4.71E-06	5.13	2.07E-08	2.70E-07	0.29
564720_4184280	564720	4184280	2.78E-02	1.71E-02	1.36E-03	1.16E-03	3.77E-07	4.18E-06	4.55	1.84E-08	2.40E-07	0.26
564740_4184280	564740	4184280	2.48E-02	1.52E-02	1.21E-03	1.04E-03	3.36E-07	3.73E-06	4.06	1.64E-08	2.14E-07	0.23
564760_4184280	564760	4184280	2.22E-02	1.37E-02	1.09E-03	9.32E-04	3.01E-07	3.34E-06	3.64	1.48E-08	1.92E-07	0.21
564780_4184280	564780	4184280	2.00E-02	1.23E-02	9.80E-04	8.39E-04	2.71E-07	3.01E-06	3.28	1.33E-08	1.73E-07	0.19
564140_4184300	564140	4184300	3.18E-03	1.96E-03	1.74E-04	1.49E-04	4.32E-08	4.79E-07	0.52	2.36E-09	3.07E-08	0.03
564160_4184300	564160	4184300	3.54E-03	2.18E-03	1.97E-04	1.68E-04	4.80E-08	5.32E-07	0.58	2.67E-09	3.48E-08	0.04
564180_4184300	564180	4184300	3.96E-03	2.44E-03	2.27E-04	1.93E-04	5.37E-08	5.97E-07	0.65	3.07E-09	4.00E-08	0.04
564200_4184300	564200	4184300	4.48E-03	2.76E-03	2.66E-04	2.27E-04	6.07E-08	6.74E-07	0.73	3.61E-09	4.69E-08	0.05
564220_4184300	564220	4184300	5.10E-03	3.15E-03	3.19E-04	2.72E-04	6.92E-08	7.68E-07	0.84	4.33E-09	5.63E-08	0.06
564240_4184300	564240	4184300	5.88E-03	3.64E-03	3.99E-04	3.39E-04	7.97E-08	8.86E-07	0.97	5.41E-09	7.02E-08	0.08
564340_4184300	564340	4184300	1.36E-02	8.39E-03	8.01E-04	6.83E-04	1.84E-07	2.05E-06	2.23	1.09E-08	1.41E-07	0.15
564360_4184300	564360	4184300	1.67E-02	1.03E-02	9.33E-04	7.96E-04	2.26E-07	2.51E-06	2.74	1.27E-08	1.65E-07	0.18
564380_4184300	564380	4184300	2.06E-02	1.27E-02	1.13E-03	9.64E-04	2.80E-07	3.10E-06	3.38	1.53E-08	1.99E-07	0.21
564480_4184300	564480	4184300	4.79E-02	2.95E-02	2.38E-03	2.03E-03	6.50E-07	7.20E-06	7.85	3.22E-08	4.20E-07	0.45
564500_4184300	564500	4184300	6.16E-02	3.79E-02	3.02E-03	2.59E-03	8.36E-07	9.27E-06	10.10	4.10E-08	5.34E-07	0.58
564600_4184300	564600	4184300	6.87E-02	4.22E-02	3.33E-03	2.85E-03	9.31E-07	1.03E-05	11.25	4.51E-08	5.89E-07	0.63
564620_4184300	564620	4184300	5.94E-02	3.65E-02	2.88E-03	2.47E-03	8.05E-07	8.93E-06	9.73	3.91E-08	5.10E-07	0.55
564640_4184300	564640	4184300	5.12E-02	3.15E-02	2.48E-03	2.13E-03	6.94E-07	7.69E-06	8.38	3.37E-08	4.39E-07	0.47
564660_4184300	564660	4184300	4.40E-02	2.71E-02	2.14E-03	1.84E-03	5.97E-07	6.62E-06	7.22	2.90E-08	3.79E-07	0.41
564680_4184300	564680	4184300	3.81E-02	2.34E-02	1.86E-03	1.59E-03	5.17E-07	5.73E-06	6.25	2.52E-08	3.28E-07	0.35
564700_4184300	564700	4184300	3.32E-02	2.04E-02	1.62E-03	1.39E-03	4.51E-07	5.00E-06	5.45	2.20E-08	2.87E-07	0.31
564720_4184300	564720	4184300	2.92E-02	1.79E-02	1.42E-03	1.22E-03	3.96E-07	4.39E-06	4.78	1.93E-08	2.52E-07	0.27
564740_4184300	564740	4184300	2.58E-02	1.59E-02	1.26E-03	1.08E-03	3.50E-07	3.88E-06	4.23	1.71E-08	2.23E-07	0.24
564760_4184300	564760	4184300	2.31E-02	1.42E-02	1.13E-03	9.67E-04	3.13E-07	3.47E-06	3.78	1.53E-08	2.00E-07	0.21
564780_4184300	564780	4184300	2.07E-02	1.27E-02	1.01E-03	8.69E-04	2.81E-07	3.11E-06	3.39	1.38E-08	1.79E-07	0.19
564140_4184320	564140	4184320	3.20E-03	1.97E-03	1.78E-04	1.52E-04	4.34E-08	4.81E-07	0.52	2.42E-09	3.15E-08	0.03
564160_4184320	564160	4184320	3.56E-03	2.20E-03	2.06E-04	1.75E-04	4.83E-08	5.36E-07	0.58	2.79E-09	3.63E-08	0.04
564180_4184320	564180	4184320	4.01E-03	2.48E-03	2.44E-04	2.08E-04	5.44E-08	6.04E-07	0.66	3.31E-09	4.31E-08	0.05
564200_4184320	564200	4184320	4.56E-03	2.82E-03	3.02E-04	2.57E-04	6.18E-08	6.87E-07	0.75	4.09E-09	5.32E-08	0.06
564260_4184320	564260	4184320	7.07E-03	4.39E-03	5.46E-04	4.63E-04	9.59E-08	1.07E-06	1.16	7.41E-09	9.60E-08	0.10
564580_4184320	564580	4184320	9.84E-02	6.05E-02	4.75E-03	4.07E-03	1.33E-06	1.48E-05	16.12	6.45E-08	8.41E-07	0.91
564600_4184320	564600	4184320	8.10E-02	4.98E-02	3.92E-03	3.36E-03	1.10E-06	1.22E-05	13.27	5.31E-08	6.93E-07	0.75
564620_4184320	564620	4184320	6.69E-02	4.12E-02	3.24E-03	2.78E-03	9.08E-07	1.01E-05	10.97	4.40E-08	5.74E-07	0.62
564640_4184320	564640	4184320	5.60E-02	3.44E-02	2.72E-03	2.33E-03	7.59E-07	8.41E-06	9.17	3.68E-08	4.81E-07	0.52
564660_4184320	564660	4184320	4.74E-02	2.91E-02	2.30E-03	1.97E-03	6.43E-07	7.12E-06	7.77	3.13E-08	4.08E-07	0.44
564680_4184320	564680	4184320	4.05E-02	2.49E-02	1.97E-03	1.69E-03	5.49E-07	6.09E-06	6.64	2.68E-08	3.49E-07	0.38
564700_4184320	564700	4184320	3.50E-02	2.15E-02	1.71E-03	1.46E-03	4.75E-07	5.27E-06	5.74	2.32E-08	3.02E-07	0.33
564720_4184320	564720	4184320	3.05E-02	1.88E-02	1.49E-03	1.28E-03	4.14E-07	4.59E-06	5.00	2.02E-08	2.64E-07	0.28
564740_4184320	564740	4184320	2.66E-02	1.64E-02	1.30E-03	1.12E-03	3.61E-07	4.00E-06	4.37	1.77E-08	2.30E-07	0.25
564760_4184320	564760	4184320	2.37E-02	1.46E-02	1.16E-03	9.95E-04	3.22E-07	3.57E-06	3.89	1.58E-08	2.05E-07	0.22
564780_4184320	564780	4184320	2.14E-02	1.32E-02	1.05E-03	8.99E-04	2.91E-07	3.22E-06	3.51	1.42E-08	1.86E-07	0.20
564140_4184340	564140	4184340	3.19E-03	1.97E-03	1.86E-04	1.58E-04	4.33E-08	4.81E-07	0.52	2.52E-09	3.27E-08	0.04
564160_4184340	564160	4184340	3.58E-03	2.21E-03	2.30E-04	1.95E-04	4.86E-08	5.40E-07	0.59	3.12E-09	4.05E-08	0.04
564220_4184340	564220	4184340	5.28E-03	3.28E-03	4.08E-04	3.45E-04	7.16E-08	7.97E-07	0.87	5.53E-09	7.17E-08	0.08
564240_4184340	564240	4184340	6.04E-03	3.74E-03	4.16E-04	3.53E-04	8.19E-08	9.11E-07	0.99	5.64E-09	7.32E-08	0.08
564260_4184340	564260	4184340	7.05E-03	4.36E-03	4.59E-04	3.91E-04	9.56E-08	1.06E-06	1.16	6.23E-09	8.09E-08	0.09
564600_4184340	564600	4184340	9.07E-02	5.58E-02	4.39E-03	3.76E-03	1.23E-06	1.36E-05	14.87	5.95E-08	7.76E-07	0.84
564620_4184340	564620	4184340	7.31E-02	4.50E-02	3.54E-03	3.04E-03	9.92E-07	1.10E-05	11.98	4.80E-08	6.27E-07	0.67
564640_4184340	564640	4184340	6.01E-02	3.70E-02	2.92E-03	2.50E-03	8.15E-07	9.03E-06	9.85	3.96E-08	5.16E-07	0.56
564660_4184340	564660	4184340	5.04E-02	3.10E-02	2.45E-03	2.10E-03	6.84E-07	7.58E-06	8.26	3.32E-08	4.33E-07	0.47
564680_4184340	564680	4184340	4.28E-02	2.63E-02	2.08E-03	1.78E-03	5.80E-07	6.43E-06	7.01	2.82E-08	3.68E-07	0.40
564700_4184340	564700	4184340	3.69E-02	2.27E-02	1.80E-03	1.54E-03	5.00E-07	5.54E-06	6.04	2.44E-08	3.18E-07	0.34
564720_4184340	564720	4184340	3.20E-02	1.97E-02	1.56E-03	1.34E-03	4.34E-07	4.81E-06	5.24	2.12E-08	2.76E-07	0.30
564740_4184340	564740	4184340	2.77E-02	1.71E-02	1.36E-03	1.16E-03	3.76E-07	4.17E-06	4.55	1.84E-08	2.40E-07	0.26
564760_4184340	564760	4184340	2.46E-02	1.51E-02	1.20E-03	1.03E-03	3.34E-07	3.70E-06	4.03	1.63E-08	2.13E-07	0.23
564780_4184340	564780	4184340	2.21E-02	1.36E-02	1.08E-03	9.26E-04	2.99E-07	3.32E-06	3.61	1.47E-08	1.91E-07	0.21
564180_4184360	564180	4184360	4.03E-03	2.50E-03	3.12E-04	2.64E-04	5.46E-08	6.09E-07	0.66	4.23E-09	5.49E-08	0.06
564200_4184360	564200	4184360	4.52E-03	2.80E-03	3.12E-04	2.65E-04	6.13E-08	6.82E-07	0.74	4.23E-09	5.49E-08	0.06
564220_4184360	564220	4184360	5.14E-03	3.18E-03	3.30E-04	2.80E-04	6.98E-08	7.75E-07	0.85	4.47E-09	5.81E-08	0.06
564240_4184360	564240	4184360	5.93E-03	3.67E-03	3.63E-04	3.09E-04	8.05E-08	8.94E-07	0.97	4.92E-09	6.39E-08	0.07
564260_4184360	564260	4184360	6.95E-03	4.29E-03	4.15E-04	3.53E-04	9.43E-08	1.05E-06	1.14	5.63E-09	7.31E-08	0.08
564280_4184360	564280	4184360	8.30E-03	5.13E-03	5.01E-04	4.27E-04	1.13E-07	1.25E-06	1.36	6.79E-09	8.83E-08	0.10
564560_4184360	564560	4184360	1.73E-01	1.06E-01	8.34E-03	7.15E-03	2.35E-06	2.60E-05	28.38	1.13E-07	1.48E-06	1.59
564580_4184360	564580	4184360	1.27E-01	7.83E-02	6.15E-03	5.27E-03	1.73E-06	1.91E-05	20.87	8.34E-08	1.09E-06	1.17

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)							Uncontrolled Cancer Risk, Risk Calculation Part 2			Controlled Cancer Risk, Risk Calculation Part		
			Unmitigated		Mitigated		$\sum R1 * C_{DPM}$			$\sum R1 * C_{DPM}$		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	3rd Trimester	0<2	Total	3rd Trimester	0<2	Total
564620_4184360	564620	4184360	7.75E-02	4.77E-02	3.76E-03	3.22E-03	1.05E-06	1.17E-05	12.70	5.09E-08	6.64E-07	0.72
564640_4184360	564640	4184360	6.30E-02	3.87E-02	3.06E-03	2.62E-03	8.54E-07	9.47E-06	10.32	4.15E-08	5.41E-07	0.58
564660_4184360	564660	4184360	5.23E-02	3.22E-02	2.54E-03	2.18E-03	7.10E-07	7.87E-06	8.58	3.45E-08	4.50E-07	0.48
564680_4184360	564680	4184360	4.42E-02	2.72E-02	2.15E-03	1.85E-03	6.00E-07	6.65E-06	7.25	2.92E-08	3.81E-07	0.41
564700_4184360	564700	4184360	3.78E-02	2.32E-02	1.84E-03	1.58E-03	5.13E-07	5.68E-06	6.19	2.50E-08	3.26E-07	0.35
564720_4184360	564720	4184360	3.25E-02	2.00E-02	1.59E-03	1.36E-03	4.41E-07	4.89E-06	5.33	2.15E-08	2.81E-07	0.30
564740_4184360	564740	4184360	2.84E-02	1.75E-02	1.39E-03	1.19E-03	3.85E-07	4.27E-06	4.65	1.88E-08	2.45E-07	0.26
564760_4184360	564760	4184360	2.50E-02	1.54E-02	1.22E-03	1.05E-03	3.39E-07	3.76E-06	4.10	1.66E-08	2.16E-07	0.23
564780_4184360	564780	4184360	2.23E-02	1.37E-02	1.09E-03	9.36E-04	3.02E-07	3.35E-06	3.65	1.48E-08	1.93E-07	0.21
564140_4184380	564140	4184380	3.10E-03	1.91E-03	1.84E-04	1.57E-04	4.20E-08	4.66E-07	0.51	2.50E-09	3.25E-08	0.03
564160_4184380	564160	4184380	3.46E-03	2.14E-03	2.13E-04	1.81E-04	4.69E-08	5.21E-07	0.57	2.89E-09	3.75E-08	0.04
564180_4184380	564180	4184380	3.88E-03	2.40E-03	2.37E-04	2.02E-04	5.26E-08	5.84E-07	0.64	3.21E-09	4.17E-08	0.04
564200_4184380	564200	4184380	4.38E-03	2.70E-03	2.60E-04	2.22E-04	5.94E-08	6.59E-07	0.72	3.53E-09	4.59E-08	0.05
564220_4184380	564220	4184380	5.00E-03	3.08E-03	2.90E-04	2.47E-04	6.77E-08	7.52E-07	0.82	3.93E-09	5.12E-08	0.06
564240_4184380	564240	4184380	5.77E-03	3.56E-03	3.29E-04	2.81E-04	7.83E-08	8.69E-07	0.95	4.47E-09	5.81E-08	0.06
564260_4184380	564260	4184380	6.76E-03	4.17E-03	3.82E-04	3.26E-04	9.17E-08	1.02E-06	1.11	5.18E-09	6.74E-08	0.07
564280_4184380	564280	4184380	8.05E-03	4.96E-03	4.58E-04	3.91E-04	1.09E-07	1.21E-06	1.32	6.21E-09	8.08E-08	0.09
564640_4184380	564640	4184380	6.17E-02	3.79E-02	3.00E-03	2.57E-03	8.36E-07	9.27E-06	10.11	4.06E-08	5.30E-07	0.57
564660_4184380	564660	4184380	5.12E-02	3.15E-02	2.49E-03	2.14E-03	6.95E-07	7.70E-06	8.40	3.38E-08	4.41E-07	0.48
564680_4184380	564680	4184380	4.34E-02	2.67E-02	2.11E-03	1.81E-03	5.88E-07	6.52E-06	7.11	2.87E-08	3.74E-07	0.40
564700_4184380	564700	4184380	3.70E-02	2.28E-02	1.81E-03	1.55E-03	5.02E-07	5.57E-06	6.07	2.45E-08	3.20E-07	0.34
564720_4184380	564720	4184380	3.19E-02	1.96E-02	1.56E-03	1.34E-03	4.33E-07	4.80E-06	5.23	2.12E-08	2.76E-07	0.30
564740_4184380	564740	4184380	2.79E-02	1.71E-02	1.36E-03	1.17E-03	3.78E-07	4.19E-06	4.57	1.85E-08	2.41E-07	0.26
564760_4184380	564760	4184380	2.46E-02	1.51E-02	1.21E-03	1.03E-03	3.34E-07	3.70E-06	4.04	1.64E-08	2.13E-07	0.23
564780_4184380	564780	4184380	2.20E-02	1.35E-02	1.08E-03	9.23E-04	2.98E-07	3.30E-06	3.60	1.46E-08	1.90E-07	0.21
564140_4184400	564140	4184400	3.00E-03	1.85E-03	1.66E-04	1.42E-04	4.07E-08	4.52E-07	0.49	2.25E-09	2.93E-08	0.03
564160_4184400	564160	4184400	3.34E-03	2.06E-03	1.86E-04	1.59E-04	4.53E-08	5.03E-07	0.55	2.53E-09	3.29E-08	0.04
564180_4184400	564180	4184400	3.75E-03	2.31E-03	2.09E-04	1.79E-04	5.08E-08	5.64E-07	0.61	2.84E-09	3.69E-08	0.04
564200_4184400	564200	4184400	4.23E-03	2.61E-03	2.35E-04	2.00E-04	5.74E-08	6.37E-07	0.69	3.18E-09	4.14E-08	0.04
564220_4184400	564220	4184400	4.82E-03	2.97E-03	2.65E-04	2.27E-04	6.53E-08	7.25E-07	0.79	3.60E-09	4.68E-08	0.05
564240_4184400	564240	4184400	5.56E-03	3.42E-03	3.04E-04	2.60E-04	7.54E-08	8.36E-07	0.91	4.13E-09	5.37E-08	0.06
564260_4184400	564260	4184400	6.49E-03	4.00E-03	3.55E-04	3.03E-04	8.80E-08	9.77E-07	1.06	4.81E-09	6.26E-08	0.07
564280_4184400	564280	4184400	7.71E-03	4.75E-03	4.24E-04	3.62E-04	1.05E-07	1.16E-06	1.26	5.75E-09	7.49E-08	0.08
564300_4184400	564300	4184400	9.35E-03	5.76E-03	5.31E-04	4.53E-04	1.27E-07	1.41E-06	1.53	7.20E-09	9.36E-08	0.10
564540_4184400	564540	4184400	1.52E-01	9.32E-02	7.34E-03	6.29E-03	2.06E-06	2.28E-05	24.85	9.96E-08	1.30E-06	1.40
564560_4184400	564560	4184400	1.23E-01	7.57E-02	5.96E-03	5.11E-03	1.67E-06	1.85E-05	20.16	8.09E-08	1.05E-06	1.14
564640_4184400	564640	4184400	5.43E-02	3.34E-02	2.65E-03	2.27E-03	7.36E-07	8.16E-06	8.89	3.59E-08	4.68E-07	0.50
564660_4184400	564660	4184400	4.60E-02	2.83E-02	2.25E-03	1.92E-03	6.24E-07	6.92E-06	7.54	3.05E-08	3.97E-07	0.43
564680_4184400	564680	4184400	3.94E-02	2.42E-02	1.93E-03	1.65E-03	5.34E-07	5.92E-06	6.46	2.61E-08	3.41E-07	0.37
564700_4184400	564700	4184400	3.41E-02	2.10E-02	1.67E-03	1.43E-03	4.63E-07	5.13E-06	5.60	2.27E-08	2.96E-07	0.32
564720_4184400	564720	4184400	2.97E-02	1.83E-02	1.46E-03	1.25E-03	4.03E-07	4.47E-06	4.87	1.97E-08	2.58E-07	0.28
564740_4184400	564740	4184400	2.62E-02	1.61E-02	1.28E-03	1.10E-03	3.55E-07	3.94E-06	4.29	1.74E-08	2.27E-07	0.24
564760_4184400	564760	4184400	2.33E-02	1.43E-02	1.14E-03	9.79E-04	3.16E-07	3.50E-06	3.82	1.55E-08	2.02E-07	0.22
564780_4184400	564780	4184400	2.07E-02	1.28E-02	1.02E-03	8.73E-04	2.81E-07	3.12E-06	3.40	1.38E-08	1.80E-07	0.19
564140_4184420	564140	4184420	2.90E-03	1.79E-03	1.56E-04	1.33E-04	3.94E-08	4.37E-07	0.48	2.11E-09	2.75E-08	0.03
564160_4184420	564160	4184420	3.23E-03	1.99E-03	1.74E-04	1.48E-04	4.37E-08	4.85E-07	0.53	2.36E-09	3.07E-08	0.03
564180_4184420	564180	4184420	3.61E-03	2.22E-03	1.95E-04	1.66E-04	4.90E-08	5.43E-07	0.59	2.64E-09	3.44E-08	0.04
564200_4184420	564200	4184420	4.07E-03	2.51E-03	2.19E-04	1.87E-04	5.53E-08	6.13E-07	0.67	2.97E-09	3.87E-08	0.04
564220_4184420	564220	4184420	4.63E-03	2.85E-03	2.49E-04	2.12E-04	6.28E-08	6.97E-07	0.76	3.37E-09	4.39E-08	0.05
564240_4184420	564240	4184420	5.33E-03	3.28E-03	2.85E-04	2.44E-04	7.22E-08	8.01E-07	0.87	3.87E-09	5.04E-08	0.05
564260_4184420	564260	4184420	6.20E-03	3.82E-03	3.32E-04	2.84E-04	8.41E-08	9.32E-07	1.02	4.50E-09	5.87E-08	0.06
564280_4184420	564280	4184420	7.33E-03	4.51E-03	3.95E-04	3.37E-04	9.94E-08	1.10E-06	1.20	5.35E-09	6.97E-08	0.08
564300_4184420	564300	4184420	8.83E-03	5.44E-03	4.84E-04	4.13E-04	1.20E-07	1.33E-06	1.45	6.57E-09	8.55E-08	0.09
564520_4184420	564520	4184420	9.45E-02	5.81E-02	4.64E-03	3.98E-03	1.28E-06	1.42E-05	15.48	6.30E-08	8.21E-07	0.88
564540_4184420	564540	4184420	8.58E-02	5.28E-02	4.21E-03	3.61E-03	1.16E-06	1.29E-05	14.07	5.71E-08	7.45E-07	0.80
564560_4184420	564560	4184420	7.62E-02	4.68E-02	3.73E-03	3.20E-03	1.03E-06	1.14E-05	12.48	5.06E-08	6.60E-07	0.71
564600_4184420	564600	4184420	5.74E-02	3.53E-02	2.82E-03	2.41E-03	7.79E-07	8.63E-06	9.41	3.82E-08	4.98E-07	0.54
564620_4184420	564620	4184420	4.98E-02	3.06E-02	2.44E-03	2.09E-03	6.75E-07	7.48E-06	8.16	3.31E-08	4.32E-07	0.46
564640_4184420	564640	4184420	4.34E-02	2.67E-02	2.13E-03	1.83E-03	5.89E-07	6.53E-06	7.12	2.89E-08	3.77E-07	0.41
564660_4184420	564660	4184420	3.79E-02	2.33E-02	1.86E-03	1.59E-03	5.14E-07	5.70E-06	6.21	2.52E-08	3.29E-07	0.35
564680_4184420	564680	4184420	3.33E-02	2.05E-02	1.63E-03	1.40E-03	4.51E-07	5.00E-06	5.45	2.22E-08	2.89E-07	0.31
564700_4184420	564700	4184420	2.95E-02	1.81E-02	1.45E-03	1.24E-03	3.99E-07	4.43E-06	4.83	1.96E-08	2.56E-07	0.28
564720_4184420	564720	4184420	2.62E-02	1.61E-02	1.29E-03	1.10E-03	3.55E-07	3.93E-06	4.29	1.74E-08	2.28E-07	0.24
564740_4184420	564740	4184420	2.34E-02	1.44E-02	1.15E-03	9.85E-04	3.17E-07	3.51E-06	3.83	1.56E-08	2.03E-07	0.22
564760_4184420	564760	4184420	2.09E-02	1.29E-02	1.03E-03	8.83E-04	2.84E-07	3.15E-06	3.43	1.40E-08	1.82E-07	0.20
564780_4184420	564780	4184420	1.88E-02	1.16E-02	9.26E-04	7.93E-04	2.55E-07	2.83E-06	3.08	1.26E-08	1.64E-07	0.18
564140_4184440	564140	4184440	2.80E-03	1.73E-03	1.48E-04	1.27E-04	3.80E-08	4.21E-07	0.46	2.01E-09	2.62E-08	0.03
564160_4184440	564160	4184440	3.11E-03	1.91E-03	1.64E-04	1.41E-04	4.21E-08	4.67E-07	0.51	2.23E-09	2.91E-08	0.03
564180_4184440	564180	4184440	3.47E-03	2.14E-03	1.84E-04	1.57E-04	4.71E-08	5.22E-07	0.57	2.49E-09	3.25E-08	0.03
564200_4184440	564200	4184440	3.91E-03	2.41E-03	2.07E-04	1.77E-04	5.30E-08	5.88E-07	0.64	2.80E-09	3.65E-08	0.04
564220_4184440	564220	4184440	4.44E-03	2.73E-03	2.35E-04	2.00E-04	6.02E-08	6.67E-07	0.73	3.18E-09	4.14E-08	0.04
564240_4184440	564240	4184440	5.09E-03	3.13E-03	2.69E-04	2.30E-04	6.90E-08	7.65E-07	0.83	3.65E-09	4.75E-08	0.05
564260_4184440	564260	4184440	5.90E-03	3.64E-03	3.12E-04	2.67E-04	8.01E-08	8.88E-07	0.97	4.24E-09	5.52E-08	0.06
564280_4184440	564280	4184440	6.94E-03	4.28E-03	3.69E-04	3.15E-04	9.42E-08	1.04E-06	1.14	5.00E-09	6.51E-08	0.07
564300_4184440	564300	4184440	8.30E-03	5.11E-03	4.46E-04	3.81E-04	1.13E-07	1.25E-06	1.36	6.04E-09	7.87E-08	0.08
564320_4184440	564320	4184440	1.02E-02	6.27E-03	5.65E-04	4.82E-04	1.38E-07	1.53E-06	1.67	7.67E-09	9.98E-08	0.11
564520_4184440	564520	4184440	5.49E-02	3.38E-02	2.77E-03	2.37E-03	7.45E-07	8.26E-06	9.00	3.76E-08	4.90E-07	0.53
564540_4184440	564540	4184440	5.15E-02	3.17E-02	2.58E-03	2.21E-03	6.99E-07	7.75E-06	8.45	3.51E-08	4.57E-07	0.49
564560_4184440	564560	4184440	4.76E-02	2.93E-02	2.38E-03	2.04E-03	6.46E-07	7.16E-06	7.81	3.23E-08	4.21E-07	0.45
564580_4184440	564580	4184440	4.36E-02	2.68E-02	2.17E-03	1.86E-03	5.91E-07	6.55E-06	7.14	2.94E-08	3.84E-07	0.41
564660_4184440	564660	4184440	2.94E-02	1.81E-02	1.45E-03	1.24E-03	3.98E-07	4.41E-06	4.81	1.97E-08	2.57E-07	0.28
564680_4184440	564680	4184440	2.66E-02	1.63E-02	1.32E-03	1.13E-03	3.60E-07	4.00E-06	4.36	1.78E-08	2.33E-07	0.25
564700_4184440	564700	4184440	2.41E-02	1.48E-02	1.19E-03	1.02E-03	3.27E-07	3.62E-06	3.95	1.62E-08	2.11E-07	0.23
564720_4184440	564720	4184440	2.19E-02	1.35E-02	1.08E-03	9.27E-04	2.97E-07	3.29E-06	3.58	1.47E-08	1.91E-07	0.21
564740_4184440	564740	4184440	1.99E-02	1.22E-02	9.84E-04	8.43E-04	2.70E-07	2.99E-06	3.26	1.33E-08	1.74E-07	0.19
564760_4184440	564760	4184440	1.81E-02	1.11E-02	8.95E-04	7.67E-04	2.45E-07	2.72E-06	2.97	1.21E-08	1.58E-07	0.17
564780_4184440	564780	4184440	1.65E-02	1.02E-02	8.19E-04	7.01E-04	2.24E-07	2.49E-06	2.71	1.11E-08	1.45E-07	0.16
564160_4184460	564160	4184460	2.99E-03	1.84E-03	1.57E-04	1.34E-04	4.05E-08	4.50E-07	0.49	2.12E-09	2.77E-08	0.03
564180_4184460	564180	4184460	3.33E-03	2.05E-03	1.75E-04	1.49E-04	4.52E-08	5.02E-07	0.55	2.37E-09	3.09E-08	0.03
564200_4184460	564200	4184460	3.75E-03	2.31E-03	1.96E-04	1.68E-04	5.08E-08	5.64E-07	0.61	2.66E-09	3.47E-08	0.04
564220_4184460	564220	4184460	4.25E-03	2.62E-03	2.22E-04	1.90E-04	5.76E-08	6.39E-07	0.70	3.02E-09	3.93E-08	0.04
564240_4184460	564240	4184460	4.86E-03	2.99E-03	2.54E-04	2.17E-04	6.59E-08	7.31E-07	0.80	3.45E-09	4.49E-08	0.05
564260_4184460	564260	4184460	5.61E-03	3.45E-03	2.94E-04	2.51E-04	7.61E-08	8.44E-07	0.92	3.99E-09	5.19E-08	0.06

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3) | Uncontrolled Cancer Risk, Risk Calculation Part 2 | Controlled Cancer Risk, Risk Calculation Part

			Unmitigated		Mitigated		Uncontrolled: $\sum R1*C_{DPM}$			Controlled: $\sum R1*C_{DPM}$		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	3rd Trimester	0<2	Total	3rd Trimester	0<2	Total
564280_4184460	564280	4184460	6.57E-03	4.05E-03	3.45E-04	2.95E-04	8.91E-08	9.88E-07	1.08	4.68E-09	6.10E-08	0.07
564300_4184460	564300	4184460	7.82E-03	4.81E-03	4.14E-04	3.54E-04	1.06E-07	1.18E-06	1.28	5.61E-09	7.31E-08	0.08
564320_4184460	564320	4184460	9.49E-03	5.84E-03	5.12E-04	4.38E-04	1.29E-07	1.43E-06	1.56	6.95E-09	9.05E-08	0.10
564480_4184460	564480	4184460	3.53E-02	2.18E-02	1.99E-03	1.70E-03	4.79E-07	5.31E-06	5.79	2.70E-08	3.52E-07	0.38
564500_4184460	564500	4184460	3.58E-02	2.21E-02	1.93E-03	1.65E-03	4.86E-07	5.39E-06	5.87	2.62E-08	3.41E-07	0.37
564540_4184460	564540	4184460	3.40E-02	2.09E-02	1.76E-03	1.50E-03	4.61E-07	5.11E-06	5.57	2.38E-08	3.11E-07	0.33
564560_4184460	564560	4184460	3.21E-02	1.97E-02	1.64E-03	1.41E-03	4.35E-07	4.82E-06	5.26	2.23E-08	2.91E-07	0.31
564580_4184460	564580	4184460	2.98E-02	1.84E-02	1.52E-03	1.30E-03	4.05E-07	4.49E-06	4.89	2.06E-08	2.68E-07	0.29
564700_4184460	564700	4184460	1.91E-02	1.17E-02	9.53E-04	8.16E-04	2.59E-07	2.87E-06	3.13	1.29E-08	1.68E-07	0.18
564720_4184460	564720	4184460	1.77E-02	1.09E-02	8.82E-04	7.55E-04	2.40E-07	2.66E-06	2.90	1.20E-08	1.56E-07	0.17
564740_4184460	564740	4184460	1.64E-02	1.01E-02	8.17E-04	7.00E-04	2.23E-07	2.47E-06	2.69	1.11E-08	1.45E-07	0.16
564760_4184460	564760	4184460	1.52E-02	9.34E-03	7.56E-04	6.48E-04	2.06E-07	2.28E-06	2.49	1.03E-08	1.34E-07	0.14
564780_4184460	564780	4184460	1.41E-02	8.68E-03	7.02E-04	6.01E-04	1.91E-07	2.12E-06	2.31	9.52E-09	1.24E-07	0.13
564160_4184480	564160	4184480	2.88E-03	1.77E-03	1.50E-04	1.28E-04	3.91E-08	4.34E-07	0.47	2.03E-09	2.65E-08	0.03
564180_4184480	564180	4184480	3.21E-03	1.98E-03	1.67E-04	1.43E-04	4.35E-08	4.83E-07	0.53	2.26E-09	2.95E-08	0.03
564200_4184480	564200	4184480	3.60E-03	2.22E-03	1.87E-04	1.60E-04	4.89E-08	5.42E-07	0.59	2.54E-09	3.31E-08	0.04
564220_4184480	564220	4184480	4.07E-03	2.51E-03	2.12E-04	1.81E-04	5.52E-08	6.12E-07	0.67	2.87E-09	3.74E-08	0.04
564240_4184480	564240	4184480	4.65E-03	2.86E-03	2.41E-04	2.06E-04	6.30E-08	6.99E-07	0.76	3.27E-09	4.27E-08	0.05
564260_4184480	564260	4184480	5.35E-03	3.29E-03	2.78E-04	2.38E-04	7.25E-08	8.04E-07	0.88	3.77E-09	4.91E-08	0.05
564280_4184480	564280	4184480	6.22E-03	3.83E-03	3.24E-04	2.77E-04	8.44E-08	9.36E-07	1.02	4.40E-09	5.73E-08	0.06
564300_4184480	564300	4184480	7.36E-03	4.53E-03	3.86E-04	3.30E-04	9.98E-08	1.11E-06	1.21	5.23E-09	6.82E-08	0.07
564320_4184480	564320	4184480	8.82E-03	5.43E-03	4.69E-04	4.01E-04	1.20E-07	1.33E-06	1.45	6.36E-09	8.28E-08	0.09
564340_4184480	564340	4184480	1.06E-02	6.54E-03	5.86E-04	5.00E-04	1.44E-07	1.60E-06	1.74	7.94E-09	1.03E-07	0.11
564500_4184480	564500	4184480	2.45E-02	1.51E-02	1.43E-03	1.22E-03	3.33E-07	3.69E-06	4.03	1.94E-08	2.53E-07	0.27
564520_4184480	564520	4184480	2.46E-02	1.51E-02	1.37E-03	1.17E-03	3.33E-07	3.70E-06	4.03	1.86E-08	2.42E-07	0.26
564540_4184480	564540	4184480	2.40E-02	1.48E-02	1.30E-03	1.11E-03	3.26E-07	3.62E-06	3.94	1.76E-08	2.30E-07	0.25
564700_4184480	564700	4184480	1.50E-02	9.21E-03	7.56E-04	6.47E-04	2.03E-07	2.25E-06	2.45	1.02E-08	1.34E-07	0.14
564720_4184480	564720	4184480	1.41E-02	8.68E-03	7.11E-04	6.08E-04	1.91E-07	2.12E-06	2.31	9.64E-09	1.26E-07	0.14
564740_4184480	564740	4184480	1.33E-02	8.16E-03	6.67E-04	5.71E-04	1.80E-07	1.99E-06	2.17	9.05E-09	1.18E-07	0.13
564760_4184480	564760	4184480	1.25E-02	7.69E-03	6.28E-04	5.37E-04	1.70E-07	1.88E-06	2.05	8.51E-09	1.11E-07	0.12
564780_4184480	564780	4184480	1.17E-02	7.19E-03	5.86E-04	5.01E-04	1.58E-07	1.76E-06	1.92	7.94E-09	1.04E-07	0.11
564160_4184500	564160	4184500	2.78E-03	1.71E-03	1.44E-04	1.23E-04	3.77E-08	4.19E-07	0.46	1.95E-09	2.54E-08	0.03
564180_4184500	564180	4184500	3.09E-03	1.90E-03	1.60E-04	1.37E-04	4.20E-08	4.65E-07	0.51	2.17E-09	2.83E-08	0.03
564200_4184500	564200	4184500	3.47E-03	2.13E-03	1.79E-04	1.53E-04	4.70E-08	5.22E-07	0.57	2.43E-09	3.17E-08	0.03
564220_4184500	564220	4184500	3.91E-03	2.41E-03	2.02E-04	1.73E-04	5.30E-08	5.88E-07	0.64	2.74E-09	3.57E-08	0.04
564240_4184500	564240	4184500	4.45E-03	2.74E-03	2.30E-04	1.97E-04	6.04E-08	6.70E-07	0.73	3.12E-09	4.07E-08	0.04
564260_4184500	564260	4184500	5.10E-03	3.14E-03	2.63E-04	2.25E-04	6.91E-08	7.66E-07	0.84	3.57E-09	4.66E-08	0.05
564280_4184500	564280	4184500	5.88E-03	3.62E-03	3.05E-04	2.61E-04	7.98E-08	8.85E-07	0.96	4.13E-09	5.39E-08	0.06
564300_4184500	564300	4184500	6.85E-03	4.22E-03	3.57E-04	3.05E-04	9.29E-08	1.03E-06	1.12	4.84E-09	6.30E-08	0.07
564320_4184500	564320	4184500	8.03E-03	4.94E-03	4.23E-04	3.61E-04	1.09E-07	1.21E-06	1.32	5.73E-09	7.47E-08	0.08
564340_4184500	564340	4184500	9.40E-03	5.79E-03	5.07E-04	4.33E-04	1.27E-07	1.41E-06	1.54	6.88E-09	8.96E-08	0.10
564400_4184500	564400	4184500	1.37E-02	8.46E-03	7.68E-04	6.56E-04	1.86E-07	2.07E-06	2.25	1.04E-08	1.36E-07	0.15
564420_4184500	564420	4184500	1.50E-02	9.22E-03	8.17E-04	6.98E-04	2.03E-07	2.25E-06	2.46	1.11E-08	1.44E-07	0.16
564480_4184500	564480	4184500	1.74E-02	1.07E-02	1.03E-03	8.79E-04	2.36E-07	2.62E-06	2.85	1.40E-08	1.82E-07	0.20
564500_4184500	564500	4184500	1.78E-02	1.10E-02	1.19E-03	1.01E-03	2.42E-07	2.69E-06	2.93	1.61E-08	2.10E-07	0.23
564540_4184500	564540	4184500	1.76E-02	1.09E-02	1.00E-03	8.54E-04	2.39E-07	2.65E-06	2.89	1.36E-08	1.77E-07	0.19
564700_4184500	564700	4184500	1.18E-02	7.27E-03	6.05E-04	5.17E-04	1.60E-07	1.78E-06	1.94	8.20E-09	1.07E-07	0.12
564720_4184500	564720	4184500	1.12E-02	6.92E-03	5.73E-04	4.90E-04	1.52E-07	1.69E-06	1.84	7.77E-09	1.01E-07	0.11
564180_4184520	564180	4184520	2.99E-03	1.84E-03	1.54E-04	1.32E-04	4.05E-08	4.50E-07	0.49	2.09E-09	2.72E-08	0.03
564200_4184520	564200	4184520	3.34E-03	2.06E-03	1.72E-04	1.47E-04	4.53E-08	5.02E-07	0.55	2.33E-09	3.04E-08	0.03
564220_4184520	564220	4184520	3.76E-03	2.31E-03	1.93E-04	1.65E-04	5.09E-08	5.65E-07	0.62	2.62E-09	3.41E-08	0.04
564240_4184520	564240	4184520	4.25E-03	2.62E-03	2.19E-04	1.87E-04	5.77E-08	6.39E-07	0.70	2.96E-09	3.86E-08	0.04
564260_4184520	564260	4184520	4.83E-03	2.98E-03	2.49E-04	2.13E-04	6.56E-08	7.27E-07	0.79	3.37E-09	4.40E-08	0.05
564280_4184520	564280	4184520	5.52E-03	3.40E-03	2.85E-04	2.43E-04	7.49E-08	8.30E-07	0.90	3.86E-09	5.03E-08	0.05
564300_4184520	564300	4184520	6.32E-03	3.89E-03	3.27E-04	2.80E-04	8.57E-08	9.50E-07	1.04	4.44E-09	5.78E-08	0.06
564320_4184520	564320	4184520	7.22E-03	4.45E-03	3.78E-04	3.23E-04	9.79E-08	1.09E-06	1.18	5.12E-09	6.67E-08	0.07
564340_4184520	564340	4184520	8.21E-03	5.05E-03	4.38E-04	3.74E-04	1.11E-07	1.23E-06	1.35	5.94E-09	7.74E-08	0.08
564360_4184520	564360	4184520	9.21E-03	5.68E-03	5.19E-04	4.43E-04	1.25E-07	1.39E-06	1.51	7.05E-09	9.17E-08	0.10
564380_4184520	564380	4184520	1.02E-02	6.30E-03	6.49E-04	5.52E-04	1.38E-07	1.54E-06	1.67	8.80E-09	1.14E-07	0.12
564440_4184520	564440	4184520	1.24E-02	7.67E-03	7.18E-04	6.12E-04	1.69E-07	1.87E-06	2.04	9.74E-09	1.27E-07	0.14
564460_4184520	564460	4184520	1.29E-02	8.00E-03	7.92E-04	6.74E-04	1.76E-07	1.95E-06	2.13	1.07E-08	1.40E-07	0.15
564520_4184520	564520	4184520	1.35E-02	8.37E-03	8.68E-04	7.38E-04	1.83E-07	2.04E-06	2.22	1.18E-08	1.53E-07	0.16
564540_4184520	564540	4184520	1.34E-02	8.26E-03	7.96E-04	6.78E-04	1.81E-07	2.01E-06	2.20	1.08E-08	1.40E-07	0.15
564560_4184520	564560	4184520	1.30E-02	8.03E-03	7.40E-04	6.31E-04	1.77E-07	1.96E-06	2.14	1.00E-08	1.31E-07	0.14
564180_4184540	564180	4184540	2.89E-03	1.78E-03	1.48E-04	1.27E-04	3.92E-08	4.34E-07	0.47	2.01E-09	2.62E-08	0.03
564200_4184540	564200	4184540	3.22E-03	1.98E-03	1.65E-04	1.41E-04	4.36E-08	4.84E-07	0.53	2.23E-09	2.91E-08	0.03
564220_4184540	564220	4184540	3.60E-03	2.22E-03	1.84E-04	1.58E-04	4.88E-08	5.41E-07	0.59	2.50E-09	3.26E-08	0.04
564240_4184540	564240	4184540	4.05E-03	2.49E-03	2.07E-04	1.77E-04	5.49E-08	6.08E-07	0.66	2.81E-09	3.66E-08	0.04
564260_4184540	564260	4184540	4.56E-03	2.81E-03	2.34E-04	2.00E-04	6.18E-08	6.85E-07	0.75	3.17E-09	4.13E-08	0.04
564280_4184540	564280	4184540	5.13E-03	3.16E-03	2.64E-04	2.25E-04	6.96E-08	7.71E-07	0.84	3.57E-09	4.66E-08	0.05
564300_4184540	564300	4184540	5.77E-03	3.55E-03	2.98E-04	2.55E-04	7.82E-08	8.67E-07	0.95	4.04E-09	5.26E-08	0.06
564320_4184540	564320	4184540	6.43E-03	3.96E-03	3.35E-04	2.86E-04	8.72E-08	9.67E-07	1.05	4.54E-09	5.92E-08	0.06
564340_4184540	564340	4184540	7.11E-03	4.38E-03	3.77E-04	3.22E-04	9.65E-08	1.07E-06	1.17	5.11E-09	6.66E-08	0.07
564360_4184540	564360	4184540	7.76E-03	4.78E-03	4.28E-04	3.65E-04	1.05E-07	1.17E-06	1.27	5.80E-09	7.55E-08	0.08
564400_4184540	564400	4184540	8.95E-03	5.53E-03	5.76E-04	4.90E-04	1.21E-07	1.35E-06	1.47	7.81E-09	1.01E-07	0.11
564420_4184540	564420	4184540	9.52E-03	5.89E-03	6.19E-04	5.26E-04	1.29E-07	1.43E-06	1.56	8.39E-09	1.09E-07	0.12
564520_4184540	564520	4184540	1.06E-02	6.58E-03	7.11E-04	6.04E-04	1.44E-07	1.60E-06	1.75	9.64E-09	1.25E-07	0.13
564540_4184540	564540	4184540	1.06E-02	6.52E-03	6.51E-04	5.54E-04	1.43E-07	1.59E-06	1.73	8.83E-09	1.15E-07	0.12
564560_4184540	564560	4184540	1.04E-02	6.40E-03	6.09E-04	5.19E-04	1.41E-07	1.56E-06	1.70	8.26E-09	1.07E-07	0.12
564200_4184560	564200	4184560	3.09E-03	1.90E-03	1.58E-04	1.35E-04	4.19E-08	4.65E-07	0.51	2.14E-09	2.79E-08	0.03
564220_4184560	564220	4184560	3.43E-03	2.11E-03	1.75E-04	1.50E-04	4.65E-08	5.16E-07	0.56	2.37E-09	3.09E-08	0.03
564240_4184560	564240	4184560	3.82E-03	2.35E-03	1.95E-04	1.67E-04	5.18E-08	5.75E-07	0.63	2.64E-09	3.45E-08	0.04
564260_4184560	564260	4184560	4.25E-03	2.62E-03	2.17E-04	1.86E-04	5.77E-08	6.40E-07	0.70	2.95E-09	3.84E-08	0.04
564280_4184560	564280	4184560	4.72E-03	2.90E-03	2.42E-04	2.07E-04	6.40E-08	7.10E-07	0.77	3.28E-09	4.27E-08	0.05
564300_4184560	564300	4184560	5.21E-03	3.20E-03	2.68E-04	2.29E-04	7.06E-08	7.83E-07	0.85	3.63E-09	4.73E-08	0.05
564320_4184560	564320	4184560	5.69E-03	3.50E-03	2.95E-04	2.52E-04	7.72E-08	8.56E-07	0.93	4.00E-09	5.22E-08	0.06
564340_4184560	564340	4184560	6.15E-03	3.79E-03	3.24E-04	2.77E-04	8.34E-08	9.25E-07	1.01	4.39E-09	5.72E-08	0.06
564360_4184560	564360	4184560	6.56E-03	4.05E-03	3.56E-04	3.04E-04	8.90E-08	9.88E-07	1.08	4.83E-09	6.29E-08	0.07
564380_4184560	564380	4184560	6.97E-03	4.30E-03	4.08E-04	3.48E-04	9.45E-08	1.05E-06	1.14	5.54E-09	7.20E-08	0.08
564420_4184560	564420	4184560	7.82E-03	4.84E-03	5.32E-04	4.52E-04	1.06E-07	1.18E-06	1.29	7.22E-09	9.37E-08	0.10
564440_4184560	564440	4184560	8.08E-03	5.00E-03	5.10E-04	4.34E-04	1.10E-07	1.22E-06	1.33	6.92E-09	8.99E-08	0.10
564460_4184560	564460	4184560	8.20E-03	5.06E-03	4.97E-04	4.23E-04	1.11E-07	1.23E-06	1.35	6.74E-09	8.76E-08	0.09
564480_4184560	564480	4184560	8.24E-03	5.09E-03	4.92E-04	4.19E-04	1.12E-07	1.24E-06	1.35	6.67E-09	8.67E-08	0.09

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)								Uncontrolled Cancer Risk, Risk Calculation Part 2			Controlled Cancer Risk, Risk Calculation Part		
			Unmitigated		Mitigated			$\sum R1 \cdot C_{DPM}$			$\sum R1 \cdot C_{DPM}$		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022		3rd Trimester	0<2	Total	3rd Trimester	0<2	Total
564500_4184560	564500	4184560	8.34E-03	5.15E-03	5.02E-04	4.28E-04		1.13E-07	1.26E-06	1.37	6.81E-09	8.85E-08	0.10
564540_4184560	564540	4184560	8.54E-03	5.28E-03	5.53E-04	4.71E-04		1.16E-07	1.29E-06	1.40	7.51E-09	9.75E-08	0.10
564560_4184560	564560	4184560	8.44E-03	5.21E-03	5.14E-04	4.37E-04		1.14E-07	1.27E-06	1.39	6.97E-09	9.06E-08	0.10
564580_4184560	564580	4184560	8.28E-03	5.11E-03	4.83E-04	4.12E-04		1.12E-07	1.25E-06	1.36	6.55E-09	8.52E-08	0.09
564600_4184560	564600	4184560	8.02E-03	4.95E-03	4.57E-04	3.90E-04		1.09E-07	1.21E-06	1.32	6.20E-09	8.07E-08	0.09
564620_4184560	564620	4184560	7.72E-03	4.76E-03	4.31E-04	3.68E-04		1.05E-07	1.16E-06	1.27	5.85E-09	7.61E-08	0.08
564640_4184560	564640	4184560	7.41E-03	4.57E-03	4.08E-04	3.48E-04		1.01E-07	1.12E-06	1.22	5.53E-09	7.20E-08	0.08
564220_4184580	564220	4184580	3.25E-03	2.00E-03	1.66E-04	1.42E-04		4.41E-08	4.89E-07	0.53	2.24E-09	2.93E-08	0.03
564240_4184580	564240	4184580	3.58E-03	2.20E-03	1.82E-04	1.56E-04		4.86E-08	5.38E-07	0.59	2.47E-09	3.22E-08	0.03
564260_4184580	564260	4184580	3.93E-03	2.42E-03	2.01E-04	1.72E-04		5.34E-08	5.92E-07	0.65	2.72E-09	3.55E-08	0.04
564280_4184580	564280	4184580	4.30E-03	2.65E-03	2.20E-04	1.88E-04		5.83E-08	6.47E-07	0.71	2.98E-09	3.89E-08	0.04
564300_4184580	564300	4184580	4.66E-03	2.87E-03	2.39E-04	2.05E-04		6.32E-08	7.01E-07	0.76	3.25E-09	4.23E-08	0.05
564320_4184580	564320	4184580	5.01E-03	3.08E-03	2.59E-04	2.21E-04		6.79E-08	7.53E-07	0.82	3.51E-09	4.58E-08	0.05
564340_4184580	564340	4184580	5.32E-03	3.27E-03	2.78E-04	2.38E-04		7.21E-08	8.00E-07	0.87	3.77E-09	4.92E-08	0.05
564360_4184580	564360	4184580	5.59E-03	3.45E-03	2.99E-04	2.55E-04		7.59E-08	8.41E-07	0.92	4.05E-09	5.27E-08	0.06
564380_4184580	564380	4184580	5.87E-03	3.62E-03	3.23E-04	2.76E-04		7.96E-08	8.83E-07	0.96	4.38E-09	5.70E-08	0.06
564400_4184580	564400	4184580	6.17E-03	3.81E-03	3.50E-04	2.98E-04		8.37E-08	9.29E-07	1.01	4.74E-09	6.17E-08	0.07
564420_4184580	564420	4184580	6.47E-03	3.99E-03	3.70E-04	3.15E-04		8.77E-08	9.73E-07	1.06	5.02E-09	6.53E-08	0.07
564440_4184580	564440	4184580	6.66E-03	4.11E-03	3.80E-04	3.24E-04		9.03E-08	1.00E-06	1.09	5.15E-09	6.70E-08	0.07
564460_4184580	564460	4184580	6.72E-03	4.14E-03	3.82E-04	3.26E-04		9.11E-08	1.01E-06	1.10	5.18E-09	6.73E-08	0.07
564480_4184580	564480	4184580	6.74E-03	4.16E-03	3.84E-04	3.28E-04		9.15E-08	1.02E-06	1.11	5.21E-09	6.78E-08	0.07
564500_4184580	564500	4184580	6.80E-03	4.20E-03	3.94E-04	3.36E-04		9.22E-08	1.02E-06	1.12	5.35E-09	6.95E-08	0.07
564520_4184580	564520	4184580	6.93E-03	4.28E-03	4.35E-04	3.70E-04		9.40E-08	1.04E-06	1.14	5.90E-09	7.66E-08	0.08
564540_4184580	564540	4184580	7.02E-03	4.35E-03	4.92E-04	4.18E-04		9.52E-08	1.06E-06	1.15	6.68E-09	8.66E-08	0.09
564560_4184580	564560	4184580	6.97E-03	4.31E-03	4.46E-04	3.79E-04		9.45E-08	1.05E-06	1.14	6.05E-09	7.86E-08	0.08
564580_4184580	564580	4184580	6.87E-03	4.24E-03	4.15E-04	3.54E-04		9.31E-08	1.03E-06	1.13	5.63E-09	7.32E-08	0.08
564600_4184580	564600	4184580	6.66E-03	4.11E-03	3.91E-04	3.33E-04		9.03E-08	1.00E-06	1.09	5.30E-09	6.89E-08	0.07
564620_4184580	564620	4184580	6.49E-03	4.00E-03	3.70E-04	3.16E-04		8.80E-08	9.76E-07	1.06	5.02E-09	6.53E-08	0.07
564640_4184580	564640	4184580	6.26E-03	3.86E-03	3.50E-04	2.99E-04		8.48E-08	9.42E-07	1.03	4.75E-09	6.18E-08	0.07
564220_4184600	564220	4184600	3.06E-03	1.88E-03	1.55E-04	1.33E-04		4.15E-08	4.60E-07	0.50	2.11E-09	2.75E-08	0.03
564240_4184600	564240	4184600	3.33E-03	2.05E-03	1.69E-04	1.45E-04		4.52E-08	5.01E-07	0.55	2.30E-09	2.99E-08	0.03
564260_4184600	564260	4184600	3.61E-03	2.22E-03	1.84E-04	1.57E-04		4.90E-08	5.43E-07	0.59	2.50E-09	3.25E-08	0.04
564280_4184600	564280	4184600	3.89E-03	2.40E-03	1.99E-04	1.70E-04		5.28E-08	5.85E-07	0.64	2.69E-09	3.51E-08	0.04
564300_4184600	564300	4184600	4.16E-03	2.56E-03	2.13E-04	1.82E-04		5.64E-08	6.25E-07	0.68	2.89E-09	3.77E-08	0.04
564320_4184600	564320	4184600	4.40E-03	2.71E-03	2.27E-04	1.94E-04		5.97E-08	6.62E-07	0.72	3.08E-09	4.01E-08	0.04
564340_4184600	564340	4184600	4.61E-03	2.84E-03	2.40E-04	2.05E-04		6.26E-08	6.94E-07	0.76	3.26E-09	4.24E-08	0.05
564360_4184600	564360	4184600	4.82E-03	2.97E-03	2.54E-04	2.17E-04		6.54E-08	7.25E-07	0.79	3.45E-09	4.49E-08	0.05
564380_4184600	564380	4184600	5.04E-03	3.10E-03	2.69E-04	2.30E-04		6.83E-08	7.57E-07	0.83	3.65E-09	4.75E-08	0.05
564400_4184600	564400	4184600	5.26E-03	3.24E-03	2.84E-04	2.43E-04		7.13E-08	7.91E-07	0.86	3.85E-09	5.02E-08	0.05
564420_4184600	564420	4184600	5.49E-03	3.38E-03	2.99E-04	2.55E-04		7.45E-08	8.26E-07	0.90	4.05E-09	5.27E-08	0.06
564480_4184600	564480	4184600	5.62E-03	3.46E-03	3.10E-04	2.65E-04		7.62E-08	8.45E-07	0.92	4.21E-09	5.48E-08	0.06
564560_4184600	564560	4184600	5.85E-03	3.62E-03	3.97E-04	3.37E-04		7.93E-08	8.82E-07	0.96	5.38E-09	6.98E-08	0.08
564580_4184600	564580	4184600	5.78E-03	3.57E-03	3.64E-04	3.10E-04		7.84E-08	8.71E-07	0.95	4.94E-09	6.42E-08	0.07
564600_4184600	564600	4184600	5.63E-03	3.48E-03	3.41E-04	2.91E-04		7.64E-08	8.48E-07	0.92	4.63E-09	6.02E-08	0.06
564620_4184600	564620	4184600	5.48E-03	3.38E-03	3.21E-04	2.74E-04		7.43E-08	8.25E-07	0.90	4.35E-09	5.66E-08	0.06
564640_4184600	564640	4184600	5.33E-03	3.29E-03	3.04E-04	2.59E-04		7.23E-08	8.02E-07	0.87	4.12E-09	5.36E-08	0.06
564240_4184620	564240	4184620	3.09E-03	1.90E-03	1.57E-04	1.34E-04		4.18E-08	4.64E-07	0.51	2.12E-09	2.77E-08	0.03
564260_4184620	564260	4184620	3.30E-03	2.03E-03	1.68E-04	1.44E-04		4.48E-08	4.97E-07	0.54	2.28E-09	2.97E-08	0.03
564280_4184620	564280	4184620	3.51E-03	2.16E-03	1.79E-04	1.53E-04		4.76E-08	5.28E-07	0.58	2.43E-09	3.16E-08	0.03
564300_4184620	564300	4184620	3.70E-03	2.28E-03	1.89E-04	1.62E-04		5.02E-08	5.56E-07	0.61	2.57E-09	3.35E-08	0.04
564320_4184620	564320	4184620	3.87E-03	2.38E-03	1.99E-04	1.71E-04		5.25E-08	5.82E-07	0.63	2.70E-09	3.52E-08	0.04
564340_4184620	564340	4184620	4.03E-03	2.48E-03	2.09E-04	1.79E-04		5.47E-08	6.06E-07	0.66	2.84E-09	3.69E-08	0.04
564360_4184620	564360	4184620	4.19E-03	2.58E-03	2.19E-04	1.87E-04		5.68E-08	6.30E-07	0.69	2.97E-09	3.86E-08	0.04
564380_4184620	564380	4184620	4.35E-03	2.68E-03	2.29E-04	1.96E-04		5.90E-08	6.54E-07	0.71	3.10E-09	4.04E-08	0.04
564400_4184620	564400	4184620	4.54E-03	2.80E-03	2.40E-04	2.06E-04		6.16E-08	6.84E-07	0.75	3.26E-09	4.25E-08	0.05
564560_4184620	564560	4184620	4.92E-03	3.06E-03	3.70E-04	3.14E-04		6.68E-08	7.43E-07	0.81	5.02E-09	6.51E-08	0.07
564580_4184620	564580	4184620	4.87E-03	3.02E-03	3.30E-04	2.80E-04		6.61E-08	7.35E-07	0.80	4.48E-09	5.81E-08	0.06
564600_4184620	564600	4184620	4.80E-03	2.97E-03	3.04E-04	2.58E-04		6.50E-08	7.23E-07	0.79	4.12E-09	5.35E-08	0.06
564620_4184620	564620	4184620	4.70E-03	2.90E-03	2.83E-04	2.41E-04		6.37E-08	7.07E-07	0.77	3.84E-09	4.99E-08	0.05
564640_4184620	564640	4184620	4.60E-03	2.84E-03	2.66E-04	2.27E-04		6.23E-08	6.92E-07	0.75	3.61E-09	4.70E-08	0.05
564660_4184620	564660	4184620	4.45E-03	2.74E-03	2.51E-04	2.14E-04		6.04E-08	6.70E-07	0.73	3.41E-09	4.44E-08	0.05
564280_4184640	564280	4184640	3.16E-03	1.95E-03	1.61E-04	1.38E-04		4.29E-08	4.75E-07	0.52	2.19E-09	2.85E-08	0.03
564300_4184640	564300	4184640	3.30E-03	2.03E-03	1.69E-04	1.44E-04		4.47E-08	4.96E-07	0.54	2.29E-09	2.98E-08	0.03
564320_4184640	564320	4184640	3.42E-03	2.11E-03	1.76E-04	1.50E-04		4.64E-08	5.14E-07	0.56	2.38E-09	3.11E-08	0.03
564340_4184640	564340	4184640	3.54E-03	2.18E-03	1.83E-04	1.56E-04		4.80E-08	5.32E-07	0.58	2.48E-09	3.23E-08	0.03
564360_4184640	564360	4184640	3.64E-03	2.24E-03	1.89E-04	1.62E-04		4.94E-08	5.48E-07	0.60	2.56E-09	3.34E-08	0.04
564380_4184640	564380	4184640	3.77E-03	2.32E-03	1.97E-04	1.68E-04		5.12E-08	5.68E-07	0.62	2.67E-09	3.48E-08	0.04
564400_4184640	564400	4184640	3.93E-03	2.42E-03	2.06E-04	1.76E-04		5.33E-08	5.91E-07	0.64	2.79E-09	3.64E-08	0.04
564420_4184640	564420	4184640	4.06E-03	2.50E-03	2.13E-04	1.82E-04		5.51E-08	6.11E-07	0.67	2.89E-09	3.77E-08	0.04
564580_4184640	564580	4184640	4.21E-03	2.61E-03	3.07E-04	2.61E-04		5.71E-08	6.35E-07	0.69	4.17E-09	5.41E-08	0.06
564600_4184640	564600	4184640	4.16E-03	2.57E-03	2.75E-04	2.33E-04		5.64E-08	6.27E-07	0.68	3.72E-09	4.84E-08	0.05
564620_4184640	564620	4184640	4.02E-03	2.48E-03	2.50E-04	2.13E-04		5.45E-08	6.05E-07	0.66	3.39E-09	4.40E-08	0.05
564640_4184640	564640	4184640	3.93E-03	2.43E-03	2.32E-04	1.98E-04		5.34E-08	5.92E-07	0.65	3.14E-09	4.09E-08	0.04
564660_4184640	564660	4184640	3.86E-03	2.38E-03	2.19E-04	1.87E-04		5.24E-08	5.82E-07	0.63	2.98E-09	3.87E-08	0.04
564300_4184660	564300	4184660	2.94E-03	1.81E-03	1.50E-04	1.29E-04		3.99E-08	4.42E-07	0.48	2.04E-09	2.66E-08	0.03
564320_4184660	564320	4184660	3.03E-03	1.87E-03	1.55E-04	1.33E-04		4.11E-08	4.56E-07	0.50	2.11E-09	2.75E-08	0.03
564340_4184660	564340	4184660	3.13E-03	1.92E-03	1.61E-04	1.38E-04		4.24E-08	4.70E-07	0.51	2.18E-09	2.84E-08	0.03
564360_4184660	564360	4184660	3.22E-03	1.98E-03	1.66E-04	1.42E-04		4.37E-08	4.84E-07	0.53	2.25E-09	2.94E-08	0.03
564380_4184660	564380	4184660	3.33E-03	2.05E-03	1.73E-04	1.48E-04		4.52E-08	5.01E-07	0.55	2.34E-09	3.05E-08	0.03
564400_4184660	564400	4184660	3.43E-03	2.11E-03	1.78E-04	1.52E-04		4.65E-08	5.16E-07	0.56	2.42E-09	3.15E-08	0.03
564420_4184660	564420	4184660	3.55E-03	2.18E-03	1.85E-04	1.58E-04		4.81E-08	5.33E-07	0.58	2.51E-09	3.27E-08	0.04
564540_4184660	564540	4184660	3.56E-03	2.20E-03	2.07E-04	1.77E-04		4.83E-08	5.36E-07	0.58	2.81E-09	3.66E-08	0.04
564580_4184660	564580	4184660	3.66E-03	2.28E-03	2.96E-04	2.50E-04		4.97E-08	5.54E-07	0.60	4.01E-09	5.20E-08	0.06
564600_4184660	564600	4184660	3.62E-03	2.24E-03	2.45E-04	2.08E-04		4.91E-08	5.46E-07	0.60	3.33E-09	4.32E-08	0.05
564620_4184660	564620	4184660	3.53E-03	2.18E-03	2.19E-04	1.86E-04		4.78E-08	5.31E-07	0.58	2.96E-09	3.85E-08	0.04
564340_4184680	564340	4184680	2.78E-03	1.71E-03	1.43E-04	1.22E-04		3.77E-08	4.18E-07	0.46	1.94E-09	2.52E-08	0.03
564360_4184680	564360	4184680	2.87E-03	1.77E-03	1.48E-04	1.26E-04		3.89E-08	4.32E-07	0.47	2.00E-09	2.61E-08	0.03
564380_4184680	564380	4184680	2.96E-03	1.82E-03	1.52E-04	1.30E-04		4.01E-08	4.44E-07	0.48	2.07E-09	2.69E-08	0.03
564400_4184680	564400	4184680	3.04E-03	1.87E-03	1.57E-04	1.34E-04		4.12E-08	4.57E-07	0.50	2.13E-09	2.77E-08	0.03
564420_4184680	564420	4184680	3.10E-03	1.91E-03	1.61E-04	1.37E-04		4.20E-08	4.66E-07	0.51	2.18E-09	2.84E-08	0.03
564440_4184680	564440	4184680	3.12E-03	1.92E-03	1.63E-04	1.39E-04		4.23E-08	4.69E-07	0.51	2.21E-09	2.87E-08	0.03
564500_4184680	564500	4184680	3.08E-03	1.90E-03	1.65E-04	1.41E-04		4.18E-08	4.63E-07	0.51	2.24E-09	2.91E-08	0.03
564520_4184680	564520	4184680	3.09E-03	1.90E-03	1.68E-04	1.44E-04		4.19E-08	4.65E-07	0.51	2.28E-09	2.97E-08	0.03

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

			Unmitigated		Mitigated	
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022
564540_418468C	564540	4184680	3.11E-03	1.91E-03	1.74E-04	1.49E-04
564560_418468C	564560	4184680	3.12E-03	1.92E-03	1.86E-04	1.58E-04
564400_418470C	564400	4184700	2.70E-03	1.66E-03	1.39E-04	1.19E-04
564420_418470C	564420	4184700	2.74E-03	1.69E-03	1.42E-04	1.21E-04
564440_418470C	564440	4184700	2.76E-03	1.70E-03	1.43E-04	1.23E-04
564460_418470C	564460	4184700	2.75E-03	1.69E-03	1.43E-04	1.23E-04
564480_418470C	564480	4184700	2.73E-03	1.68E-03	1.44E-04	1.23E-04
564500_418470C	564500	4184700	2.72E-03	1.68E-03	1.44E-04	1.23E-04
564520_418470C	564520	4184700	2.72E-03	1.68E-03	1.46E-04	1.25E-04

Uncontrolled Cancer Risk, Risk Calculation Part 2

$\sum R1*C_{DPM}$		
3rd Trimester	0<2	Total
4.21E-08	4.67E-07	0.51
4.23E-08	4.69E-07	0.51
3.66E-08	4.06E-07	0.44
3.72E-08	4.13E-07	0.45
3.74E-08	4.15E-07	0.45
3.73E-08	4.13E-07	0.45
3.71E-08	4.11E-07	0.45
3.69E-08	4.09E-07	0.45
3.69E-08	4.09E-07	0.45

Controlled Cancer Risk, Risk Calculation Part

$\sum R1*C_{DPM}$		
3rd Trimester	0<2	Total
2.36E-09	3.07E-08	0.03
2.52E-09	3.28E-08	0.04
1.89E-09	2.46E-08	0.03
1.92E-09	2.51E-08	0.03
1.94E-09	2.53E-08	0.03
1.94E-09	2.53E-08	0.03
1.95E-09	2.54E-08	0.03
1.96E-09	2.55E-08	0.03
1.98E-09	2.58E-08	0.03

All Receptors - Construction Hazard Index

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	7.3	miles
	32187	11748	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Route1	0.02	0.06
Route2	0.02	0.06

Modeled Routes

	Route1	Route2	
Trip Length	730	743.1	meters

from AERMOD

			Days			Total Uncontrolled DPM (tons)			Total Controlled DPM (tons)		
Construction Year	Start Date	End Date	3rd Trimester	Age 0<2	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2021	4/1/2021	12/31/2021	91	184.00	275	3.41E-02	5.90E-04	4.10E-04	1.63E-03	5.90E-04	4.10E-04
2022	1/1/2022	9/1/2022	0	244.00	244	1.86E-02	3.60E-04	3.30E-04	1.24E-03	3.60E-04	3.30E-04

			Total Uncontrolled DPM (g/s)			Total Controlled DPM (g/s)		
Construction Year	Start Date	End Date	Construction	Route1	Route2	Construction	Route1	Route2
2021	4/1/2021	12/31/2021	1.30E-03	1.48E-06	1.51E-06	6.22E-05	1.48E-06	1.51E-06
2022	1/1/2022	9/1/2022	8.01E-04	1.23E-06	1.26E-06	5.34E-05	1.23E-06	1.26E-06

Risk Factors

	Abbreviation	UOM	
Chronic Inhalation	REL	ug/m^3	5

MAX	Cancer Risk	UTM X	UTM Y
Unmitigated	0.03	564560	4184360
Mitigated	0.00	564560	4184360

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3) — Uncontrolled HI Risk — Controlled HI Risk

			Unmitigated		Mitigated		C_{DPM}/REL (Uncontrolled)			C_{DPM}/REL (Controlled)		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	2021	2022	Max	2021	2022	Max
564460_4184040	564460	4184040	3.19E-03	1.96E-03	1.65E-04	1.41E-04	6.38E-04	3.93E-04	0.00	3.31E-05	2.83E-05	0.00
564360_4184060	564360	4184060	2.84E-03	1.75E-03	1.49E-04	1.27E-04	5.67E-04	3.49E-04	0.00	2.98E-05	2.55E-05	0.00
564380_4184060	564380	4184060	2.95E-03	1.81E-03	1.55E-04	1.32E-04	5.89E-04	3.63E-04	0.00	3.09E-05	2.64E-05	0.00
564400_4184060	564400	4184060	3.07E-03	1.89E-03	1.61E-04	1.38E-04	6.14E-04	3.78E-04	0.00	3.22E-05	2.75E-05	0.00
564420_4184060	564420	4184060	3.22E-03	1.98E-03	1.68E-04	1.44E-04	6.43E-04	3.96E-04	0.00	3.36E-05	2.87E-05	0.00
564440_4184060	564440	4184060	3.37E-03	2.08E-03	1.76E-04	1.50E-04	6.75E-04	4.15E-04	0.00	3.51E-05	3.01E-05	0.00
564460_4184060	564460	4184060	3.55E-03	2.18E-03	1.84E-04	1.58E-04	7.09E-04	4.37E-04	0.00	3.68E-05	3.15E-05	0.00
564480_4184060	564480	4184060	3.74E-03	2.30E-03	1.93E-04	1.65E-04	7.47E-04	4.60E-04	0.00	3.87E-05	3.31E-05	0.00
564500_4184060	564500	4184060	3.95E-03	2.43E-03	2.04E-04	1.74E-04	7.90E-04	4.86E-04	0.00	4.08E-05	3.49E-05	0.00
564520_4184060	564520	4184060	4.19E-03	2.58E-03	2.15E-04	1.84E-04	8.38E-04	5.16E-04	0.00	4.31E-05	3.69E-05	0.00
564540_4184060	564540	4184060	4.45E-03	2.74E-03	2.28E-04	1.95E-04	8.90E-04	5.48E-04	0.00	4.56E-05	3.90E-05	0.00
564560_4184060	564560	4184060	4.74E-03	2.92E-03	2.42E-04	2.07E-04	9.47E-04	5.83E-04	0.00	4.83E-05	4.13E-05	0.00
564320_4184080	564320	4184080	2.93E-03	1.80E-03	1.55E-04	1.33E-04	5.85E-04	3.61E-04	0.00	3.11E-05	2.66E-05	0.00
564340_4184080	564340	4184080	3.03E-03	1.87E-03	1.61E-04	1.37E-04	6.06E-04	3.73E-04	0.00	3.21E-05	2.75E-05	0.00
564360_4184080	564360	4184080	3.14E-03	1.93E-03	1.66E-04	1.42E-04	6.28E-04	3.87E-04	0.00	3.33E-05	2.84E-05	0.00
564380_4184080	564380	4184080	3.27E-03	2.01E-03	1.72E-04	1.47E-04	6.53E-04	4.02E-04	0.00	3.45E-05	2.95E-05	0.00
564400_4184080	564400	4184080	3.41E-03	2.10E-03	1.80E-04	1.53E-04	6.82E-04	4.20E-04	0.00	3.59E-05	3.07E-05	0.00
564420_4184080	564420	4184080	3.58E-03	2.20E-03	1.88E-04	1.61E-04	7.16E-04	4.41E-04	0.00	3.75E-05	3.21E-05	0.00
564440_4184080	564440	4184080	3.77E-03	2.32E-03	1.97E-04	1.68E-04	7.53E-04	4.64E-04	0.00	3.94E-05	3.36E-05	0.00
564460_4184080	564460	4184080	3.97E-03	2.45E-03	2.07E-04	1.77E-04	7.95E-04	4.89E-04	0.00	4.14E-05	3.54E-05	0.00
564480_4184080	564480	4184080	4.20E-03	2.59E-03	2.18E-04	1.86E-04	8.41E-04	5.18E-04	0.00	4.36E-05	3.73E-05	0.00
564500_4184080	564500	4184080	4.46E-03	2.75E-03	2.30E-04	1.97E-04	8.92E-04	5.49E-04	0.00	4.61E-05	3.94E-05	0.00
564520_4184080	564520	4184080	4.75E-03	2.92E-03	2.44E-04	2.09E-04	9.50E-04	5.85E-04	0.00	4.89E-05	4.18E-05	0.00
564540_4184080	564540	4184080	5.07E-03	3.12E-03	2.59E-04	2.22E-04	1.01E-03	6.24E-04	0.00	5.19E-05	4.44E-05	0.00
564560_4184080	564560	4184080	5.41E-03	3.33E-03	2.76E-04	2.36E-04	1.08E-03	6.66E-04	0.00	5.51E-05	4.72E-05	0.00
564580_4184080	564580	4184080	5.77E-03	3.55E-03	2.93E-04	2.51E-04	1.15E-03	7.11E-04	0.00	5.86E-05	5.01E-05	0.00
564600_4184080	564600	4184080	6.17E-03	3.80E-03	3.12E-04	2.67E-04	1.23E-03	7.59E-04	0.00	6.23E-05	5.33E-05	0.00
564620_4184080	564620	4184080	6.56E-03	4.04E-03	3.30E-04	2.83E-04	1.31E-03	8.08E-04	0.00	6.60E-05	5.65E-05	0.00
564280_4184100	564280	4184100	3.01E-03	1.86E-03	1.63E-04	1.39E-04	6.02E-04	3.71E-04	0.00	3.26E-05	2.78E-05	0.00
564300_4184100	564300	4184100	3.13E-03	1.93E-03	1.69E-04	1.44E-04	6.26E-04	3.86E-04	0.00	3.38E-05	2.89E-05	0.00
564320_4184100	564320	4184100	3.25E-03	2.00E-03	1.75E-04	1.50E-04	6.51E-04	4.01E-04	0.00	3.50E-05	2.99E-05	0.00
564340_4184100	564340	4184100	3.37E-03	2.08E-03	1.81E-04	1.54E-04	6.75E-04	4.16E-04	0.00	3.61E-05	3.09E-05	0.00
564360_4184100	564360	4184100	3.50E-03	2.16E-03	1.87E-04	1.59E-04	7.00E-04	4.31E-04	0.00	3.73E-05	3.19E-05	0.00
564380_4184100	564380	4184100	3.64E-03	2.24E-03	1.94E-04	1.65E-04	7.29E-04	4.49E-04	0.00	3.87E-05	3.31E-05	0.00
564400_4184100	564400	4184100	3.81E-03	2.35E-03	2.02E-04	1.72E-04	7.63E-04	4.70E-04	0.00	4.03E-05	3.45E-05	0.00
564420_4184100	564420	4184100	4.01E-03	2.47E-03	2.11E-04	1.81E-04	8.03E-04	4.94E-04	0.00	4.23E-05	3.61E-05	0.00
564440_4184100	564440	4184100	4.23E-03	2.61E-03	2.22E-04	1.90E-04	8.47E-04	5.21E-04	0.00	4.44E-05	3.80E-05	0.00
564460_4184100	564460	4184100	4.49E-03	2.76E-03	2.34E-04	2.00E-04	8.97E-04	5.52E-04	0.00	4.68E-05	4.00E-05	0.00
564480_4184100	564480	4184100	4.77E-03	2.94E-03	2.48E-04	2.12E-04	9.54E-04	5.87E-04	0.00	4.96E-05	4.24E-05	0.00
564500_4184100	564500	4184100	5.08E-03	3.13E-03	2.63E-04	2.25E-04	1.02E-03	6.26E-04	0.00	5.25E-05	4.49E-05	0.00
564520_4184100	564520	4184100	5.43E-03	3.34E-03	2.79E-04	2.39E-04	1.09E-03	6.68E-04	0.00	5.58E-05	4.77E-05	0.00
564540_4184100	564540	4184100	5.83E-03	3.59E-03	2.98E-04	2.55E-04	1.17E-03	7.17E-04	0.00	5.96E-05	5.10E-05	0.00
564560_4184100	564560	4184100	6.26E-03	3.85E-03	3.18E-04	2.72E-04	1.25E-03	7.70E-04	0.00	6.37E-05	5.45E-05	0.00
564580_4184100	564580	4184100	6.70E-03	4.12E-03	3.39E-04	2.90E-04	1.34E-03	8.24E-04	0.00	6.78E-05	5.81E-05	0.00
564600_4184100	564600	4184100	7.17E-03	4.41E-03	3.61E-04	3.09E-04	1.43E-03	8.82E-04	0.00	7.22E-05	6.18E-05	0.00
564620_4184100	564620	4184100	7.67E-03	4.72E-03	3.85E-04	3.29E-04	1.53E-03	9.43E-04	0.00	7.69E-05	6.58E-05	0.00
564640_4184100	564640	4184100	8.12E-03	5.00E-03	4.06E-04	3.48E-04	1.62E-03	9.99E-04	0.00	8.12E-05	6.95E-05	0.00
564260_4184120	564260	4184120	3.19E-03	1.96E-03	1.78E-04	1.52E-04	6.37E-04	3.93E-04	0.00	3.57E-05	3.05E-05	0.00
564280_4184120	564280	4184120	3.34E-03	2.06E-03	1.85E-04	1.58E-04	6.68E-04	4.12E-04	0.00	3.71E-05	3.17E-05	0.00
564300_4184120	564300	4184120	3.49E-03	2.15E-03	1.92E-04	1.64E-04	6.98E-04	4.30E-04	0.00	3.84E-05	3.28E-05	0.00
564320_4184120	564320	4184120	3.64E-03	2.24E-03	1.98E-04	1.69E-04	7.28E-04	4.49E-04	0.00	3.97E-05	3.39E-05	0.00
564340_4184120	564340	4184120	3.78E-03	2.33E-03	2.05E-04	1.75E-04	7.57E-04	4.66E-04	0.00	4.09E-05	3.49E-05	0.00
564360_4184120	564360	4184120	3.93E-03	2.42E-03	2.11E-04	1.81E-04	7.87E-04	4.85E-04	0.00	4.23E-05	3.61E-05	0.00
564380_4184120	564380	4184120	4.11E-03	2.53E-03	2.19E-04	1.87E-04	8.21E-04	5.06E-04	0.00	4.39E-05	3.75E-05	0.00
564400_4184120	564400	4184120	4.30E-03	2.65E-03	2.29E-04	1.95E-04	8.60E-04	5.30E-04	0.00	4.57E-05	3.91E-05	0.00
564420_4184120	564420	4184120	4.53E-03	2.79E-03	2.40E-04	2.05E-04	9.07E-04	5.59E-04	0.00	4.80E-05	4.10E-05	0.00
564440_4184120	564440	4184120	4.80E-03	2.96E-03	2.53E-04	2.16E-04	9.61E-04	5.92E-04	0.00	5.05E-05	4.32E-05	0.00
564460_4184120	564460	4184120	5.11E-03	3.15E-03	2.67E-04	2.29E-04	1.02E-03	6.29E-04	0.00	5.35E-05	4.57E-05	0.00
564480_4184120	564480	4184120	5.45E-03	3.36E-03	2.84E-04	2.43E-04	1.09E-03	6.71E-04	0.00	5.67E-05	4.85E-05	0.00
564500_4184120	564500	4184120	5.83E-03	3.59E-03	3.02E-04	2.58E-04	1.17E-03	7.18E-04	0.00	6.03E-05	5.16E-05	0.00
564520_4184120	564520	4184120	6.26E-03	3.85E-03	3.22E-04	2.75E-04	1.25E-03	7.71E-04	0.00	6.44E-05	5.51E-05	0.00

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3) | Uncontrolled HI Risk | Controlled HI Risk

			Unmitigated		Mitigated		Uncontrolled HI Risk C_{DPM}/REL			Controlled HI Risk C_{DPM}/REL		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	2021	2022	Max	2021	2022	Max
564540_4184120	564540	4184120	6.77E-03	4.16E-03	3.46E-04	2.96E-04	1.35E-03	8.33E-04	0.00	6.91E-05	5.91E-05	0.00
564560_4184120	564560	4184120	7.33E-03	4.51E-03	3.72E-04	3.18E-04	1.47E-03	9.02E-04	0.00	7.44E-05	6.37E-05	0.00
564580_4184120	564580	4184120	7.89E-03	4.85E-03	3.98E-04	3.41E-04	1.58E-03	9.71E-04	0.00	7.97E-05	6.82E-05	0.00
564600_4184120	564600	4184120	8.47E-03	5.21E-03	4.26E-04	3.64E-04	1.69E-03	1.04E-03	0.00	8.51E-05	7.28E-05	0.00
564620_4184120	564620	4184120	9.07E-03	5.58E-03	4.53E-04	3.88E-04	1.81E-03	1.12E-03	0.00	9.07E-05	7.76E-05	0.00
564640_4184120	564640	4184120	9.61E-03	5.91E-03	4.79E-04	4.10E-04	1.92E-03	1.18E-03	0.00	9.57E-05	8.19E-05	0.00
564660_4184120	564660	4184120	1.01E-02	6.21E-03	5.01E-04	4.29E-04	2.02E-03	1.24E-03	0.00	1.00E-04	8.59E-05	0.00
564680_4184120	564680	4184120	1.05E-02	6.46E-03	5.20E-04	4.46E-04	2.10E-03	1.29E-03	0.00	1.04E-04	8.91E-05	0.00
564240_4184140	564240	4184140	3.34E-03	2.06E-03	2.02E-04	1.72E-04	6.67E-04	4.12E-04	0.00	4.04E-05	3.44E-05	0.00
564260_4184140	564260	4184140	3.52E-03	2.18E-03	2.07E-04	1.76E-04	7.05E-04	4.35E-04	0.00	4.13E-05	3.52E-05	0.00
564280_4184140	564280	4184140	3.72E-03	2.30E-03	2.13E-04	1.81E-04	7.44E-04	4.59E-04	0.00	4.25E-05	3.63E-05	0.00
564300_4184140	564300	4184140	3.91E-03	2.41E-03	2.19E-04	1.87E-04	7.83E-04	4.83E-04	0.00	4.39E-05	3.74E-05	0.00
564320_4184140	564320	4184140	4.10E-03	2.53E-03	2.26E-04	1.93E-04	8.20E-04	5.05E-04	0.00	4.53E-05	3.86E-05	0.00
564340_4184140	564340	4184140	4.28E-03	2.64E-03	2.34E-04	2.00E-04	8.56E-04	5.28E-04	0.00	4.67E-05	3.99E-05	0.00
564360_4184140	564360	4184140	4.46E-03	2.75E-03	2.42E-04	2.06E-04	8.93E-04	5.50E-04	0.00	4.83E-05	4.13E-05	0.00
564380_4184140	564380	4184140	4.67E-03	2.87E-03	2.51E-04	2.14E-04	9.33E-04	5.75E-04	0.00	5.01E-05	4.28E-05	0.00
564400_4184140	564400	4184140	4.90E-03	3.02E-03	2.62E-04	2.24E-04	9.80E-04	6.04E-04	0.00	5.24E-05	4.47E-05	0.00
564420_4184140	564420	4184140	5.18E-03	3.19E-03	2.75E-04	2.35E-04	1.04E-03	6.37E-04	0.00	5.50E-05	4.70E-05	0.00
564440_4184140	564440	4184140	5.50E-03	3.39E-03	2.90E-04	2.48E-04	1.10E-03	6.77E-04	0.00	5.81E-05	4.96E-05	0.00
564460_4184140	564460	4184140	5.87E-03	3.61E-03	3.08E-04	2.63E-04	1.17E-03	7.23E-04	0.00	6.16E-05	5.27E-05	0.00
564480_4184140	564480	4184140	6.28E-03	3.86E-03	3.27E-04	2.80E-04	1.26E-03	7.73E-04	0.00	6.54E-05	5.59E-05	0.00
564500_4184140	564500	4184140	6.77E-03	4.16E-03	3.50E-04	2.99E-04	1.35E-03	8.33E-04	0.00	7.00E-05	5.99E-05	0.00
564520_4184140	564520	4184140	7.34E-03	4.52E-03	3.77E-04	3.22E-04	1.47E-03	9.03E-04	0.00	7.53E-05	6.45E-05	0.00
564540_4184140	564540	4184140	7.99E-03	4.92E-03	4.07E-04	3.48E-04	1.60E-03	9.83E-04	0.00	8.14E-05	6.97E-05	0.00
564560_4184140	564560	4184140	8.70E-03	5.36E-03	4.41E-04	3.77E-04	1.74E-03	1.07E-03	0.00	8.81E-05	7.54E-05	0.00
564580_4184140	564580	4184140	9.43E-03	5.80E-03	4.74E-04	4.06E-04	1.89E-03	1.16E-03	0.00	9.49E-05	8.12E-05	0.00
564600_4184140	564600	4184140	1.02E-02	6.25E-03	5.08E-04	4.35E-04	2.03E-03	1.25E-03	0.00	1.02E-04	8.70E-05	0.00
564620_4184140	564620	4184140	1.09E-02	6.68E-03	5.41E-04	4.63E-04	2.17E-03	1.34E-03	0.00	1.08E-04	9.27E-05	0.00
564640_4184140	564640	4184140	1.15E-02	7.06E-03	5.69E-04	4.88E-04	2.29E-03	1.41E-03	0.00	1.14E-04	9.75E-05	0.00
564660_4184140	564660	4184140	1.20E-02	7.38E-03	5.94E-04	5.09E-04	2.40E-03	1.48E-03	0.00	1.19E-04	1.02E-04	0.00
564680_4184140	564680	4184140	1.24E-02	7.64E-03	6.13E-04	5.25E-04	2.48E-03	1.53E-03	0.00	1.23E-04	1.05E-04	0.00
564700_4184140	564700	4184140	1.27E-02	7.80E-03	6.25E-04	5.35E-04	2.54E-03	1.56E-03	0.00	1.25E-04	1.07E-04	0.00
564220_4184160	564220	4184160	3.46E-03	2.14E-03	2.54E-04	2.16E-04	6.91E-04	4.29E-04	0.00	5.08E-05	4.31E-05	0.00
564240_4184160	564240	4184160	3.67E-03	2.27E-03	2.43E-04	2.06E-04	7.35E-04	4.55E-04	0.00	4.85E-05	4.12E-05	0.00
564260_4184160	564260	4184160	3.90E-03	2.41E-03	2.40E-04	2.04E-04	7.81E-04	4.82E-04	0.00	4.80E-05	4.09E-05	0.00
564280_4184160	564280	4184160	4.15E-03	2.56E-03	2.44E-04	2.08E-04	8.31E-04	5.13E-04	0.00	4.89E-05	4.17E-05	0.00
564300_4184160	564300	4184160	4.41E-03	2.72E-03	2.52E-04	2.15E-04	8.81E-04	5.44E-04	0.00	5.03E-05	4.29E-05	0.00
564320_4184160	564320	4184160	4.65E-03	2.87E-03	2.60E-04	2.22E-04	9.31E-04	5.74E-04	0.00	5.20E-05	4.44E-05	0.00
564340_4184160	564340	4184160	4.89E-03	3.01E-03	2.69E-04	2.30E-04	9.77E-04	6.02E-04	0.00	5.38E-05	4.60E-05	0.00
564360_4184160	564360	4184160	5.12E-03	3.16E-03	2.79E-04	2.38E-04	1.02E-03	6.31E-04	0.00	5.58E-05	4.77E-05	0.00
564380_4184160	564380	4184160	5.36E-03	3.30E-03	2.90E-04	2.48E-04	1.07E-03	6.61E-04	0.00	5.80E-05	4.95E-05	0.00
564400_4184160	564400	4184160	5.63E-03	3.47E-03	3.02E-04	2.58E-04	1.13E-03	6.93E-04	0.00	6.05E-05	5.17E-05	0.00
564420_4184160	564420	4184160	5.95E-03	3.67E-03	3.18E-04	2.72E-04	1.19E-03	7.33E-04	0.00	6.36E-05	5.43E-05	0.00
564440_4184160	564440	4184160	6.36E-03	3.92E-03	3.37E-04	2.88E-04	1.27E-03	7.84E-04	0.00	6.75E-05	5.77E-05	0.00
564460_4184160	564460	4184160	6.84E-03	4.21E-03	3.60E-04	3.08E-04	1.37E-03	8.42E-04	0.00	7.20E-05	6.15E-05	0.00
564480_4184160	564480	4184160	7.37E-03	4.54E-03	3.85E-04	3.29E-04	1.47E-03	9.08E-04	0.00	7.69E-05	6.58E-05	0.00
564500_4184160	564500	4184160	8.01E-03	4.93E-03	4.14E-04	3.54E-04	1.60E-03	9.86E-04	0.00	8.28E-05	7.08E-05	0.00
564520_4184160	564520	4184160	8.77E-03	5.39E-03	4.49E-04	3.84E-04	1.75E-03	1.08E-03	0.00	8.98E-05	7.68E-05	0.00
564540_4184160	564540	4184160	9.62E-03	5.92E-03	4.88E-04	4.18E-04	1.92E-03	1.18E-03	0.00	9.77E-05	8.36E-05	0.00
564560_4184160	564560	4184160	1.05E-02	6.47E-03	5.30E-04	4.53E-04	2.10E-03	1.29E-03	0.00	1.06E-04	9.07E-05	0.00
564580_4184160	564580	4184160	1.14E-02	7.04E-03	5.73E-04	4.91E-04	2.29E-03	1.41E-03	0.00	1.15E-04	9.82E-05	0.00
564600_4184160	564600	4184160	1.23E-02	7.59E-03	6.15E-04	5.27E-04	2.47E-03	1.52E-03	0.00	1.23E-04	1.05E-04	0.00
564620_4184160	564620	4184160	1.32E-02	8.10E-03	6.53E-04	5.59E-04	2.63E-03	1.62E-03	0.00	1.31E-04	1.12E-04	0.00
564640_4184160	564640	4184160	1.38E-02	8.52E-03	6.85E-04	5.86E-04	2.77E-03	1.70E-03	0.00	1.37E-04	1.17E-04	0.00
564660_4184160	564660	4184160	1.44E-02	8.87E-03	7.11E-04	6.09E-04	2.88E-03	1.77E-03	0.00	1.42E-04	1.22E-04	0.00
564680_4184160	564680	4184160	1.48E-02	9.08E-03	7.27E-04	6.22E-04	2.95E-03	1.82E-03	0.00	1.45E-04	1.24E-04	0.00
564700_4184160	564700	4184160	1.49E-02	9.16E-03	7.32E-04	6.27E-04	2.98E-03	1.83E-03	0.00	1.46E-04	1.25E-04	0.00
564720_4184160	564720	4184160	1.48E-02	9.10E-03	7.27E-04	6.23E-04	2.96E-03	1.82E-03	0.00	1.45E-04	1.25E-04	0.00
564220_4184180	564220	4184180	3.77E-03	2.35E-03	3.03E-04	2.56E-04	7.54E-04	4.69E-04	0.00	6.06E-05	5.13E-05	0.00
564240_4184180	564240	4184180	4.03E-03	2.50E-03	2.82E-04	2.39E-04	8.07E-04	5.00E-04	0.00	5.64E-05	4.79E-05	0.00
564260_4184180	564260	4184180	4.33E-03	2.68E-03	2.76E-04	2.35E-04	8.65E-04	5.35E-04	0.00	5.53E-05	4.70E-05	0.00
564280_4184180	564280	4184180	4.64E-03	2.87E-03	2.80E-04	2.38E-04	9.29E-04	5.74E-04	0.00	5.60E-05	4.77E-05	0.00
564300_4184180	564300	4184180	4.98E-03	3.07E-03	2.89E-04	2.47E-04	9.96E-04	6.15E-04	0.00	5.78E-05	4.93E-05	0.00
564320_4184180	564320	4184180	5.31E-03	3.27E-03	3.00E-04	2.56E-04	1.06E-03	6.54E-04	0.00	6.00E-05	5.12E-05	0.00
564340_4184180	564340	4184180	5.62E-03	3.47E-03	3.12E-04	2.67E-04	1.12E-03	6.93E-04	0.00	6.25E-05	5.33E-05	0.00
564360_4184180	564360	4184180	5.93E-03	3.65E-03	3.25E-04	2.78E-04	1.19E-03	7.30E-04	0.00	6.51E-05	5.56E-05	0.00
564380_4184180	564380	4184180	6.22E-03	3.83E-03	3.39E-04	2.89E-04	1.24E-03	7.67E-04	0.00	6.77E-05	5.79E-05	0.00
564400_4184180	564400	4184180	6.55E-03	4.04E-03	3.55E-04	3.03E-04	1.31E-03	8.08E-04	0.00	7.09E-05	6.06E-05	0.00
564420_4184180	564420	4184180	6.95E-03	4.28E-03	3.74E-04	3.19E-04	1.39E-03	8.57E-04	0.00	7.47E-05	6.38E-05	0.00
564440_4184180	564440	4184180	7.47E-03	4.60E-03	3.98E-04	3.40E-04	1.49E-03	9.20E-04	0.00	7.96E-05	6.80E-05	0.00
564460_4184180	564460	4184180	8.08E-03	4.97E-03	4.26E-04	3.64E-04	1.62E-03	9.95E-04	0.00	8.52E-05	7.28E-05	0.00
564480_4184180	564480	4184180	8.80E-03	5.42E-03	4.58E-04	3.92E-04	1.76E-03	1.08E-03	0.00	9.17E-05	7.84E-05	0.00
564500_4184180	564500	4184180	9.66E-03	5.94E-03	4.98E-04	4.26E-04	1.93E-03	1.19E-03	0.00	9.96E-05	8.52E-05	0.00
564520_4184180	564520	4184180	1.06E-02	6.55E-03	5.43E-04	4.65E-04	2.13E-03	1.31E-03	0.00	1.09E-04	9.29E-05	0.00
564540_4184180	564540	4184180	1.18E-02	7.24E-03	5.95E-04	5.09E-04	2.35E-03	1.45E-03	0.00	1.19E-04	1.02E-04	0.00
564560_4184180	564560	4184180	1.30E-02	7.97E-03	6.49E-04	5.56E-04	2.59E-03	1.59E-03	0.00	1.30E-04	1.11E-04	0.00
564580_4184180	564580	4184180	1.42E-02	8.72E-03	7.07E-04	6.05E-04	2.84E-03	1.74E-03	0.00	1.41E-04	1.21E-04	0.00
564600_4184180	564600	4184180	1.53E-02	9.42E-03	7.59E-04	6.50E-04	3.06E-03	1.88E-03	0.00	1.52E-04	1.30E-04	0.00
564620_4184180	564620	4184180	1.62E-02	9.98E-03	8.01E-04	6.86E-04	3.24E-03	2.00E-03	0.00	1.60E-04	1.37E-04	0.00
564640_4184180	564640	4184180	1.69E-02	1.04E-02	8.32E-04	7.13E-04	3.38E-03	2.08E-03	0.00	1.66E-04	1.43E-04	0.00
564660_4184180	564660	4184180	1.74E-02	1.07E-02	8.57E-04	7.34E-04	3.49E-03	2.14E-03	0.00	1.71E-04	1.47E-04	0.00
564680_4184180	564680	4184180	1.76E-02	1.08E-02	8.64E-04	7.40E-04	3.52E-03	2.16E-03	0.00	1.73E-04	1.48E-04	0.00
564700_4184180	564700	4184180	1.74E-02	1.07E-02	8.56E-04	7.33E-04	3.49E-03	2.15E-03	0.00	1.71E-04	1.47E-04	0.00
564720_4184180	564720	4184180	1.71E-02	1.05E-02	8.36E-04	7.16E-04	3.41E-03	2.10E-03	0.00	1.67E-04	1.43E-04	0.00
564180_4184200	564180	4184200	3.33E-03	2.05E-03	1.92E-04	1.63E-04	6.66E-04	4.11E-04	0.00	3.83E-05	3.27E-05	0.00
564200_4184200	564200	4184200	3.66E-03	2.26E-03	2.32E-04	1.97E-04	7.31E-04	4.52E-04	0.00	4.63E-05	3.94E-05	0.00
564240_4184200	564240	4184200	4.40E-03	2.73E-03	3.21E-04	2.72E-04	8.81E-04	5.47E-04	0.00	6.42E-05	5.44E-05	0.00
564260_4184200	564260	4184200	4.78E-03	2.96E-03	3.14E-04	2.67E-04	9.56E-04	5.91E-04	0.00	6.28E-05	5.33E-05	0.00
564280_4184200	564280	4184200	5.19E-03	3.21E-03	3.19E-04	2.71E-04	1.04E-03	6.41E-04	0.00	6.38E-05	5.43E-05	0.00
564300_4184200	564300	4184200	5.63E-03	3.48E-03	3.31E-04	2.82E-04	1.13E-03	6.95E-04	0.00	6.63E-05	5.65E-05	0.00
564320_4184200	564320	4184200	6.08E-03	3.75E-03	3.47E-04	2.96E-04	1.22E-03	7.50E-04	0.00	6.95E-05	5.93E-05	0.00
564340_4184200	564340	4184200	6.53E-03	4.03E-03	3.66E-04	3.12E-04	1.31E-03	8.05E-04	0.00	7.32E-05	6.25E-05	0.00
564360_4184200	564360	4184200	6.95E-03	4.28E-03	3.85E-04	3.28E-04	1.39E-03	8.56E-04	0.00	7.70E-05	6.57E-05	0.00

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)							Uncontrolled HI Risk			Controlled HI Risk		
			Unmitigated		Mitigated		C_{DPM}/REL			C_{DPM}/REL		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	2021	2022	Max	2021	2022	Max
564380_4184200	564380	4184200	7.34E-03	4.53E-03	4.04E-04	3.45E-04	1.47E-03	9.05E-04	0.00	8.07E-05	6.89E-05	0.00
564400_4184200	564400	4184200	7.79E-03	4.80E-03	4.26E-04	3.63E-04	1.56E-03	9.60E-04	0.00	8.51E-05	7.27E-05	0.00
564420_4184200	564420	4184200	8.27E-03	5.10E-03	4.48E-04	3.83E-04	1.65E-03	1.02E-03	0.00	8.97E-05	7.66E-05	0.00
564440_4184200	564440	4184200	8.91E-03	5.49E-03	4.77E-04	4.08E-04	1.78E-03	1.10E-03	0.00	9.54E-05	8.15E-05	0.00
564460_4184200	564460	4184200	9.71E-03	5.98E-03	5.12E-04	4.38E-04	1.94E-03	1.20E-03	0.00	1.02E-04	8.76E-05	0.00
564480_4184200	564480	4184200	1.07E-02	6.56E-03	5.54E-04	4.74E-04	2.13E-03	1.31E-03	0.00	1.11E-04	9.48E-05	0.00
564520_4184200	564520	4184200	1.32E-02	8.12E-03	6.69E-04	5.73E-04	2.64E-03	1.62E-03	0.00	1.34E-04	1.15E-04	0.00
564540_4184200	564540	4184200	1.47E-02	9.06E-03	7.40E-04	6.34E-04	2.95E-03	1.81E-03	0.00	1.48E-04	1.27E-04	0.00
564560_4184200	564560	4184200	1.63E-02	1.01E-02	8.15E-04	6.98E-04	3.27E-03	2.01E-03	0.00	1.63E-04	1.40E-04	0.00
564580_4184200	564580	4184200	1.79E-02	1.10E-02	8.89E-04	7.62E-04	3.59E-03	2.21E-03	0.00	1.78E-04	1.52E-04	0.00
564600_4184200	564600	4184200	1.94E-02	1.19E-02	9.55E-04	8.18E-04	3.87E-03	2.38E-03	0.00	1.91E-04	1.64E-04	0.00
564620_4184200	564620	4184200	2.03E-02	1.25E-02	9.99E-04	8.56E-04	4.06E-03	2.50E-03	0.00	2.00E-04	1.71E-04	0.00
564640_4184200	564640	4184200	2.09E-02	1.28E-02	1.03E-03	8.78E-04	4.18E-03	2.57E-03	0.00	2.05E-04	1.76E-04	0.00
564660_4184200	564660	4184200	2.11E-02	1.30E-02	1.03E-03	8.86E-04	4.22E-03	2.60E-03	0.00	2.07E-04	1.77E-04	0.00
564680_4184200	564680	4184200	2.09E-02	1.29E-02	1.02E-03	8.77E-04	4.18E-03	2.57E-03	0.00	2.05E-04	1.75E-04	0.00
564700_4184200	564700	4184200	2.03E-02	1.25E-02	9.94E-04	8.51E-04	4.06E-03	2.50E-03	0.00	1.99E-04	1.70E-04	0.00
564720_4184200	564720	4184200	1.95E-02	1.20E-02	9.52E-04	8.16E-04	3.89E-03	2.39E-03	0.00	1.90E-04	1.63E-04	0.00
564740_4184200	564740	4184200	1.85E-02	1.14E-02	9.04E-04	7.74E-04	3.69E-03	2.27E-03	0.00	1.81E-04	1.55E-04	0.00
564180_4184220	564180	4184220	3.50E-03	2.16E-03	1.98E-04	1.69E-04	7.00E-04	4.31E-04	0.00	3.95E-05	3.37E-05	0.00
564200_4184220	564200	4184220	3.86E-03	2.38E-03	2.31E-04	1.97E-04	7.72E-04	4.77E-04	0.00	4.62E-05	3.94E-05	0.00
564240_4184220	564240	4184220	4.78E-03	2.97E-03	3.63E-04	3.08E-04	9.56E-04	5.94E-04	0.00	7.26E-05	6.15E-05	0.00
564260_4184220	564260	4184220	5.24E-03	3.24E-03	3.53E-04	3.00E-04	1.05E-03	6.49E-04	0.00	7.06E-05	6.00E-05	0.00
564280_4184220	564280	4184220	5.77E-03	3.56E-03	3.60E-04	3.07E-04	1.15E-03	7.13E-04	0.00	7.21E-05	6.13E-05	0.00
564300_4184220	564300	4184220	6.35E-03	3.92E-03	3.79E-04	3.23E-04	1.27E-03	7.84E-04	0.00	7.58E-05	6.45E-05	0.00
564320_4184220	564320	4184220	6.98E-03	4.31E-03	4.05E-04	3.45E-04	1.40E-03	8.62E-04	0.00	8.09E-05	6.90E-05	0.00
564340_4184220	564340	4184220	7.63E-03	4.71E-03	4.34E-04	3.70E-04	1.53E-03	9.41E-04	0.00	8.68E-05	7.41E-05	0.00
564360_4184220	564360	4184220	8.25E-03	5.08E-03	4.64E-04	3.96E-04	1.65E-03	1.02E-03	0.00	9.28E-05	7.92E-05	0.00
564380_4184220	564380	4184220	8.82E-03	5.44E-03	4.94E-04	4.22E-04	1.76E-03	1.09E-03	0.00	9.89E-05	8.44E-05	0.00
564400_4184220	564400	4184220	9.39E-03	5.79E-03	5.23E-04	4.47E-04	1.88E-03	1.16E-03	0.00	1.05E-04	8.93E-05	0.00
564420_4184220	564420	4184220	1.00E-02	6.18E-03	5.50E-04	4.70E-04	2.01E-03	1.24E-03	0.00	1.10E-04	9.39E-05	0.00
564440_4184220	564440	4184220	1.08E-02	6.67E-03	5.82E-04	4.97E-04	2.17E-03	1.33E-03	0.00	1.16E-04	9.95E-05	0.00
564460_4184220	564460	4184220	1.19E-02	7.32E-03	6.26E-04	5.35E-04	2.38E-03	1.46E-03	0.00	1.25E-04	1.07E-04	0.00
564540_4184220	564540	4184220	1.90E-02	1.17E-02	9.51E-04	8.14E-04	3.81E-03	2.34E-03	0.00	1.90E-04	1.63E-04	0.00
564560_4184220	564560	4184220	2.13E-02	1.31E-02	1.06E-03	9.04E-04	4.26E-03	2.62E-03	0.00	2.11E-04	1.81E-04	0.00
564620_4184220	564620	4184220	2.58E-02	1.59E-02	1.26E-03	1.08E-03	5.16E-03	3.17E-03	0.01	2.53E-04	2.16E-04	0.00
564640_4184220	564640	4184220	2.59E-02	1.59E-02	1.27E-03	1.08E-03	5.17E-03	3.18E-03	0.01	2.53E-04	2.17E-04	0.00
564660_4184220	564660	4184220	2.54E-02	1.56E-02	1.24E-03	1.06E-03	5.09E-03	3.13E-03	0.01	2.49E-04	2.13E-04	0.00
564680_4184220	564680	4184220	2.46E-02	1.51E-02	1.20E-03	1.03E-03	4.92E-03	3.02E-03	0.00	2.40E-04	2.06E-04	0.00
564700_4184220	564700	4184220	2.33E-02	1.44E-02	1.14E-03	9.77E-04	4.67E-03	2.87E-03	0.00	2.28E-04	1.95E-04	0.00
564720_4184220	564720	4184220	2.19E-02	1.35E-02	1.07E-03	9.17E-04	4.38E-03	2.69E-03	0.00	2.14E-04	1.83E-04	0.00
564740_4184220	564740	4184220	2.04E-02	1.25E-02	9.97E-04	8.54E-04	4.08E-03	2.51E-03	0.00	1.99E-04	1.71E-04	0.00
564760_4184220	564760	4184220	1.89E-02	1.16E-02	9.24E-04	7.92E-04	3.78E-03	2.32E-03	0.00	1.85E-04	1.58E-04	0.00
564160_4184240	564160	4184240	3.31E-03	2.04E-03	1.81E-04	1.54E-04	6.62E-04	4.08E-04	0.00	3.61E-05	3.09E-05	0.00
564180_4184240	564180	4184240	3.66E-03	2.26E-03	2.04E-04	1.74E-04	7.32E-04	4.51E-04	0.00	4.09E-05	3.49E-05	0.00
564200_4184240	564200	4184240	4.06E-03	2.50E-03	2.36E-04	2.01E-04	8.12E-04	5.01E-04	0.00	4.71E-05	4.02E-05	0.00
564220_4184240	564220	4184240	4.54E-03	2.80E-03	2.85E-04	2.43E-04	9.07E-04	5.61E-04	0.00	5.71E-05	4.86E-05	0.00
564260_4184240	564260	4184240	5.70E-03	3.53E-03	3.97E-04	3.37E-04	1.14E-03	7.07E-04	0.00	7.93E-05	6.74E-05	0.00
564280_4184240	564280	4184240	6.37E-03	3.94E-03	4.08E-04	3.47E-04	1.27E-03	7.87E-04	0.00	8.15E-05	6.93E-05	0.00
564300_4184240	564300	4184240	7.14E-03	4.41E-03	4.35E-04	3.70E-04	1.43E-03	8.82E-04	0.00	8.70E-05	7.41E-05	0.00
564320_4184240	564320	4184240	8.01E-03	4.94E-03	4.75E-04	4.05E-04	1.60E-03	9.89E-04	0.00	9.50E-05	8.10E-05	0.00
564340_4184240	564340	4184240	8.95E-03	5.52E-03	5.26E-04	4.48E-04	1.79E-03	1.10E-03	0.00	1.05E-04	8.96E-05	0.00
564360_4184240	564360	4184240	9.91E-03	6.11E-03	5.83E-04	4.97E-04	1.98E-03	1.22E-03	0.00	1.17E-04	9.94E-05	0.00
564380_4184240	564380	4184240	1.08E-02	6.67E-03	6.40E-04	5.46E-04	2.16E-03	1.33E-03	0.00	1.28E-04	1.09E-04	0.00
564400_4184240	564400	4184240	1.16E-02	7.16E-03	6.68E-04	5.70E-04	2.32E-03	1.43E-03	0.00	1.34E-04	1.14E-04	0.00
564420_4184240	564420	4184240	1.24E-02	7.66E-03	6.88E-04	5.88E-04	2.49E-03	1.53E-03	0.00	1.38E-04	1.18E-04	0.00
564440_4184240	564440	4184240	1.35E-02	8.31E-03	7.24E-04	6.19E-04	2.70E-03	1.66E-03	0.00	1.45E-04	1.24E-04	0.00
564460_4184240	564460	4184240	1.50E-02	9.21E-03	7.83E-04	6.70E-04	2.99E-03	1.84E-03	0.00	1.57E-04	1.34E-04	0.00
564480_4184240	564480	4184240	1.69E-02	1.04E-02	8.70E-04	7.44E-04	3.39E-03	2.09E-03	0.00	1.74E-04	1.49E-04	0.00
564620_4184240	564620	4184240	3.27E-02	2.01E-02	1.60E-03	1.37E-03	6.55E-03	4.03E-03	0.01	3.20E-04	2.74E-04	0.00
564640_4184240	564640	4184240	3.19E-02	1.96E-02	1.55E-03	1.33E-03	6.37E-03	3.92E-03	0.01	3.11E-04	2.66E-04	0.00
564660_4184240	564660	4184240	3.03E-02	1.86E-02	1.48E-03	1.27E-03	6.06E-03	3.73E-03	0.01	2.96E-04	2.53E-04	0.00
564680_4184240	564680	4184240	2.84E-02	1.75E-02	1.39E-03	1.19E-03	5.68E-03	3.50E-03	0.01	2.77E-04	2.38E-04	0.00
564700_4184240	564700	4184240	2.63E-02	1.62E-02	1.29E-03	1.10E-03	5.27E-03	3.24E-03	0.01	2.57E-04	2.20E-04	0.00
564720_4184240	564720	4184240	2.42E-02	1.49E-02	1.18E-03	1.01E-03	4.84E-03	2.97E-03	0.00	2.36E-04	2.02E-04	0.00
564740_4184240	564740	4184240	2.21E-02	1.36E-02	1.08E-03	9.26E-04	4.42E-03	2.72E-03	0.00	2.16E-04	1.85E-04	0.00
564760_4184240	564760	4184240	2.02E-02	1.24E-02	9.88E-04	8.47E-04	4.04E-03	2.48E-03	0.00	1.98E-04	1.69E-04	0.00
564160_4184260	564160	4184260	3.41E-03	2.10E-03	1.86E-04	1.59E-04	6.82E-04	4.21E-04	0.00	3.73E-05	3.18E-05	0.00
564180_4184260	564180	4184260	3.79E-03	2.34E-03	2.11E-04	1.80E-04	7.58E-04	4.67E-04	0.00	4.22E-05	3.60E-05	0.00
564200_4184260	564200	4184260	4.23E-03	2.61E-03	2.42E-04	2.07E-04	8.46E-04	5.22E-04	0.00	4.84E-05	4.13E-05	0.00
564220_4184260	564220	4184260	4.75E-03	2.93E-03	2.86E-04	2.44E-04	9.50E-04	5.87E-04	0.00	5.73E-05	4.88E-05	0.00
564260_4184260	564260	4184260	6.15E-03	3.82E-03	4.49E-04	3.81E-04	1.23E-03	7.63E-04	0.00	8.98E-05	7.61E-05	0.00
564280_4184260	564280	4184260	6.96E-03	4.31E-03	4.64E-04	3.94E-04	1.39E-03	8.62E-04	0.00	9.28E-05	7.88E-05	0.00
564300_4184260	564300	4184260	7.95E-03	4.92E-03	5.05E-04	4.30E-04	1.59E-03	9.83E-04	0.00	1.01E-04	8.60E-05	0.00
564320_4184260	564320	4184260	9.13E-03	5.65E-03	5.73E-04	4.87E-04	1.83E-03	1.13E-03	0.00	1.15E-04	9.75E-05	0.00
564380_4184260	564380	4184260	1.35E-02	8.35E-03	9.05E-04	7.69E-04	2.70E-03	1.67E-03	0.00	1.81E-04	1.54E-04	0.00
564400_4184260	564400	4184260	1.47E-02	9.05E-03	8.67E-04	7.38E-04	2.93E-03	1.81E-03	0.00	1.73E-04	1.48E-04	0.00
564420_4184260	564420	4184260	1.58E-02	9.77E-03	8.79E-04	7.51E-04	3.17E-03	1.95E-03	0.00	1.76E-04	1.50E-04	0.00
564440_4184260	564440	4184260	1.73E-02	1.07E-02	9.24E-04	7.90E-04	3.46E-03	2.13E-03	0.00	1.85E-04	1.58E-04	0.00
564460_4184260	564460	4184260	1.95E-02	1.20E-02	1.01E-03	8.65E-04	3.89E-03	2.40E-03	0.00	2.02E-04	1.73E-04	0.00
564480_4184260	564480	4184260	2.25E-02	1.38E-02	1.15E-03	9.80E-04	4.50E-03	2.77E-03	0.00	2.29E-04	1.96E-04	0.00
564580_4184260	564580	4184260	4.22E-02	2.60E-02	2.06E-03	1.76E-03	8.44E-03	5.19E-03	0.01	4.12E-04	3.53E-04	0.00
564600_4184260	564600	4184260	4.26E-02	2.62E-02	2.07E-03	1.78E-03	8.52E-03	5.24E-03	0.01	4.15E-04	3.56E-04	0.00
564620_4184260	564620	4184260	4.11E-02	2.53E-02	2.00E-03	1.72E-03	8.23E-03	5.06E-03	0.01	4.01E-04	3.43E-04	0.00
564640_4184260	564640	4184260	3.86E-02	2.37E-02	1.88E-03	1.61E-03	7.71E-03	4.74E-03	0.01	3.75E-04	3.22E-04	0.00
564660_4184260	564660	4184260	3.54E-02	2.18E-02	1.72E-03	1.48E-03	7.08E-03	4.35E-03	0.01	3.45E-04	2.95E-04	0.00
564680_4184260	564680	4184260	3.21E-02	1.98E-02	1.57E-03	1.34E-03	6.43E-03	3.95E-03	0.01	3.13E-04	2.68E-04	0.00
564700_4184260	564700	4184260	2.90E-02	1.79E-02	1.42E-03	1.21E-03	5.81E-03	3.57E-03	0.01	2.83E-04	2.43E-04	0.00
564720_4184260	564720	4184260	2.62E-02	1.61E-02	1.28E-03	1.10E-03	5.24E-03	3.22E-03	0.01	2.56E-04	2.19E-04	0.00
564740_4184260	564740	4184260	2.36E-02	1.45E-02	1.15E-03	9.88E-04	4.72E-03	2.90E-03	0.00	2.31E-04	1.98E-04	0.00
564760_4184260	564760	4184260	2.13E-02	1.31E-02	1.04E-03	8.93E-04	4.26E-03	2.62E-03	0.00	2.08E-04	1.79E-04	0.00
564160_4184280	564160	4184280	3.48E-03	2.15E-03	1.91E-04	1.63E-04	6.97E-04	4.29E-04	0.00	3.83E-05	3.27E-05	0.00
564180_4184280	564180	4184280	3.89E-03	2.40E-03	2.18E-04	1.86E-04	7.78E-04	4.80E-04	0.00	4.35E-05	3.72E-05	0.00
564200_4184280	564200	4184280	4.37E-03	2.70E-03	2.51E-04	2.14E-04	8.74E-04	5.39E-04	0.00	5.03E-05	4.29E-05	0.00

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3) | Uncontrolled HI Risk | Controlled HI Risk

			Unmitigated		Mitigated		Uncontrolled HI Risk C_{DPM}/REL			Controlled HI Risk C_{DPM}/REL		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	2021	2022	Max	2021	2022	Max
564220_4184280	564220	4184280	4.94E-03	3.05E-03	2.97E-04	2.53E-04	9.89E-04	6.11E-04	0.00	5.93E-05	5.05E-05	0.00
564240_4184280	564240	4184280	5.65E-03	3.50E-03	3.66E-04	3.11E-04	1.13E-03	6.99E-04	0.00	7.32E-05	6.22E-05	0.00
564280_4184280	564280	4184280	7.54E-03	4.68E-03	5.44E-04	4.61E-04	1.51E-03	9.35E-04	0.00	1.09E-04	9.22E-05	0.00
564340_4184280	564340	4184280	1.21E-02	7.50E-03	7.97E-04	6.77E-04	2.42E-03	1.50E-03	0.00	1.59E-04	1.35E-04	0.00
564360_4184280	564360	4184280	1.43E-02	8.80E-03	8.57E-04	7.30E-04	2.85E-03	1.76E-03	0.00	1.71E-04	1.46E-04	0.00
564400_4184280	564400	4184280	1.90E-02	1.17E-02	1.10E-03	9.36E-04	3.80E-03	2.34E-03	0.00	2.19E-04	1.87E-04	0.00
564460_4184280	564460	4184280	2.65E-02	1.63E-02	1.36E-03	1.16E-03	5.30E-03	3.26E-03	0.01	2.72E-04	2.33E-04	0.00
564480_4184280	564480	4184280	3.16E-02	1.94E-02	1.59E-03	1.36E-03	6.31E-03	3.89E-03	0.01	3.17E-04	2.72E-04	0.00
564500_4184280	564500	4184280	3.86E-02	2.37E-02	1.91E-03	1.64E-03	7.72E-03	4.75E-03	0.01	3.83E-04	3.28E-04	0.00
564580_4184280	564580	4184280	5.80E-02	3.56E-02	2.82E-03	2.41E-03	1.16E-02	7.13E-03	0.01	5.63E-04	4.83E-04	0.00
564600_4184280	564600	4184280	5.51E-02	3.39E-02	2.67E-03	2.29E-03	1.10E-02	6.77E-03	0.01	5.35E-04	4.58E-04	0.00
564620_4184280	564620	4184280	5.04E-02	3.10E-02	2.45E-03	2.10E-03	1.01E-02	6.20E-03	0.01	4.90E-04	4.20E-04	0.00
564640_4184280	564640	4184280	4.52E-02	2.78E-02	2.20E-03	1.88E-03	9.05E-03	5.56E-03	0.01	4.40E-04	3.77E-04	0.00
564660_4184280	564660	4184280	4.01E-02	2.46E-02	1.95E-03	1.67E-03	8.01E-03	4.93E-03	0.01	3.90E-04	3.34E-04	0.00
564680_4184280	564680	4184280	3.54E-02	2.18E-02	1.72E-03	1.48E-03	7.08E-03	4.35E-03	0.01	3.45E-04	2.95E-04	0.00
564700_4184280	564700	4184280	3.13E-02	1.93E-02	1.53E-03	1.31E-03	6.26E-03	3.85E-03	0.01	3.05E-04	2.62E-04	0.00
564720_4184280	564720	4184280	2.78E-02	1.71E-02	1.36E-03	1.16E-03	5.56E-03	3.42E-03	0.01	2.71E-04	2.33E-04	0.00
564740_4184280	564740	4184280	2.48E-02	1.52E-02	1.21E-03	1.04E-03	4.96E-03	3.05E-03	0.00	2.42E-04	2.08E-04	0.00
564760_4184280	564760	4184280	2.22E-02	1.37E-02	1.09E-03	9.32E-04	4.45E-03	2.73E-03	0.00	2.18E-04	1.86E-04	0.00
564780_4184280	564780	4184280	2.00E-02	1.23E-02	9.80E-04	8.39E-04	4.00E-03	2.46E-03	0.00	1.96E-04	1.68E-04	0.00
564140_4184300	564140	4184300	3.18E-03	1.96E-03	1.74E-04	1.49E-04	6.36E-04	3.92E-04	0.00	3.48E-05	2.97E-05	0.00
564160_4184300	564160	4184300	3.54E-03	2.18E-03	1.97E-04	1.68E-04	7.07E-04	4.36E-04	0.00	3.94E-05	3.36E-05	0.00
564180_4184300	564180	4184300	3.96E-03	2.44E-03	2.27E-04	1.93E-04	7.93E-04	4.89E-04	0.00	4.53E-05	3.87E-05	0.00
564200_4184300	564200	4184300	4.48E-03	2.76E-03	2.66E-04	2.27E-04	8.95E-04	5.53E-04	0.00	5.32E-05	4.53E-05	0.00
564220_4184300	564220	4184300	5.10E-03	3.15E-03	3.19E-04	2.72E-04	1.02E-03	6.31E-04	0.00	6.39E-05	5.43E-05	0.00
564240_4184300	564240	4184300	5.88E-03	3.64E-03	3.99E-04	3.39E-04	1.18E-03	7.28E-04	0.00	7.97E-05	6.77E-05	0.00
564340_4184300	564340	4184300	1.36E-02	8.39E-03	8.01E-04	6.83E-04	2.72E-03	1.68E-03	0.00	1.60E-04	1.37E-04	0.00
564360_4184300	564360	4184300	1.67E-02	1.03E-02	9.33E-04	7.96E-04	3.34E-03	2.06E-03	0.00	1.87E-04	1.59E-04	0.00
564380_4184300	564380	4184300	2.06E-02	1.27E-02	1.13E-03	9.64E-04	4.12E-03	2.54E-03	0.00	2.26E-04	1.93E-04	0.00
564480_4184300	564480	4184300	4.79E-02	2.95E-02	2.38E-03	2.03E-03	9.59E-03	5.90E-03	0.01	4.75E-04	4.07E-04	0.00
564500_4184300	564500	4184300	6.16E-02	3.79E-02	3.02E-03	2.59E-03	1.23E-02	7.58E-03	0.01	6.04E-04	5.18E-04	0.00
564600_4184300	564600	4184300	6.87E-02	4.22E-02	3.33E-03	2.85E-03	1.37E-02	8.44E-03	0.01	6.65E-04	5.70E-04	0.00
564620_4184300	564620	4184300	5.94E-02	3.65E-02	2.88E-03	2.47E-03	1.19E-02	7.30E-03	0.01	5.76E-04	4.94E-04	0.00
564640_4184300	564640	4184300	5.12E-02	3.15E-02	2.48E-03	2.13E-03	1.02E-02	6.29E-03	0.01	4.97E-04	4.26E-04	0.00
564660_4184300	564660	4184300	4.40E-02	2.71E-02	2.14E-03	1.84E-03	8.81E-03	5.42E-03	0.01	4.28E-04	3.67E-04	0.00
564680_4184300	564680	4184300	3.81E-02	2.34E-02	1.86E-03	1.59E-03	7.62E-03	4.69E-03	0.01	3.71E-04	3.18E-04	0.00
564700_4184300	564700	4184300	3.32E-02	2.04E-02	1.62E-03	1.39E-03	6.65E-03	4.09E-03	0.01	3.24E-04	2.78E-04	0.00
564720_4184300	564720	4184300	2.92E-02	1.79E-02	1.42E-03	1.22E-03	5.83E-03	3.59E-03	0.01	2.85E-04	2.44E-04	0.00
564740_4184300	564740	4184300	2.58E-02	1.59E-02	1.26E-03	1.08E-03	5.16E-03	3.17E-03	0.01	2.52E-04	2.16E-04	0.00
564760_4184300	564760	4184300	2.31E-02	1.42E-02	1.13E-03	9.67E-04	4.61E-03	2.84E-03	0.00	2.26E-04	1.93E-04	0.00
564780_4184300	564780	4184300	2.07E-02	1.27E-02	1.01E-03	8.69E-04	4.14E-03	2.55E-03	0.00	2.03E-04	1.74E-04	0.00
564140_4184320	564140	4184320	3.20E-03	1.97E-03	1.78E-04	1.52E-04	6.39E-04	3.94E-04	0.00	3.57E-05	3.04E-05	0.00
564160_4184320	564160	4184320	3.56E-03	2.20E-03	2.06E-04	1.75E-04	7.13E-04	4.40E-04	0.00	4.11E-05	3.51E-05	0.00
564180_4184320	564180	4184320	4.01E-03	2.48E-03	2.44E-04	2.08E-04	8.02E-04	4.95E-04	0.00	4.88E-05	4.16E-05	0.00
564200_4184320	564200	4184320	4.56E-03	2.82E-03	3.02E-04	2.57E-04	9.12E-04	5.64E-04	0.00	6.04E-05	5.13E-05	0.00
564260_4184320	564260	4184320	7.07E-03	4.39E-03	5.46E-04	4.63E-04	1.41E-03	8.78E-04	0.00	1.09E-04	9.25E-05	0.00
564580_4184320	564580	4184320	9.84E-02	6.05E-02	4.75E-03	4.07E-03	1.97E-02	1.21E-02	0.02	9.51E-04	8.15E-04	0.00
564600_4184320	564600	4184320	8.10E-02	4.98E-02	3.92E-03	3.36E-03	1.62E-02	9.96E-03	0.02	7.84E-04	6.72E-04	0.00
564620_4184320	564620	4184320	6.69E-02	4.12E-02	3.24E-03	2.78E-03	1.34E-02	8.23E-03	0.01	6.49E-04	5.56E-04	0.00
564640_4184320	564640	4184320	5.60E-02	3.44E-02	2.72E-03	2.33E-03	1.12E-02	6.88E-03	0.01	5.43E-04	4.66E-04	0.00
564660_4184320	564660	4184320	4.74E-02	2.91E-02	2.30E-03	1.97E-03	9.48E-03	5.83E-03	0.01	4.61E-04	3.95E-04	0.00
564680_4184320	564680	4184320	4.05E-02	2.49E-02	1.97E-03	1.69E-03	8.10E-03	4.98E-03	0.01	3.95E-04	3.38E-04	0.00
564700_4184320	564700	4184320	3.50E-02	2.15E-02	1.71E-03	1.46E-03	7.01E-03	4.31E-03	0.01	3.42E-04	2.93E-04	0.00
564720_4184320	564720	4184320	3.05E-02	1.88E-02	1.49E-03	1.28E-03	6.10E-03	3.75E-03	0.01	2.98E-04	2.55E-04	0.00
564740_4184320	564740	4184320	2.66E-02	1.64E-02	1.30E-03	1.12E-03	5.33E-03	3.28E-03	0.01	2.60E-04	2.23E-04	0.00
564760_4184320	564760	4184320	2.37E-02	1.46E-02	1.16E-03	9.95E-04	4.75E-03	2.92E-03	0.00	2.32E-04	1.99E-04	0.00
564780_4184320	564780	4184320	2.14E-02	1.32E-02	1.05E-03	8.99E-04	4.29E-03	2.64E-03	0.00	2.10E-04	1.80E-04	0.00
564140_4184340	564140	4184340	3.19E-03	1.97E-03	1.86E-04	1.58E-04	6.38E-04	3.94E-04	0.00	3.71E-05	3.17E-05	0.00
564160_4184340	564160	4184340	3.58E-03	2.21E-03	2.30E-04	1.95E-04	7.16E-04	4.43E-04	0.00	4.59E-05	3.91E-05	0.00
564220_4184340	564220	4184340	5.28E-03	3.28E-03	4.08E-04	3.45E-04	1.06E-03	6.56E-04	0.00	8.15E-05	6.91E-05	0.00
564240_4184340	564240	4184340	6.04E-03	3.74E-03	4.16E-04	3.53E-04	1.21E-03	7.49E-04	0.00	8.32E-05	7.07E-05	0.00
564260_4184340	564260	4184340	7.05E-03	4.36E-03	4.59E-04	3.91E-04	1.41E-03	8.72E-04	0.00	9.19E-05	7.81E-05	0.00
564600_4184340	564600	4184340	9.07E-02	5.58E-02	4.39E-03	3.76E-03	1.81E-02	1.12E-02	0.02	8.78E-04	7.52E-04	0.00
564620_4184340	564620	4184340	7.31E-02	4.50E-02	3.54E-03	3.04E-03	1.46E-02	8.99E-03	0.01	7.08E-04	6.07E-04	0.00
564640_4184340	564640	4184340	6.01E-02	3.70E-02	2.92E-03	2.50E-03	1.20E-02	7.39E-03	0.01	5.83E-04	5.00E-04	0.00
564660_4184340	564660	4184340	5.04E-02	3.10E-02	2.45E-03	2.10E-03	1.01E-02	6.20E-03	0.01	4.90E-04	4.20E-04	0.00
564680_4184340	564680	4184340	4.28E-02	2.63E-02	2.08E-03	1.78E-03	8.55E-03	5.26E-03	0.01	4.17E-04	3.57E-04	0.00
564700_4184340	564700	4184340	3.69E-02	2.27E-02	1.80E-03	1.54E-03	7.37E-03	4.53E-03	0.01	3.59E-04	3.08E-04	0.00
564720_4184340	564720	4184340	3.20E-02	1.97E-02	1.56E-03	1.34E-03	6.40E-03	3.93E-03	0.01	3.12E-04	2.68E-04	0.00
564740_4184340	564740	4184340	2.77E-02	1.71E-02	1.36E-03	1.16E-03	5.55E-03	3.41E-03	0.01	2.71E-04	2.32E-04	0.00
564760_4184340	564760	4184340	2.46E-02	1.51E-02	1.20E-03	1.03E-03	4.92E-03	3.03E-03	0.00	2.41E-04	2.06E-04	0.00
564780_4184340	564780	4184340	2.21E-02	1.36E-02	1.08E-03	9.26E-04	4.41E-03	2.71E-03	0.00	2.16E-04	1.85E-04	0.00
564180_4184360	564180	4184360	4.03E-03	2.50E-03	3.12E-04	2.64E-04	8.06E-04	5.01E-04	0.00	6.24E-05	5.29E-05	0.00
564200_4184360	564200	4184360	4.52E-03	2.80E-03	3.12E-04	2.65E-04	9.04E-04	5.60E-04	0.00	6.24E-05	5.30E-05	0.00
564220_4184360	564220	4184360	5.14E-03	3.18E-03	3.30E-04	2.80E-04	1.03E-03	6.36E-04	0.00	6.59E-05	5.61E-05	0.00
564240_4184360	564240	4184360	5.93E-03	3.67E-03	3.63E-04	3.09E-04	1.19E-03	7.33E-04	0.00	7.25E-05	6.17E-05	0.00
564260_4184360	564260	4184360	6.95E-03	4.29E-03	4.15E-04	3.53E-04	1.39E-03	8.59E-04	0.00	8.30E-05	7.07E-05	0.00
564280_4184360	564280	4184360	8.30E-03	5.13E-03	5.01E-04	4.27E-04	1.66E-03	1.03E-03	0.00	1.00E-04	8.53E-05	0.00
564560_4184360	564560	4184360	1.73E-01	1.06E-01	8.34E-03	7.15E-03	3.46E-02	2.13E-02	0.03	1.67E-03	1.43E-03	0.00
564580_4184360	564580	4184360	1.27E-01	7.83E-02	6.15E-03	5.27E-03	2.55E-02	1.57E-02	0.03	1.23E-03	1.05E-03	0.00
564620_4184360	564620	4184360	7.75E-02	4.77E-02	3.76E-03	3.22E-03	1.55E-02	9.53E-03	0.02	7.51E-04	6.44E-04	0.00
564640_4184360	564640	4184360	6.30E-02	3.87E-02	3.06E-03	2.62E-03	1.26E-02	7.74E-03	0.01	6.11E-04	5.24E-04	0.00
564660_4184360	564660	4184360	5.23E-02	3.22E-02	2.54E-03	2.18E-03	1.05E-02	6.44E-03	0.01	5.09E-04	4.36E-04	0.00
564680_4184360	564680	4184360	4.42E-02	2.72E-02	2.15E-03	1.85E-03	8.84E-03	5.44E-03	0.01	4.31E-04	3.69E-04	0.00
564700_4184360	564700	4184360	3.78E-02	2.32E-02	1.84E-03	1.58E-03	7.56E-03	4.65E-03	0.01	3.69E-04	3.16E-04	0.00
564720_4184360	564720	4184360	3.25E-02	2.00E-02	1.59E-03	1.36E-03	6.51E-03	4.00E-03	0.01	3.18E-04	2.72E-04	0.00
564740_4184360	564740	4184360	2.84E-02	1.75E-02	1.39E-03	1.19E-03	5.68E-03	3.49E-03	0.01	2.78E-04	2.38E-04	0.00
564760_4184360	564760	4184360	2.50E-02	1.54E-02	1.22E-03	1.05E-03	5.00E-03	3.08E-03	0.01	2.45E-04	2.10E-04	0.00
564780_4184360	564780	4184360	2.23E-02	1.37E-02	1.09E-03	9.36E-04	4.46E-03	2.74E-03	0.00	2.19E-04	1.87E-04	0.00
564140_4184380	564140	4184380	3.10E-03	1.91E-03	1.84E-04	1.57E-04	6.19E-04	3.82E-04	0.00	3.69E-05	3.14E-05	0.00
564160_4184380	564160	4184380	3.46E-03	2.14E-03	2.13E-04	1.81E-04	6.92E-04	4.27E-04	0.00	4.26E-05	3.63E-05	0.00
564180_4184380	564180	4184380	3.88E-03	2.40E-03	2.37E-04	2.02E-04	7.76E-04	4.79E-04	0.00	4.73E-05	4.03E-05	0.00
564200_4184380	564200	4184380	4.38E-03	2.70E-03	2.60E-04	2.22E-04	8.76E-04	5.41E-04	0.00	5.20E-05	4.43E-05	0.00

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

Uncontrolled HI Risk

Controlled HI Risk

Lookup	X (UTM)	Y (UTM	Unmitigated		Mitigated		Uncontrolled HI Risk C_{DPM}/REL			Controlled HI Risk C_{DPM}/REL		
			2021	2022	2021	2022	2021	2022	Max	2021	2022	Max
564220_4184380	564220	4184380	5.00E-03	3.08E-03	2.90E-04	2.47E-04	9.99E-04	6.16E-04	0.00	5.80E-05	4.94E-05	0.00
564240_4184380	564240	4184380	5.77E-03	3.56E-03	3.29E-04	2.81E-04	1.15E-03	7.12E-04	0.00	6.59E-05	5.62E-05	0.00
564260_4184380	564260	4184380	6.76E-03	4.17E-03	3.82E-04	3.26E-04	1.35E-03	8.34E-04	0.00	7.64E-05	6.52E-05	0.00
564280_4184380	564280	4184380	8.05E-03	4.96E-03	4.58E-04	3.91E-04	1.61E-03	9.93E-04	0.00	9.16E-05	7.81E-05	0.00
564640_4184380	564640	4184380	6.17E-02	3.79E-02	3.00E-03	2.57E-03	1.23E-02	7.58E-03	0.01	5.99E-04	5.14E-04	0.00
564660_4184380	564660	4184380	5.12E-02	3.15E-02	2.49E-03	2.14E-03	1.02E-02	6.30E-03	0.01	4.99E-04	4.28E-04	0.00
564680_4184380	564680	4184380	4.34E-02	2.67E-02	2.11E-03	1.81E-03	8.67E-03	5.33E-03	0.01	4.23E-04	3.62E-04	0.00
564700_4184380	564700	4184380	3.70E-02	2.28E-02	1.81E-03	1.55E-03	7.41E-03	4.56E-03	0.01	3.62E-04	3.10E-04	0.00
564720_4184380	564720	4184380	3.19E-02	1.96E-02	1.56E-03	1.34E-03	6.39E-03	3.93E-03	0.01	3.12E-04	2.67E-04	0.00
564740_4184380	564740	4184380	2.79E-02	1.71E-02	1.36E-03	1.17E-03	5.58E-03	3.43E-03	0.01	2.73E-04	2.34E-04	0.00
564760_4184380	564760	4184380	2.46E-02	1.51E-02	1.21E-03	1.03E-03	4.93E-03	3.03E-03	0.00	2.41E-04	2.07E-04	0.00
564780_4184380	564780	4184380	2.20E-02	1.35E-02	1.08E-03	9.23E-04	4.39E-03	2.70E-03	0.00	2.15E-04	1.85E-04	0.00
564140_4184400	564140	4184400	3.00E-03	1.85E-03	1.66E-04	1.42E-04	6.00E-04	3.70E-04	0.00	3.32E-05	2.83E-05	0.00
564160_4184400	564160	4184400	3.34E-03	2.06E-03	1.86E-04	1.59E-04	6.68E-04	4.12E-04	0.00	3.73E-05	3.18E-05	0.00
564180_4184400	564180	4184400	3.75E-03	2.31E-03	2.09E-04	1.79E-04	7.50E-04	4.62E-04	0.00	4.18E-05	3.57E-05	0.00
564200_4184400	564200	4184400	4.23E-03	2.61E-03	2.35E-04	2.00E-04	8.46E-04	5.22E-04	0.00	4.69E-05	4.01E-05	0.00
564220_4184400	564220	4184400	4.82E-03	2.97E-03	2.65E-04	2.27E-04	9.63E-04	5.94E-04	0.00	5.31E-05	4.53E-05	0.00
564240_4184400	564240	4184400	5.56E-03	3.42E-03	3.04E-04	2.60E-04	1.11E-03	6.85E-04	0.00	6.09E-05	5.20E-05	0.00
564260_4184400	564260	4184400	6.49E-03	4.00E-03	3.55E-04	3.03E-04	1.30E-03	8.00E-04	0.00	7.10E-05	6.06E-05	0.00
564280_4184400	564280	4184400	7.71E-03	4.75E-03	4.24E-04	3.62E-04	1.54E-03	9.50E-04	0.00	8.48E-05	7.24E-05	0.00
564300_4184400	564300	4184400	9.35E-03	5.76E-03	5.31E-04	4.53E-04	1.87E-03	1.15E-03	0.00	1.06E-04	9.05E-05	0.00
564540_4184400	564540	4184400	1.52E-01	9.32E-02	7.34E-03	6.29E-03	3.03E-02	1.86E-02	0.03	1.47E-03	1.26E-03	0.00
564560_4184400	564560	4184400	1.23E-01	7.57E-02	5.96E-03	5.11E-03	2.46E-02	1.51E-02	0.02	1.19E-03	1.02E-03	0.00
564640_4184400	564640	4184400	5.43E-02	3.34E-02	2.65E-03	2.27E-03	1.09E-02	6.67E-03	0.01	5.29E-04	4.53E-04	0.00
564660_4184400	564660	4184400	4.60E-02	2.83E-02	2.25E-03	1.92E-03	9.20E-03	5.66E-03	0.01	4.49E-04	3.85E-04	0.00
564680_4184400	564680	4184400	3.94E-02	2.42E-02	1.93E-03	1.65E-03	7.88E-03	4.85E-03	0.01	3.85E-04	3.30E-04	0.00
564700_4184400	564700	4184400	3.41E-02	2.10E-02	1.67E-03	1.43E-03	6.83E-03	4.20E-03	0.01	3.34E-04	2.86E-04	0.00
564720_4184400	564720	4184400	2.97E-02	1.83E-02	1.46E-03	1.25E-03	5.94E-03	3.66E-03	0.01	2.91E-04	2.49E-04	0.00
564740_4184400	564740	4184400	2.62E-02	1.61E-02	1.28E-03	1.10E-03	5.24E-03	3.22E-03	0.01	2.57E-04	2.20E-04	0.00
564760_4184400	564760	4184400	2.33E-02	1.43E-02	1.14E-03	9.79E-04	4.66E-03	2.86E-03	0.00	2.29E-04	1.96E-04	0.00
564780_4184400	564780	4184400	2.07E-02	1.28E-02	1.02E-03	8.73E-04	4.15E-03	2.55E-03	0.00	2.04E-04	1.75E-04	0.00
564140_4184420	564140	4184420	2.90E-03	1.79E-03	1.56E-04	1.33E-04	5.81E-04	3.58E-04	0.00	3.12E-05	2.66E-05	0.00
564160_4184420	564160	4184420	3.23E-03	1.99E-03	1.74E-04	1.48E-04	6.45E-04	3.97E-04	0.00	3.48E-05	2.97E-05	0.00
564180_4184420	564180	4184420	3.61E-03	2.22E-03	1.95E-04	1.66E-04	7.22E-04	4.45E-04	0.00	3.89E-05	3.33E-05	0.00
564200_4184420	564200	4184420	4.07E-03	2.51E-03	2.19E-04	1.87E-04	8.15E-04	5.02E-04	0.00	4.39E-05	3.75E-05	0.00
564220_4184420	564220	4184420	4.63E-03	2.85E-03	2.49E-04	2.12E-04	9.26E-04	5.71E-04	0.00	4.97E-05	4.25E-05	0.00
564240_4184420	564240	4184420	5.33E-03	3.28E-03	2.85E-04	2.44E-04	1.07E-03	6.56E-04	0.00	5.71E-05	4.88E-05	0.00
564260_4184420	564260	4184420	6.20E-03	3.82E-03	3.32E-04	2.84E-04	1.24E-03	7.64E-04	0.00	6.64E-05	5.68E-05	0.00
564280_4184420	564280	4184420	7.33E-03	4.51E-03	3.95E-04	3.37E-04	1.47E-03	9.03E-04	0.00	7.90E-05	6.75E-05	0.00
564300_4184420	564300	4184420	8.83E-03	5.44E-03	4.84E-04	4.13E-04	1.77E-03	1.09E-03	0.00	9.68E-05	8.27E-05	0.00
564520_4184420	564520	4184420	9.45E-02	5.81E-02	4.64E-03	3.98E-03	1.89E-02	1.16E-02	0.02	9.29E-04	7.95E-04	0.00
564540_4184420	564540	4184420	8.58E-02	5.28E-02	4.21E-03	3.61E-03	1.72E-02	1.06E-02	0.02	8.42E-04	7.21E-04	0.00
564560_4184420	564560	4184420	7.62E-02	4.68E-02	3.73E-03	3.20E-03	1.52E-02	9.37E-03	0.02	7.47E-04	6.40E-04	0.00
564600_4184420	564600	4184420	5.74E-02	3.53E-02	2.82E-03	2.41E-03	1.15E-02	7.06E-03	0.01	5.63E-04	4.82E-04	0.00
564620_4184420	564620	4184420	4.98E-02	3.06E-02	2.44E-03	2.09E-03	9.96E-03	6.12E-03	0.01	4.88E-04	4.18E-04	0.00
564640_4184420	564640	4184420	4.34E-02	2.67E-02	2.13E-03	1.83E-03	8.69E-03	5.34E-03	0.01	4.26E-04	3.65E-04	0.00
564660_4184420	564660	4184420	3.79E-02	2.33E-02	1.86E-03	1.59E-03	7.58E-03	4.66E-03	0.01	3.72E-04	3.19E-04	0.00
564680_4184420	564680	4184420	3.33E-02	2.05E-02	1.63E-03	1.40E-03	6.65E-03	4.09E-03	0.01	3.27E-04	2.80E-04	0.00
564700_4184420	564700	4184420	2.95E-02	1.81E-02	1.45E-03	1.24E-03	5.89E-03	3.62E-03	0.01	2.90E-04	2.48E-04	0.00
564720_4184420	564720	4184420	2.62E-02	1.61E-02	1.29E-03	1.10E-03	5.23E-03	3.22E-03	0.01	2.57E-04	2.20E-04	0.00
564740_4184420	564740	4184420	2.34E-02	1.44E-02	1.15E-03	9.85E-04	4.67E-03	2.87E-03	0.00	2.30E-04	1.97E-04	0.00
564760_4184420	564760	4184420	2.09E-02	1.29E-02	1.03E-03	8.83E-04	4.19E-03	2.57E-03	0.00	2.06E-04	1.77E-04	0.00
564780_4184420	564780	4184420	1.88E-02	1.16E-02	9.26E-04	7.93E-04	3.76E-03	2.31E-03	0.00	1.85E-04	1.59E-04	0.00
564140_4184440	564140	4184440	2.80E-03	1.73E-03	1.48E-04	1.27E-04	5.60E-04	3.45E-04	0.00	2.96E-05	2.53E-05	0.00
564160_4184440	564160	4184440	3.11E-03	1.91E-03	1.64E-04	1.41E-04	6.21E-04	3.83E-04	0.00	3.29E-05	2.81E-05	0.00
564180_4184440	564180	4184440	3.47E-03	2.14E-03	1.84E-04	1.57E-04	6.94E-04	4.27E-04	0.00	3.68E-05	3.14E-05	0.00
564200_4184440	564200	4184440	3.91E-03	2.41E-03	2.07E-04	1.77E-04	7.81E-04	4.81E-04	0.00	4.14E-05	3.54E-05	0.00
564220_4184440	564220	4184440	4.44E-03	2.73E-03	2.35E-04	2.00E-04	8.87E-04	5.46E-04	0.00	4.69E-05	4.01E-05	0.00
564240_4184440	564240	4184440	5.09E-03	3.13E-03	2.69E-04	2.30E-04	1.02E-03	6.27E-04	0.00	5.38E-05	4.60E-05	0.00
564260_4184440	564260	4184440	5.90E-03	3.64E-03	3.12E-04	2.67E-04	1.18E-03	7.27E-04	0.00	6.25E-05	5.34E-05	0.00
564280_4184440	564280	4184440	6.94E-03	4.28E-03	3.69E-04	3.15E-04	1.39E-03	8.55E-04	0.00	7.38E-05	6.30E-05	0.00
564300_4184440	564300	4184440	8.30E-03	5.11E-03	4.46E-04	3.81E-04	1.66E-03	1.02E-03	0.00	8.91E-05	7.61E-05	0.00
564320_4184440	564320	4184440	1.02E-02	6.27E-03	5.65E-04	4.82E-04	2.03E-03	1.25E-03	0.00	1.13E-04	9.65E-05	0.00
564520_4184440	564520	4184440	5.49E-02	3.38E-02	2.77E-03	2.37E-03	1.10E-02	6.76E-03	0.01	5.54E-04	4.74E-04	0.00
564540_4184440	564540	4184440	5.15E-02	3.17E-02	2.58E-03	2.21E-03	1.03E-02	6.34E-03	0.01	5.17E-04	4.43E-04	0.00
564560_4184440	564560	4184440	4.76E-02	2.93E-02	2.38E-03	2.04E-03	9.53E-03	5.86E-03	0.01	4.76E-04	4.07E-04	0.00
564580_4184440	564580	4184440	4.36E-02	2.68E-02	2.17E-03	1.86E-03	8.72E-03	5.36E-03	0.01	4.34E-04	3.72E-04	0.00
564660_4184440	564660	4184440	2.94E-02	1.81E-02	1.45E-03	1.24E-03	5.87E-03	3.61E-03	0.01	2.91E-04	2.49E-04	0.00
564680_4184440	564680	4184440	2.66E-02	1.63E-02	1.32E-03	1.13E-03	5.32E-03	3.27E-03	0.01	2.63E-04	2.25E-04	0.00
564700_4184440	564700	4184440	2.41E-02	1.48E-02	1.19E-03	1.02E-03	4.82E-03	2.96E-03	0.00	2.38E-04	2.04E-04	0.00
564720_4184440	564720	4184440	2.19E-02	1.35E-02	1.08E-03	9.27E-04	4.37E-03	2.69E-03	0.00	2.16E-04	1.85E-04	0.00
564740_4184440	564740	4184440	1.99E-02	1.22E-02	9.84E-04	8.43E-04	3.98E-03	2.45E-03	0.00	1.97E-04	1.69E-04	0.00
564760_4184440	564760	4184440	1.81E-02	1.11E-02	8.95E-04	7.67E-04	3.62E-03	2.23E-03	0.00	1.79E-04	1.53E-04	0.00
564780_4184440	564780	4184440	1.65E-02	1.02E-02	8.19E-04	7.01E-04	3.31E-03	2.04E-03	0.00	1.64E-04	1.40E-04	0.00
564160_4184460	564160	4184460	2.99E-03	1.84E-03	1.57E-04	1.34E-04	5.98E-04	3.68E-04	0.00	3.13E-05	2.68E-05	0.00
564180_4184460	564180	4184460	3.33E-03	2.05E-03	1.75E-04	1.49E-04	6.67E-04	4.11E-04	0.00	3.49E-05	2.99E-05	0.00
564200_4184460	564200	4184460	3.75E-03	2.31E-03	1.96E-04	1.68E-04	7.50E-04	4.62E-04	0.00	3.93E-05	3.36E-05	0.00
564220_4184460	564220	4184460	4.25E-03	2.62E-03	2.22E-04	1.90E-04	8.50E-04	5.23E-04	0.00	4.45E-05	3.80E-05	0.00
564240_4184460	564240	4184460	4.86E-03	2.99E-03	2.54E-04	2.17E-04	9.72E-04	5.98E-04	0.00	5.09E-05	4.35E-05	0.00
564260_4184460	564260	4184460	5.61E-03	3.45E-03	2.94E-04	2.51E-04	1.12E-03	6.91E-04	0.00	5.88E-05	5.03E-05	0.00
564280_4184460	564280	4184460	6.57E-03	4.05E-03	3.45E-04	2.95E-04	1.31E-03	8.09E-04	0.00	6.90E-05	5.90E-05	0.00
564300_4184460	564300	4184460	7.82E-03	4.81E-03	4.14E-04	3.54E-04	1.56E-03	9.63E-04	0.00	8.28E-05	7.08E-05	0.00
564320_4184460	564320	4184460	9.49E-03	5.84E-03	5.12E-04	4.38E-04	1.90E-03	1.17E-03	0.00	1.02E-04	8.75E-05	0.00
564480_4184460	564480	4184460	3.53E-02	2.18E-02	1.99E-03	1.70E-03	7.06E-03	4.35E-03	0.01	3.99E-04	3.40E-04	0.00
564500_4184460	564500	4184460	3.58E-02	2.21E-02	1.93E-03	1.65E-03	7.16E-03	4.41E-03	0.01	3.86E-04	3.30E-04	0.00
564540_4184460	564540	4184460	3.40E-02	2.09E-02	1.76E-03	1.50E-03	6.79E-03	4.18E-03	0.01	3.52E-04	3.01E-04	0.00
564560_4184460	564560	4184460	3.21E-02	1.97E-02	1.64E-03	1.41E-03	6.42E-03	3.95E-03	0.01	3.29E-04	2.81E-04	0.00
564580_4184460	564580	4184460	2.98E-02	1.84E-02	1.52E-03	1.30E-03	5.97E-03	3.67E-03	0.01	3.04E-04	2.60E-04	0.00
564700_4184460	564700	4184460	1.91E-02	1.17E-02	9.53E-04	8.16E-04	3.82E-03	2.35E-03	0.00	1.91E-04	1.63E-04	0.00
564720_4184460	564720	4184460	1.77E-02	1.09E-02	8.82E-04	7.55E-04	3.54E-03	2.18E-03	0.00	1.76E-04	1.51E-04	0.00
564740_4184460	564740	4184460	1.64E-02	1.01E-02	8.17E-04	7.00E-04	3.28E-03	2.02E-03	0.00	1.63E-04	1.40E-04	0.00
564760_4184460	564760	4184460	1.52E-02	9.34E-03	7.56E-04	6.48E-04	3.04E-03	1.87E-03	0.00	1.51E-04	1.30E-04	0.00
564780_4184460	564780	4184460	1.41E-02	8.68E-03	7.02E-04	6.01E-04	2.82E-03	1.74E-03	0.00	1.40E-04	1.20E-04	0.00

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)							Uncontrolled HI Risk			Controlled HI Risk		
			Unmitigated		Mitigated		C_{DPM}/REL			C_{DPM}/REL		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	2021	2022	Max	2021	2022	Max
564160_4184480	564160	4184480	2.88E-03	1.77E-03	1.50E-04	1.28E-04	5.77E-04	3.55E-04	0.00	3.00E-05	2.56E-05	0.00
564180_4184480	564180	4184480	3.21E-03	1.98E-03	1.67E-04	1.43E-04	6.42E-04	3.95E-04	0.00	3.34E-05	2.85E-05	0.00
564200_4184480	564200	4184480	3.60E-03	2.22E-03	1.87E-04	1.60E-04	7.21E-04	4.44E-04	0.00	3.75E-05	3.20E-05	0.00
564220_4184480	564220	4184480	4.07E-03	2.51E-03	2.12E-04	1.81E-04	8.14E-04	5.01E-04	0.00	4.23E-05	3.62E-05	0.00
564240_4184480	564240	4184480	4.65E-03	2.86E-03	2.41E-04	2.06E-04	9.29E-04	5.72E-04	0.00	4.83E-05	4.13E-05	0.00
564260_4184480	564260	4184480	5.35E-03	3.29E-03	2.78E-04	2.38E-04	1.07E-03	6.58E-04	0.00	5.56E-05	4.76E-05	0.00
564280_4184480	564280	4184480	6.22E-03	3.83E-03	3.24E-04	2.77E-04	1.24E-03	7.66E-04	0.00	6.49E-05	5.55E-05	0.00
564300_4184480	564300	4184480	7.36E-03	4.53E-03	3.86E-04	3.30E-04	1.47E-03	9.06E-04	0.00	7.72E-05	6.60E-05	0.00
564320_4184480	564320	4184480	8.82E-03	5.43E-03	4.69E-04	4.01E-04	1.76E-03	1.09E-03	0.00	9.38E-05	8.01E-05	0.00
564340_4184480	564340	4184480	1.06E-02	6.54E-03	5.86E-04	5.00E-04	2.12E-03	1.31E-03	0.00	1.17E-04	1.00E-04	0.00
564500_4184480	564500	4184480	2.45E-02	1.51E-02	1.43E-03	1.22E-03	4.91E-03	3.03E-03	0.00	2.86E-04	2.44E-04	0.00
564520_4184480	564520	4184480	2.46E-02	1.51E-02	1.37E-03	1.17E-03	4.91E-03	3.03E-03	0.00	2.74E-04	2.34E-04	0.00
564540_4184480	564540	4184480	2.40E-02	1.48E-02	1.30E-03	1.11E-03	4.81E-03	2.96E-03	0.00	2.60E-04	2.22E-04	0.00
564700_4184480	564700	4184480	1.50E-02	9.21E-03	7.56E-04	6.47E-04	2.99E-03	1.84E-03	0.00	1.51E-04	1.29E-04	0.00
564720_4184480	564720	4184480	1.41E-02	8.68E-03	7.11E-04	6.08E-04	2.82E-03	1.74E-03	0.00	1.42E-04	1.22E-04	0.00
564740_4184480	564740	4184480	1.33E-02	8.16E-03	6.67E-04	5.71E-04	2.65E-03	1.63E-03	0.00	1.33E-04	1.14E-04	0.00
564760_4184480	564760	4184480	1.25E-02	7.69E-03	6.28E-04	5.37E-04	2.50E-03	1.54E-03	0.00	1.26E-04	1.07E-04	0.00
564780_4184480	564780	4184480	1.17E-02	7.19E-03	5.86E-04	5.01E-04	2.34E-03	1.44E-03	0.00	1.17E-04	1.00E-04	0.00
564160_4184500	564160	4184500	2.78E-03	1.71E-03	1.44E-04	1.23E-04	5.57E-04	3.43E-04	0.00	2.88E-05	2.46E-05	0.00
564180_4184500	564180	4184500	3.09E-03	1.90E-03	1.60E-04	1.37E-04	6.19E-04	3.81E-04	0.00	3.20E-05	2.74E-05	0.00
564200_4184500	564200	4184500	3.47E-03	2.13E-03	1.79E-04	1.53E-04	6.94E-04	4.27E-04	0.00	3.58E-05	3.07E-05	0.00
564220_4184500	564220	4184500	3.91E-03	2.41E-03	2.02E-04	1.73E-04	7.82E-04	4.81E-04	0.00	4.04E-05	3.45E-05	0.00
564240_4184500	564240	4184500	4.45E-03	2.74E-03	2.30E-04	1.97E-04	8.90E-04	5.48E-04	0.00	4.60E-05	3.94E-05	0.00
564260_4184500	564260	4184500	5.10E-03	3.14E-03	2.63E-04	2.25E-04	1.02E-03	6.27E-04	0.00	5.27E-05	4.51E-05	0.00
564280_4184500	564280	4184500	5.88E-03	3.62E-03	3.05E-04	2.61E-04	1.18E-03	7.24E-04	0.00	6.10E-05	5.21E-05	0.00
564300_4184500	564300	4184500	6.85E-03	4.22E-03	3.57E-04	3.05E-04	1.37E-03	8.43E-04	0.00	7.13E-05	6.10E-05	0.00
564320_4184500	564320	4184500	8.03E-03	4.94E-03	4.23E-04	3.61E-04	1.61E-03	9.89E-04	0.00	8.45E-05	7.23E-05	0.00
564340_4184500	564340	4184500	9.40E-03	5.79E-03	5.07E-04	4.33E-04	1.88E-03	1.16E-03	0.00	1.01E-04	8.67E-05	0.00
564400_4184500	564400	4184500	1.37E-02	8.46E-03	7.68E-04	6.56E-04	2.75E-03	1.69E-03	0.00	1.54E-04	1.31E-04	0.00
564420_4184500	564420	4184500	1.50E-02	9.22E-03	8.17E-04	6.98E-04	2.99E-03	1.84E-03	0.00	1.63E-04	1.40E-04	0.00
564480_4184500	564480	4184500	1.74E-02	1.07E-02	1.03E-03	8.79E-04	3.48E-03	2.15E-03	0.00	2.06E-04	1.76E-04	0.00
564500_4184500	564500	4184500	1.78E-02	1.10E-02	1.19E-03	1.01E-03	3.57E-03	2.21E-03	0.00	2.38E-04	2.02E-04	0.00
564540_4184500	564540	4184500	1.76E-02	1.09E-02	1.00E-03	8.54E-04	3.52E-03	2.17E-03	0.00	2.00E-04	1.71E-04	0.00
564700_4184500	564700	4184500	1.18E-02	7.27E-03	6.05E-04	5.17E-04	2.36E-03	1.45E-03	0.00	1.21E-04	1.03E-04	0.00
564720_4184500	564720	4184500	1.12E-02	6.92E-03	5.73E-04	4.90E-04	2.25E-03	1.38E-03	0.00	1.15E-04	9.81E-05	0.00
564180_4184520	564180	4184520	2.99E-03	1.84E-03	1.54E-04	1.32E-04	5.98E-04	3.68E-04	0.00	3.08E-05	2.63E-05	0.00
564200_4184520	564200	4184520	3.34E-03	2.06E-03	1.72E-04	1.47E-04	6.68E-04	4.11E-04	0.00	3.44E-05	2.94E-05	0.00
564220_4184520	564220	4184520	3.76E-03	2.31E-03	1.93E-04	1.65E-04	7.51E-04	4.62E-04	0.00	3.86E-05	3.30E-05	0.00
564240_4184520	564240	4184520	4.25E-03	2.62E-03	2.19E-04	1.87E-04	8.50E-04	5.23E-04	0.00	4.37E-05	3.74E-05	0.00
564260_4184520	564260	4184520	4.83E-03	2.98E-03	2.49E-04	2.13E-04	9.67E-04	5.95E-04	0.00	4.98E-05	4.26E-05	0.00
564280_4184520	564280	4184520	5.52E-03	3.40E-03	2.85E-04	2.43E-04	1.10E-03	6.80E-04	0.00	5.69E-05	4.87E-05	0.00
564300_4184520	564300	4184520	6.32E-03	3.89E-03	3.27E-04	2.80E-04	1.26E-03	7.78E-04	0.00	6.54E-05	5.60E-05	0.00
564320_4184520	564320	4184520	7.22E-03	4.45E-03	3.78E-04	3.23E-04	1.44E-03	8.89E-04	0.00	7.55E-05	6.46E-05	0.00
564340_4184520	564340	4184520	8.21E-03	5.05E-03	4.38E-04	3.74E-04	1.64E-03	1.01E-03	0.00	8.76E-05	7.49E-05	0.00
564360_4184520	564360	4184520	9.21E-03	5.68E-03	5.19E-04	4.43E-04	1.84E-03	1.14E-03	0.00	1.04E-04	8.86E-05	0.00
564380_4184520	564380	4184520	1.02E-02	6.30E-03	6.49E-04	5.52E-04	2.04E-03	1.26E-03	0.00	1.30E-04	1.10E-04	0.00
564440_4184520	564440	4184520	1.24E-02	7.67E-03	7.18E-04	6.12E-04	2.49E-03	1.53E-03	0.00	1.44E-04	1.22E-04	0.00
564460_4184520	564460	4184520	1.29E-02	8.00E-03	7.92E-04	6.74E-04	2.59E-03	1.60E-03	0.00	1.58E-04	1.35E-04	0.00
564520_4184520	564520	4184520	1.35E-02	8.37E-03	8.68E-04	7.38E-04	2.71E-03	1.67E-03	0.00	1.74E-04	1.48E-04	0.00
564540_4184520	564540	4184520	1.34E-02	8.26E-03	7.96E-04	6.78E-04	2.67E-03	1.65E-03	0.00	1.59E-04	1.36E-04	0.00
564560_4184520	564560	4184520	1.30E-02	8.03E-03	7.40E-04	6.31E-04	2.60E-03	1.61E-03	0.00	1.48E-04	1.26E-04	0.00
564180_4184540	564180	4184540	2.89E-03	1.78E-03	1.48E-04	1.27E-04	5.78E-04	3.56E-04	0.00	2.96E-05	2.53E-05	0.00
564200_4184540	564200	4184540	3.22E-03	1.98E-03	1.65E-04	1.41E-04	6.43E-04	3.96E-04	0.00	3.29E-05	2.82E-05	0.00
564220_4184540	564220	4184540	3.60E-03	2.22E-03	1.84E-04	1.58E-04	7.20E-04	4.43E-04	0.00	3.69E-05	3.15E-05	0.00
564240_4184540	564240	4184540	4.05E-03	2.49E-03	2.07E-04	1.77E-04	8.09E-04	4.98E-04	0.00	4.14E-05	3.54E-05	0.00
564260_4184540	564260	4184540	4.56E-03	2.81E-03	2.34E-04	2.00E-04	9.12E-04	5.61E-04	0.00	4.67E-05	4.00E-05	0.00
564280_4184540	564280	4184540	5.13E-03	3.16E-03	2.64E-04	2.25E-04	1.03E-03	6.31E-04	0.00	5.27E-05	4.51E-05	0.00
564300_4184540	564300	4184540	5.77E-03	3.55E-03	2.98E-04	2.55E-04	1.15E-03	7.10E-04	0.00	5.95E-05	5.09E-05	0.00
564320_4184540	564320	4184540	6.43E-03	3.96E-03	3.35E-04	2.86E-04	1.29E-03	7.92E-04	0.00	6.70E-05	5.73E-05	0.00
564340_4184540	564340	4184540	7.11E-03	4.38E-03	3.77E-04	3.22E-04	1.42E-03	8.76E-04	0.00	7.54E-05	6.44E-05	0.00
564360_4184540	564360	4184540	7.76E-03	4.78E-03	4.28E-04	3.65E-04	1.55E-03	9.56E-04	0.00	8.55E-05	7.30E-05	0.00
564400_4184540	564400	4184540	8.95E-03	5.53E-03	5.76E-04	4.90E-04	1.79E-03	1.11E-03	0.00	1.15E-04	9.79E-05	0.00
564420_4184540	564420	4184540	9.52E-03	5.89E-03	6.19E-04	5.26E-04	1.90E-03	1.18E-03	0.00	1.24E-04	1.05E-04	0.00
564520_4184540	564520	4184540	1.06E-02	6.58E-03	7.11E-04	6.04E-04	2.13E-03	1.32E-03	0.00	1.42E-04	1.21E-04	0.00
564540_4184540	564540	4184540	1.06E-02	6.52E-03	6.51E-04	5.54E-04	2.11E-03	1.30E-03	0.00	1.30E-04	1.11E-04	0.00
564560_4184540	564560	4184540	1.04E-02	6.40E-03	6.09E-04	5.19E-04	2.08E-03	1.28E-03	0.00	1.22E-04	1.04E-04	0.00
564200_4184560	564200	4184560	3.09E-03	1.90E-03	1.58E-04	1.35E-04	6.18E-04	3.80E-04	0.00	3.15E-05	2.70E-05	0.00
564220_4184560	564220	4184560	3.43E-03	2.11E-03	1.75E-04	1.50E-04	6.86E-04	4.22E-04	0.00	3.50E-05	3.00E-05	0.00
564240_4184560	564240	4184560	3.82E-03	2.35E-03	1.95E-04	1.67E-04	7.64E-04	4.70E-04	0.00	3.90E-05	3.34E-05	0.00
564260_4184560	564260	4184560	4.25E-03	2.62E-03	2.17E-04	1.86E-04	8.51E-04	5.24E-04	0.00	4.35E-05	3.72E-05	0.00
564280_4184560	564280	4184560	4.72E-03	2.90E-03	2.42E-04	2.07E-04	9.44E-04	5.81E-04	0.00	4.83E-05	4.14E-05	0.00
564300_4184560	564300	4184560	5.21E-03	3.20E-03	2.68E-04	2.29E-04	1.04E-03	6.41E-04	0.00	5.36E-05	4.58E-05	0.00
564320_4184560	564320	4184560	5.69E-03	3.50E-03	2.95E-04	2.52E-04	1.14E-03	7.01E-04	0.00	5.90E-05	5.05E-05	0.00
564340_4184560	564340	4184560	6.15E-03	3.79E-03	3.24E-04	2.77E-04	1.23E-03	7.57E-04	0.00	6.47E-05	5.53E-05	0.00
564360_4184560	564360	4184560	6.56E-03	4.05E-03	3.56E-04	3.04E-04	1.31E-03	8.09E-04	0.00	7.12E-05	6.08E-05	0.00
564380_4184560	564380	4184560	6.97E-03	4.30E-03	4.08E-04	3.48E-04	1.39E-03	8.60E-04	0.00	8.17E-05	6.96E-05	0.00
564420_4184560	564420	4184560	7.82E-03	4.84E-03	5.32E-04	4.52E-04	1.56E-03	9.69E-04	0.00	1.06E-04	9.04E-05	0.00
564440_4184560	564440	4184560	8.08E-03	5.00E-03	5.10E-04	4.34E-04	1.62E-03	9.99E-04	0.00	1.02E-04	8.68E-05	0.00
564460_4184560	564460	4184560	8.20E-03	5.06E-03	4.97E-04	4.23E-04	1.64E-03	1.01E-03	0.00	9.94E-05	8.47E-05	0.00
564480_4184560	564480	4184560	8.24E-03	5.09E-03	4.92E-04	4.19E-04	1.65E-03	1.02E-03	0.00	9.83E-05	8.38E-05	0.00
564500_4184560	564500	4184560	8.34E-03	5.15E-03	5.02E-04	4.28E-04	1.67E-03	1.03E-03	0.00	1.00E-04	8.55E-05	0.00
564540_4184560	564540	4184560	8.54E-03	5.28E-03	5.53E-04	4.71E-04	1.71E-03	1.06E-03	0.00	1.11E-04	9.41E-05	0.00
564560_4184560	564560	4184560	8.44E-03	5.21E-03	5.14E-04	4.37E-04	1.69E-03	1.04E-03	0.00	1.03E-04	8.75E-05	0.00
564580_4184560	564580	4184560	8.28E-03	5.11E-03	4.83E-04	4.12E-04	1.66E-03	1.02E-03	0.00	9.67E-05	8.24E-05	0.00
564600_4184560	564600	4184560	8.02E-03	4.95E-03	4.57E-04	3.90E-04	1.60E-03	9.89E-04	0.00	9.14E-05	7.80E-05	0.00
564620_4184560	564620	4184560	7.72E-03	4.76E-03	4.31E-04	3.68E-04	1.54E-03	9.52E-04	0.00	8.63E-05	7.36E-05	0.00
564640_4184560	564640	4184560	7.41E-03	4.57E-03	4.08E-04	3.48E-04	1.48E-03	9.14E-04	0.00	8.15E-05	6.96E-05	0.00
564220_4184580	564220	4184580	3.25E-03	2.00E-03	1.66E-04	1.42E-04	6.51E-04	4.00E-04	0.00	3.31E-05	2.83E-05	0.00
564240_4184580	564240	4184580	3.58E-03	2.20E-03	1.82E-04	1.56E-04	7.16E-04	4.41E-04	0.00	3.65E-05	3.12E-05	0.00
564260_4184580	564260	4184580	3.93E-03	2.42E-03	2.01E-04	1.72E-04	7.87E-04	4.84E-04	0.00	4.01E-05	3.43E-05	0.00
564280_4184580	564280	4184580	4.30E-03	2.65E-03	2.20E-04	1.88E-04	8.60E-04	5.29E-04	0.00	4.40E-05	3.76E-05	0.00
564300_4184580	564300	4184580	4.66E-03	2.87E-03	2.39E-04	2.05E-04	9.33E-04	5.74E-04	0.00	4.79E-05	4.10E-05	0.00
564320_4184580	564320	4184580	5.01E-03	3.08E-03	2.59E-04	2.21E-04	1.00E-03	6.16E-04	0.00	5.18E-05	4.43E-05	0.00

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3) | Uncontrolled HI Risk | Controlled HI Risk

			Unmitigated		Mitigated		Uncontrolled HI Risk C_{DPM}/REL			Controlled HI Risk C_{DPM}/REL		
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	2021	2022	Max	2021	2022	Max
564340_4184580	564340	4184580	5.32E-03	3.27E-03	2.78E-04	2.38E-04	1.06E-03	6.55E-04	0.00	5.57E-05	4.76E-05	0.00
564360_4184580	564360	4184580	5.59E-03	3.45E-03	2.99E-04	2.55E-04	1.12E-03	6.89E-04	0.00	5.97E-05	5.10E-05	0.00
564380_4184580	564380	4184580	5.87E-03	3.62E-03	3.23E-04	2.76E-04	1.17E-03	7.23E-04	0.00	6.46E-05	5.51E-05	0.00
564400_4184580	564400	4184580	6.17E-03	3.81E-03	3.50E-04	2.98E-04	1.23E-03	7.62E-04	0.00	6.99E-05	5.97E-05	0.00
564420_4184580	564420	4184580	6.47E-03	3.99E-03	3.70E-04	3.15E-04	1.29E-03	7.98E-04	0.00	7.40E-05	6.31E-05	0.00
564440_4184580	564440	4184580	6.66E-03	4.11E-03	3.80E-04	3.24E-04	1.33E-03	8.21E-04	0.00	7.59E-05	6.48E-05	0.00
564460_4184580	564460	4184580	6.72E-03	4.14E-03	3.82E-04	3.26E-04	1.34E-03	8.29E-04	0.00	7.63E-05	6.51E-05	0.00
564480_4184580	564480	4184580	6.74E-03	4.16E-03	3.84E-04	3.28E-04	1.35E-03	8.32E-04	0.00	7.68E-05	6.56E-05	0.00
564500_4184580	564500	4184580	6.80E-03	4.20E-03	3.94E-04	3.36E-04	1.36E-03	8.39E-04	0.00	7.88E-05	6.72E-05	0.00
564520_4184580	564520	4184580	6.93E-03	4.28E-03	4.35E-04	3.70E-04	1.39E-03	8.56E-04	0.00	8.69E-05	7.40E-05	0.00
564540_4184580	564540	4184580	7.02E-03	4.35E-03	4.92E-04	4.18E-04	1.40E-03	8.70E-04	0.00	9.85E-05	8.36E-05	0.00
564560_4184580	564560	4184580	6.97E-03	4.31E-03	4.46E-04	3.79E-04	1.39E-03	8.62E-04	0.00	8.92E-05	7.59E-05	0.00
564580_4184580	564580	4184580	6.87E-03	4.24E-03	4.15E-04	3.54E-04	1.37E-03	8.48E-04	0.00	8.31E-05	7.07E-05	0.00
564600_4184580	564600	4184580	6.66E-03	4.11E-03	3.91E-04	3.33E-04	1.33E-03	8.22E-04	0.00	7.82E-05	6.66E-05	0.00
564620_4184580	564620	4184580	6.49E-03	4.00E-03	3.70E-04	3.16E-04	1.30E-03	8.00E-04	0.00	7.40E-05	6.31E-05	0.00
564640_4184580	564640	4184580	6.26E-03	3.86E-03	3.50E-04	2.99E-04	1.25E-03	7.71E-04	0.00	7.00E-05	5.97E-05	0.00
564220_4184600	564220	4184600	3.06E-03	1.88E-03	1.55E-04	1.33E-04	6.12E-04	3.77E-04	0.00	3.11E-05	2.66E-05	0.00
564240_4184600	564240	4184600	3.33E-03	2.05E-03	1.69E-04	1.45E-04	6.67E-04	4.10E-04	0.00	3.39E-05	2.90E-05	0.00
564260_4184600	564260	4184600	3.61E-03	2.22E-03	1.84E-04	1.57E-04	7.23E-04	4.45E-04	0.00	3.68E-05	3.15E-05	0.00
564280_4184600	564280	4184600	3.89E-03	2.40E-03	1.99E-04	1.70E-04	7.79E-04	4.79E-04	0.00	3.97E-05	3.40E-05	0.00
564300_4184600	564300	4184600	4.16E-03	2.56E-03	2.13E-04	1.82E-04	8.32E-04	5.12E-04	0.00	4.26E-05	3.65E-05	0.00
564320_4184600	564320	4184600	4.40E-03	2.71E-03	2.27E-04	1.94E-04	8.80E-04	5.42E-04	0.00	4.54E-05	3.88E-05	0.00
564340_4184600	564340	4184600	4.61E-03	2.84E-03	2.40E-04	2.05E-04	9.22E-04	5.68E-04	0.00	4.80E-05	4.11E-05	0.00
564360_4184600	564360	4184600	4.82E-03	2.97E-03	2.54E-04	2.17E-04	9.65E-04	5.94E-04	0.00	5.09E-05	4.35E-05	0.00
564380_4184600	564380	4184600	5.04E-03	3.10E-03	2.69E-04	2.30E-04	1.01E-03	6.20E-04	0.00	5.38E-05	4.60E-05	0.00
564400_4184600	564400	4184600	5.26E-03	3.24E-03	2.84E-04	2.43E-04	1.05E-03	6.48E-04	0.00	5.68E-05	4.85E-05	0.00
564420_4184600	564420	4184600	5.49E-03	3.38E-03	2.99E-04	2.55E-04	1.10E-03	6.77E-04	0.00	5.97E-05	5.10E-05	0.00
564480_4184600	564480	4184600	5.62E-03	3.46E-03	3.10E-04	2.65E-04	1.12E-03	6.92E-04	0.00	6.21E-05	5.30E-05	0.00
564560_4184600	564560	4184600	5.85E-03	3.62E-03	3.97E-04	3.37E-04	1.17E-03	7.24E-04	0.00	7.93E-05	6.74E-05	0.00
564580_4184600	564580	4184600	5.78E-03	3.57E-03	3.64E-04	3.10E-04	1.16E-03	7.14E-04	0.00	7.29E-05	6.20E-05	0.00
564600_4184600	564600	4184600	5.63E-03	3.48E-03	3.41E-04	2.91E-04	1.13E-03	6.95E-04	0.00	6.83E-05	5.81E-05	0.00
564620_4184600	564620	4184600	5.48E-03	3.38E-03	3.21E-04	2.74E-04	1.10E-03	6.77E-04	0.00	6.42E-05	5.47E-05	0.00
564640_4184600	564640	4184600	5.33E-03	3.29E-03	3.04E-04	2.59E-04	1.07E-03	6.57E-04	0.00	6.08E-05	5.18E-05	0.00
564240_4184620	564240	4184620	3.09E-03	1.90E-03	1.57E-04	1.34E-04	6.17E-04	3.80E-04	0.00	3.13E-05	2.68E-05	0.00
564260_4184620	564260	4184620	3.30E-03	2.03E-03	1.68E-04	1.44E-04	6.61E-04	4.07E-04	0.00	3.36E-05	2.87E-05	0.00
564280_4184620	564280	4184620	3.51E-03	2.16E-03	1.79E-04	1.53E-04	7.02E-04	4.32E-04	0.00	3.58E-05	3.06E-05	0.00
564300_4184620	564300	4184620	3.70E-03	2.28E-03	1.89E-04	1.62E-04	7.40E-04	4.55E-04	0.00	3.79E-05	3.24E-05	0.00
564320_4184620	564320	4184620	3.87E-03	2.38E-03	1.99E-04	1.71E-04	7.75E-04	4.77E-04	0.00	3.99E-05	3.41E-05	0.00
564340_4184620	564340	4184620	4.03E-03	2.48E-03	2.09E-04	1.79E-04	8.06E-04	4.96E-04	0.00	4.18E-05	3.58E-05	0.00
564360_4184620	564360	4184620	4.19E-03	2.58E-03	2.19E-04	1.87E-04	8.37E-04	5.16E-04	0.00	4.37E-05	3.74E-05	0.00
564380_4184620	564380	4184620	4.35E-03	2.68E-03	2.29E-04	1.96E-04	8.70E-04	5.36E-04	0.00	4.58E-05	3.91E-05	0.00
564400_4184620	564400	4184620	4.54E-03	2.80E-03	2.40E-04	2.06E-04	9.09E-04	5.60E-04	0.00	4.81E-05	4.11E-05	0.00
564560_4184620	564560	4184620	4.92E-03	3.06E-03	3.70E-04	3.14E-04	9.85E-04	6.12E-04	0.00	7.40E-05	6.27E-05	0.00
564580_4184620	564580	4184620	4.87E-03	3.02E-03	3.30E-04	2.80E-04	9.75E-04	6.03E-04	0.00	6.60E-05	5.61E-05	0.00
564600_4184620	564600	4184620	4.80E-03	2.97E-03	3.04E-04	2.58E-04	9.59E-04	5.93E-04	0.00	6.07E-05	5.17E-05	0.00
564620_4184620	564620	4184620	4.70E-03	2.90E-03	2.83E-04	2.41E-04	9.39E-04	5.80E-04	0.00	5.66E-05	4.82E-05	0.00
564640_4184620	564640	4184620	4.60E-03	2.84E-03	2.66E-04	2.27E-04	9.19E-04	5.67E-04	0.00	5.33E-05	4.54E-05	0.00
564660_4184620	564660	4184620	4.45E-03	2.74E-03	2.51E-04	2.14E-04	8.90E-04	5.49E-04	0.00	5.03E-05	4.29E-05	0.00
564280_4184640	564280	4184640	3.16E-03	1.95E-03	1.61E-04	1.38E-04	6.32E-04	3.89E-04	0.00	3.22E-05	2.76E-05	0.00
564300_4184640	564300	4184640	3.30E-03	2.03E-03	1.69E-04	1.44E-04	6.59E-04	4.06E-04	0.00	3.37E-05	2.89E-05	0.00
564320_4184640	564320	4184640	3.42E-03	2.11E-03	1.76E-04	1.50E-04	6.84E-04	4.21E-04	0.00	3.52E-05	3.01E-05	0.00
564340_4184640	564340	4184640	3.54E-03	2.18E-03	1.83E-04	1.56E-04	7.07E-04	4.35E-04	0.00	3.65E-05	3.12E-05	0.00
564360_4184640	564360	4184640	3.64E-03	2.24E-03	1.89E-04	1.62E-04	7.28E-04	4.48E-04	0.00	3.78E-05	3.23E-05	0.00
564380_4184640	564380	4184640	3.77E-03	2.32E-03	1.97E-04	1.68E-04	7.55E-04	4.65E-04	0.00	3.93E-05	3.36E-05	0.00
564400_4184640	564400	4184640	3.93E-03	2.42E-03	2.06E-04	1.76E-04	7.87E-04	4.84E-04	0.00	4.12E-05	3.52E-05	0.00
564420_4184640	564420	4184640	4.06E-03	2.50E-03	2.13E-04	1.82E-04	8.12E-04	5.00E-04	0.00	4.27E-05	3.65E-05	0.00
564580_4184640	564580	4184640	4.21E-03	2.61E-03	3.07E-04	2.61E-04	8.42E-04	5.22E-04	0.00	6.15E-05	5.21E-05	0.00
564600_4184640	564600	4184640	4.16E-03	2.57E-03	2.75E-04	2.33E-04	8.31E-04	5.15E-04	0.00	5.49E-05	4.67E-05	0.00
564620_4184640	564620	4184640	4.02E-03	2.48E-03	2.50E-04	2.13E-04	8.03E-04	4.96E-04	0.00	5.00E-05	4.25E-05	0.00
564640_4184640	564640	4184640	3.93E-03	2.43E-03	2.32E-04	1.98E-04	7.87E-04	4.86E-04	0.00	4.64E-05	3.95E-05	0.00
564660_4184640	564660	4184640	3.86E-03	2.38E-03	2.19E-04	1.87E-04	7.73E-04	4.77E-04	0.00	4.39E-05	3.74E-05	0.00
564300_4184660	564300	4184660	2.94E-03	1.81E-03	1.50E-04	1.29E-04	5.88E-04	3.62E-04	0.00	3.00E-05	2.57E-05	0.00
564320_4184660	564320	4184660	3.03E-03	1.87E-03	1.55E-04	1.33E-04	6.06E-04	3.73E-04	0.00	3.11E-05	2.66E-05	0.00
564340_4184660	564340	4184660	3.13E-03	1.92E-03	1.61E-04	1.38E-04	6.25E-04	3.85E-04	0.00	3.22E-05	2.75E-05	0.00
564360_4184660	564360	4184660	3.22E-03	1.98E-03	1.66E-04	1.42E-04	6.44E-04	3.96E-04	0.00	3.32E-05	2.84E-05	0.00
564380_4184660	564380	4184660	3.33E-03	2.05E-03	1.73E-04	1.48E-04	6.66E-04	4.10E-04	0.00	3.45E-05	2.95E-05	0.00
564400_4184660	564400	4184660	3.43E-03	2.11E-03	1.78E-04	1.52E-04	6.86E-04	4.22E-04	0.00	3.56E-05	3.05E-05	0.00
564420_4184660	564420	4184660	3.55E-03	2.18E-03	1.85E-04	1.58E-04	7.09E-04	4.37E-04	0.00	3.70E-05	3.16E-05	0.00
564540_4184660	564540	4184660	3.56E-03	2.20E-03	2.07E-04	1.77E-04	7.12E-04	4.40E-04	0.00	4.14E-05	3.53E-05	0.00
564580_4184660	564580	4184660	3.66E-03	2.28E-03	2.96E-04	2.50E-04	7.33E-04	4.56E-04	0.00	5.92E-05	5.01E-05	0.00
564600_4184660	564600	4184660	3.62E-03	2.24E-03	2.45E-04	2.08E-04	7.24E-04	4.48E-04	0.00	4.91E-05	4.17E-05	0.00
564620_4184660	564620	4184660	3.53E-03	2.18E-03	2.19E-04	1.86E-04	7.05E-04	4.36E-04	0.00	4.37E-05	3.72E-05	0.00
564340_4184680	564340	4184680	2.78E-03	1.71E-03	1.43E-04	1.22E-04	5.57E-04	3.43E-04	0.00	2.86E-05	2.44E-05	0.00
564360_4184680	564360	4184680	2.87E-03	1.77E-03	1.48E-04	1.26E-04	5.74E-04	3.53E-04	0.00	2.95E-05	2.53E-05	0.00
564380_4184680	564380	4184680	2.96E-03	1.82E-03	1.52E-04	1.30E-04	5.91E-04	3.64E-04	0.00	3.05E-05	2.61E-05	0.00
564400_4184680	564400	4184680	3.04E-03	1.87E-03	1.57E-04	1.34E-04	6.07E-04	3.74E-04	0.00	3.14E-05	2.69E-05	0.00
564420_4184680	564420	4184680	3.10E-03	1.91E-03	1.61E-04	1.37E-04	6.20E-04	3.81E-04	0.00	3.21E-05	2.75E-05	0.00
564440_4184680	564440	4184680	3.12E-03	1.92E-03	1.63E-04	1.39E-04	6.24E-04	3.84E-04	0.00	3.25E-05	2.78E-05	0.00
564500_4184680	564500	4184680	3.08E-03	1.90E-03	1.65E-04	1.41E-04	6.16E-04	3.79E-04	0.00	3.30E-05	2.82E-05	0.00
564520_4184680	564520	4184680	3.09E-03	1.90E-03	1.68E-04	1.44E-04	6.18E-04	3.81E-04	0.00	3.36E-05	2.87E-05	0.00
564540_4184680	564540	4184680	3.11E-03	1.91E-03	1.74E-04	1.49E-04	6.21E-04	3.83E-04	0.00	3.48E-05	2.97E-05	0.00
564560_4184680	564560	4184680	3.12E-03	1.92E-03	1.86E-04	1.58E-04	6.24E-04	3.85E-04	0.00	3.72E-05	3.17E-05	0.00
564400_4184700	564400	4184700	2.70E-03	1.66E-03	1.39E-04	1.19E-04	5.40E-04	3.32E-04	0.00	2.78E-05	2.38E-05	0.00
564420_4184700	564420	4184700	2.74E-03	1.69E-03	1.42E-04	1.21E-04	5.49E-04	3.38E-04	0.00	2.84E-05	2.43E-05	0.00
564440_4184700	564440	4184700	2.76E-03	1.70E-03	1.43E-04	1.23E-04	5.52E-04	3.40E-04	0.00	2.86E-05	2.45E-05	0.00
564460_4184700	564460	4184700	2.75E-03	1.69E-03	1.43E-04	1.23E-04	5.49E-04	3.38E-04	0.00	2.87E-05	2.45E-05	0.00
564480_4184700	564480	4184700	2.73E-03	1.68E-03	1.44E-04	1.23E-04	5.47E-04	3.37E-04	0.00	2.87E-05	2.46E-05	0.00
564500_4184700	564500	4184700	2.72E-03	1.68E-03	1.44E-04	1.23E-04	5.44E-04	3.35E-04	0.00	2.89E-05	2.47E-05	0.00
564520_4184700	564520	4184700	2.72E-03	1.68E-03	1.46E-04	1.25E-04	5.44E-04	3.35E-04	0.00	2.92E-05	2.49E-05	0.00

All Receptors - Construction Annual Average $PM_{2.5}$ Concentration

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	7.3	miles
	32187	11748	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Route1	0.02	0.06
Route2	0.02	0.06

Modeled Routes

	Route1	Route2	
Trip Length	730	743.1	meters

from AERMOD

			Days			Total Uncontrolled $PM_{2.5}$ (tons)			Total Controlled $PM_{2.5}$ (tons)		
Construction Year	Start Date	End Date	3rd Trimester	Age 0<2	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2021	4/1/2021	12/31/2021	91	184.00	275	3.25E-02	5.70E-04	3.90E-04	1.63E-03	5.70E-04	3.90E-04
2022	1/1/2022	9/1/2022	0	244.00	244	1.77E-02	3.50E-04	3.10E-04	1.24E-03	3.50E-04	3.10E-04

			Total Uncontrolled $PM_{2.5}$ (g/s)			Total Controlled $PM_{2.5}$ (g/s)		
Construction Year	Start Date	End Date	Construction	Route1	Route2	Construction	Route1	Route2
2021	4/1/2021	12/31/2021	1.24E-03	1.42E-06	1.44E-06	6.22E-05	1.42E-06	1.44E-06
2022	1/1/2022	9/1/2022	7.63E-04	1.17E-06	1.19E-06	5.34E-05	1.17E-06	1.19E-06

MAX	Cancer Risk	UTM X	UTM Y
Unmitigated	0.16	564560	4184360
Mitigated	0.01	564560	4184360

Diesel Particulate Matter concentration, $C_{PM2.5}$ (ug/m^3)

			Unmitigated		Mitigated		Uncontrolled $PM_{2.5}$ Concentration	Controlled $PM_{2.5}$ Concentration
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	Max	2021
564460_4184040	564460	4184040	3.04E-03	1.87E-03	1.65E-04	1.41E-04	3.04E-03	1.65E-04
564360_4184060	564360	4184060	2.70E-03	1.66E-03	1.48E-04	1.27E-04	2.70E-03	1.48E-04
564380_4184060	564380	4184060	2.81E-03	1.73E-03	1.54E-04	1.32E-04	2.81E-03	1.54E-04
564400_4184060	564400	4184060	2.93E-03	1.80E-03	1.60E-04	1.37E-04	2.93E-03	1.60E-04
564420_4184060	564420	4184060	3.06E-03	1.88E-03	1.67E-04	1.43E-04	3.06E-03	1.67E-04
564440_4184060	564440	4184060	3.21E-03	1.98E-03	1.75E-04	1.50E-04	3.21E-03	1.75E-04
564460_4184060	564460	4184060	3.38E-03	2.08E-03	1.84E-04	1.57E-04	3.38E-03	1.84E-04
564480_4184060	564480	4184060	3.56E-03	2.19E-03	1.93E-04	1.65E-04	3.56E-03	1.93E-04
564500_4184060	564500	4184060	3.76E-03	2.32E-03	2.03E-04	1.74E-04	3.76E-03	2.03E-04
564520_4184060	564520	4184060	3.99E-03	2.46E-03	2.15E-04	1.84E-04	3.99E-03	2.15E-04
564540_4184060	564540	4184060	4.24E-03	2.61E-03	2.27E-04	1.94E-04	4.24E-03	2.27E-04
564560_4184060	564560	4184060	4.51E-03	2.78E-03	2.41E-04	2.06E-04	4.51E-03	2.41E-04
564320_4184080	564320	4184080	2.79E-03	1.72E-03	1.55E-04	1.32E-04	2.79E-03	1.55E-04
564340_4184080	564340	4184080	2.89E-03	1.78E-03	1.60E-04	1.37E-04	2.89E-03	1.60E-04
564360_4184080	564360	4184080	2.99E-03	1.84E-03	1.66E-04	1.41E-04	2.99E-03	1.66E-04
564380_4184080	564380	4184080	3.11E-03	1.91E-03	1.72E-04	1.47E-04	3.11E-03	1.72E-04
564400_4184080	564400	4184080	3.25E-03	2.00E-03	1.79E-04	1.53E-04	3.25E-03	1.79E-04
564420_4184080	564420	4184080	3.41E-03	2.10E-03	1.87E-04	1.60E-04	3.41E-03	1.87E-04
564440_4184080	564440	4184080	3.59E-03	2.21E-03	1.96E-04	1.67E-04	3.59E-03	1.96E-04
564460_4184080	564460	4184080	3.78E-03	2.33E-03	2.06E-04	1.76E-04	3.78E-03	2.06E-04
564480_4184080	564480	4184080	4.01E-03	2.46E-03	2.17E-04	1.86E-04	4.01E-03	2.17E-04
564500_4184080	564500	4184080	4.25E-03	2.62E-03	2.30E-04	1.96E-04	4.25E-03	2.30E-04
564520_4184080	564520	4184080	4.53E-03	2.79E-03	2.44E-04	2.08E-04	4.53E-03	2.44E-04
564540_4184080	564540	4184080	4.83E-03	2.97E-03	2.59E-04	2.21E-04	4.83E-03	2.59E-04
564560_4184080	564560	4184080	5.15E-03	3.17E-03	2.75E-04	2.35E-04	5.15E-03	2.75E-04
564580_4184080	564580	4184080	5.50E-03	3.38E-03	2.92E-04	2.50E-04	5.50E-03	2.92E-04
564600_4184080	564600	4184080	5.88E-03	3.61E-03	3.11E-04	2.66E-04	5.88E-03	3.11E-04
564620_4184080	564620	4184080	6.25E-03	3.85E-03	3.29E-04	2.82E-04	6.25E-03	3.29E-04
564280_4184100	564280	4184100	2.87E-03	1.77E-03	1.62E-04	1.38E-04	2.87E-03	1.62E-04
564300_4184100	564300	4184100	2.98E-03	1.84E-03	1.68E-04	1.44E-04	2.98E-03	1.68E-04
564320_4184100	564320	4184100	3.10E-03	1.91E-03	1.74E-04	1.49E-04	3.10E-03	1.74E-04
564340_4184100	564340	4184100	3.21E-03	1.98E-03	1.80E-04	1.53E-04	3.21E-03	1.80E-04
564360_4184100	564360	4184100	3.33E-03	2.05E-03	1.86E-04	1.59E-04	3.33E-03	1.86E-04
564380_4184100	564380	4184100	3.47E-03	2.14E-03	1.93E-04	1.65E-04	3.47E-03	1.93E-04
564400_4184100	564400	4184100	3.63E-03	2.24E-03	2.01E-04	1.72E-04	3.63E-03	2.01E-04
564420_4184100	564420	4184100	3.82E-03	2.35E-03	2.10E-04	1.80E-04	3.82E-03	2.10E-04
564440_4184100	564440	4184100	4.03E-03	2.48E-03	2.21E-04	1.89E-04	4.03E-03	2.21E-04
564460_4184100	564460	4184100	4.27E-03	2.63E-03	2.33E-04	1.99E-04	4.27E-03	2.33E-04
564480_4184100	564480	4184100	4.54E-03	2.80E-03	2.47E-04	2.11E-04	4.54E-03	2.47E-04
564500_4184100	564500	4184100	4.84E-03	2.98E-03	2.62E-04	2.24E-04	4.84E-03	2.62E-04
564520_4184100	564520	4184100	5.17E-03	3.18E-03	2.78E-04	2.38E-04	5.17E-03	2.78E-04
564540_4184100	564540	4184100	5.55E-03	3.41E-03	2.97E-04	2.54E-04	5.55E-03	2.97E-04
564560_4184100	564560	4184100	5.96E-03	3.67E-03	3.18E-04	2.72E-04	5.96E-03	3.18E-04
564580_4184100	564580	4184100	6.38E-03	3.93E-03	3.38E-04	2.89E-04	6.38E-03	3.38E-04
564600_4184100	564600	4184100	6.83E-03	4.20E-03	3.60E-04	3.08E-04	6.83E-03	3.60E-04
564620_4184100	564620	4184100	7.30E-03	4.49E-03	3.84E-04	3.28E-04	7.30E-03	3.84E-04
564640_4184100	564640	4184100	7.74E-03	4.76E-03	4.05E-04	3.47E-04	7.74E-03	4.05E-04
564260_4184120	564260	4184120	3.03E-03	1.87E-03	1.77E-04	1.51E-04	3.03E-03	1.77E-04
564280_4184120	564280	4184120	3.18E-03	1.96E-03	1.84E-04	1.57E-04	3.18E-03	1.84E-04
564300_4184120	564300	4184120	3.33E-03	2.05E-03	1.91E-04	1.63E-04	3.33E-03	1.91E-04
564320_4184120	564320	4184120	3.47E-03	2.14E-03	1.97E-04	1.68E-04	3.47E-03	1.97E-04
564340_4184120	564340	4184120	3.60E-03	2.22E-03	2.03E-04	1.74E-04	3.60E-03	2.03E-04
564360_4184120	564360	4184120	3.75E-03	2.31E-03	2.10E-04	1.79E-04	3.75E-03	2.10E-04
564380_4184120	564380	4184120	3.91E-03	2.41E-03	2.18E-04	1.86E-04	3.91E-03	2.18E-04
564400_4184120	564400	4184120	4.10E-03	2.52E-03	2.27E-04	1.94E-04	4.10E-03	2.27E-04
564420_4184120	564420	4184120	4.32E-03	2.66E-03	2.39E-04	2.04E-04	4.32E-03	2.39E-04
564440_4184120	564440	4184120	4.58E-03	2.82E-03	2.52E-04	2.15E-04	4.58E-03	2.52E-04
564460_4184120	564460	4184120	4.87E-03	3.00E-03	2.66E-04	2.28E-04	4.87E-03	2.66E-04
564480_4184120	564480	4184120	5.19E-03	3.20E-03	2.83E-04	2.41E-04	5.19E-03	2.83E-04
564500_4184120	564500	4184120	5.55E-03	3.42E-03	3.01E-04	2.57E-04	5.55E-03	3.01E-04
564520_4184120	564520	4184120	5.96E-03	3.67E-03	3.21E-04	2.74E-04	5.96E-03	3.21E-04
564540_4184120	564540	4184120	6.45E-03	3.97E-03	3.45E-04	2.95E-04	6.45E-03	3.45E-04
564560_4184120	564560	4184120	6.98E-03	4.29E-03	3.71E-04	3.17E-04	6.98E-03	3.71E-04
564580_4184120	564580	4184120	7.51E-03	4.62E-03	3.97E-04	3.40E-04	7.51E-03	3.97E-04
564600_4184120	564600	4184120	8.07E-03	4.96E-03	4.25E-04	3.63E-04	8.07E-03	4.25E-04

Diesel Particulate Matter concentration, $C_{PM2.5}$ (ug/m^3)

			Unmitigated		Mitigated		Uncontrolled	Controlled
							$PM_{2.5}$ Concentration	$PM_{2.5}$ Concentration
Lookup	X (UTM)	Y (UTM	2021	2022	2021	2022	Max	2021
564620_4184120	564620	4184120	8.64E-03	5.31E-03	4.52E-04	3.87E-04	8.64E-03	4.52E-04
564640_4184120	564640	4184120	9.15E-03	5.63E-03	4.78E-04	4.09E-04	9.15E-03	4.78E-04
564660_4184120	564660	4184120	9.62E-03	5.91E-03	5.00E-04	4.28E-04	9.62E-03	5.00E-04
564680_4184120	564680	4184120	1.00E-02	6.15E-03	5.19E-04	4.45E-04	1.00E-02	5.19E-04
564240_4184140	564240	4184140	3.18E-03	1.96E-03	2.00E-04	1.70E-04	3.18E-03	2.00E-04
564260_4184140	564260	4184140	3.36E-03	2.07E-03	2.05E-04	1.74E-04	3.36E-03	2.05E-04
564280_4184140	564280	4184140	3.55E-03	2.19E-03	2.11E-04	1.80E-04	3.55E-03	2.11E-04
564300_4184140	564300	4184140	3.73E-03	2.30E-03	2.18E-04	1.86E-04	3.73E-03	2.18E-04
564320_4184140	564320	4184140	3.90E-03	2.41E-03	2.25E-04	1.92E-04	3.90E-03	2.25E-04
564340_4184140	564340	4184140	4.08E-03	2.51E-03	2.32E-04	1.98E-04	4.08E-03	2.32E-04
564360_4184140	564360	4184140	4.25E-03	2.62E-03	2.40E-04	2.05E-04	4.25E-03	2.40E-04
564380_4184140	564380	4184140	4.44E-03	2.74E-03	2.49E-04	2.13E-04	4.44E-03	2.49E-04
564400_4184140	564400	4184140	4.67E-03	2.87E-03	2.61E-04	2.22E-04	4.67E-03	2.61E-04
564420_4184140	564420	4184140	4.93E-03	3.04E-03	2.74E-04	2.34E-04	4.93E-03	2.74E-04
564440_4184140	564440	4184140	5.24E-03	3.22E-03	2.89E-04	2.47E-04	5.24E-03	2.89E-04
564460_4184140	564460	4184140	5.59E-03	3.44E-03	3.07E-04	2.62E-04	5.59E-03	3.07E-04
564480_4184140	564480	4184140	5.98E-03	3.68E-03	3.26E-04	2.78E-04	5.98E-03	3.26E-04
564500_4184140	564500	4184140	6.44E-03	3.97E-03	3.49E-04	2.98E-04	6.44E-03	3.49E-04
564520_4184140	564520	4184140	6.99E-03	4.30E-03	3.76E-04	3.21E-04	6.99E-03	3.76E-04
564540_4184140	564540	4184140	7.61E-03	4.68E-03	4.06E-04	3.47E-04	7.61E-03	4.06E-04
564560_4184140	564560	4184140	8.29E-03	5.10E-03	4.39E-04	3.76E-04	8.29E-03	4.39E-04
564580_4184140	564580	4184140	8.98E-03	5.52E-03	4.73E-04	4.05E-04	8.98E-03	4.73E-04
564600_4184140	564600	4184140	9.67E-03	5.95E-03	5.07E-04	4.34E-04	9.67E-03	5.07E-04
564620_4184140	564620	4184140	1.03E-02	6.36E-03	5.40E-04	4.62E-04	1.03E-02	5.40E-04
564640_4184140	564640	4184140	1.09E-02	6.72E-03	5.68E-04	4.87E-04	1.09E-02	5.68E-04
564660_4184140	564660	4184140	1.14E-02	7.03E-03	5.93E-04	5.08E-04	1.14E-02	5.93E-04
564680_4184140	564680	4184140	1.18E-02	7.27E-03	6.12E-04	5.24E-04	1.18E-02	6.12E-04
564700_4184140	564700	4184140	1.21E-02	7.43E-03	6.24E-04	5.34E-04	1.21E-02	6.24E-04
564220_4184160	564220	4184160	3.29E-03	2.04E-03	2.50E-04	2.12E-04	3.29E-03	2.50E-04
564240_4184160	564240	4184160	3.50E-03	2.17E-03	2.40E-04	2.03E-04	3.50E-03	2.40E-04
564260_4184160	564260	4184160	3.72E-03	2.30E-03	2.38E-04	2.02E-04	3.72E-03	2.38E-04
564280_4184160	564280	4184160	3.96E-03	2.44E-03	2.42E-04	2.06E-04	3.96E-03	2.42E-04
564300_4184160	564300	4184160	4.20E-03	2.59E-03	2.50E-04	2.13E-04	4.20E-03	2.50E-04
564320_4184160	564320	4184160	4.43E-03	2.73E-03	2.58E-04	2.20E-04	4.43E-03	2.58E-04
564340_4184160	564340	4184160	4.65E-03	2.87E-03	2.68E-04	2.28E-04	4.65E-03	2.68E-04
564360_4184160	564360	4184160	4.88E-03	3.01E-03	2.78E-04	2.37E-04	4.88E-03	2.78E-04
564380_4184160	564380	4184160	5.11E-03	3.15E-03	2.88E-04	2.46E-04	5.11E-03	2.88E-04
564400_4184160	564400	4184160	5.36E-03	3.30E-03	3.01E-04	2.57E-04	5.36E-03	3.01E-04
564420_4184160	564420	4184160	5.67E-03	3.49E-03	3.16E-04	2.70E-04	5.67E-03	3.16E-04
564440_4184160	564440	4184160	6.06E-03	3.73E-03	3.36E-04	2.87E-04	6.06E-03	3.36E-04
564460_4184160	564460	4184160	6.52E-03	4.01E-03	3.58E-04	3.06E-04	6.52E-03	3.58E-04
564480_4184160	564480	4184160	7.02E-03	4.32E-03	3.83E-04	3.27E-04	7.02E-03	3.83E-04
564500_4184160	564500	4184160	7.63E-03	4.70E-03	4.13E-04	3.53E-04	7.63E-03	4.13E-04
564520_4184160	564520	4184160	8.35E-03	5.14E-03	4.48E-04	3.83E-04	8.35E-03	4.48E-04
564540_4184160	564540	4184160	9.16E-03	5.63E-03	4.87E-04	4.17E-04	9.16E-03	4.87E-04
564560_4184160	564560	4184160	1.00E-02	6.16E-03	5.29E-04	4.52E-04	1.00E-02	5.29E-04
564580_4184160	564580	4184160	1.09E-02	6.70E-03	5.72E-04	4.90E-04	1.09E-02	5.72E-04
564600_4184160	564600	4184160	1.18E-02	7.23E-03	6.14E-04	5.25E-04	1.18E-02	6.14E-04
564620_4184160	564620	4184160	1.25E-02	7.71E-03	6.52E-04	5.58E-04	1.25E-02	6.52E-04
564640_4184160	564640	4184160	1.32E-02	8.11E-03	6.84E-04	5.85E-04	1.32E-02	6.84E-04
564660_4184160	564660	4184160	1.37E-02	8.44E-03	7.10E-04	6.08E-04	1.37E-02	7.10E-04
564680_4184160	564680	4184160	1.41E-02	8.64E-03	7.26E-04	6.21E-04	1.41E-02	7.26E-04
564700_4184160	564700	4184160	1.42E-02	8.72E-03	7.31E-04	6.26E-04	1.42E-02	7.31E-04
564720_4184160	564720	4184160	1.41E-02	8.67E-03	7.26E-04	6.22E-04	1.41E-02	7.26E-04
564220_4184180	564220	4184180	3.59E-03	2.23E-03	2.97E-04	2.51E-04	3.59E-03	2.97E-04
564240_4184180	564240	4184180	3.84E-03	2.38E-03	2.78E-04	2.35E-04	3.84E-03	2.78E-04
564260_4184180	564260	4184180	4.12E-03	2.55E-03	2.73E-04	2.32E-04	4.12E-03	2.73E-04
564280_4184180	564280	4184180	4.42E-03	2.73E-03	2.77E-04	2.36E-04	4.42E-03	2.77E-04
564300_4184180	564300	4184180	4.74E-03	2.93E-03	2.87E-04	2.44E-04	4.74E-03	2.87E-04
564320_4184180	564320	4184180	5.05E-03	3.12E-03	2.98E-04	2.54E-04	5.05E-03	2.98E-04
564340_4184180	564340	4184180	5.36E-03	3.30E-03	3.10E-04	2.65E-04	5.36E-03	3.10E-04
564360_4184180	564360	4184180	5.65E-03	3.48E-03	3.23E-04	2.76E-04	5.65E-03	3.23E-04
564380_4184180	564380	4184180	5.93E-03	3.65E-03	3.37E-04	2.87E-04	5.93E-03	3.37E-04
564400_4184180	564400	4184180	6.24E-03	3.85E-03	3.53E-04	3.01E-04	6.24E-03	3.53E-04
564420_4184180	564420	4184180	6.62E-03	4.08E-03	3.72E-04	3.17E-04	6.62E-03	3.72E-04
564440_4184180	564440	4184180	7.11E-03	4.38E-03	3.96E-04	3.38E-04	7.11E-03	3.96E-04
564460_4184180	564460	4184180	7.70E-03	4.74E-03	4.24E-04	3.62E-04	7.70E-03	4.24E-04
564480_4184180	564480	4184180	8.38E-03	5.16E-03	4.57E-04	3.90E-04	8.38E-03	4.57E-04
564500_4184180	564500	4184180	9.20E-03	5.66E-03	4.96E-04	4.24E-04	9.20E-03	4.96E-04
564520_4184180	564520	4184180	1.01E-02	6.24E-03	5.41E-04	4.63E-04	1.01E-02	5.41E-04
564540_4184180	564540	4184180	1.12E-02	6.90E-03	5.93E-04	5.08E-04	1.12E-02	5.93E-04
564560_4184180	564560	4184180	1.23E-02	7.59E-03	6.48E-04	5.55E-04	1.23E-02	6.48E-04
564580_4184180	564580	4184180	1.35E-02	8.31E-03	7.05E-04	6.04E-04	1.35E-02	7.05E-04
564600_4184180	564600	4184180	1.46E-02	8.97E-03	7.58E-04	6.49E-04	1.46E-02	7.58E-04
564620_4184180	564620	4184180	1.55E-02	9.50E-03	8.00E-04	6.85E-04	1.55E-02	8.00E-04
564640_4184180	564640	4184180	1.61E-02	9.89E-03	8.31E-04	7.11E-04	1.61E-02	8.31E-04
564660_4184180	564660	4184180	1.66E-02	1.02E-02	8.56E-04	7.33E-04	1.66E-02	8.56E-04
564680_4184180	564680	4184180	1.68E-02	1.03E-02	8.63E-04	7.39E-04	1.68E-02	8.63E-04
564700_4184180	564700	4184180	1.66E-02	1.02E-02	8.55E-04	7.32E-04	1.66E-02	8.55E-04
564720_4184180	564720	4184180	1.63E-02	9.99E-03	8.35E-04	7.15E-04	1.63E-02	8.35E-04
564180_4184200	564180	4184200	3.17E-03	1.96E-03	1.90E-04	1.62E-04	3.17E-03	1.90E-04
564200_4184200	564200	4184200	3.48E-03	2.15E-03	2.29E-04	1.95E-04	3.48E-03	2.29E-04
564240_4184200	564240	4184200	4.20E-03	2.60E-03	3.16E-04	2.67E-04	4.20E-03	3.16E-04
564260_4184200	564260	4184200	4.55E-03	2.81E-03	3.10E-04	2.63E-04	4.55E-03	3.10E-04
564280_4184200	564280	4184200	4.94E-03	3.05E-03	3.16E-04	2.68E-04	4.94E-03	3.16E-04
564300_4184200	564300	4184200	5.37E-03	3.31E-03	3.28E-04	2.80E-04	5.37E-03	3.28E-04
564320_4184200	564320	4184200	5.79E-03	3.57E-03	3.45E-04	2.94E-04	5.79E-03	3.45E-04
564340_4184200	564340	4184200	6.22E-03	3.83E-03	3.64E-04	3.10E-04	6.22E-03	3.64E-04
564360_4184200	564360	4184200	6.62E-03	4.08E-03	3.82E-04	3.26E-04	6.62E-03	3.82E-04
564380_4184200	564380	4184200	7.00E-03	4.31E-03	4.01E-04	3.42E-04	7.00E-03	4.01E-04
564400_4184200	564400	4184200	7.42E-03	4.57E-03	4.23E-04	3.61E-04	7.42E-03	4.23E-04
564420_4184200	564420	4184200	7.88E-03	4.85E-03	4.46E-04	3.80E-04	7.88E-03	4.46E-04
564440_4184200	564440	4184200	8.48E-03	5.22E-03	4.75E-04	4.05E-04	8.48E-03	4.75E-04

Diesel Particulate Matter concentration, $C_{PM2.5}$ (ug/m^3)

Lookup	X (UTM)	Y (UTM	Unmitigated 2021	Unmitigated 2022	Mitigated 2021	Mitigated 2022	Uncontrolled $PM_{2.5}$ Concentration Max	Controlled $PM_{2.5}$ Concentration 2021
564460_4184200	564460	4184200	9.25E-03	5.69E-03	5.10E-04	4.36E-04	9.25E-03	5.10E-04
564480_4184200	564480	4184200	1.02E-02	6.25E-03	5.52E-04	4.72E-04	1.02E-02	5.52E-04
564520_4184200	564520	4184200	1.26E-02	7.73E-03	6.67E-04	5.71E-04	1.26E-02	6.67E-04
564540_4184200	564540	4184200	1.40E-02	8.63E-03	7.38E-04	6.32E-04	1.40E-02	7.38E-04
564560_4184200	564560	4184200	1.56E-02	9.58E-03	8.14E-04	6.96E-04	1.56E-02	8.14E-04
564580_4184200	564580	4184200	1.71E-02	1.05E-02	8.88E-04	7.60E-04	1.71E-02	8.88E-04
564600_4184200	564600	4184200	1.84E-02	1.13E-02	9.53E-04	8.16E-04	1.84E-02	9.53E-04
564620_4184200	564620	4184200	1.94E-02	1.19E-02	9.98E-04	8.55E-04	1.94E-02	9.98E-04
564640_4184200	564640	4184200	1.99E-02	1.22E-02	1.02E-03	8.77E-04	1.99E-02	1.02E-03
564660_4184200	564660	4184200	2.01E-02	1.24E-02	1.03E-03	8.85E-04	2.01E-02	1.03E-03
564680_4184200	564680	4184200	1.99E-02	1.22E-02	1.02E-03	8.76E-04	1.99E-02	1.02E-03
564700_4184200	564700	4184200	1.93E-02	1.19E-02	9.93E-04	8.50E-04	1.93E-02	9.93E-04
564720_4184200	564720	4184200	1.85E-02	1.14E-02	9.51E-04	8.15E-04	1.85E-02	9.51E-04
564740_4184200	564740	4184200	1.76E-02	1.08E-02	9.03E-04	7.73E-04	1.76E-02	9.03E-04
564180_4184220	564180	4184220	3.33E-03	2.05E-03	1.96E-04	1.67E-04	3.33E-03	1.96E-04
564200_4184220	564200	4184220	3.68E-03	2.27E-03	2.29E-04	1.95E-04	3.68E-03	2.29E-04
564240_4184220	564240	4184220	4.55E-03	2.83E-03	3.57E-04	3.02E-04	4.55E-03	3.57E-04
564260_4184220	564260	4184220	4.99E-03	3.09E-03	3.48E-04	2.95E-04	4.99E-03	3.48E-04
564280_4184220	564280	4184220	5.49E-03	3.39E-03	3.56E-04	3.03E-04	5.49E-03	3.56E-04
564300_4184220	564300	4184220	6.05E-03	3.73E-03	3.75E-04	3.19E-04	6.05E-03	3.75E-04
564320_4184220	564320	4184220	6.65E-03	4.10E-03	4.01E-04	3.42E-04	6.65E-03	4.01E-04
564340_4184220	564340	4184220	7.27E-03	4.48E-03	4.31E-04	3.67E-04	7.27E-03	4.31E-04
564360_4184220	564360	4184220	7.85E-03	4.84E-03	4.61E-04	3.93E-04	7.85E-03	4.61E-04
564380_4184220	564380	4184220	8.40E-03	5.18E-03	4.91E-04	4.19E-04	8.40E-03	4.91E-04
564400_4184220	564400	4184220	8.95E-03	5.51E-03	5.20E-04	4.43E-04	8.95E-03	5.20E-04
564420_4184220	564420	4184220	9.55E-03	5.88E-03	5.47E-04	4.66E-04	9.55E-03	5.47E-04
564440_4184220	564440	4184220	1.03E-02	6.35E-03	5.79E-04	4.94E-04	1.03E-02	5.79E-04
564460_4184220	564460	4184220	1.13E-02	6.97E-03	6.23E-04	5.33E-04	1.13E-02	6.23E-04
564540_4184220	564540	4184220	1.81E-02	1.12E-02	9.49E-04	8.12E-04	1.81E-02	9.49E-04
564560_4184220	564560	4184220	2.03E-02	1.25E-02	1.05E-03	9.02E-04	2.03E-02	1.05E-03
564620_4184220	564620	4184220	2.46E-02	1.51E-02	1.26E-03	1.08E-03	2.46E-02	1.26E-03
564640_4184220	564640	4184220	2.46E-02	1.51E-02	1.26E-03	1.08E-03	2.46E-02	1.26E-03
564660_4184220	564660	4184220	2.42E-02	1.49E-02	1.24E-03	1.06E-03	2.42E-02	1.24E-03
564680_4184220	564680	4184220	2.34E-02	1.44E-02	1.20E-03	1.03E-03	2.34E-02	1.20E-03
564700_4184220	564700	4184220	2.22E-02	1.37E-02	1.14E-03	9.76E-04	2.22E-02	1.14E-03
564720_4184220	564720	4184220	2.09E-02	1.28E-02	1.07E-03	9.16E-04	2.09E-02	1.07E-03
564740_4184220	564740	4184220	1.94E-02	1.19E-02	9.96E-04	8.53E-04	1.94E-02	9.96E-04
564760_4184220	564760	4184220	1.80E-02	1.11E-02	9.23E-04	7.91E-04	1.80E-02	9.23E-04
564160_4184240	564160	4184240	3.15E-03	1.94E-03	1.80E-04	1.53E-04	3.15E-03	1.80E-04
564180_4184240	564180	4184240	3.48E-03	2.15E-03	2.03E-04	1.73E-04	3.48E-03	2.03E-04
564200_4184240	564200	4184240	3.87E-03	2.38E-03	2.34E-04	1.99E-04	3.87E-03	2.34E-04
564220_4184240	564220	4184240	4.32E-03	2.67E-03	2.82E-04	2.40E-04	4.32E-03	2.82E-04
564260_4184240	564260	4184240	5.43E-03	3.36E-03	3.91E-04	3.31E-04	5.43E-03	3.91E-04
564280_4184240	564280	4184240	6.07E-03	3.75E-03	4.03E-04	3.42E-04	6.07E-03	4.03E-04
564300_4184240	564300	4184240	6.80E-03	4.20E-03	4.31E-04	3.66E-04	6.80E-03	4.31E-04
564320_4184240	564320	4184240	7.63E-03	4.71E-03	4.71E-04	4.01E-04	7.63E-03	4.71E-04
564340_4184240	564340	4184240	8.52E-03	5.26E-03	5.21E-04	4.44E-04	8.52E-03	5.21E-04
564360_4184240	564360	4184240	9.44E-03	5.82E-03	5.78E-04	4.92E-04	9.44E-03	5.78E-04
564380_4184240	564380	4184240	1.03E-02	6.35E-03	6.35E-04	5.40E-04	1.03E-02	6.35E-04
564400_4184240	564400	4184240	1.11E-02	6.82E-03	6.63E-04	5.64E-04	1.11E-02	6.63E-04
564420_4184240	564420	4184240	1.18E-02	7.29E-03	6.84E-04	5.83E-04	1.18E-02	6.84E-04
564440_4184240	564440	4184240	1.29E-02	7.91E-03	7.21E-04	6.15E-04	1.29E-02	7.21E-04
564460_4184240	564460	4184240	1.42E-02	8.77E-03	7.80E-04	6.67E-04	1.42E-02	7.80E-04
564480_4184240	564480	4184240	1.61E-02	9.93E-03	8.67E-04	7.42E-04	1.61E-02	8.67E-04
564620_4184240	564620	4184240	3.12E-02	1.92E-02	1.60E-03	1.37E-03	3.12E-02	1.60E-03
564640_4184240	564640	4184240	3.04E-02	1.87E-02	1.55E-03	1.33E-03	3.04E-02	1.55E-03
564660_4184240	564660	4184240	2.89E-02	1.78E-02	1.48E-03	1.27E-03	2.89E-02	1.48E-03
564680_4184240	564680	4184240	2.71E-02	1.66E-02	1.39E-03	1.19E-03	2.71E-02	1.39E-03
564700_4184240	564700	4184240	2.51E-02	1.54E-02	1.28E-03	1.10E-03	2.51E-02	1.28E-03
564720_4184240	564720	4184240	2.30E-02	1.42E-02	1.18E-03	1.01E-03	2.30E-02	1.18E-03
564740_4184240	564740	4184240	2.11E-02	1.30E-02	1.08E-03	9.25E-04	2.11E-02	1.08E-03
564760_4184240	564760	4184240	1.92E-02	1.18E-02	9.87E-04	8.46E-04	1.92E-02	9.87E-04
564160_4184260	564160	4184260	3.25E-03	2.00E-03	1.85E-04	1.58E-04	3.25E-03	1.85E-04
564180_4184260	564180	4184260	3.61E-03	2.22E-03	2.10E-04	1.79E-04	3.61E-03	2.10E-04
564200_4184260	564200	4184260	4.03E-03	2.48E-03	2.40E-04	2.05E-04	4.03E-03	2.40E-04
564220_4184260	564220	4184260	4.53E-03	2.79E-03	2.84E-04	2.41E-04	4.53E-03	2.84E-04
564260_4184260	564260	4184260	5.86E-03	3.63E-03	4.42E-04	3.74E-04	5.86E-03	4.42E-04
564280_4184260	564280	4184260	6.63E-03	4.10E-03	4.58E-04	3.88E-04	6.63E-03	4.58E-04
564300_4184260	564300	4184260	7.58E-03	4.68E-03	5.00E-04	4.24E-04	7.58E-03	5.00E-04
564320_4184260	564320	4184260	8.70E-03	5.38E-03	5.66E-04	4.81E-04	8.70E-03	5.66E-04
564380_4184260	564380	4184260	1.28E-02	7.95E-03	8.93E-04	7.57E-04	1.28E-02	8.93E-04
564400_4184260	564400	4184260	1.40E-02	8.62E-03	8.59E-04	7.31E-04	1.40E-02	8.59E-04
564420_4184260	564420	4184260	1.51E-02	9.30E-03	8.74E-04	7.45E-04	1.51E-02	8.74E-04
564440_4184260	564440	4184260	1.65E-02	1.01E-02	9.19E-04	7.85E-04	1.65E-02	9.19E-04
564460_4184260	564460	4184260	1.85E-02	1.14E-02	1.01E-03	8.61E-04	1.85E-02	1.01E-03
564480_4184260	564480	4184260	2.14E-02	1.32E-02	1.14E-03	9.77E-04	2.14E-02	1.14E-03
564580_4184260	564580	4184260	4.02E-02	2.47E-02	2.06E-03	1.76E-03	4.02E-02	2.06E-03
564600_4184260	564600	4184260	4.06E-02	2.49E-02	2.07E-03	1.78E-03	4.06E-02	2.07E-03
564620_4184260	564620	4184260	3.92E-02	2.41E-02	2.00E-03	1.71E-03	3.92E-02	2.00E-03
564640_4184260	564640	4184260	3.67E-02	2.26E-02	1.88E-03	1.61E-03	3.67E-02	1.88E-03
564660_4184260	564660	4184260	3.37E-02	2.07E-02	1.72E-03	1.47E-03	3.37E-02	1.72E-03
564680_4184260	564680	4184260	3.06E-02	1.88E-02	1.56E-03	1.34E-03	3.06E-02	1.56E-03
564700_4184260	564700	4184260	2.77E-02	1.70E-02	1.42E-03	1.21E-03	2.77E-02	1.42E-03
564720_4184260	564720	4184260	2.49E-02	1.53E-02	1.28E-03	1.09E-03	2.49E-02	1.28E-03
564740_4184260	564740	4184260	2.25E-02	1.38E-02	1.15E-03	9.87E-04	2.25E-02	1.15E-03
564760_4184260	564760	4184260	2.03E-02	1.25E-02	1.04E-03	8.92E-04	2.03E-02	1.04E-03
564160_4184280	564160	4184280	3.32E-03	2.04E-03	1.90E-04	1.62E-04	3.32E-03	1.90E-04
564180_4184280	564180	4184280	3.70E-03	2.28E-03	2.16E-04	1.84E-04	3.70E-03	2.16E-04
564200_4184280	564200	4184280	4.16E-03	2.57E-03	2.49E-04	2.12E-04	4.16E-03	2.49E-04
564220_4184280	564220	4184280	4.71E-03	2.91E-03	2.94E-04	2.50E-04	4.71E-03	2.94E-04
564240_4184280	564240	4184280	5.38E-03	3.33E-03	3.62E-04	3.07E-04	5.38E-03	3.62E-04
564280_4184280	564280	4184280	7.18E-03	4.45E-03	5.35E-04	4.53E-04	7.18E-03	5.35E-04
564340_4184280	564340	4184280	1.15E-02	7.14E-03	7.87E-04	6.68E-04	1.15E-02	7.87E-04

Diesel Particulate Matter concentration, $C_{PM2.5}$ (ug/m^3)

Lookup	X (UTM)	Y (UTM	Unmitigated 2021	Unmitigated 2022	Mitigated 2021	Mitigated 2022	Uncontrolled $PM_{2.5}$ Concentration Max	Controlled $PM_{2.5}$ Concentration 2021
564360_4184280	564360	4184280	1.36E-02	8.38E-03	8.49E-04	7.22E-04	1.36E-02	8.49E-04
564400_4184280	564400	4184280	1.81E-02	1.12E-02	1.09E-03	9.27E-04	1.81E-02	1.09E-03
564460_4184280	564460	4184280	2.53E-02	1.55E-02	1.35E-03	1.16E-03	2.53E-02	1.35E-03
564480_4184280	564480	4184280	3.01E-02	1.85E-02	1.58E-03	1.36E-03	3.01E-02	1.58E-03
564500_4184280	564500	4184280	3.68E-02	2.26E-02	1.91E-03	1.64E-03	3.68E-02	1.91E-03
564580_4184280	564580	4184280	5.52E-02	3.39E-02	2.81E-03	2.41E-03	5.52E-02	2.81E-03
564600_4184280	564600	4184280	5.25E-02	3.22E-02	2.67E-03	2.29E-03	5.25E-02	2.67E-03
564620_4184280	564620	4184280	4.81E-02	2.95E-02	2.45E-03	2.10E-03	4.81E-02	2.45E-03
564640_4184280	564640	4184280	4.31E-02	2.65E-02	2.20E-03	1.88E-03	4.31E-02	2.20E-03
564660_4184280	564660	4184280	3.82E-02	2.35E-02	1.95E-03	1.67E-03	3.82E-02	1.95E-03
564680_4184280	564680	4184280	3.37E-02	2.07E-02	1.72E-03	1.48E-03	3.37E-02	1.72E-03
564700_4184280	564700	4184280	2.98E-02	1.83E-02	1.53E-03	1.31E-03	2.98E-02	1.53E-03
564720_4184280	564720	4184280	2.65E-02	1.63E-02	1.36E-03	1.16E-03	2.65E-02	1.36E-03
564740_4184280	564740	4184280	2.36E-02	1.45E-02	1.21E-03	1.04E-03	2.36E-02	1.21E-03
564760_4184280	564760	4184280	2.12E-02	1.30E-02	1.09E-03	9.31E-04	2.12E-02	1.09E-03
564780_4184280	564780	4184280	1.91E-02	1.17E-02	9.79E-04	8.38E-04	1.91E-02	9.79E-04
564140_4184300	564140	4184300	3.03E-03	1.87E-03	1.73E-04	1.48E-04	3.03E-03	1.73E-04
564160_4184300	564160	4184300	3.37E-03	2.08E-03	1.96E-04	1.67E-04	3.37E-03	1.96E-04
564180_4184300	564180	4184300	3.77E-03	2.33E-03	2.25E-04	1.92E-04	3.77E-03	2.25E-04
564200_4184300	564200	4184300	4.26E-03	2.63E-03	2.64E-04	2.24E-04	4.26E-03	2.64E-04
564220_4184300	564220	4184300	4.86E-03	3.00E-03	3.16E-04	2.68E-04	4.86E-03	3.16E-04
564240_4184300	564240	4184300	5.60E-03	3.47E-03	3.93E-04	3.33E-04	5.60E-03	3.93E-04
564340_4184300	564340	4184300	1.30E-02	7.99E-03	7.94E-04	6.76E-04	1.30E-02	7.94E-04
564360_4184300	564360	4184300	1.59E-02	9.80E-03	9.27E-04	7.90E-04	1.59E-02	9.27E-04
564380_4184300	564380	4184300	1.96E-02	1.21E-02	1.12E-03	9.58E-04	1.96E-02	1.12E-03
564480_4184300	564480	4184300	4.57E-02	2.81E-02	2.37E-03	2.03E-03	4.57E-02	2.37E-03
564500_4184300	564500	4184300	5.87E-02	3.61E-02	3.02E-03	2.58E-03	5.87E-02	3.02E-03
564600_4184300	564600	4184300	6.54E-02	4.02E-02	3.33E-03	2.85E-03	6.54E-02	3.33E-03
564620_4184300	564620	4184300	5.66E-02	3.48E-02	2.88E-03	2.47E-03	5.66E-02	2.88E-03
564640_4184300	564640	4184300	4.87E-02	2.99E-02	2.48E-03	2.13E-03	4.87E-02	2.48E-03
564660_4184300	564660	4184300	4.20E-02	2.58E-02	2.14E-03	1.83E-03	4.20E-02	2.14E-03
564680_4184300	564680	4184300	3.63E-02	2.23E-02	1.85E-03	1.59E-03	3.63E-02	1.85E-03
564700_4184300	564700	4184300	3.17E-02	1.95E-02	1.62E-03	1.39E-03	3.17E-02	1.62E-03
564720_4184300	564720	4184300	2.78E-02	1.71E-02	1.42E-03	1.22E-03	2.78E-02	1.42E-03
564740_4184300	564740	4184300	2.46E-02	1.51E-02	1.26E-03	1.08E-03	2.46E-02	1.26E-03
564760_4184300	564760	4184300	2.20E-02	1.35E-02	1.13E-03	9.66E-04	2.20E-02	1.13E-03
564780_4184300	564780	4184300	1.97E-02	1.21E-02	1.01E-03	8.68E-04	1.97E-02	1.01E-03
564140_4184320	564140	4184320	3.05E-03	1.88E-03	1.77E-04	1.51E-04	3.05E-03	1.77E-04
564160_4184320	564160	4184320	3.39E-03	2.09E-03	2.04E-04	1.74E-04	3.39E-03	2.04E-04
564180_4184320	564180	4184320	3.82E-03	2.36E-03	2.42E-04	2.06E-04	3.82E-03	2.42E-04
564200_4184320	564200	4184320	4.34E-03	2.69E-03	2.98E-04	2.53E-04	4.34E-03	2.98E-04
564260_4184320	564260	4184320	6.73E-03	4.18E-03	5.36E-04	4.53E-04	6.73E-03	5.36E-04
564580_4184320	564580	4184320	9.37E-02	5.76E-02	4.75E-03	4.07E-03	9.37E-02	4.75E-03
564600_4184320	564600	4184320	7.71E-02	4.74E-02	3.92E-03	3.36E-03	7.71E-02	3.92E-03
564620_4184320	564620	4184320	6.38E-02	3.92E-02	3.24E-03	2.78E-03	6.38E-02	3.24E-03
564640_4184320	564640	4184320	5.33E-02	3.28E-02	2.71E-03	2.33E-03	5.33E-02	2.71E-03
564660_4184320	564660	4184320	4.52E-02	2.78E-02	2.30E-03	1.97E-03	4.52E-02	2.30E-03
564680_4184320	564680	4184320	3.86E-02	2.37E-02	1.97E-03	1.69E-03	3.86E-02	1.97E-03
564700_4184320	564700	4184320	3.34E-02	2.05E-02	1.71E-03	1.46E-03	3.34E-02	1.71E-03
564720_4184320	564720	4184320	2.91E-02	1.79E-02	1.49E-03	1.28E-03	2.91E-02	1.49E-03
564740_4184320	564740	4184320	2.54E-02	1.56E-02	1.30E-03	1.11E-03	2.54E-02	1.30E-03
564760_4184320	564760	4184320	2.26E-02	1.39E-02	1.16E-03	9.94E-04	2.26E-02	1.16E-03
564780_4184320	564780	4184320	2.04E-02	1.25E-02	1.05E-03	8.98E-04	2.04E-02	1.05E-03
564140_4184340	564140	4184340	3.04E-03	1.88E-03	1.84E-04	1.57E-04	3.04E-03	1.84E-04
564160_4184340	564160	4184340	3.41E-03	2.11E-03	2.27E-04	1.93E-04	3.41E-03	2.27E-04
564220_4184340	564220	4184340	5.03E-03	3.12E-03	4.01E-04	3.38E-04	5.03E-03	4.01E-04
564240_4184340	564240	4184340	5.76E-03	3.56E-03	4.10E-04	3.48E-04	5.76E-03	4.10E-04
564260_4184340	564260	4184340	6.71E-03	4.15E-03	4.54E-04	3.85E-04	6.71E-03	4.54E-04
564600_4184340	564600	4184340	8.64E-02	5.31E-02	4.39E-03	3.76E-03	8.64E-02	4.39E-03
564620_4184340	564620	4184340	6.96E-02	4.28E-02	3.54E-03	3.03E-03	6.96E-02	3.54E-03
564640_4184340	564640	4184340	5.72E-02	3.52E-02	2.91E-03	2.50E-03	5.72E-02	2.91E-03
564660_4184340	564660	4184340	4.80E-02	2.95E-02	2.45E-03	2.10E-03	4.80E-02	2.45E-03
564680_4184340	564680	4184340	4.07E-02	2.50E-02	2.08E-03	1.78E-03	4.07E-02	2.08E-03
564700_4184340	564700	4184340	3.51E-02	2.16E-02	1.80E-03	1.54E-03	3.51E-02	1.80E-03
564720_4184340	564720	4184340	3.05E-02	1.87E-02	1.56E-03	1.34E-03	3.05E-02	1.56E-03
564740_4184340	564740	4184340	2.64E-02	1.62E-02	1.35E-03	1.16E-03	2.64E-02	1.35E-03
564760_4184340	564760	4184340	2.34E-02	1.44E-02	1.20E-03	1.03E-03	2.34E-02	1.20E-03
564780_4184340	564780	4184340	2.10E-02	1.29E-02	1.08E-03	9.25E-04	2.10E-02	1.08E-03
564180_4184360	564180	4184360	3.84E-03	2.38E-03	3.07E-04	2.59E-04	3.84E-03	3.07E-04
564200_4184360	564200	4184360	4.31E-03	2.67E-03	3.08E-04	2.61E-04	4.31E-03	3.08E-04
564220_4184360	564220	4184360	4.90E-03	3.03E-03	3.26E-04	2.77E-04	4.90E-03	3.26E-04
564240_4184360	564240	4184360	5.65E-03	3.49E-03	3.59E-04	3.05E-04	5.65E-03	3.59E-04
564260_4184360	564260	4184360	6.62E-03	4.09E-03	4.11E-04	3.50E-04	6.62E-03	4.11E-04
564280_4184360	564280	4184360	7.91E-03	4.88E-03	4.96E-04	4.22E-04	7.91E-03	4.96E-04
564560_4184360	564560	4184360	1.65E-01	1.01E-01	8.34E-03	7.15E-03	1.65E-01	8.34E-03
564580_4184360	564580	4184360	1.21E-01	7.46E-02	6.14E-03	5.27E-03	1.21E-01	6.14E-03
564620_4184360	564620	4184360	7.39E-02	4.54E-02	3.75E-03	3.22E-03	7.39E-02	3.75E-03
564640_4184360	564640	4184360	6.00E-02	3.69E-02	3.05E-03	2.62E-03	6.00E-02	3.05E-03
564660_4184360	564660	4184360	4.99E-02	3.06E-02	2.54E-03	2.18E-03	4.99E-02	2.54E-03
564680_4184360	564680	4184360	4.21E-02	2.59E-02	2.15E-03	1.84E-03	4.21E-02	2.15E-03
564700_4184360	564700	4184360	3.60E-02	2.21E-02	1.84E-03	1.58E-03	3.60E-02	1.84E-03
564720_4184360	564720	4184360	3.10E-02	1.90E-02	1.59E-03	1.36E-03	3.10E-02	1.59E-03
564740_4184360	564740	4184360	2.70E-02	1.66E-02	1.39E-03	1.19E-03	2.70E-02	1.39E-03
564760_4184360	564760	4184360	2.38E-02	1.46E-02	1.22E-03	1.05E-03	2.38E-02	1.22E-03
564780_4184360	564780	4184360	2.12E-02	1.31E-02	1.09E-03	9.35E-04	2.12E-02	1.09E-03
564140_4184380	564140	4184380	2.95E-03	1.82E-03	1.83E-04	1.55E-04	2.95E-03	1.83E-04
564160_4184380	564160	4184380	3.29E-03	2.03E-03	2.11E-04	1.79E-04	3.29E-03	2.11E-04
564180_4184380	564180	4184380	3.70E-03	2.28E-03	2.34E-04	1.99E-04	3.70E-03	2.34E-04
564200_4184380	564200	4184380	4.17E-03	2.57E-03	2.58E-04	2.19E-04	4.17E-03	2.58E-04
564220_4184380	564220	4184380	4.76E-03	2.93E-03	2.88E-04	2.45E-04	4.76E-03	2.88E-04
564240_4184380	564240	4184380	5.50E-03	3.39E-03	3.27E-04	2.78E-04	5.50E-03	3.27E-04
564260_4184380	564260	4184380	6.44E-03	3.97E-03	3.79E-04	3.23E-04	6.44E-03	3.79E-04
564280_4184380	564280	4184380	7.67E-03	4.73E-03	4.55E-04	3.87E-04	7.67E-03	4.55E-04

Diesel Particulate Matter concentration, $C_{PM2.5}$ (ug/m^3)

Lookup	X (UTM)	Y (UTM	Unmitigated 2021	Unmitigated 2022	Mitigated 2021	Mitigated 2022	Uncontrolled PM$_{2.5}$ Concentration Max	Controlled PM$_{2.5}$ Concentration 2021
564640_4184380	564640	4184380	5.87E-02	3.61E-02	2.99E-03	2.57E-03	5.87E-02	2.99E-03
564660_4184380	564660	4184380	4.88E-02	3.00E-02	2.49E-03	2.14E-03	4.88E-02	2.49E-03
564680_4184380	564680	4184380	4.13E-02	2.54E-02	2.11E-03	1.81E-03	4.13E-02	2.11E-03
564700_4184380	564700	4184380	3.53E-02	2.17E-02	1.81E-03	1.55E-03	3.53E-02	1.81E-03
564720_4184380	564720	4184380	3.04E-02	1.87E-02	1.56E-03	1.34E-03	3.04E-02	1.56E-03
564740_4184380	564740	4184380	2.66E-02	1.63E-02	1.36E-03	1.17E-03	2.66E-02	1.36E-03
564760_4184380	564760	4184380	2.35E-02	1.44E-02	1.21E-03	1.03E-03	2.35E-02	1.21E-03
564780_4184380	564780	4184380	2.09E-02	1.29E-02	1.08E-03	9.21E-04	2.09E-02	1.08E-03
564140_4184400	564140	4184400	2.86E-03	1.76E-03	1.65E-04	1.41E-04	2.86E-03	1.65E-04
564160_4184400	564160	4184400	3.18E-03	1.96E-03	1.85E-04	1.58E-04	3.18E-03	1.85E-04
564180_4184400	564180	4184400	3.57E-03	2.20E-03	2.08E-04	1.77E-04	3.57E-03	2.08E-04
564200_4184400	564200	4184400	4.03E-03	2.48E-03	2.33E-04	1.99E-04	4.03E-03	2.33E-04
564220_4184400	564220	4184400	4.59E-03	2.83E-03	2.64E-04	2.25E-04	4.59E-03	2.64E-04
564240_4184400	564240	4184400	5.29E-03	3.26E-03	3.03E-04	2.58E-04	5.29E-03	3.03E-04
564260_4184400	564260	4184400	6.18E-03	3.81E-03	3.53E-04	3.01E-04	6.18E-03	3.53E-04
564280_4184400	564280	4184400	7.34E-03	4.52E-03	4.22E-04	3.60E-04	7.34E-03	4.22E-04
564300_4184400	564300	4184400	8.90E-03	5.49E-03	5.27E-04	4.49E-04	8.90E-03	5.27E-04
564540_4184400	564540	4184400	1.44E-01	8.88E-02	7.34E-03	6.29E-03	1.44E-01	7.34E-03
564560_4184400	564560	4184400	1.17E-01	7.20E-02	5.96E-03	5.11E-03	1.17E-01	5.96E-03
564640_4184400	564640	4184400	5.17E-02	3.18E-02	2.64E-03	2.26E-03	5.17E-02	2.64E-03
564660_4184400	564660	4184400	4.38E-02	2.69E-02	2.24E-03	1.92E-03	4.38E-02	2.24E-03
564680_4184400	564680	4184400	3.75E-02	2.31E-02	1.92E-03	1.65E-03	3.75E-02	1.92E-03
564700_4184400	564700	4184400	3.25E-02	2.00E-02	1.67E-03	1.43E-03	3.25E-02	1.67E-03
564720_4184400	564720	4184400	2.83E-02	1.74E-02	1.45E-03	1.25E-03	2.83E-02	1.45E-03
564740_4184400	564740	4184400	2.49E-02	1.53E-02	1.28E-03	1.10E-03	2.49E-02	1.28E-03
564760_4184400	564760	4184400	2.22E-02	1.36E-02	1.14E-03	9.78E-04	2.22E-02	1.14E-03
564780_4184400	564780	4184400	1.97E-02	1.21E-02	1.02E-03	8.71E-04	1.97E-02	1.02E-03
564140_4184420	564140	4184420	2.77E-03	1.70E-03	1.55E-04	1.32E-04	2.77E-03	1.55E-04
564160_4184420	564160	4184420	3.07E-03	1.89E-03	1.73E-04	1.48E-04	3.07E-03	1.73E-04
564180_4184420	564180	4184420	3.44E-03	2.12E-03	1.94E-04	1.65E-04	3.44E-03	1.94E-04
564200_4184420	564200	4184420	3.88E-03	2.39E-03	2.18E-04	1.86E-04	3.88E-03	2.18E-04
564220_4184420	564220	4184420	4.41E-03	2.72E-03	2.47E-04	2.11E-04	4.41E-03	2.47E-04
564240_4184420	564240	4184420	5.07E-03	3.12E-03	2.84E-04	2.42E-04	5.07E-03	2.84E-04
564260_4184420	564260	4184420	5.90E-03	3.64E-03	3.30E-04	2.82E-04	5.90E-03	3.30E-04
564280_4184420	564280	4184420	6.98E-03	4.30E-03	3.93E-04	3.35E-04	6.98E-03	3.93E-04
564300_4184420	564300	4184420	8.41E-03	5.18E-03	4.81E-04	4.11E-04	8.41E-03	4.81E-04
564520_4184420	564520	4184420	9.00E-02	5.53E-02	4.64E-03	3.97E-03	9.00E-02	4.64E-03
564540_4184420	564540	4184420	8.18E-02	5.03E-02	4.21E-03	3.60E-03	8.18E-02	4.21E-03
564560_4184420	564560	4184420	7.26E-02	4.46E-02	3.73E-03	3.19E-03	7.26E-02	3.73E-03
564600_4184420	564600	4184420	5.47E-02	3.36E-02	2.81E-03	2.41E-03	5.47E-02	2.81E-03
564620_4184420	564620	4184420	4.74E-02	2.92E-02	2.44E-03	2.09E-03	4.74E-02	2.44E-03
564640_4184420	564640	4184420	4.14E-02	2.54E-02	2.13E-03	1.82E-03	4.14E-02	2.13E-03
564660_4184420	564660	4184420	3.61E-02	2.22E-02	1.86E-03	1.59E-03	3.61E-02	1.86E-03
564680_4184420	564680	4184420	3.17E-02	1.95E-02	1.63E-03	1.40E-03	3.17E-02	1.63E-03
564700_4184420	564700	4184420	2.81E-02	1.72E-02	1.45E-03	1.24E-03	2.81E-02	1.45E-03
564720_4184420	564720	4184420	2.49E-02	1.53E-02	1.28E-03	1.10E-03	2.49E-02	1.28E-03
564740_4184420	564740	4184420	2.23E-02	1.37E-02	1.15E-03	9.83E-04	2.23E-02	1.15E-03
564760_4184420	564760	4184420	1.99E-02	1.23E-02	1.03E-03	8.81E-04	1.99E-02	1.03E-03
564780_4184420	564780	4184420	1.79E-02	1.10E-02	9.25E-04	7.92E-04	1.79E-02	9.25E-04
564140_4184440	564140	4184440	2.67E-03	1.64E-03	1.47E-04	1.26E-04	2.67E-03	1.47E-04
564160_4184440	564160	4184440	2.96E-03	1.82E-03	1.64E-04	1.40E-04	2.96E-03	1.64E-04
564180_4184440	564180	4184440	3.31E-03	2.03E-03	1.83E-04	1.56E-04	3.31E-03	1.83E-04
564200_4184440	564200	4184440	3.72E-03	2.29E-03	2.06E-04	1.76E-04	3.72E-03	2.06E-04
564220_4184440	564220	4184440	4.23E-03	2.60E-03	2.33E-04	1.99E-04	4.23E-03	2.33E-04
564240_4184440	564240	4184440	4.85E-03	2.98E-03	2.68E-04	2.29E-04	4.85E-03	2.68E-04
564260_4184440	564260	4184440	5.62E-03	3.46E-03	3.11E-04	2.66E-04	5.62E-03	3.11E-04
564280_4184440	564280	4184440	6.61E-03	4.07E-03	3.67E-04	3.14E-04	6.61E-03	3.67E-04
564300_4184440	564300	4184440	7.90E-03	4.87E-03	4.43E-04	3.78E-04	7.90E-03	4.43E-04
564320_4184440	564320	4184440	9.69E-03	5.97E-03	5.62E-04	4.79E-04	9.69E-03	5.62E-04
564520_4184440	564520	4184440	5.23E-02	3.22E-02	2.76E-03	2.37E-03	5.23E-02	2.76E-03
564540_4184440	564540	4184440	4.91E-02	3.02E-02	2.58E-03	2.21E-03	4.91E-02	2.58E-03
564560_4184440	564560	4184440	4.54E-02	2.79E-02	2.37E-03	2.03E-03	4.54E-02	2.37E-03
564580_4184440	564580	4184440	4.15E-02	2.55E-02	2.17E-03	1.85E-03	4.15E-02	2.17E-03
564660_4184440	564660	4184440	2.80E-02	1.72E-02	1.45E-03	1.24E-03	2.80E-02	1.45E-03
564680_4184440	564680	4184440	2.53E-02	1.56E-02	1.31E-03	1.12E-03	2.53E-02	1.31E-03
564700_4184440	564700	4184440	2.29E-02	1.41E-02	1.19E-03	1.02E-03	2.29E-02	1.19E-03
564720_4184440	564720	4184440	2.08E-02	1.28E-02	1.08E-03	9.25E-04	2.08E-02	1.08E-03
564740_4184440	564740	4184440	1.90E-02	1.17E-02	9.83E-04	8.41E-04	1.90E-02	9.83E-04
564760_4184440	564760	4184440	1.72E-02	1.06E-02	8.94E-04	7.66E-04	1.72E-02	8.94E-04
564780_4184440	564780	4184440	1.58E-02	9.69E-03	8.17E-04	7.00E-04	1.58E-02	8.17E-04
564160_4184460	564160	4184460	2.85E-03	1.75E-03	1.56E-04	1.33E-04	2.85E-03	1.56E-04
564180_4184460	564180	4184460	3.18E-03	1.96E-03	1.74E-04	1.49E-04	3.18E-03	1.74E-04
564200_4184460	564200	4184460	3.57E-03	2.20E-03	1.96E-04	1.67E-04	3.57E-03	1.96E-04
564220_4184460	564220	4184460	4.05E-03	2.49E-03	2.22E-04	1.89E-04	4.05E-03	2.22E-04
564240_4184460	564240	4184460	4.63E-03	2.85E-03	2.53E-04	2.16E-04	4.63E-03	2.53E-04
564260_4184460	564260	4184460	5.34E-03	3.29E-03	2.93E-04	2.50E-04	5.34E-03	2.93E-04
564280_4184460	564280	4184460	6.26E-03	3.85E-03	3.44E-04	2.94E-04	6.26E-03	3.44E-04
564300_4184460	564300	4184460	7.45E-03	4.58E-03	4.12E-04	3.52E-04	7.45E-03	4.12E-04
564320_4184460	564320	4184460	9.04E-03	5.57E-03	5.10E-04	4.35E-04	9.04E-03	5.10E-04
564480_4184460	564480	4184460	3.36E-02	2.07E-02	1.98E-03	1.69E-03	3.36E-02	1.98E-03
564500_4184460	564500	4184460	3.41E-02	2.10E-02	1.92E-03	1.64E-03	3.41E-02	1.92E-03
564540_4184460	564540	4184460	3.23E-02	1.99E-02	1.75E-03	1.50E-03	3.23E-02	1.75E-03
564560_4184460	564560	4184460	3.06E-02	1.88E-02	1.64E-03	1.40E-03	3.06E-02	1.64E-03
564580_4184460	564580	4184460	2.84E-02	1.75E-02	1.51E-03	1.30E-03	2.84E-02	1.51E-03
564700_4184460	564700	4184460	1.82E-02	1.12E-02	9.51E-04	8.14E-04	1.82E-02	9.51E-04
564720_4184460	564720	4184460	1.69E-02	1.04E-02	8.81E-04	7.54E-04	1.69E-02	8.81E-04
564740_4184460	564740	4184460	1.56E-02	9.61E-03	8.16E-04	6.98E-04	1.56E-02	8.16E-04
564760_4184460	564760	4184460	1.45E-02	8.90E-03	7.55E-04	6.46E-04	1.45E-02	7.55E-04
564780_4184460	564780	4184460	1.34E-02	8.26E-03	7.01E-04	6.00E-04	1.34E-02	7.01E-04
564160_4184480	564160	4184480	2.75E-03	1.69E-03	1.49E-04	1.28E-04	2.75E-03	1.49E-04
564180_4184480	564180	4184480	3.06E-03	1.88E-03	1.66E-04	1.42E-04	3.06E-03	1.66E-04
564200_4184480	564200	4184480	3.43E-03	2.11E-03	1.87E-04	1.60E-04	3.43E-03	1.87E-04
564220_4184480	564220	4184480	3.88E-03	2.39E-03	2.11E-04	1.80E-04	3.88E-03	2.11E-04

Diesel Particulate Matter concentration, $C_{PM2.5}$ (ug/m^3)

Lookup	X (UTM)	Y (UTM	Unmitigated 2021	Unmitigated 2022	Mitigated 2021	Mitigated 2022	Uncontrolled $PM_{2.5}$ Concentration Max	Controlled $PM_{2.5}$ Concentration 2021
564240_4184480	564240	4184480	4.43E-03	2.72E-03	2.41E-04	2.06E-04	4.43E-03	2.41E-04
564260_4184480	564260	4184480	5.09E-03	3.13E-03	2.77E-04	2.37E-04	5.09E-03	2.77E-04
564280_4184480	564280	4184480	5.93E-03	3.65E-03	3.23E-04	2.76E-04	5.93E-03	3.23E-04
564300_4184480	564300	4184480	7.01E-03	4.31E-03	3.84E-04	3.28E-04	7.01E-03	3.84E-04
564320_4184480	564320	4184480	8.40E-03	5.17E-03	4.67E-04	3.98E-04	8.40E-03	4.67E-04
564340_4184480	564340	4184480	1.01E-02	6.22E-03	5.82E-04	4.96E-04	1.01E-02	5.82E-04
564500_4184480	564500	4184480	2.34E-02	1.44E-02	1.42E-03	1.21E-03	2.34E-02	1.42E-03
564520_4184480	564520	4184480	2.34E-02	1.44E-02	1.36E-03	1.16E-03	2.34E-02	1.36E-03
564540_4184480	564540	4184480	2.29E-02	1.41E-02	1.29E-03	1.10E-03	2.29E-02	1.29E-03
564700_4184480	564700	4184480	1.43E-02	8.77E-03	7.54E-04	6.45E-04	1.43E-02	7.54E-04
564720_4184480	564720	4184480	1.34E-02	8.27E-03	7.09E-04	6.07E-04	1.34E-02	7.09E-04
564740_4184480	564740	4184480	1.26E-02	7.77E-03	6.66E-04	5.70E-04	1.26E-02	6.66E-04
564760_4184480	564760	4184480	1.19E-02	7.33E-03	6.26E-04	5.36E-04	1.19E-02	6.26E-04
564780_4184480	564780	4184480	1.11E-02	6.85E-03	5.84E-04	5.00E-04	1.11E-02	5.84E-04
564160_4184500	564160	4184500	2.65E-03	1.63E-03	1.43E-04	1.23E-04	2.65E-03	1.43E-04
564180_4184500	564180	4184500	2.95E-03	1.81E-03	1.59E-04	1.36E-04	2.95E-03	1.59E-04
564200_4184500	564200	4184500	3.30E-03	2.03E-03	1.79E-04	1.53E-04	3.30E-03	1.79E-04
564220_4184500	564220	4184500	3.72E-03	2.29E-03	2.01E-04	1.72E-04	3.72E-03	2.01E-04
564240_4184500	564240	4184500	4.24E-03	2.61E-03	2.29E-04	1.96E-04	4.24E-03	2.29E-04
564260_4184500	564260	4184500	4.85E-03	2.99E-03	2.63E-04	2.24E-04	4.85E-03	2.63E-04
564280_4184500	564280	4184500	5.60E-03	3.45E-03	3.04E-04	2.60E-04	5.60E-03	3.04E-04
564300_4184500	564300	4184500	6.52E-03	4.02E-03	3.55E-04	3.04E-04	6.52E-03	3.55E-04
564320_4184500	564320	4184500	7.65E-03	4.71E-03	4.21E-04	3.60E-04	7.65E-03	4.21E-04
564340_4184500	564340	4184500	8.95E-03	5.51E-03	5.05E-04	4.31E-04	8.95E-03	5.05E-04
564400_4184500	564400	4184500	1.31E-02	8.06E-03	7.63E-04	6.51E-04	1.31E-02	7.63E-04
564420_4184500	564420	4184500	1.43E-02	8.78E-03	8.13E-04	6.93E-04	1.43E-02	8.13E-04
564480_4184500	564480	4184500	1.66E-02	1.02E-02	1.02E-03	8.70E-04	1.66E-02	1.02E-03
564500_4184500	564500	4184500	1.70E-02	1.05E-02	1.17E-03	9.96E-04	1.70E-02	1.17E-03
564540_4184500	564540	4184500	1.68E-02	1.03E-02	9.94E-04	8.47E-04	1.68E-02	9.94E-04
564700_4184500	564700	4184500	1.13E-02	6.92E-03	6.03E-04	5.16E-04	1.13E-02	6.03E-04
564720_4184500	564720	4184500	1.07E-02	6.59E-03	5.71E-04	4.89E-04	1.07E-02	5.71E-04
564180_4184520	564180	4184520	2.85E-03	1.75E-03	1.53E-04	1.31E-04	2.85E-03	1.53E-04
564200_4184520	564200	4184520	3.18E-03	1.96E-03	1.71E-04	1.46E-04	3.18E-03	1.71E-04
564220_4184520	564220	4184520	3.58E-03	2.20E-03	1.92E-04	1.65E-04	3.58E-03	1.92E-04
564240_4184520	564240	4184520	4.05E-03	2.49E-03	2.18E-04	1.86E-04	4.05E-03	2.18E-04
564260_4184520	564260	4184520	4.61E-03	2.83E-03	2.48E-04	2.12E-04	4.61E-03	2.48E-04
564280_4184520	564280	4184520	5.26E-03	3.24E-03	2.84E-04	2.43E-04	5.26E-03	2.84E-04
564300_4184520	564300	4184520	6.02E-03	3.70E-03	3.26E-04	2.79E-04	6.02E-03	3.26E-04
564320_4184520	564320	4184520	6.88E-03	4.23E-03	3.76E-04	3.21E-04	6.88E-03	3.76E-04
564340_4184520	564340	4184520	7.82E-03	4.81E-03	4.36E-04	3.72E-04	7.82E-03	4.36E-04
564360_4184520	564360	4184520	8.77E-03	5.41E-03	5.16E-04	4.40E-04	8.77E-03	5.16E-04
564380_4184520	564380	4184520	9.71E-03	6.00E-03	6.42E-04	5.45E-04	9.71E-03	6.42E-04
564440_4184520	564440	4184520	1.18E-02	7.30E-03	7.13E-04	6.07E-04	1.18E-02	7.13E-04
564460_4184520	564460	4184520	1.23E-02	7.62E-03	7.84E-04	6.66E-04	1.23E-02	7.84E-04
564520_4184520	564520	4184520	1.29E-02	7.97E-03	8.58E-04	7.28E-04	1.29E-02	8.58E-04
564540_4184520	564540	4184520	1.27E-02	7.86E-03	7.88E-04	6.71E-04	1.27E-02	7.88E-04
564560_4184520	564560	4184520	1.24E-02	7.64E-03	7.34E-04	6.26E-04	1.24E-02	7.34E-04
564180_4184540	564180	4184540	2.75E-03	1.69E-03	1.48E-04	1.26E-04	2.75E-03	1.48E-04
564200_4184540	564200	4184540	3.06E-03	1.89E-03	1.64E-04	1.40E-04	3.06E-03	1.64E-04
564220_4184540	564220	4184540	3.43E-03	2.11E-03	1.84E-04	1.57E-04	3.43E-03	1.84E-04
564240_4184540	564240	4184540	3.85E-03	2.37E-03	2.07E-04	1.77E-04	3.85E-03	2.07E-04
564260_4184540	564260	4184540	4.34E-03	2.67E-03	2.33E-04	1.99E-04	4.34E-03	2.33E-04
564280_4184540	564280	4184540	4.89E-03	3.01E-03	2.63E-04	2.25E-04	4.89E-03	2.63E-04
564300_4184540	564300	4184540	5.49E-03	3.38E-03	2.97E-04	2.54E-04	5.49E-03	2.97E-04
564320_4184540	564320	4184540	6.13E-03	3.77E-03	3.34E-04	2.85E-04	6.13E-03	3.34E-04
564340_4184540	564340	4184540	6.78E-03	4.17E-03	3.75E-04	3.21E-04	6.78E-03	3.75E-04
564360_4184540	564360	4184540	7.39E-03	4.55E-03	4.25E-04	3.63E-04	7.39E-03	4.25E-04
564400_4184540	564400	4184540	8.52E-03	5.27E-03	5.69E-04	4.83E-04	8.52E-03	5.69E-04
564420_4184540	564420	4184540	9.07E-03	5.61E-03	6.11E-04	5.19E-04	9.07E-03	6.11E-04
564520_4184540	564520	4184540	1.01E-02	6.27E-03	7.02E-04	5.95E-04	1.01E-02	7.02E-04
564540_4184540	564540	4184540	1.01E-02	6.21E-03	6.45E-04	5.48E-04	1.01E-02	6.45E-04
564560_4184540	564560	4184540	9.89E-03	6.10E-03	6.04E-04	5.14E-04	9.89E-03	6.04E-04
564200_4184560	564200	4184560	2.94E-03	1.81E-03	1.57E-04	1.34E-04	2.94E-03	1.57E-04
564220_4184560	564220	4184560	3.27E-03	2.01E-03	1.75E-04	1.49E-04	3.27E-03	1.75E-04
564240_4184560	564240	4184560	3.64E-03	2.24E-03	1.94E-04	1.66E-04	3.64E-03	1.94E-04
564260_4184560	564260	4184560	4.05E-03	2.49E-03	2.17E-04	1.85E-04	4.05E-03	2.17E-04
564280_4184560	564280	4184560	4.49E-03	2.77E-03	2.41E-04	2.06E-04	4.49E-03	2.41E-04
564300_4184560	564300	4184560	4.96E-03	3.05E-03	2.67E-04	2.28E-04	4.96E-03	2.67E-04
564320_4184560	564320	4184560	5.42E-03	3.34E-03	2.94E-04	2.51E-04	5.42E-03	2.94E-04
564340_4184560	564340	4184560	5.86E-03	3.60E-03	3.22E-04	2.75E-04	5.86E-03	3.22E-04
564360_4184560	564360	4184560	6.25E-03	3.85E-03	3.54E-04	3.02E-04	6.25E-03	3.54E-04
564380_4184560	564380	4184560	6.64E-03	4.10E-03	4.05E-04	3.45E-04	6.64E-03	4.05E-04
564420_4184560	564420	4184560	7.45E-03	4.61E-03	5.25E-04	4.45E-04	7.45E-03	5.25E-04
564440_4184560	564440	4184560	7.70E-03	4.76E-03	5.04E-04	4.28E-04	7.70E-03	5.04E-04
564460_4184560	564460	4184560	7.81E-03	4.82E-03	4.92E-04	4.19E-04	7.81E-03	4.92E-04
564480_4184560	564480	4184560	7.85E-03	4.85E-03	4.87E-04	4.14E-04	7.85E-03	4.87E-04
564500_4184560	564500	4184560	7.95E-03	4.91E-03	4.97E-04	4.23E-04	7.95E-03	4.97E-04
564540_4184560	564540	4184560	8.14E-03	5.03E-03	5.47E-04	4.64E-04	8.14E-03	5.47E-04
564560_4184560	564560	4184560	8.04E-03	4.96E-03	5.09E-04	4.32E-04	8.04E-03	5.09E-04
564580_4184560	564580	4184560	7.89E-03	4.86E-03	4.79E-04	4.08E-04	7.89E-03	4.79E-04
564600_4184560	564600	4184560	7.64E-03	4.71E-03	4.54E-04	3.87E-04	7.64E-03	4.54E-04
564620_4184560	564620	4184560	7.36E-03	4.53E-03	4.28E-04	3.65E-04	7.36E-03	4.28E-04
564640_4184560	564640	4184560	7.06E-03	4.35E-03	4.05E-04	3.46E-04	7.06E-03	4.05E-04
564220_4184580	564220	4184580	3.10E-03	1.91E-03	1.65E-04	1.41E-04	3.10E-03	1.65E-04
564240_4184580	564240	4184580	3.41E-03	2.10E-03	1.82E-04	1.56E-04	3.41E-03	1.82E-04
564260_4184580	564260	4184580	3.75E-03	2.31E-03	2.00E-04	1.71E-04	3.75E-03	2.00E-04
564280_4184580	564280	4184580	4.10E-03	2.52E-03	2.19E-04	1.87E-04	4.10E-03	2.19E-04
564300_4184580	564300	4184580	4.44E-03	2.73E-03	2.39E-04	2.04E-04	4.44E-03	2.39E-04
564320_4184580	564320	4184580	4.77E-03	2.93E-03	2.58E-04	2.21E-04	4.77E-03	2.58E-04
564340_4184580	564340	4184580	5.06E-03	3.12E-03	2.77E-04	2.37E-04	5.06E-03	2.77E-04
564360_4184580	564360	4184580	5.33E-03	3.28E-03	2.97E-04	2.54E-04	5.33E-03	2.97E-04
564380_4184580	564380	4184580	5.59E-03	3.44E-03	3.21E-04	2.74E-04	5.59E-03	3.21E-04
564400_4184580	564400	4184580	5.88E-03	3.63E-03	3.47E-04	2.96E-04	5.88E-03	3.47E-04

Diesel Particulate Matter concentration, $C_{PM2.5}$ (ug/m^3)

Lookup	X (UTM)	Y (UTM	Unmitigated 2021	Unmitigated 2022	Mitigated 2021	Mitigated 2022	Uncontrolled $PM_{2.5}$ Concentration Max	Controlled $PM_{2.5}$ Concentration 2021
564420_4184580	564420	4184580	6.16E-03	3.80E-03	3.67E-04	3.13E-04	6.16E-03	3.67E-04
564440_4184580	564440	4184580	6.34E-03	3.91E-03	3.77E-04	3.21E-04	6.34E-03	3.77E-04
564460_4184580	564460	4184580	6.40E-03	3.94E-03	3.79E-04	3.23E-04	6.40E-03	3.79E-04
564480_4184580	564480	4184580	6.42E-03	3.96E-03	3.81E-04	3.25E-04	6.42E-03	3.81E-04
564500_4184580	564500	4184580	6.48E-03	4.00E-03	3.91E-04	3.33E-04	6.48E-03	3.91E-04
564520_4184580	564520	4184580	6.60E-03	4.08E-03	4.30E-04	3.65E-04	6.60E-03	4.30E-04
564540_4184580	564540	4184580	6.69E-03	4.14E-03	4.85E-04	4.11E-04	6.69E-03	4.85E-04
564560_4184580	564560	4184580	6.64E-03	4.10E-03	4.41E-04	3.74E-04	6.64E-03	4.41E-04
564580_4184580	564580	4184580	6.54E-03	4.04E-03	4.11E-04	3.50E-04	6.54E-03	4.11E-04
564600_4184580	564600	4184580	6.35E-03	3.91E-03	3.87E-04	3.30E-04	6.35E-03	3.87E-04
564620_4184580	564620	4184580	6.18E-03	3.81E-03	3.67E-04	3.13E-04	6.18E-03	3.67E-04
564640_4184580	564640	4184580	5.96E-03	3.67E-03	3.48E-04	2.96E-04	5.96E-03	3.48E-04
564220_4184600	564220	4184600	2.92E-03	1.79E-03	1.55E-04	1.33E-04	2.92E-03	1.55E-04
564240_4184600	564240	4184600	3.18E-03	1.95E-03	1.69E-04	1.45E-04	3.18E-03	1.69E-04
564260_4184600	564260	4184600	3.44E-03	2.12E-03	1.83E-04	1.57E-04	3.44E-03	1.83E-04
564280_4184600	564280	4184600	3.71E-03	2.28E-03	1.98E-04	1.69E-04	3.71E-03	1.98E-04
564300_4184600	564300	4184600	3.96E-03	2.44E-03	2.12E-04	1.82E-04	3.96E-03	2.12E-04
564320_4184600	564320	4184600	4.19E-03	2.58E-03	2.26E-04	1.93E-04	4.19E-03	2.26E-04
564340_4184600	564340	4184600	4.39E-03	2.70E-03	2.39E-04	2.05E-04	4.39E-03	2.39E-04
564360_4184600	564360	4184600	4.59E-03	2.83E-03	2.53E-04	2.16E-04	4.59E-03	2.53E-04
564380_4184600	564380	4184600	4.80E-03	2.95E-03	2.68E-04	2.29E-04	4.80E-03	2.68E-04
564400_4184600	564400	4184600	5.01E-03	3.09E-03	2.82E-04	2.41E-04	5.01E-03	2.82E-04
564420_4184600	564420	4184600	5.23E-03	3.22E-03	2.97E-04	2.53E-04	5.23E-03	2.97E-04
564480_4184600	564480	4184600	5.35E-03	3.30E-03	3.08E-04	2.63E-04	5.35E-03	3.08E-04
564560_4184600	564560	4184600	5.57E-03	3.45E-03	3.91E-04	3.32E-04	5.57E-03	3.91E-04
564580_4184600	564580	4184600	5.50E-03	3.40E-03	3.60E-04	3.06E-04	5.50E-03	3.60E-04
564600_4184600	564600	4184600	5.36E-03	3.31E-03	3.38E-04	2.87E-04	5.36E-03	3.38E-04
564620_4184600	564620	4184600	5.22E-03	3.22E-03	3.18E-04	2.71E-04	5.22E-03	3.18E-04
564640_4184600	564640	4184600	5.08E-03	3.13E-03	3.02E-04	2.57E-04	5.08E-03	3.02E-04
564240_4184620	564240	4184620	2.94E-03	1.81E-03	1.56E-04	1.34E-04	2.94E-03	1.56E-04
564260_4184620	564260	4184620	3.15E-03	1.94E-03	1.68E-04	1.43E-04	3.15E-03	1.68E-04
564280_4184620	564280	4184620	3.34E-03	2.06E-03	1.79E-04	1.53E-04	3.34E-03	1.79E-04
564300_4184620	564300	4184620	3.52E-03	2.17E-03	1.89E-04	1.62E-04	3.52E-03	1.89E-04
564320_4184620	564320	4184620	3.69E-03	2.27E-03	1.99E-04	1.70E-04	3.69E-03	1.99E-04
564340_4184620	564340	4184620	3.84E-03	2.36E-03	2.08E-04	1.78E-04	3.84E-03	2.08E-04
564360_4184620	564360	4184620	3.99E-03	2.45E-03	2.18E-04	1.86E-04	3.99E-03	2.18E-04
564380_4184620	564380	4184620	4.14E-03	2.55E-03	2.28E-04	1.95E-04	4.14E-03	2.28E-04
564400_4184620	564400	4184620	4.33E-03	2.66E-03	2.39E-04	2.04E-04	4.33E-03	2.39E-04
564560_4184620	564560	4184620	4.69E-03	2.91E-03	3.64E-04	3.08E-04	4.69E-03	3.64E-04
564580_4184620	564580	4184620	4.64E-03	2.87E-03	3.26E-04	2.76E-04	4.64E-03	3.26E-04
564600_4184620	564600	4184620	4.57E-03	2.82E-03	3.00E-04	2.55E-04	4.57E-03	3.00E-04
564620_4184620	564620	4184620	4.47E-03	2.76E-03	2.80E-04	2.38E-04	4.47E-03	2.80E-04
564640_4184620	564640	4184620	4.38E-03	2.70E-03	2.64E-04	2.25E-04	4.38E-03	2.64E-04
564660_4184620	564660	4184620	4.24E-03	2.61E-03	2.50E-04	2.13E-04	4.24E-03	2.50E-04
564280_4184640	564280	4184640	3.01E-03	1.85E-03	1.61E-04	1.37E-04	3.01E-03	1.61E-04
564300_4184640	564300	4184640	3.14E-03	1.93E-03	1.68E-04	1.44E-04	3.14E-03	1.68E-04
564320_4184640	564320	4184640	3.26E-03	2.00E-03	1.75E-04	1.50E-04	3.26E-03	1.75E-04
564340_4184640	564340	4184640	3.37E-03	2.07E-03	1.82E-04	1.56E-04	3.37E-03	1.82E-04
564360_4184640	564360	4184640	3.47E-03	2.14E-03	1.88E-04	1.61E-04	3.47E-03	1.88E-04
564380_4184640	564380	4184640	3.59E-03	2.21E-03	1.96E-04	1.67E-04	3.59E-03	1.96E-04
564400_4184640	564400	4184640	3.75E-03	2.31E-03	2.05E-04	1.75E-04	3.75E-03	2.05E-04
564420_4184640	564420	4184640	3.87E-03	2.38E-03	2.13E-04	1.82E-04	3.87E-03	2.13E-04
564580_4184640	564580	4184640	4.01E-03	2.49E-03	3.02E-04	2.56E-04	4.01E-03	3.02E-04
564600_4184640	564600	4184640	3.96E-03	2.45E-03	2.71E-04	2.30E-04	3.96E-03	2.71E-04
564620_4184640	564620	4184640	3.83E-03	2.36E-03	2.47E-04	2.10E-04	3.83E-03	2.47E-04
564640_4184640	564640	4184640	3.75E-03	2.31E-03	2.30E-04	1.96E-04	3.75E-03	2.30E-04
564660_4184640	564660	4184640	3.68E-03	2.27E-03	2.18E-04	1.86E-04	3.68E-03	2.18E-04
564300_4184660	564300	4184660	2.80E-03	1.72E-03	1.50E-04	1.28E-04	2.80E-03	1.50E-04
564320_4184660	564320	4184660	2.89E-03	1.78E-03	1.55E-04	1.33E-04	2.89E-03	1.55E-04
564340_4184660	564340	4184660	2.98E-03	1.83E-03	1.60E-04	1.37E-04	2.98E-03	1.60E-04
564360_4184660	564360	4184660	3.07E-03	1.89E-03	1.66E-04	1.42E-04	3.07E-03	1.66E-04
564380_4184660	564380	4184660	3.17E-03	1.95E-03	1.72E-04	1.47E-04	3.17E-03	1.72E-04
564400_4184660	564400	4184660	3.27E-03	2.01E-03	1.78E-04	1.52E-04	3.27E-03	1.78E-04
564420_4184660	564420	4184660	3.38E-03	2.08E-03	1.84E-04	1.57E-04	3.38E-03	1.84E-04
564540_4184660	564540	4184660	3.39E-03	2.09E-03	2.06E-04	1.75E-04	3.39E-03	2.06E-04
564580_4184660	564580	4184660	3.49E-03	2.17E-03	2.90E-04	2.45E-04	3.49E-03	2.90E-04
564600_4184660	564600	4184660	3.45E-03	2.13E-03	2.42E-04	2.05E-04	3.45E-03	2.42E-04
564620_4184660	564620	4184660	3.36E-03	2.08E-03	2.16E-04	1.84E-04	3.36E-03	2.16E-04
564340_4184680	564340	4184680	2.65E-03	1.63E-03	1.42E-04	1.22E-04	2.65E-03	1.42E-04
564360_4184680	564360	4184680	2.73E-03	1.68E-03	1.47E-04	1.26E-04	2.73E-03	1.47E-04
564380_4184680	564380	4184680	2.81E-03	1.73E-03	1.52E-04	1.30E-04	2.81E-03	1.52E-04
564400_4184680	564400	4184680	2.89E-03	1.78E-03	1.56E-04	1.34E-04	2.89E-03	1.56E-04
564420_4184680	564420	4184680	2.95E-03	1.82E-03	1.60E-04	1.37E-04	2.95E-03	1.60E-04
564440_4184680	564440	4184680	2.97E-03	1.83E-03	1.62E-04	1.39E-04	2.97E-03	1.62E-04
564500_4184680	564500	4184680	2.93E-03	1.81E-03	1.64E-04	1.40E-04	2.93E-03	1.64E-04
564520_4184680	564520	4184680	2.94E-03	1.81E-03	1.67E-04	1.43E-04	2.94E-03	1.67E-04
564540_4184680	564540	4184680	2.96E-03	1.82E-03	1.73E-04	1.47E-04	2.96E-03	1.73E-04
564560_4184680	564560	4184680	2.97E-03	1.83E-03	1.84E-04	1.57E-04	2.97E-03	1.84E-04
564400_4184700	564400	4184700	2.57E-03	1.58E-03	1.39E-04	1.19E-04	2.57E-03	1.39E-04
564420_4184700	564420	4184700	2.61E-03	1.61E-03	1.41E-04	1.21E-04	2.61E-03	1.41E-04
564440_4184700	564440	4184700	2.63E-03	1.62E-03	1.43E-04	1.22E-04	2.63E-03	1.43E-04
564460_4184700	564460	4184700	2.62E-03	1.61E-03	1.43E-04	1.22E-04	2.62E-03	1.43E-04
564480_4184700	564480	4184700	2.60E-03	1.60E-03	1.43E-04	1.22E-04	2.60E-03	1.43E-04
564500_4184700	564500	4184700	2.59E-03	1.60E-03	1.44E-04	1.23E-04	2.59E-03	1.44E-04
564520_4184700	564520	4184700	2.59E-03	1.60E-03	1.45E-04	1.24E-04	2.59E-03	1.45E-04

APPENDIX D

Historical Resource Evaluation

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memorandum

date	August 26, 2020
to	Pete Vollmann, City of Oakland
cc	Elizabeth Kanner, ESA
from	Becky Urbano, Senior Architectural Historian, ESA
subject	1510 Webster Street – Historical Resource Evaluation Memo

The building at 1510 Webster Street is proposed for demolition in connection with redevelopment of the site with a 19-story, mixed-use residential building. The present two-story building was constructed in 1951 and is currently 69 years of age, making it age-eligible as a potential historical resource for the purposes of the California Environmental Quality Act (CEQA). The building is currently assigned an Oakland Cultural Heritage Survey (OCHS) rating of F3, which means that the building was less than 45 years old when it was originally surveyed (F) and is not located in a historic district (3). This memo serves as a preliminary assessment of eligibility as a historic resource for the purposes of CEQA.

Methodology

Research conducted for this report includes:

- Historical aerial photographs available online;
- Sanborn Fire Insurance Co. maps (Sanborn maps) available online;
- Historical newspapers and periodicals available online; and
- Other online research (e.g. *Internet Archive*, company websites, digital archives and finding aids, etc.)

ESA senior architectural historian Becky Urbano, M.S., is the author of this report and meets the Secretary of the Interior's Professional Qualifications Standards for architectural history. Johanna Kahn, M.Ar.H., who meets the Secretary of the Interior's Professional Qualification Standards for architectural history, provided quality assurance and review.

Architectural Description

The subject property at 1510 Webster Street is a 10,500-square-foot, rectangular parcel on the east side of Webster Street between 15th and 17th streets. It is occupied by the subject building, a 23,280-square-foot commercial building designed in the Modern style. The building's rectangular footprint occupies the entire parcel. It is constructed of poured-in-place, reinforced concrete and is capped by a flat roof. The primary façade is clad with white marble panels with a red Swedish granite water table. The water table is currently covered with plywood and not visible from the street. The subject property contains no landscaping or other site features.

The primary façade faces west on Webster Street (**Figure 1**). The first floor is composed of a central, aluminum storefront pedestrian entrance flanked by polished red granite panels. Plywood panels cover the lower level, obscuring the red granite panels. Above the entry, the façade is composed of a large, central, tripartite glazed area containing multi-lite aluminum windows with alternating fixed and hopper sash. Many of the windows have been painted over, broken, or removed. This glazed area spans the central 60 percent of the façade and is surrounded by flat marble cladding on both sides and above. Graffiti covers nearly half of the marble cladding. An illuminated metal blade sign reading "Tien-Hu, Knitting Co. (US) Inc." is mounted below the roofline at the southern end of primary façade.

The secondary façade faces a parking lot to the north. The façade is clad in smooth stucco that has been painted with a large mural (completed in 2014) and layers of graffiti. There are no doors or windows on this façade.

The south façade abuts a partially constructed building. The adjacent construction site obscures the first floor of the subject building. The upper floor appears to be clad in smooth stucco that has been painted over with layers of graffiti. Views of the building from 2011 show pedestrian entrances on the first and second floors stacked near the center of the façade.

SOURCE: Google Street View, March 2020

Figure 1
Current View of 1510 Webster Street

Historical Context

The following brief history of development in downtown Oakland is an excerpt from the Downtown Oakland Specific Plan Draft EIR:

> By World War I, there was an increased number of industrial establishments in both downtown and along Oakland's waterfront, which in turn contributed to enhanced residential construction in areas made more easily accessible by the popularity and use of the automobile. Oakland's population almost topped 300,000 in the 1920s with new residential enclaves built in both the more upper-scale North Oakland and East Oakland, providing housing for industrial workers… The downtown commercial center was further built out during this era with additional department stores or expansions to older stores; two large movie palaces, the Fox and the Paramount; and skyscrapers, including the Tribune Tower and the Art Deco 1928 Financial Center Building. Many of these buildings and those from the post-earthquake boom are within the boundaries of the Downtown Oakland National Register Historic District […]
>
> Like most of the country, Oakland fell into a period of financial instability in the 1930s, with little to no development, especially downtown. Some construction activity was spurred both by the Federal Housing Act (FHA) of 1934 and the construction of the Oakland Bay Bridge, completed in 1936... It was not until full-scale preparations for and the outset of World War II that Oakland entered its next era of intense industrial, commercial, and economic development. From 1940 to 1945, Oakland's population increased by one third, with a population of nearly 385,000 in 1950. Intensified shipbuilding and harbor activities, including the construction of the Oakland Army Base and the Naval Supply Center, provided much-needed employment for migrating newcomers and established Oakland residents alike […]
>
> In the early 1960s, at the north side of the I-880, the County of Alameda invested in new social service buildings and the City of Oakland in a new police administration building, both near the intersections of 6th Street and Broadway. These large-scale, government projects are sandwiched between the elevated I-880 and Old Oakland along 6th Street.
>
> The 1960s also brought the introduction of the [Bay Area Rapid Transit (BART)] system to provide alternatives to an increasingly car-dependent Bay Area. Several stations along the BART lines serve [d]owntown Oakland, including the Lake Merritt, the 12th Street-City Center, and the 19th Street Stations. These stations resulted in changing uses, development of new building types, and modern construction in their immediate vicinity. A new wave of office skyscrapers, and smaller office and financial institution-related buildings cropped up near these important transit hubs at 12th and 19th streets. ... The Kaiser Center (Welton Beckett and Associates, 1960), the Oakland Museum (Roche Dinkeloo and Associates, Architects, with Dan Kiley Landscape Architect, 1969) and Laney College (Skidmore, Owings & Merrill, 1971) brought a wave of Modern buildings to Lake Merritt's shore.[1]

It is also during this time that Thomas L. Berkley Way (20th Street) between Broadway and Harrison Street became the center of a new banking and financial district. A series of prominent national and regional banks built new, modern headquarters buildings. This development replaced the institutional, residential, and automotive

[1] City of Oakland, *Downtown Oakland Specific Plan Draft Environmental Impact Report (State Clearinghouse No: 2019012008,* prepared by Urban Planning Partners, August 2019, 310-312.

uses that previously existed between Lake Merritt and Broadway. This evolution began in the second half of the 1950s and continued through the early 1970s.[2]

Site and Vicinity History

1510 Webster Street is part of this mid-20th century period of growth in downtown Oakland. It was designed and constructed by the John J. Moore Company for the Alameda County-East Bay Title Company at a cost of $500,000 in 1951 on the site of a former auto repair shop (see **Figures 2 and 3.)**[3]

The building remained in use as a title company office by the Alameda County-East Bay Title Company and its later parent companies through 1982.

In 1994, it was purchased by the Tien-Hu Knitting Co. and converted to a sewing shop. This company remained in the building through approximately 2011, and the building has since been vacant.

Owner and Occupant History

1510 Webster Street was constructed in 1951 by the Alameda County – East Bay Title Insurance Company. This company represented a merger of two earlier title companies and later merged with a number of larger, regional and national companies. A brief history of these various companies and their relationship with the subject property is presented below.

The Alameda County Title Insurance Company was established in 1861.[4] It maintained offices in various locations in downtown Oakland, finally constructing a seven-story brick and terra cotta building on the northeast corner of Franklin and 14th streets. The Beaux-Arts building at 1400 Franklin Street was designed by McCall & Davis and completed in 1924 (**Figure 4**).[5] It is currently known as the Holland Building and is Oakland Landmark #121.[6]

The East Bay Title Insurance Company was formed in February 1923 with temporary offices in the Perry Building at 414 13th Street. In 1924, it constructed a two-story, Italianate office building at 1430 Franklin Street designed by Hamilton Murdock.[7] This extant building has been remodeled.

In 1936, the East Bay Title Insurance Company merged with the Alameda County Title Insurance Company and became The Alameda County-East Bay Title Insurance Company.[8] The unified company moved to the larger office building at 1400 Franklin Street.

[2] City of Oakland, *Eastline Project – 2100 Telegraph EIR, Appendix B: Cultural and Historical Resource Analysis,* prepared by Urban Planning Partners, Bridget Maley, Shayne Watson, and Mark Hulbert, December 2017, 6.

[3] "Title Insurance Firm Moves to $500,000 Home," *Oakland Tribune* (Oakland, CA), June 17,1951, 13; Sanborn Map, 1951; Fred Jones, "Operation – Building!" *Architect and Engineer* (San Francisco, CA), January 1954, 10-15, 20.

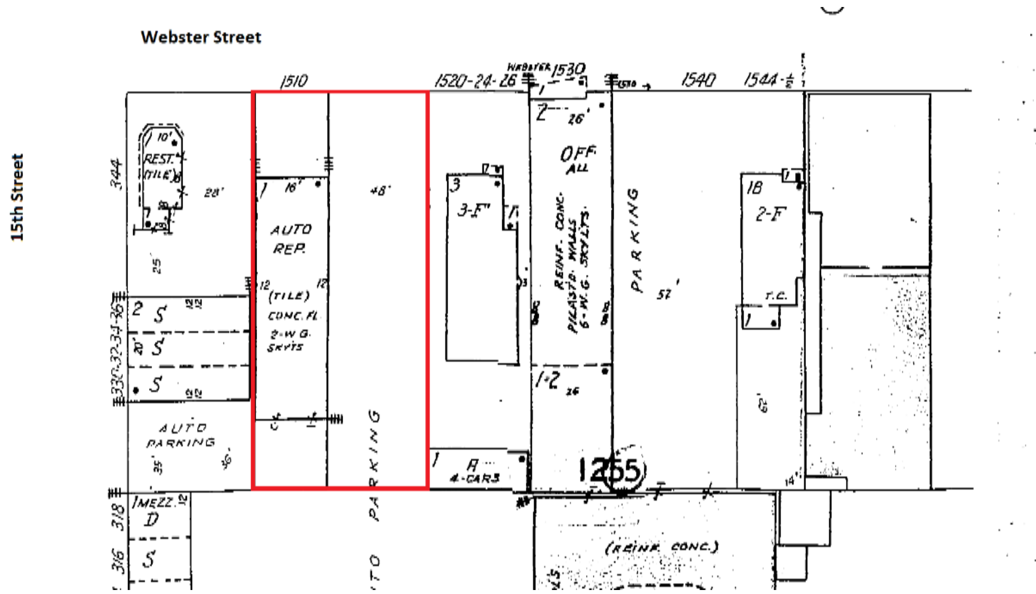
[4] *Oakland Tribune* (Oakland, CA), April 18, 1926, 77.

[5] "New Alameda County Title Insurance Co. Building," *Oakland Tribune* (Oakland, CA), May 11, 1924, 51.

[6] "Alameda County Title Insurance Co. Building," Oakland Wiki (accessed 8/25/2020), localwiki.org/oakland/Alameda_County_Title_Insurance_Co._Building.

[7] "New Home for Title Ins. Co.," *Oakland Tribune* (Oakland, CA), March 30, 1924, 92; "Harry C. Knight in East Bay Title Ins. Co. Building," *Oakland Tribune* (Oakland, CA), November 2, 1924, 75. The current building at 1430 Franklin Street appears to be the same building associated with the East Bay Title Insurance Co. Its façade has been remodeled.

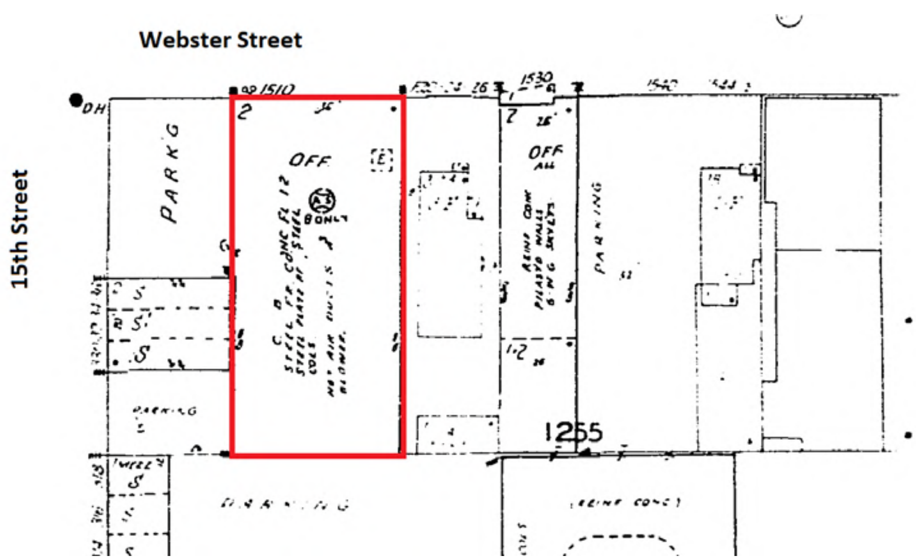
[8] Advertisement, *Oakland Tribune (*Oakland, CA), November 9, 1936, 58.



North is to the right. The subject property is outlined in red.

SOURCE: *ProQuest*

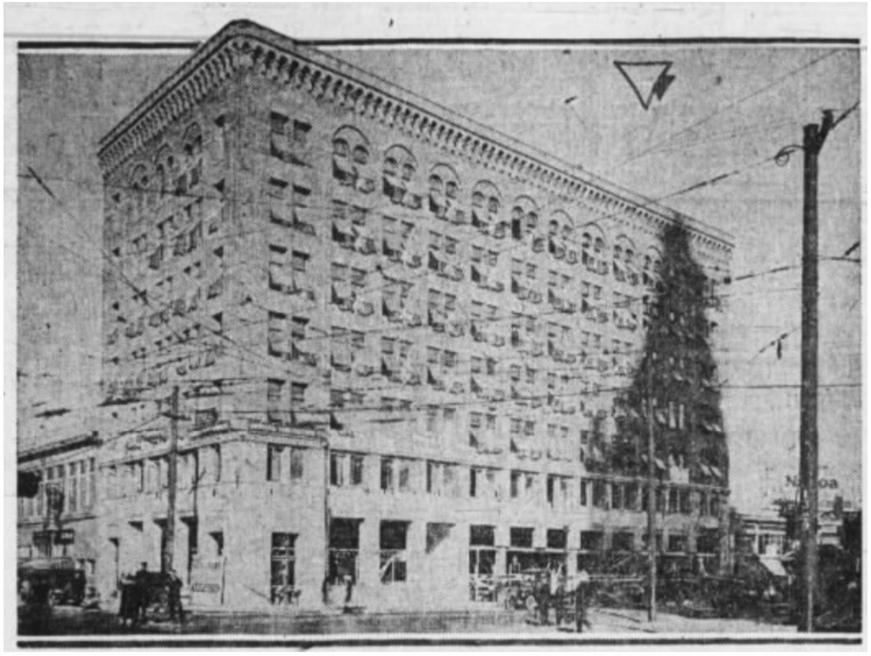
Figure 2
1951 Sanborn Map



North is to the right. The subject property is outlined in red.

SOURCE: *ProQuest*

Figure 3
1952 Sanborn Map



SOURCE: "New Alameda County Title Insurance Co. Building," *Oakland Tribune* (Oakland, CA), May 11, 1924, 51.

Figure 4
A rendering of the Alameda County Title Insurance Company Building at 1400 Franklin Street. This building is extant.

The company's first branch office was opened in 1953 at 1165 A Street in Hayward.[15] In 1956, Alameda County-East Bay Title Company merged with Title Insurance and Trust Company of Los Angeles.[16] This Los Angeles-based company was founded in 1893 and maintained an office at 458 South Spring Street in downtown Los Angeles.[17] At the time, the two companies maintained separate names but shared a business model of branches and subsidiaries. In 1959, Alameda County-East Bay Title Company was acquired by Western Title and Guaranty.[18] A third branch was opened in 1960 at 2148 Center Street in Berkeley. By 1967, there was a branch located in Sacramento at 919 8th Street.

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13 "Title Insurance Firm Moves to $500,000 Home," *Oakland Tribune* (Oakland CA), June 17, 1951, 13.

14 Ibid.

15 "Title Insurance Co. to Open Hayward Branch," *Oakland Tribune* (Oakland CA), April 2, 1953, 50.

16 "East Bay Title in Merger Deal with L.A. Firm," *Oakland Tribune* (Oakland CA), February 2, 1956, 58. "Notice of Trustee's Sale," *The Folsom Telegraph* (Folsom, CA), February 9, 1967, 16.

17 Title Insurance and Trust changed their name in 1968 to TI Corporation. In 1977 they reorganized into TICOR, a general business corporation. The company continues to operate under this name with offices across the United States. Ticor was acquired by Chicago Title & Trust in 1992. In 2000, Chicago Title & Trust was acquired by Fidelity National Financial. (Ticor Title, History of Ticor, website, ticornevada.com/wp-content/plugins/Informational_Flyers/uploads/History_of_Ticor.pdf.)

18 "Western Title," *San Francisco Chronicle* (San Francisco, CA), May 2, 1959, 21.

Western Title consolidated its Bay Area offices in 1982. At that time, it moved most local operations to Hayward and vacated the building at 1510 Webster Street in Oakland.[19]

It is unclear what affiliation with Title Insurance and Trust of Los Angeles existed beyond the late 1950s. Western Title Guaranty Company was acquired by Fidelity National Title in 1987.[20]

According to archival newspaper research, the next occupant of 1510 Webster Street was Tien Hu Knitting Co., which occupied the building since at least 1994. The company was an American-Chinese company that manufactured sweaters and sewed labels onto knitwear for companies such as Eber, Fritsi, Ralph Lauren, and Woolrich.[21] In 1994, it was one of several Bay Area companies required to pay damages to its immigrant workers; the settlement amounted to $67,910 distributed to 80 employees.[22] It is unclear when Tien-Hu Knitting Co. vacated the building. As early as June 2011, historic photographs of the subject property show the building for sale. The sign for Tien Hu Knitting Co. remains on the primary façade.

1510 Webster Street is currently vacant and appears to have been repeatedly vandalized.

Designer

1510 Webster Street was designed and constructed by the John J. Moore Company. This company billed itself as a selective, all-inclusive design and construction firm that catered to a small group of clients. It was started in 1924 by John J. Moore and operated as a sole proprietorship until 1939. At that time, Moore formed a partnership with Maxwell Reid. When Moore died in 1942, Reid and Mrs. Moore incorporated the business.[23]

The company is associated with several buildings in Oakland including the former Downtown Merchant Garage, 14th and Franklin streets (demolished), John J. Moore Building, 287 17th Street, and 1510 Webster Street. In the 1950s the company specialized in commercial construction, including parking garages and small shopping centers, located throughout California. They were associated with the Mayfair chain of stores.

Building Alteration and Ownership History

The Oakland Department of Building Inspection is currently closed to in-person requests due to COVID-19 restriction, and therefore no building permits were available for inclusions in this report. ESA was able to confirm the construction chronology of 1510 Webster Street based on archival newspaper research (**Table 1**).

[19] "Western Title Consolidation," *San Francisco Chronicle* (San Francisco, CA), April 19,1982, 50.
[20] Untitled, *San Francisco Chronicle* (San Francisco, CA), May 14, 1987, 32.
[21] *The San Francisco Examiner* (San Francesco, CA), May 27, 1994, 85.
[22] "Bay Sewing Shops Cheating Workers," *The San Francisco Examiner* (San Francesco, CA), January 3, 1994, 16.
[23] "Title Insurance Firm Moves to $500,000 Home," *Oakland Tribune* (Oakland, CA), June 17,1951, 13; Sanborn Map, 1951; Fred Jones, "Operation – Building!" *Architect and Engineer* (San Francisco, CA), January 1954, 10-15, 20.

TABLE 1
CONSTRUCTION CHRONOLOGY OF 1510 WEBSTER STREET

Date	Description of Work	Sources
1951	Alameda County-East Bay Title Insurance Company constructs a new $500,000, 2-story plus basement, building at 1510 Webster Street. Architect/Builder: John J. Moore Co. Valuation: $500,000	*Oakland Tribune,* June 17, 1951 *Architect & Engineer,* January 1954
1964	Western Title Guaranty, Co remodels offices at 1510 Webster Street. Architect: unknown Valuation: unknown	*Oakland Tribune,* July 10, 1964
1982	Western Title Guaranty, Company moves to a consolidated office in Hayward. 1510 Webster Street is traded in partial payment for the new Hayward facility.	*San Francisco Chronicle,* April 19, 1982
1994	Tien-Hu Knitting Co. is operating at 1510 Webster Street	*San Francisco Chronicle,* May 27, 1994
2011	1510 Webster Street is for Sale	*Google Maps,* Street View, June 2011

Evaluation of Historical Significance

Under Section 17.158.090 of the City of Oakland Planning Code (2005), for purposes of evaluating environmental impacts CEQA, a historical resource is a resource that meets any of the following criteria:

1. A resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (California Register);
2. A resource included in Oakland's Local Register of historical resources, unless the preponderance of evidence demonstrates that it is not historically or culturally significant. As defined in General Plan Historic Preservation Element Policy 3.8, for purposes of environmental review under the California Environmental Quality Act, the following properties will constitute the City of Oakland's Local Register of Historic Resources:
   a. All Designated Historic Properties [Landmarks, Heritage Properties, Study List Properties, Preservation Districts, and S-7 and S-20 Preservation Combining Zone Properties]; and
   b. Those Potential Designated Historic Properties that have an existing rating of "A" or "B" or are located within an Area of Primary Importance (API);
3. A resource identified as significant (e.g., rated 1–5) in a historical resource survey recorded on Department of Parks and Recreation Form (DPR) 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
4. Any object, building, structure, site, area, place, record, or manuscript which the Oakland City Council determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the California Register CEQA Guidelines Section 15064.5; or

5. A resource that is determined by the City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

California Register of Historical Resources

The California Register is “an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change” (PRC Section 5024.1(a)). Certain resources are determined by law to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register of Historic Places (National Register).

To be eligible for the California Register, a historical resource must be significant at the federal, state, or local level under one or more of the following criteria (PRC Section 5024.1(c)):

(1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(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.

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

Integrity is the authenticity of a historic resource’s physical identity as shown by the survival of characteristics that existed during the period of significance. For a resource to be eligible for the California Register, it must also retain enough integrity to be recognizable as a historic resource and to convey the reasons for its significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. A resource that does not retain sufficient integrity to meet the National Register criteria may still be eligible for listing in the California Register.

Oakland Cultural Heritage Survey[24]

In March 1994, the Oakland City Council adopted the Historic Preservation Element of the Oakland General Plan (amended July 21, 1998). The Historic Preservation Element sets out a graduated system of ratings and designations resulting from the Oakland Cultural Heritage Survey (OCHS) and Oakland Zoning Regulations. The OCHS is an ongoing survey process conducted by the City of Oakland. It uses a five-tier rating system for individual properties.

A – Highest Importance – These properties are of “exceptional historical or architectural value.” They are individually eligible for listing on the National Register.

[24] All quotes in this section are taken from *Oakland General Plan: Historic Preservation Element*, September 1993. Available online at: www.oaklandca.gov/resources/historic-preservation-element.

B – Major Importance – These properties are of "major historical or architectural value, but less important than those rated A." Buildings in this category are generally eligible for listing on the California Register and may be eligible for the National Register.[25]

C – Secondary Importance – These properties have "sufficient historical or visual/architectural value to warrant limited recognition but which do not appear individually eligible for the National Register."

D – Minor Importance – Buildings with this ranking are "not individually distinctive but which are typical or represent examples of an important style, type, convention, or historical pattern."

E – Of No Particular Interest – These properties meet the age criteria but are "visually undistinguished."

F/* – Not Rated – This designation was applied to buildings in the original survey area that were not age-eligible at the time of survey.

This letter rating is termed the "Individual Property Rating" of a building and is based on the following criteria:

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

District status is indicated by numbers. "1" is applied to buildings in an Area of Primary Importance (API) or a National Register-eligible district. "2" is applied to buildings in an Area of Secondary Importance (ASI) or a district of local interest. "3" indicates a building that is not located in a district. Additional notations are applied to indicate whether the building contributes to the district (+), potentially contributes to the district (*), or does not contribute to the district (-).

Areas of Primary Importance (API) are "historically or visually cohesive areas or property groups which usually contain a high proportion of individual properties with rankings of 'C' or higher and appear eligible for the National Register either as a district or as a historically-related complex. At least two-thirds of the properties in an API must be 'contributors' to the API. […] Properties which do not contribute to the API because of alterations, but which could contribute if the alterations are at least partly reversed are 'potential contributors' to the API." Only contributors count toward the two-thirds requirement.

Areas of Secondary Importance (ASI) are similar to APIs except both contributors and potential contributors count toward the two-thirds requirement and ASI do not appear eligible for the National Register.

[25] The OCHS predates the California Register and listing on the California Register is not explicitly codified into the Oakland Preservation Element.

Additionally, the City of Oakland maintains a list of Potential Designated Historic Properties (PDHPs). These buildings have at least a contingency rating of C or contribute or potentially contribute to an API or ASI. PDHPs have not been officially designated or evaluated but may "warrant consideration for possible preservation."

Evaluation – California Register

Criterion 1 (Events)

There is no evidence to suggest that 1510 Webster Street is associated with any local or regional events that have made a significant contribution to broad patterns of history. The Alameda County-East Bay Title Insurance Company represents a typical business type commonly found in all regions of California. While it, or its many consolidated companies, existed in some from as early as the mid-19th century, archival research does not suggest that any of these companies made important contributions to, or is associated with, a significant event or trend that shaped local or regional development. As such, 1510 Webster Street does not appear to be individually eligible for listing in the California Register under Criterion 1.

Criterion 2 (Persons)

Archival research did not reveal any historically significant individuals or groups associated with 1510 Webster Street. While the list of founders and board members for the Alameda County Title Insurance Company, the East Bay Title Insurance Company, or the combined Alameda County-East Bay Title Insurance Company represents a cross section of prominent businessmen in Oakland and the Bay Area, none appear to have gained prominence or achieved lasting recognition for their associations with these companies. Alameda County-East Bay Title Insurance Company is also associated with 1400 Franklin (City Landmark #121), an association that arguably continued in a longer and more meaningful period in the company's development. As such, 1510 Webster Street does not appear to be individually eligible for listing in the California Register under Criterion 2.

Criterion 3 (Architecture/Design)

1510 Webster Street has a distinctive design and is clearly associated with mid-century commercial design. It exhibits simplicity of form and was constructed using high-quality materials that would have distinguished it from the highly decorated brick and terra cotta office buildings that surrounded it in the 1950s. It is part of a shift in architecture toward more modern designs in downtown Oakland that began in the 1950s. The John J. Moore construction company, and its principal Maxwell Reid are associated with several remaining downtown Oakland commercial buildings from this era. Each is designed in a different style and none are recognized as outstanding examples of their type or design. While an early Modern design, the building also does not appear to represent the work of a master craftsman, nor does it possess high artistic value. It does not appear to have established the shifting trends in design, nor be inspiration for subsequent buildings in the area. Therefore, 1510 Webster Street does not appear to be individually eligible for listing in the California Register under Criterion 3.

Criterion 4 (Potential to Yield Information)

Criterion D applies to properties that have the potential to inform important research questions about human history. According to National Register Bulletin 15, to qualify for listing, the property must "have or have had information to contribute to our understanding of human history or prehistory and the information must be considered important." The California Register follows a similar threshold for consideration under Criterion 4.

1510 Webster Street does not meet this criterion and therefore does not appear to be individually eligible for listing in the California Register under Criterion 4.

Potential Historic District Contributor

1510 Webster Street is located on the same block as contributors to the Coit Building Group API (to the east) and the 17th Street Commercial API (to the north), and it is not considered a contributor to either of these districts. It is immediately adjacent to a parking lot on the north and an abandoned construction site to the south. Its rear (east) elevation faces another parking lot. The design and historical uses of 1510 Webster Street do not contribute to any known historic districts, nor does it appear to reside in an immediate grouping of similar or related buildings. Therefore, 1510 Webster Street does not appear to be a contributor to a potential historic district.

Evaluation – City of Oakland

1510 Webster Street does not appear to have important historical associations or contextual relationships. It does have architectural interest as one of the few Modern commercial buildings in this section of downtown Oakland. It is also associated with a construction and design firm that has several extent buildings in its portfolio in downtown Oakland. However, the building suffers from a long period of neglect. Windows are missing, the building is boarded up, and its visible elevations are covered with graffiti. Because it does not appear to be individually eligible for listing in the California Register, it would not qualify as either an “A” or “B” rated building. Therefore, 1510 Webster Street would not be eligible for consideration as a CEQA resource at the local level.

Integrity

In addition to being eligible for listing under at least one of the California Register criteria, a property must also retain sufficient integrity to convey its historical significance in order to be considered a historical resource. Because 1510 Webster Street does not appear to meet any California Register criteria, no evaluation of integrity is included here.

Conclusion

Based on archival research and analysis, ESA recommends the subject building at 1510 Webster Street as ineligible for individual listing in the California Register under Criteria 1, 2, 3, and 4. Additionally, ESA recommends 1510 Webster Street as ineligible for individual consideration as an “A” or “B” rated building on the City of Oakland Cultural Heritage Survey.

Sources

“Alameda County Title Insurance Co. Building,” Oakland Wiki. (accessed 8/25/2020). localwiki.org/oakland/Alameda_County_Title_Insurance_Co._Building.

City of Oakland. *Downtown Oakland Specific Plan Draft Environmental Impact Report (State Clearinghouse No: 2019012008.* prepared by Urban Planning Partners (August 2019).

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--- Advertisement. (November 9, 1936).

--- “East Bay Title in Merger Deal with L.A. Firm.” (February 2, 1956).

--- Knight in East Bay Title Ins. Co. Building.” (November 2, 1924).

--- “New Alameda County Title Insurance Co. Building.” (May 11, 1924).

--- “New Home for Title Ins. Co.” (March 30, 1924).

--- “Title Insurance Firm Moves to $500,000 Home,” *Oakland Tribune* (Oakland CA), June 17, 1951, 13.

--- “Title Insurance Co. to Open Hayward Branch,” *Oakland Tribune* (Oakland CA), April 2, 1953, 50.

San Francisco Chronicle (San Francisco, CA)

--- “Bay Sewing Shops Cheating Workers.” (January 3, 1994).

--- Untitled. (May 14, 1987).

--- Untitled. (May 27, 1994).

--- “Western Title.” (May 2, 1959).

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APPENDIX E

Equitable Climate Action Plan Consistency Checklist

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CITY OF OAKLAND
Equitable Climate Action Plan Consistency Checklist

250 Frank H. Ogawa Plaza, Suite 2114, Oakland, CA 94612-2031
Zoning Information: 510-238-3911
https://www.oaklandca.gov/topics/planning

The purpose of this Equitable Climate Action Plan Consistency Review Checklist is to determine, for purposes of compliance with the California Environmental Quality Act (CEQA), whether a development project complies with the City of Oakland Equitable Climate Action Plan (ECAP) and the City of Oakland's greenhouse gas (GHG) emissions reduction targets. CEQA Guidelines require the analysis of GHG emissions and potential climate change impacts from new development.

- If a development project completes this Checklist and can qualitatively demonstrate compliance with the Checklist items as part of the project's design, or alternatively, demonstrate to the City's satisfaction why the item is not applicable, then the project will be considered in compliance with the City's CEQA GHG Threshold of Significance.
- If a development project cannot meet all of the Checklist items, the project will alternatively need to demonstrate consistency with the ECAP by complying with the City of Oakland GHG Reduction Plan Condition of Approval.
- If the project cannot demonstrate consistency with the ECAP in either of those two ways, the City will consider the project to have a significant effect on the environment related to GHG emissions.

Application Submittal Requirements

1. The ECAP Consistency Checklist applies to all development projects needing a CEQA GHG emissions analysis, including a specific plan consistency analysis.
2. If required, the ECAP Consistency Review Checklist must be submitted concurrently with the City of Oakland Basic Application.

Application Information

Applicant's Name/Company: 1510 Webster Street LLC

Property Address: 1510 Webster Street, Oakland, CA 94612

Assessor's Parcel Number: 8-625-34-1 and 8-625-32

Phone Number: (858) 449-5270

E-mail: jeremy@owow.com

Checklist Item (Check the appropriate box and provide explanation for your answer).			
Transportation & Land Use			
1. Is the proposed project substantially consistent with the City's over-all goals for land use and urban form, and/or taking advantage of allowable density and/or floor area ratio (FAR) standards in the City's General Plan? (TLU1)	**Yes**	**No**	**N/A**
	X		
Please explain how the proposed project is substantially consistent with the City's General Plan with respect to density and FAR standards, land use, and urban form. The Proposed Development is fully consistent with the City's General Plan and zoning controls. The proposed development maximizes the residential unit density and applies the State Density Bonus to increase the density by another 20% above zoning code limits.			
2. For developments in "Transit Accessible Areas" as defined in the Planning Code, would the project provide: i) less than half the maximum allowable parking, ii) the minimum allowable parking, or iii) take advantage of available parking reductions? (TLU1)	**Yes**	**No**	**N/A**
	X		
Please explain how the proposed project meets this action item. Project has access to two BART stations within 1/4 mile of the site. The zoning requires zero parking and 1 car share space as well as adequate bike spaces as required by zoning. The project provides the 1 car share and the equired short-term bike count is at 14 spaces and the required long-term bike count at 66 spaces. Transit Passes will also be provided to residents as required by the zoning code.			
3. For projects including structured parking, would the structured parking be designed for future adaptation to other uses? (Examples include, but are not limited to: the use of speed ramps instead of sloped floors.). (TLU1)	**Yes**	**No**	**N/A**
			X
Please explain how the proposed project meets this action item. Not applicable because the project isn't providing onsite car parking so isn't providing a parking structure.			
4. For projects that ***are*** subject to a Transportation Demand Management Program, would the project include transit passes for employees and/or residents? (TLU1)	**Yes**	**No**	**N/A**
	X		
Please explain how the proposed project meets this action item. Yes, the project is providing transit passes as required by zoning code.			

	Yes	No	N/A
5. For projects that are ***not*** subject to a Transportation Demand Management Program, would the project incorporate one or more of the optional Transportation Demand Management measures that reduce dependency on single-occupancy vehicles? (Examples include but are not limited to transit passes or subsidies to employees and/or residents; carpooling; vanpooling; or shuttle programs; on-site carshare program; guaranteed ride home programs) (TLU1 & TLU8)			X
Please explain how the proposed project meets this action item. Not Applicable because the project does have a Transportation Demand Management Program.			
6. Does the project comply with the Plug-In Electric Vehicle (PEV) Charging Infrastructure requirements (Chapter 15.04 of the Oakland Municipal Code), if applicable? (TLU2 & TLU-5)			X
Please explain how the proposed project meets this action item. Parking is not required so the requirement of charging a % of these vehicles is not applicable.			
7. Would the project reduce or prevent the direct displacement of residents and essential businesses? (For residential projects, would the project comply with SB 330, if applicable? For projects that demolish an existing commercial space, would the project include comparable square footage of neighborhood serving commercial floor space.) (TLU3)	X		
Please explain how the proposed project meets this action item. Current building has been vacant for over a decade and there's also an unfinished built structure. There are no businesses or residents being displaced. The project does demolish an existing commercial space, and will be providing 50% of the original commercial square footage back as commercial use and the project is adding 182 residential apartments on top that did not exist previously with 16 of those units at low-income affordable housing AMI's.			

	Yes	No	N/A
8. Would the project prioritize sidewalk and curb space consistent with the City's adopted Bike and Pedestrian Plans? (The project should not prevent the City's Bike and Pedestrian Plans from being implemented. For example, do not install a garage entrance where a planned bike path would be unless otherwise infeasible due to Planning Code requirements, limited frontage or other constraints.) (TLU7)	X		

Please explain how the proposed project meets this action item.

The building prioritizes a pedestrian based public right of way. The project proposes a bulbout at the intersection corner to add more pedestrian friendly space but also make it safer for foot traffic since the intersection is found to be really dangerous as is now. Additionally, there are no parking garages or entrances, other than 1 loading bay which is required to serve new buildings, which maximizes the sidewalk square footage. Lastly, the ground floor of the proposed design introduces an exterior plaza which acts as an extension of the public right of way through the subject lot, creating opportunities for people to congregate and use the new retail and office spaces provided at the ground floor.

Buildings

	Yes	No	N/A
9. Does the project not create any new natural gas connections/hook-ups? (B1 & B2)	X		

Please explain how the proposed project meets this action item.

The proposed design does not include any gas meters or hook-up to relate to the City Council approval of no natural gas on all newly constructed buildings that have not received planning approval prior to December 2020.

	Yes	No	N/A
10. Does the project comply with the City of Oakland Green Building Ordinance (Chapter 18.02 of the Oakland Municipal Code), if applicable? (B4)	X		

Please explain how the proposed project meets this action item.

The proposed design includes all applicable green building requirements as included in the project submission. The commercial spaces are on track to certify as LEED Silver minimum, and the residential units above will comply with all Green Point Rating requirements. These both meet the Chapter 18.02 requirements.

	Yes	No	N/A
11. For retrofits of City-owned or City-controlled buildings: Would the project be all-electric, eliminate gas infrastructure from the building, and integrate energy storage wherever technically feasible and appropriate? (B5)			X

Please explain how the proposed project meets this action item.

Not applicable because this is not a City-owned or City-controlled building.

Material Consumption & Waste			
12. Would the project reduce demolition waste from construction and renovation and facilitate material reuse in compliance with the Construction Demolition Ordinance (Chapter 15.34 of the Oakland Municipal Code)? (MCW6)	**Yes**	**No**	**N/A**
	X		
Please explain how the proposed project meets this action item. Yes this project complies and will providing a minimum of 75% C&D Waste Diversion (Including Alternative Daily Cover).			

City Leadership			
13. For City projects: Have opportunities to eliminate/minimize fossil fuel dependency been analyzed in project design and construction? (CL2)	**Yes**	**No**	**N/A**
	X		
Please explain how the proposed project meets this action item. Yes, no cars were provided and alternative transportation strategies were designed to reduce emissions and dependency significantly. Additionally, the projects uses mostly wood construction as one of the tallest future wooden high-rises in the country. These are renewable resources and are essentially a net carbon zero source in-place of concrete and steel which would have added fossil fuel dependency. Lastly, the project is all-electric, so no dependency on natural gas systems.			

Adaptation			
14. For new projects in the Designated Very High Wildfire Severity Zone: Would the project incorporate wildfire safety requirements such creation of defensible space around the house, pruning, clearing and removal of vegetation, replacement of fire resistant plants, as required in the Vegetation Management Plan? (A4)	**Yes**	**No**	**N/A**
			X
Please explain how the proposed project meets this action item. Project is not in the designated very High Wildfire Severity Zone so this is not applicable.			

Carbon Removal			
15. Would the project replace a greater number of trees than will be removed in compliance with the Tree Preservation Ordinance (Chapter 12.36 of the Oakland Municipal Code) and Planning Code if applicable and feasible given competing site constraints? (CR-2)	**Yes**	**No**	**N/A**
	X		
Please explain how the proposed project meets this action item. The project is removing one existing tree in the sidewalk and will be replacing with 5-6 new trees.			
16. Does the project comply with the Creek Protection, Stormwater Management and Discharge Control Ordinance (Chapter 13.16 of the Oakland Municipal Code), as applicable? (CR-3)	**Yes**	**No**	**N/A**
	X		
Please explain how the proposed project meets this action item. The project complies with full C3 compliance measures for stormwater Management per the Oakland ordinance. There is no Creek near or applicable for this project.			

I understand that answering ***yes*** to all of these questions, means that the project ***is in compliance with*** the City's Energy and Climate Action Plan as adopted on to July 28, 2020 and requires that staff apply the Project Compliance with the Equitable Climate Action Plan (ECAP) Consistency Checklist Condition of Approval as adopted by the Planning Commission on December 16, 2020 and all Checklist items must be incorporated into the project

I understand that answering ***no*** to any of these questions, means that the project ***is not in compliance*** with the City's Energy and Climate Action Plan as adopted on to July 28, 2020 and requires that staff apply the Greenhouse Gas (GHG) Reduction Plan Condition of Approval as adopted by the Planning Commission on December 16, 2020 which will require that the applicant prepare a quantitative GHG analysis and GHG Reduction Plan for staff's review and approval. The GHG Reduction Plan and all GHG Reduction measures shall be incorporated into the project and implemented during construction and after construction for the life of the project.

Name and Signature of Preparer — Date: 01 / 07 / 2021

HELLOSIGN

Audit Trail

TITLE	1510 Webster - ECAP Checklist - Completed and Signed
FILE NAME	ECAP Action Item Checklist-Final.pdf
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APPENDIX F

Additional Transportation Analyses

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FEHR PEERS

Draft Memorandum

Date: December 29, 2020

To: Jill Feyk-Miney, ESA

From: Sam Tabibnia and Sam Inoue-Alexander, Fehr & Peers

Subject: 1510 Webster Street – Transportation Impact Review (Non-CEQA)

OK20-0370

This memorandum discusses transportation-related topics for the proposed 1510 Webster Street project that are not considerations under the California Environmental Quality Act (CEQA), but are evaluated to inform decision makers and the public. Some information in the CEQA document is repeated in this memorandum to provide context for the non-CEQA analysis. The information provided in this memorandum is based on the City of Oakland's *Transportation Impact Review Guidelines* (TIRG) published in April 2017. Sections in this memorandum include:

Project Description

The Project is located at the northeast corner of the Webster Street/15th Street intersection in Downtown Oakland and would consist of a 19-level building providing about 11,400 square feet of office on the ground and basement levels, about 3,500 square feet of retail on the ground level, and 182 residential dwelling units on the second through 19th levels of the building. The Project site is currently occupied by a vacant building and an abandoned construction site on a former parking lot.

Based on the project site plan dated June 4, 2020, the Project would not include any automobile parking. A back-in ground-level loading bay would be accessed via Webster Street.

Bicycle parking would be provided within the ground floor covered plaza, as well as in two separate bicycle rooms on the basement level. The Project would provide short-term and long-term parking for up to 80 bicycles.

Trip Generation

Automobile Trip Generation

Trip generation is the process of estimating the number of vehicles that would likely access the Proposed Project on any given day. **Table 1** summarizes the trip generation for the Project. Trip generation data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual* (10 Edition) was used as a starting point to estimate the vehicle trip generation.

ITE *Trip Generation* is primarily based on data collected at single-use suburban sites where the automobile is often the only travel mode. However, the Project site is in a dense mixed-use urban environment where many trips are walk, bike, or transit trips. Since the Project is within 0.3 miles of the 12th Street BART Station, this analysis reduces the ITE based trip generation by about 47 percent to account for non-automobile trips. This reduction is consistent with the City of Oakland's TIRG and is based on US Census commute data for Alameda County from the 2014 5-Year Estimates of the American Community Survey (ACS), which shows that the non-automobile mode share for areas less than 0.5 miles from a BART Station is about 47 percent.

As summarized in Table 1, the net automobile trip generation for the Project is approximately 650 daily, 44 AM peak hour, and 57 PM peak hour automobile trips.

The Project trip generation based on the TIRG process may be overestimating the actual automobile trips generated by the Project because the Project does not provide any on-site automobile parking. However, there are several parking facilities in the vicinity of the Project that are open to the public and can be used by the Project residents, employees, customers, and visitors. Although many of these public parking facilities currently operate at or near capacity on most weekdays, this analysis assumes that parking would be available to Project residents, employees, customers, and visitors who choose to drive. Therefore, this analysis uses the TIRG-based trip generation to present a more conservative estimate of the automobile trips generated by the Project.

Non-Vehicular Trip Generation

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

Table 1: Automobile Trip Generation

Land Use	Size	Units[1]	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Residential[2]	182	DU	990	17	49	66	49	31	80
Office[3]	11.4	KSF	110	12	2	14	2	12	14
Retail[4]	3.5	KSF	130	2	1	3	6	7	13
Subtotal			1,230	31	52	83	57	50	107
City of Oakland Trip Generation Adjustment[5]			*-580*	*-15*	*-24*	*-39*	*-27*	*-23*	*-50*
Total Vehicle Trip Generation			**650**	**16**	**28**	**44**	**30**	**27**	**57**

Notes:

1. DU = Dwelling Units, KSF = 1,000 square feet
2. ITE *Trip Generation* (10th Edition) land use category 221 (Multi-Family Housing [Mid-Rise]):
   Daily: T = 5.45 * X
   AM Peak Hour: T = 0.36 * X (26% in, 74% out)
   PM Peak Hour: T = 0.44 * X (61% in, 39% out)
3. ITE *Trip Generation* (10th Edition) land use category 710 (General Office Building):
   Daily: T = 9.74 * X
   AM Peak Hour: T = 1.16 * X (86% in, 14% out)
   PM Peak Hour: T = 1.15 * X (16% in, 84% out)
4. ITE *Trip Generation* (10th Edition) land use category 820 (Shopping Center):
   Daily: T = 37.75 * X
   AM Peak Hour: T = 0.94 * X (62% in, 38% out)
   PM Peak Hour: T = 3.81 * X (48% in, 52% out)
5. 46.9% reduction is based on the City of Oakland's *Transportation Impact Review Guidelines* for developments within 0.5 miles of a BART Station.

Source: Fehr & Peers, 2020.

Table 2: Trip Generation by Travel Mode

Mode	Mode Share Adjustment Factors[1]	Daily	AM Peak Hour	PM Peak Hour
Automobile	1.00	650	44	57
Transit	0.56	364	25	32
Bike	0.10	62	4	5
Walk	0.20	129	9	11
Total Trips		**1,205**	**82**	**105**

Notes:

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

Source: Fehr & Peers, 2020

Trip Distribution and Study Intersection Selection

The trip distribution and assignment process is used to estimate how the vehicle trips generated by the project would be distributed across the roadway network. Based on existing travel patterns, locations of complementary land uses, and the one-way street network and turn restrictions in the Project area, Fehr & Peers determined directions of approach to and departure from the Project site. **Figure 1** shows the resulting trip distribution.

Trips generated by the Project, as shown in Table 1, were assigned to the roadway network according to the trip distribution shown on Figure 1. **Figure 2** shows the resulting trip assignment.

According to the City of Oakland's TIRG, the criteria for the intersections to be studied in a transportation impact study include the following:

- All intersection(s) of streets adjacent to project site;
- All signalized intersections, all-way stop-controlled intersections, or roundabouts where 100 or more peak hour trips are added by the project;
- All signalized intersections with 50 or more peak-hour trips and the existing intersection operations are at Level of Service D, E, or F; and
- Side-street stop-controlled intersection(s) where 50 or more peak hour trips are added by the project to any individual movement other than the major-street through movement.

Following these criteria, the following three study intersections are selected because they are adjacent to the Project site or they were evaluated in a transportation impact study for a previously proposed development at the Project site (1510 Webster Street – Transportation Impact Study, July 2016):

1. Franklin Street/17th Street
2. Webster Street/17th Street
3. Webster Street/15th Street

The project would not add 50 or more peak hour trips trip to any signalized or all-way stop-controlled intersection or to the stop-controlled movement of a side-street stop-controlled intersection. Thus, no additional intersections would meet the study intersection selection criteria and are not included in this study.

Due to the ongoing COVID-19 pandemic, current turning movement counts could not be collected at the three study intersections because counts would not accurately reflect typical conditions due to changes in travel patterns during this time. Instead, turning movement counts collected in February 2016 for the 1510 Webster Street – Transportation Impact Study, the transportation impact study for the previously proposed development at the Project site, are used. The counts were collected within the last five years, which is consistent with the TIRG.

Appendix A presents the existing traffic volume counts. For each study intersection, the peak hour (i.e., the hour with the highest traffic volumes) for the AM and PM peak periods were selected for evaluation.

Intersection Operations

Field reconnaissance was performed at the three study intersections to identify intersection lane configuration. In addition, the City of Oakland provided signal timing data for the signalized study intersections.

The following scenarios were evaluated:

- **Existing Conditions**: Represents the existing conditions based on 2016 counts.
- **Existing Plus Project Conditions**: Represents the existing conditions plus traffic generated after completion of the Project.

Figure 3 presents the Existing and Existing plus Project intersection lane configurations, traffic control, and peak hour traffic volumes at the study intersections. Based on the volumes and roadway configurations presented on Figure 3, Fehr & Peers calculated the LOS at the study intersections using the 2010 *Highway Capacity Manual* (HCM) methodologies. **Appendix B** provides the detailed LOS calculation sheets.

Table 3 summarizes the Existing and Existing Plus Project intersection analysis results. All intersections currently operate and would continue to operate at LOS B during both weekday AM and PM peak hours.

Table 3: Intersection Level of Service Summary

Intersection	Traffic Control[1]	Peak Hour	Existing Conditions		Existing Plus Project	
			Delay[2] (seconds)	LOS	Delay[2] (seconds)	LOS
Franklin Street/ 17th Street	Signal	AM PM	15 12	B B	15 12	B B
Webster Street/ 17th Street	Signal	AM PM	11 12	B B	12 12	B B
Webster Street/ 15th Street	Signal	AM PM	12 14	B B	12 14	B B

Notes:

1. Signal = intersection controlled by traffic signal.
2. Delay calculated using HCM 2010 methodologies. Average intersection delay for signalized intersections.

Source: Fehr & Peers, 2020

Site Plan Review

An evaluation of access and circulation for all travel modes, based on the site plan dated June 4, 2020, is summarized below.

Vehicle Access and Circulation

The Project frontage along Webster Street currently has five metered parking spaces (two-hour time limit), and the Project frontage along 15th Street has two metered parking spaces (two-hour time limit) and a 20-foot driveway. The Project would eliminate the existing driveway on 15th Street and create a 15-foot driveway on Webster Street for off-street loading, resulting in no net gain or loss of on-street parking spaces.

The City of Oakland's 2019 Oakland Bike Plan (*Let's Bike Oakland*, May 2019) proposes a Class 4 protected bikeway on Webster Street. The proposed facility has not been designed and the Class 4 protected bikeway may be on either the west side or the east side of Webster Street. If the proposed facility is on the east side of Webster Street, bicycles using the protected bikeway may have a conflict with vehicles entering and exiting the Project driveway.

> **Recommendation 1:** If the proposed Class 4 protected bikeway would be provided on the east side of Webster Street, coordinate with City of Oakland to ensure:
>
> - Adequate sight distance between loading vehicles entering and exiting the driveway and cyclists on the bike facility.
> - Appropriate signage and striping in and around the driveway conflict zone.

The City of Oakland provides the following on-street loading designations:

- Commercial loading spaces with yellow curb paint, which allow loading and unloading of passengers and materials between 7:00 AM and 6:00 PM Monday through Saturday. Passenger loading and unloading operations are limited to three minutes; commercial loading is limited to 30 minutes for vehicles with commercial license plates.
- Passenger loading spaces with white curb paint, which allow loading and unloading of passengers between 7:00 AM and 6:00 PM Monday through Sunday. Passenger loading and unloading operations are generally limited to three minutes. In some places, such as adjacent to public assembly spaces, white curb parking restrictions are always in effect.

Webster and 15 Streets have no on-street commercial (yellow curb) or passenger (white curb) loading spaces designated along the curb adjacent to the Project. It is expected that the commercial loading for the Project would occur at the designated loading space within the Project building.

The Project would not provide any on-site parking. Motorists driving to the site would use other parking facilities in the project vicinity. Thus, the Project would not modify automobile access and circulation. The Project is expected to generate pick-up/drop off trips. There are currently no designated passenger loading spaces along the Project frontage.

> **Recommendation 2:** Explore the feasibility and, if determined feasible by City of Oakland staff:
>
> - Designate 40 feet of passenger loading space (white curb) on the east side of Webster Street just north of 15th Street for pick-ups and drop offs by private vehicle and transportation network company (TNC) vehicles.
> - Ensure that the parking space just north of the crosswalk is accessible.

Bicycle Access and Bicycle Parking

Near the Project site, existing bicycle facilities include a southbound Class 2B Buffered Bikeway on the west side of Webster Street and a northbound Class 2 Bikeway on the east side of Franklin Street.

The City's 2019 Oakland Bike Plan (*Let's Bike Oakland*, May 2019) proposes the following in the vicinity of the project:

- Class 2 Bikeway on 15th Street
- Class 2B Buffered Bikeways on 17th and 13th Streets
- Class 4 Protected Bikeways on Franklin, Webster, Harrison, and 14th Streets

Currently, no bicycle parking is provided along the Project frontage on Webster and 15th Streets. The nearest bikeshare station is located 0.2 miles southwest of the project site on 13th Street, just west of Franklin Street.

The Project would provide short-term bicycle parking for 14 bicycles in the ground-floor covered outdoor plaza. Two secure bicycle rooms on the basement level would accommodate long-term bicycle parking for 66 bicycles. The long-term bicycle parking facilities can be accessed through the elevators in the residential lobby or the stairs in the covered outdoor plaza. However, using stairs or elevators to access bicycle parking on the basement level may be inconvenient for bicyclists.

> **Recommendation 3:** Consider relocating one or both the long-term bicycle parking rooms from the basement level to a more convenient location on the ground level. If bicycle parking is provided on the basement level, ensure that appropriate signage is provided to directed people to the bicycle parking rooms and at least one elevator can accommodate a cargo bike.

Table 4 compares the required and provided quantity of bicycle parking spaces for the Project. The City of Oakland Planning Code Section 17.117.110 requires the Project to provide a minimum of 50 long-term and 13 short-term bicycle parking spaces. The Project would meet or exceed the minimum required short-term and long-term bicycle parking.

Table 4: Bicycle Parking

Land Use	Size	Unit [1]	Long-Term Bicycle Parking			Short-Term Bicycle Parking		
			Supply	Required [2]	Difference	Supply	Required [2]	Difference
Residential	182	DU	-	46	-	-	9	-
Office	11.4	KSF	-	2	-	-	2	-
Retail	3.5	KSF	-	2	-	-	2	-
Total			***66***	***50***	***+16***	***14***	***13***	***+1***

Notes:

1. DU = Dwelling Units, KSF = 1,000 square-feet
2. Per Oakland Planning Code Section 17.117.090 and 17.117.110; Residential Multifamily Dwelling (without private garage): 1 long-term space per 4 dwelling units, 1 short-term space per 20 dwelling units; Office: 1 long-term space per 10 KSF (min 2 spaces), 1 short-term space per 20 KSF (min 2 spaces); Retail: 1 long-term space per 12 KSF (min 2 spaces), 1 short-term space per 5 KSF (min 2 spaces).

Source: Fehr & Peers, 2020.

Pedestrian Access and Circulation

Primary pedestrian access for the office and residential components of the Project would be through the covered outdoor plaza on the ground floor, which would connect to the office lobby and residential lobby. The main entrance to the covered outdoor plaza would be on Webster Street, with a secondary entrance on 15th Street.

Ground floor office space would be accessed via the office lobby, while basement-level office space would be accessible via three different staircases and an elevator within the office space. The residential lobby would connect to the residential-use floors via two elevators. Two stairwells would also provide access to residential floors from the ground floor.

The Project would include two retail spaces. They would be located along Webster Street between the covered outdoor plaza and the loading dock and at the southwest corner of the building. The retail spaces would connect to the adjacent streets as well as to the covered outdoor plaza.

Pedestrian facilities on the streets adjacent to the Project are described below:

- Webster Street currently provides a 12-foot sidewalk along the west side of the Project site. Occasional signposts and parking meters adjacent to the street narrow the sidewalk to a minimum of nine feet.

- 15th Street currently provides a 10-foot sidewalk along the south side of the Project site. Occasional signposts and parking meters adjacent to the street narrow the sidewalk to a minimum of 7.5 feet.

Pedestrian facilities at the intersections nearest to the site include:

- The Franklin Street/17th Street intersection is signalized and provides diagonal curb ramps on all four corners and standard crosswalk markings on all approaches. All curb ramps, except for the southeast ramp, provide truncated domes. Pedestrian signal heads are provided for southbound and westbound crossings.
- The Webster Street/17th Street intersection is signalized and provides curb ramps on all four corners and standard crosswalk markings on all approaches. Diagonal curb ramps with truncated domes are present at the northwest and southwest corners, directional curb ramps with truncated domes are present at the northeast corner, and a diagonal curb ramp without truncated domes is present at the southeast corner. Countdown pedestrian signal heads are provided in every direction.
- The Webster Street/15th Street intersection is signalized and provides diagonal curb ramps on all four corners and standard crosswalk markings on all approaches. All curb ramps, except for the southeast ramp, provide truncated domes. Pedestrian signal heads are not provided.

The Project does not include any modifications to the sidewalks or the intersection adjacent to the project.

> **Recommendation 4:** Explore the feasibility and, if determined feasible by City of Oakland staff, install the following at the Webster Street/15th Street intersection:
>
> - Directional curb ramps at all four corners of the intersection. Considering that fire hydrants, signal poles, and/or light poles are located at corners, construction of curb extensions (bulb-outs) may also be required to provide directional curb ramps.
> - Provide curb extensions (bulb-outs) on the east and/or west side of Webster Street to improve pedestrian visibility and shorten the crossing distance (to be coordinated with the proposed Class 4 bikeway on Webster Street).
> - High-visibility (continental) crosswalks across all four intersection approaches.
> - Pedestrian signal heads for all four directions at the intersection.

Transit Access

Transit service providers in the Project vicinity include BART and AC Transit. BART provides regional rail service throughout the East Bay and across the Bay. The Project is located approximately 0.3 miles from the 12th Street Oakland City Center BART Station. The nearest station portal is at the Frank H. Ogawa Plaza on the north side of 14th Street, just west of Broadway.

AC Transit is the primary bus service provider in the City of Oakland. AC Transit operates the following routes in the vicinity of the Project:

- Routes 6, 12, 18, 33, 51A, 72, 72M, 72R, 800, 802, 805, 840, 851, and NL have stops on Broadway between 17th and 20th Streets, approximately 0.4 miles west of the Project site.
- Routes 1, 14, 19, 20, 29, 40, 88, 96, and the same routes mentioned above (except Route NL) have stops on Broadway between 12th and 14th Streets, approximately 0.3 miles west of the Project site.

AC Transit is currently constructing the East Bay Bus Rapid Transit (BRT) Project, which would replace Routes 1 and 6 along Broadway. BRT buses would operate in mixed-flow lanes along Broadway. The nearest BRT stop to the Project site would be on Broadway at 14th Street. During BRT construction, select bus routes have been rerouted from Broadway to northbound on Franklin Street. Two temporary bus stops on Franklin Street at 15th Street, serve Routes 1, 12, 33, 51A, 72, 72M, 72R, 840, and 851. Construction of the BRT Project is anticipated to be complete by Fall 2020.

Automobile Parking Requirements

The City of Oakland Municipal Code establishes minimum and maximum parking requirements for commercial and residential activities. According to Sections 17.116.060 and 17.116.080, no parking spaces are required for residential or commercial uses in the Central Business District Pedestrian Retail Commercial Zone or the Central Business District General Commercial Zone. Thus, no minimum parking requirements apply to the Project. Since the Project does not provide any on-site parking spaces, it meets the Oakland Municipal Code automobile parking requirements.

Loading Requirements

City Municipal Code Section 17.116.120 requires one off-street loading space with minimum dimensions of 23 feet long, 10 feet wide, and 12 feet high for residential uses larger than 50,000 square feet. No off-street loading is required for retail or office uses less than 25,000 square feet per section 17.116.140 of the Code. The Project would include one loading berth, approximately 35 feet long, 15 feet wide, and at least 12 feet high which satisfies the City's loading requirements.

The loading space would be on the northwest corner of the Project site and accessed through a driveway on Webster Street. Trucks would back into and head out of the loading berth. The Project's loading space would provide adequate sight distance between exiting trucks and pedestrians on the adjacent sidewalk. Adequate sight distance is defined as a clear line-of-sight between a motorist ten feet back from the sidewalk and a pedestrian 10 feet away on each side of the driveway.

Collision History

A five-year history (January 1, 2015 to December 31, 2019) of collision data in the Project vicinity was obtained from the Statewide Integrated Traffic Records System (SWITRS) and was evaluated for this collision analysis. **Table 5** summarizes the collision data by type and location and **Table 6** summarizes the collision data by severity and location.

As shown in Table 5, 27 collisions were reported during this five-year timeframe at the study intersections and along the roadway segments adjacent to the Project frontage. The top three collision types were broadside (33 percent), sideswipe (19 percent), and bicycle-involved (15 percent) collisions. The top two primary collision causes were failure to follow traffic signals (48 percent) and improper turning (15 percent). Pedestrians were involved in two (seven percent) of the reported collisions, while bicyclists were involved in four (15 percent) of the reported collisions. Of the 27 reported collisions, 18 (67 percent) resulted in injuries and none resulted in fatalities.

The Highway Safety Manual (HSM, Predictive Method - Volume 2, Part C) provides a methodology to predict the number of collisions for intersections and street segments based on their specific characteristics, such as vehicle and pedestrian volume, number of lanes, signal phasing, on-street parking, and number of driveways. **Table 7** presents the predicted collision frequencies for the three study intersections and two study segments using the HSM Predictive Method for Urban and Suburban Arterials and compares the predicted collision frequencies with the actual reported collision frequencies. **Appendix C** provides the detailed predicted collision frequency calculation sheets based on the HSM methodology. Intersections or roadway segments with collision frequencies greater than the predicted frequency are identified as locations that should be evaluated in greater detail for collision trends and potential modifications.

As shown in Table 7, the Webster Street/15th Street intersection is the only study location where the actual crash frequency was higher than the predicted frequency. It experienced an actual crash frequency higher than predicted by +0.3 crashes per year. Seven of the 11 reported collisions at this intersection involved drivers traveling southbound on Webster Street and failing to stop at the red light. This indicates that existing signal heads which are provided on the far-side of the intersection on both sides of the street may not be adequately visible to some motorists and/or the yellow and red clearance intervals for the existing traffic signal may not be adequate for the intersection (Currently both approaches of the intersection provide three seconds of yellow time and zero second of all-red clearance time). Relevant safety treatments from the Crash Modifications Factor (CMF) Clearinghouse that are recommended by the Federal Highway Administration (FHWA) to address red light running are summarized in **Table 8.**

Table 5: Collisions by Type

Location	Head-on	Sideswipe	Rear-End	Broadside	Hit Object	Pedestrian-Involved	Bicycle-Involved	Other	Total
Intersection									
Franklin Street/17th Street	0	1	0	1	0	0	2	1	5
Webster Street/17th Street	1	2	0	3	0	2	2	0	10
Webster Street/15th Street	1	2	1	5	1	0	0	1	11
Roadway Segment									
Webster Street (between 15th Street and 17th Street)	0	0	1	0	0	0	0	0	1
15th Street (between Webster Street and Harrison Street)	0	0	0	0	0	0	0	0	0
Total	**2**	**5**	**2**	**9**	**1**	**2**	**4**	**2**	**27**

Notes:

1. Based on SWITRS five-year collision data reported from January 1, 2015 to December 31, 2019

Source: Fehr & Peers, 2020

Table 6: Summary of Injuries

Location	Property Damage Only Collisions	Injury Collisions	Fatality Collisions	Total	Person-Injuries			
					Bike	Ped	Driver/ Passenger	Total
Intersection								
Franklin Street/17th Street	0	5	0	5	2	0	3	5
Webster Street/17th Street	4	6	0	10	2	2	3	7
Webster Street/15th Street	5	6	0	11	0	0	8	8
Roadway Segment								
Webster Street (between 15th Street and 17th Street)	0	1	0	1	0	0	1	1
15th Street (between Webster Street and Harrison Street)	0	0	0	0	0	0	0	0
Total	9	18	0	27	4	2	15	21

Notes:
1. Based on SWITRS five-year collision data reported from January 1, 2015 to December 31, 2019

Source: Fehr & Peers, 2020

Table 7: Predicted and Actual Crash Frequencies

Location	Predicted Crash Frequency[1] (per year)	Actual Crash Frequency[2] (per year)	Difference	Higher Than Predicted?
Intersection				
Franklin Street/17th Street	2.5	1.0	-1.5	No
Webster Street/17th Street	2.3	2.0	-0.3	No
Webster Street/15th Street	1.9	2.2	+0.3	**Yes**
Roadway Segment				
Webster Street (between 15th Street and 17th Street)	0.3	0.2	-0.1	No
15th Street (between Webster Street and Harrison Street)	0.1	0.0	-0.1	No

Notes:

1. Based on the Highway Safety Manual Predictive Method (Volume 2, Part C). The Highway Safety Manual Predictive Method does not directly account for one-way roadway segments or intersections with one-way approaches. In this analysis, one-way crash frequencies are approximated to be equal to half of the crash frequency of a two-way divided road segment or four-leg intersection with double the one-way traffic volumes.
2. Based on SWITRS five-year collision data reported from January 1, 2015 to December 31, 2019.

Source: Fehr & Peers, 2020

Table 8: CMF Clearinghouse Recommendations

#	CMF Recommendation Measure	CMF ID	CMF[1]	CMF Standard Error	CRF[1]	CRF Standard Error	FHWA Rating
1	Improve visibility of signal heads	1430	0.93	-	7	-	4-star
2	Add 3-inch yellow reflective sheeting to signal backplates	1410	0.85	0.005	15	0.5	4-star
3	Replace 8-inch red signal heads with 12-inch[2]	2333	0.58	0.07	42	7	4-star
4	Increase total change interval [3]	4221	0.643	0.13	35.7	13	4-star

Notes:

1. CRF = Crash Reduction Factor
2. The stated CRF applies to angle crash types only.
3. The stated CRF applies to rear end crash types only.

Source: CMF Clearinghouse, 2020; Fehr & Peers, 2020.

Recommendation 5: Explore the feasibility and, if determined feasible by City of Oakland staff, implement one or more of the following at the Webster Street/15th Street intersection:

- Install additional signal head (overhead) for the southbound Webster Street approach
- Add three-inch yellow reflective sheeting to signal backplates
- Replace eight-inch red signal heads with 12-inch signal heads
- Increase the yellow and/or all-red clearance intervals at the intersection.

Conclusion and Summary of Recommendations

Based on our review of the Project site plan and conditions on the surrounding streets, the Project would have adequate automobile, bicycle, pedestrian, and transit access and circulation with the inclusion of the following recommendations:

Recommendation 1: If the proposed Class 4 protected bikeway would be provided on the east side of Webster Street, coordinate with City of Oakland to ensure:

- Adequate sight distance between loading vehicles entering and exiting the driveway and cyclists on the bike facility.
- Appropriate signage and striping in and around the driveway conflict zone.

Recommendation 2: Explore the feasibility and, if determined feasible by City of Oakland staff:

- Designate 40 feet of passenger loading space (white curb) on the east side of Webster Street just north of 15th Street for pick-ups and drop offs by private vehicle and transportation network company (TNC) vehicles.
- Ensure that the parking space just north of the crosswalk is accessible.

Recommendation 3: Consider relocating one or both the long-term bicycle parking rooms from the basement level to a more convenient location on the ground level. If bicycle parking is provided on the basement level, ensure that appropriate signage is provided to directed people to the bicycle parking rooms and at least one elevator can accommodate a cargo bike.

Recommendation 4: Explore the feasibility and, if determined feasible by City of Oakland staff, install the following at the Webster Street/15th Street intersection:

- Directional curb ramps at all four corners of the intersection. Considering that fire hydrants, signal poles, and/or light poles are located at corners, construction of

curb extensions (bulb-outs) may also be required to provide directional curb ramps.
- Provide curb extensions (bulb-outs) on the east and/or west side of Webster Street to improve pedestrian visibility and shorten the crossing distance (to be coordinated with the proposed Class 4 bikeway on Webster Street).
- High-visibility (continental) crosswalks across all four intersection approaches.
- Pedestrian signal heads for all four directions at the intersection.

Recommendation 5: Explore the feasibility and, if determined feasible by City of Oakland staff, implement one or more of the following at the Webster Street/15th Street intersection:

- Install additional signal head (overhead) at the southbound Webster Street approach.
- Add three-inch yellow reflective sheeting to signal backplates.
- Replace eight-inch red signal heads with 12-inch signal heads.
- Increase the yellow and/or all-red clearance intervals at the intersection.

Please contact Sam Tabibnia (stabibnia@fehrandpeers.com or 510-835-1943) with questions or comments.

ATTACHMENTS

Figure 1 – Project Vehicle Trip Distribution

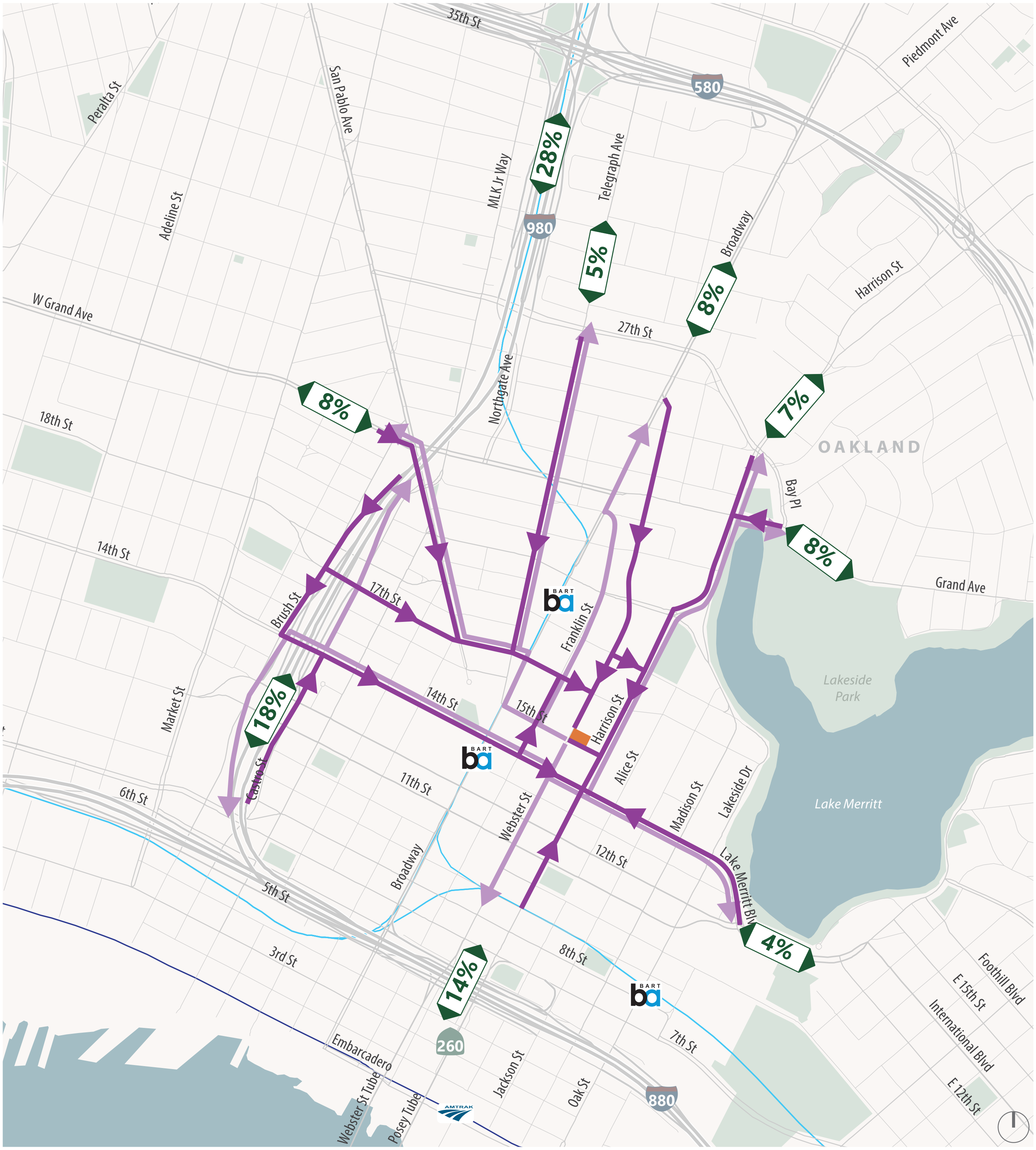
Figure 2 – Project Vehicle Trip Assignment

Figure 3 – Existing and Existing Plus Project Peak Hour Intersection Volumes, Lane Configurations, and Traffic Controls

Appendix A – Existing Traffic Volume Counts

Appendix B – Intersection LOS Calculation Sheets

Appendix C – Predicted Crash Frequency Calculation Sheets



Project Site

XX% Project Trip Distribution

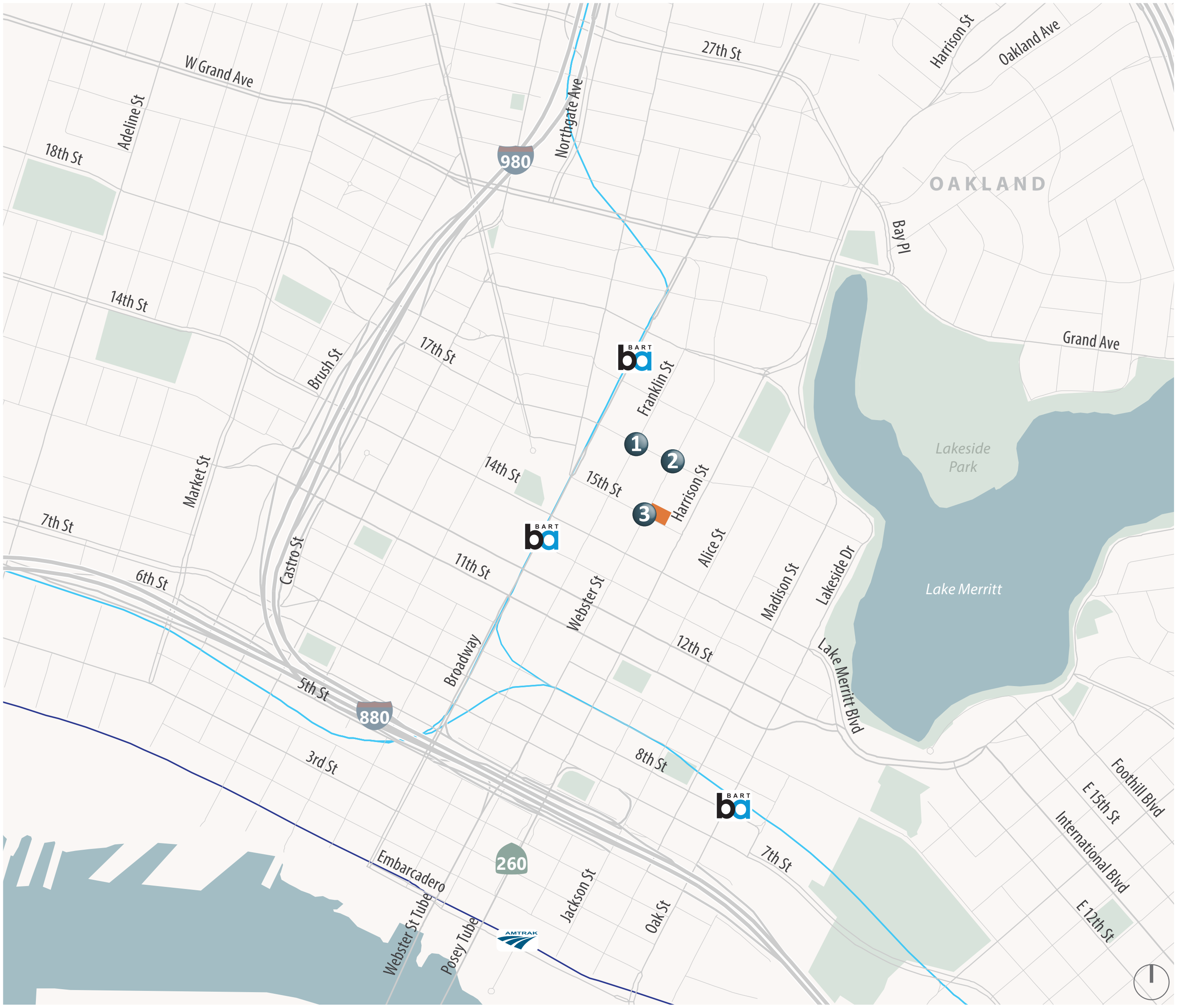
Inbound Routes

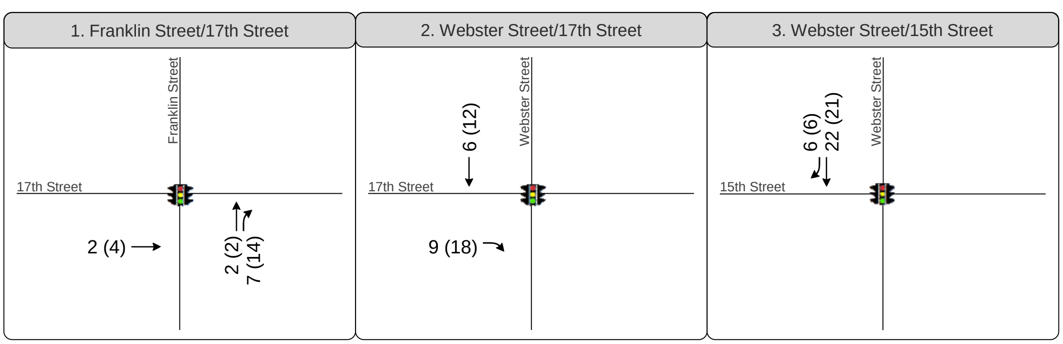
Outbound Routes

Figure 1

Project Trip Distribution

OK20-0370_1_TripDistro





XX (YY) AM (PM) Peak Hour Traffic Volumes — Signalized Intersection

Project Site — Study Intersection

Figure 2

Project Vehicle Trip Assignment

OK20-0370_X_Volumes

XX (YY) AM (PM) Peak Hour Traffic Volumes — Signalized Intersection

Project Site — Study Intersection

Figure 3

Existing and Existing Plus Project Peak Hour Intersection Volumes, Lane Configurations, and Traffic Controls

OK20-0370_X_Volumes

Appendix A:

Existing Traffic Volume Counts

ALL TRAFFIC DATA

(916) 771-8700

orders@atdtraffic.com

City of Oakland
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

File Name : 15-7863-001 Franklin Street-17th Street.ppd
Date : 10/28/2015

Unshifted Count = All Vehicles

	Franklin Street Southbound					17th Street Westbound					Franklin Street Northbound					17th Street Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	0	0	0	0	0	0	32	9	0	41	36	46	0	0	82	123	0
07:15	0	0	0	0	0	0	0	0	0	0	0	28	4	0	32	31	42	0	0	73	105	0
07:30	0	0	0	0	0	0	0	0	0	0	0	35	9	0	44	48	65	0	0	113	157	0
07:45	0	0	0	0	0	0	0	0	0	0	0	47	8	0	55	47	87	0	0	134	189	0
Total	0	0	0	0	0	0	0	0	0	0	0	142	30	0	172	162	240	0	0	402	574	0
08:00	0	0	0	0	0	0	0	0	0	0	0	55	16	0	71	48	103	0	0	151	222	0
08:15	0	0	0	0	0	0	0	0	0	0	0	88	28	0	116	75	86	0	0	161	277	0
08:30	0	0	0	0	0	0	0	0	0	0	0	65	19	0	84	73	88	0	0	161	245	0
08:45	0	0	0	0	0	0	0	0	0	0	0	73	20	0	93	82	81	0	0	163	256	0
Total	0	0	0	0	0	0	0	0	0	0	0	281	83	0	364	278	358	0	0	636	1000	0
16:00	0	0	0	0	0	0	0	0	0	0	0	83	27	0	110	29	94	0	0	123	233	0
16:15	0	0	0	0	0	0	0	0	0	0	0	71	25	0	96	26	110	0	0	136	232	0
16:30	0	0	0	0	0	0	0	0	0	0	0	92	23	0	115	35	84	0	0	119	234	0
16:45	0	0	0	0	0	0	0	0	0	0	0	79	22	0	101	27	116	0	0	143	244	0
Total	0	0	0	0	0	0	0	0	0	0	0	325	97	0	422	117	404	0	0	521	943	0
17:00	0	0	0	0	0	0	0	0	0	0	0	123	27	0	150	31	102	0	0	133	283	0
17:15	0	0	0	0	0	0	0	0	0	0	0	94	28	0	122	22	108	0	0	130	252	0
17:30	0	0	0	0	0	0	0	0	0	0	0	101	21	0	122	29	114	0	0	143	265	0
17:45	0	0	0	0	0	0	0	0	0	0	0	65	24	0	89	20	114	0	0	134	223	0
Total	0	0	0	0	0	0	0	0	0	0	0	383	100	0	483	102	438	0	0	540	1023	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1131	310	0	1441	659	1440	0	0	2099	3540	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	78.5%	21.5%	0.0%		31.4%	68.6%	0.0%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	31.9%	8.8%	0.0%	40.7%	18.6%	40.7%	0.0%	0.0%	59.3%	100.0%	

ALL TRAFFIC DATA

City of Oakland
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7119-001 Webster Street & 17th Street
Date : 2/23/2016

Unshifted Count = All Vehicles & Uturns

	Webster Street Southbound					17th Street Westbound					Webster Street Northbound					17th Street Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	5	28	0	0	33	0	0	0	0	0	0	0	0	0	0	0	30	26	0	56	89	0
7:15	7	42	0	0	49	0	0	0	0	0	0	0	0	0	0	0	49	39	0	88	137	0
7:30	10	59	0	0	69	0	0	0	0	0	0	0	0	0	0	0	52	38	0	90	159	0
7:45	13	75	0	0	88	0	0	0	0	0	0	0	0	0	0	0	63	55	0	118	206	0
Total	35	204	0	0	239	0	0	0	0	0	0	0	0	0	0	0	194	158	0	352	591	0
8:00	10	87	0	0	97	0	0	0	0	0	0	0	0	0	0	0	71	68	0	139	236	0
8:15	16	104	0	0	120	0	0	0	0	0	0	0	0	0	0	0	60	69	0	129	249	0
8:30	17	99	0	0	116	0	0	0	0	0	0	0	0	0	0	0	54	54	0	108	224	0
8:45	13	81	0	0	94	0	0	0	0	0	0	0	0	0	0	0	50	53	0	103	197	0
Total	56	371	0	0	427	0	0	0	0	0	0	0	0	0	0	0	235	244	0	479	906	0
16:00	23	109	0	0	132	0	0	0	0	0	0	0	0	0	0	0	53	75	0	128	260	0
16:15	22	98	0	0	120	0	0	0	0	0	0	0	0	0	0	0	59	46	0	105	225	0
16:30	25	110	0	0	135	0	0	0	0	0	0	0	0	0	0	0	50	54	0	104	239	0
16:45	11	134	0	0	145	0	0	0	0	0	0	0	0	0	0	0	61	56	0	117	262	0
Total	81	451	0	0	532	0	0	0	0	0	0	0	0	0	0	0	223	231	0	454	986	0
17:00	30	152	0	0	182	0	0	0	0	0	0	0	0	0	0	0	85	52	0	137	319	0
17:15	27	138	0	0	165	0	0	0	0	0	0	0	0	0	0	0	73	62	0	135	300	0
17:30	28	106	0	0	134	0	0	0	0	0	0	0	0	0	0	0	78	62	0	140	274	0
17:45	14	93	0	0	107	0	0	0	0	0	0	0	0	0	0	0	64	44	0	108	215	0
Total	99	489	0	0	588	0	0	0	0	0	0	0	0	0	0	0	300	220	0	520	1108	0
Grand Total	271	1515	0	0	1786	0	0	0	0	0	0	0	0	0	0	0	952	853	0	1805	3591	0
Apprch %	15.2%	84.8%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	52.7%	47.3%	0.0%			
Total %	7.5%	42.2%	0.0%	0.0%	49.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	26.5%	23.8%	0.0%	50.3%	100.0%	

AM PEAK HOUR	Webster Street Southbound					17th Street Westbound					Webster Street Northbound					17th Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	13	75	0	0	88	0	0	0	0	0	0	0	0	0	0	0	63	55	0	118	206
8:00	10	87	0	0	97	0	0	0	0	0	0	0	0	0	0	0	71	68	0	139	236
8:15	16	104	0	0	120	0	0	0	0	0	0	0	0	0	0	0	60	69	0	129	249
8:30	17	99	0	0	116	0	0	0	0	0	0	0	0	0	0	0	54	54	0	108	224
Total Volume	56	365	0	0	421	0	0	0	0	0	0	0	0	0	0	0	248	246	0	494	915
% App Total	13.3%	86.7%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	50.2%	49.8%	0.0%		
PHF	.824	.877	.000	.000	.877	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.873	.891	.000	.888	.919

PM PEAK HOUR	Webster Street Southbound					17th Street Westbound					Webster Street Northbound					17th Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	11	134	0	0	145	0	0	0	0	0	0	0	0	0	0	0	61	56	0	117	262
17:00	30	152	0	0	182	0	0	0	0	0	0	0	0	0	0	0	85	52	0	137	319
17:15	27	138	0	0	165	0	0	0	0	0	0	0	0	0	0	0	73	62	0	135	300
17:30	28	106	0	0	134	0	0	0	0	0	0	0	0	0	0	0	78	62	0	140	274
Total Volume	96	530	0	0	626	0	0	0	0	0	0	0	0	0	0	0	297	232	0	529	1155
% App Total	15.3%	84.7%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	56.1%	43.9%	0.0%		
PHF	.800	.872	.000	.000	.860	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.874	.935	.000	.945	.905

ALL TRAFFIC DATA

City of Oakland
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7119-003 Webster Street & 15th Street
Date : 2/23/2016

Unshifted Count = All Vehicles & Uturns

	Webster Street Southbound					15th Street Westbound					Webster Street Northbound					15th Street Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	43	10	0	53	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0	59	0
7:15	0	59	10	0	69	5	3	0	0	8	0	0	0	0	0	0	0	0	0	0	77	0
7:30	0	77	11	0	88	5	7	0	0	12	0	0	0	0	0	0	0	0	0	0	100	0
7:45	0	99	19	0	118	4	9	0	0	13	0	0	0	0	0	0	0	0	0	0	131	0
Total	0	278	50	0	328	15	24	0	0	39	0	0	0	0	0	0	0	0	0	0	367	0
8:00	0	114	24	0	138	11	22	0	0	33	0	0	0	0	0	0	0	0	0	0	171	0
8:15	0	112	36	0	148	19	22	0	0	41	0	0	0	0	0	0	0	0	0	0	189	0
8:30	0	130	22	0	152	7	25	0	0	32	0	0	0	0	0	0	0	0	0	0	184	0
8:45	0	108	17	0	125	6	9	0	0	15	0	0	0	0	0	0	0	0	0	0	140	0
Total	0	464	99	0	563	43	78	0	0	121	0	0	0	0	0	0	0	0	0	0	684	0
16:00	0	169	34	0	203	10	13	0	0	23	0	0	0	0	0	0	0	0	0	0	226	0
16:15	0	128	27	0	155	5	6	0	0	11	0	0	0	0	0	0	0	0	0	0	166	0
16:30	0	160	22	0	182	18	8	0	0	26	0	0	0	0	0	0	0	0	0	0	208	0
16:45	0	170	21	0	191	6	7	0	0	13	0	0	0	0	0	0	0	0	0	0	204	0
Total	0	627	104	0	731	39	34	0	0	73	0	0	0	0	0	0	0	0	0	0	804	0
17:00	0	190	22	0	212	12	14	0	0	26	0	0	0	0	0	0	0	0	0	0	238	0
17:15	0	176	31	0	207	8	8	0	0	16	0	0	0	0	0	0	0	0	0	0	223	0
17:30	0	148	23	0	171	7	20	0	0	27	0	0	0	0	0	0	0	0	0	0	198	0
17:45	0	126	20	0	146	8	12	0	0	20	0	0	0	0	0	0	0	0	0	0	166	0
Total	0	640	96	0	736	35	54	0	0	89	0	0	0	0	0	0	0	0	0	0	825	0
Grand Total	0	2009	349	0	2358	132	190	0	0	322	0	0	0	0	0	0	0	0	0	0	2680	0
Apprch %	0.0%	85.2%	14.8%	0.0%		41.0%	59.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%			
Total %	0.0%	75.0%	13.0%	0.0%	88.0%	4.9%	7.1%	0.0%	0.0%	12.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	

AM PEAK HOUR	Webster Street Southbound					15th Street Westbound					Webster Street Northbound					15th Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	114	24	0	138	11	22	0	0	33	0	0	0	0	0	0	0	0	0	0	171
8:15	0	112	36	0	148	19	22	0	0	41	0	0	0	0	0	0	0	0	0	0	189
8:30	0	130	22	0	152	7	25	0	0	32	0	0	0	0	0	0	0	0	0	0	184
8:45	0	108	17	0	125	6	9	0	0	15	0	0	0	0	0	0	0	0	0	0	140
Total Volume	0	464	99	0	563	43	78	0	0	121	0	0	0	0	0	0	0	0	0	0	684
% App Total	0.0%	82.4%	17.6%	0.0%		35.5%	64.5%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.892	.688	.000	.926	.566	.780	.000	.000	.738	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.905

PM PEAK HOUR	Webster Street Southbound					15th Street Westbound					Webster Street Northbound					15th Street Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	160	22	0	182	18	8	0	0	26	0	0	0	0	0	0	0	0	0	0	208
16:45	0	170	21	0	191	6	7	0	0	13	0	0	0	0	0	0	0	0	0	0	204
17:00	0	190	22	0	212	12	14	0	0	26	0	0	0	0	0	0	0	0	0	0	238
17:15	0	176	31	0	207	8	8	0	0	16	0	0	0	0	0	0	0	0	0	0	223
Total Volume	0	696	96	0	792	44	37	0	0	81	0	0	0	0	0	0	0	0	0	0	873
% App Total	0.0%	87.9%	12.1%	0.0%		54.3%	45.7%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		
PHF	.000	.916	.774	.000	.934	.611	.661	.000	.000	.779	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.917

Appendix B:

Intersection LOS Calculation Sheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	378	0	0	0	0	0	301	93	0	0	0
Future Volume (veh/h)	288	378	0	0	0	0	0	301	93	0	0	0
Number	7	4	14				5	2	12			
Initial Q (Qb), veh	0	0	0				0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.90			
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1710	1676	0				0	1676	1710			
Adj Flow Rate, veh/h	288	378	0				0	301	93			
Adj No. of Lanes	0	2	0				0	3	0			
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0				0	2	2			
Cap, veh/h	473	536	0				0	1766	501			
Arrive On Green	0.31	0.31	0.00				0.00	0.51	0.51			
Sat Flow, veh/h	1059	1798	0				0	3605	979			
Grp Volume(v), veh/h	362	304	0				0	263	131			
Grp Sat Flow(s),veh/h/ln	1332	1449	0				0	1526	1383			
Q Serve(g_s), s	11.6	8.2	0.0				0.0	2.1	2.3			
Cycle Q Clear(g_c), s	11.6	8.2	0.0				0.0	2.1	2.3			
Prop In Lane	0.80		0.00				0.00		0.71			
Lane Grp Cap(c), veh/h	558	451	0				0	1559	707			
V/C Ratio(X)	0.65	0.67	0.00				0.00	0.17	0.19			
Avail Cap(c_a), veh/h	558	451	0				0	1559	707			
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00				0.00	1.00	1.00			
Uniform Delay (d), s/veh	14.7	13.5	0.0				0.0	5.9	5.9			
Incr Delay (d2), s/veh	5.8	7.8	0.0				0.0	0.2	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.1	4.2	0.0				0.0	0.9	1.0			
LnGrp Delay(d),s/veh	20.4	21.3	0.0				0.0	6.1	6.5			
LnGrp LOS	C	C						A	A			
Approach Vol, veh/h		666						394				
Approach Delay, s/veh		20.8						6.3				
Approach LOS		C						A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				
Phs Duration (G+Y+Rc), s		27.0		18.0				
Change Period (Y+Rc), s		4.0		4.0				
Max Green Setting (Gmax), s		23.0		14.0				
Max Q Clear Time (g_c+I1), s		4.3		13.6				
Green Ext Time (p_c), s		2.5		0.2				

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	235	244	0	0	0	0	0	0	56	371	0
Future Volume (veh/h)	0	235	244	0	0	0	0	0	0	56	371	0
Number	7	4	14							1	6	16
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1676	1710							1710	1676	0
Adj Flow Rate, veh/h	0	235	244							56	371	0
Adj No. of Lanes	0	2	0							0	3	0
Peak Hour Factor	1.00	1.00	1.00							1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	584	468							291	1687	0
Arrive On Green	0.00	0.37	0.37							0.43	0.43	0.00
Sat Flow, veh/h	0	1676	1276							423	4030	0
Grp Volume(v), veh/h	0	235	244							162	265	0
Grp Sat Flow(s),veh/h/ln	0	1593	1276							1539	1388	0
Q Serve(g_s), s	0.0	4.9	6.7							0.0	2.7	0.0
Cycle Q Clear(g_c), s	0.0	4.9	6.7							2.7	2.7	0.0
Prop In Lane	0.00		1.00							0.35		0.00
Lane Grp Cap(c), veh/h	0	584	468							775	1203	0
V/C Ratio(X)	0.00	0.40	0.52							0.21	0.22	0.00
Avail Cap(c_a), veh/h	0	584	468							775	1203	0
HCM Platoon Ratio	1.00	1.00	1.00							1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	10.6	11.2							8.0	8.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	4.1							0.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	2.9							1.4	1.1	0.0
LnGrp Delay(d),s/veh	0.0	12.6	15.3							8.6	8.4	0.0
LnGrp LOS		B	B							A	A	
Approach Vol, veh/h		479									427	
Approach Delay, s/veh		14.0									8.5	
Approach LOS		B									A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		
Phs Duration (G+Y+Rc), s				21.0		24.0		
Change Period (Y+Rc), s				4.5		4.5		
Max Green Setting (Gmax), s				16.5		19.5		
Max Q Clear Time (g_c+I1), s				8.7		4.7		
Green Ext Time (p_c), s				1.4		1.6		

Intersection Summary		
HCM 2010 Ctrl Delay		11.4
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	43	78	0	0	0	0	0	464	99
Future Volume (veh/h)	0	0	0	43	78	0	0	0	0	0	464	99
Number				3	8	18				1	6	16
Initial Q (Qb), veh				0	0	0				0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00				1.00		0.86
Parking Bus, Adj				1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1710	1676	0				0	1676	1710
Adj Flow Rate, veh/h				43	78	0				0	464	99
Adj No. of Lanes				0	2	0				0	3	0
Peak Hour Factor				1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %				2	2	0				0	2	2
Cap, veh/h				464	809	0				0	1728	350
Arrive On Green				0.40	0.40	0.00				0.00	0.15	0.15
Sat Flow, veh/h				832	2100	0				0	3855	750
Grp Volume(v), veh/h				67	54	0				0	378	185
Grp Sat Flow(s),veh/h/ln				1406	1449	0				0	1526	1403
Q Serve(g_s), s				0.0	1.0	0.0				0.0	4.9	5.3
Cycle Q Clear(g_c), s				1.1	1.0	0.0				0.0	4.9	5.3
Prop In Lane				0.64		0.00				0.00		0.53
Lane Grp Cap(c), veh/h				694	580	0				0	1424	655
V/C Ratio(X)				0.10	0.09	0.00				0.00	0.27	0.28
Avail Cap(c_a), veh/h				694	580	0				0	1424	655
HCM Platoon Ratio				1.00	1.00	1.00				1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	0.00				0.00	1.00	1.00
Uniform Delay (d), s/veh				8.4	8.4	0.0				0.0	12.2	12.4
Incr Delay (d2), s/veh				0.3	0.3	0.0				0.0	0.5	1.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.6	0.5	0.0				0.0	2.2	2.2
LnGrp Delay(d),s/veh				8.7	8.7	0.0				0.0	12.7	13.5
LnGrp LOS				A	A						B	B
Approach Vol, veh/h					121						563	
Approach Delay, s/veh					8.7						12.9	
Approach LOS					A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs						6		8
Phs Duration (G+Y+Rc), s						24.0		21.0
Change Period (Y+Rc), s						3.0		3.0
Max Green Setting (Gmax), s						21.0		18.0
Max Q Clear Time (g_c+I1), s						7.3		3.1
Green Ext Time (p_c), s						2.3		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	440	0	0	0	0	0	397	98	0	0	0
Future Volume (veh/h)	109	440	0	0	0	0	0	397	98	0	0	0
Number	7	4	14				5	2	12			
Initial Q (Qb), veh	0	0	0				0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.89			
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1710	1676	0				0	1676	1710			
Adj Flow Rate, veh/h	109	440	0				0	397	98			
Adj No. of Lanes	0	2	0				0	3	0			
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0				0	2	2			
Cap, veh/h	249	788	0				0	1848	429			
Arrive On Green	0.31	0.31	0.00				0.00	0.51	0.51			
Sat Flow, veh/h	448	2609	0				0	3767	839			
Grp Volume(v), veh/h	295	254	0				0	331	164			
Grp Sat Flow(s),veh/h/ln	1531	1449	0				0	1526	1405			
Q Serve(g_s), s	4.6	6.6	0.0				0.0	2.7	2.9			
Cycle Q Clear(g_c), s	7.2	6.6	0.0				0.0	2.7	2.9			
Prop In Lane	0.37		0.00				0.00		0.60			
Lane Grp Cap(c), veh/h	586	451	0				0	1559	718			
V/C Ratio(X)	0.50	0.56	0.00				0.00	0.21	0.23			
Avail Cap(c_a), veh/h	586	451	0				0	1559	718			
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00				0.00	1.00	1.00			
Uniform Delay (d), s/veh	13.1	12.9	0.0				0.0	6.0	6.1			
Incr Delay (d2), s/veh	3.1	5.0	0.0				0.0	0.3	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.5	3.2	0.0				0.0	1.2	1.2			
LnGrp Delay(d),s/veh	16.2	18.0	0.0				0.0	6.3	6.8			
LnGrp LOS	B	B						A	A			
Approach Vol, veh/h		549						495				
Approach Delay, s/veh		17.0						6.5				
Approach LOS		B						A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				
Phs Duration (G+Y+Rc), s		27.0		18.0				
Change Period (Y+Rc), s		4.0		4.0				
Max Green Setting (Gmax), s		23.0		14.0				
Max Q Clear Time (g_c+I1), s		4.9		9.2				
Green Ext Time (p_c), s		3.2		1.5				

Intersection Summary			
HCM 2010 Ctrl Delay			12.0
HCM 2010 LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	297	232	0	0	0	0	0	0	96	530	0
Future Volume (veh/h)	0	297	232	0	0	0	0	0	0	96	530	0
Number	7	4	14							1	6	16
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.87							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1676	1710							1710	1676	0
Adj Flow Rate, veh/h	0	297	232							96	530	0
Adj No. of Lanes	0	2	0							0	3	0
Peak Hour Factor	1.00	1.00	1.00							1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	600	444							336	1633	0
Arrive On Green	0.00	0.37	0.37							0.43	0.43	0.00
Sat Flow, veh/h	0	1719	1212							516	3906	0
Grp Volume(v), veh/h	0	289	240							235	391	0
Grp Sat Flow(s),veh/h/ln	0	1593	1255							1509	1388	0
Q Serve(g_s), s	0.0	6.3	6.7							1.5	4.2	0.0
Cycle Q Clear(g_c), s	0.0	6.3	6.7							4.4	4.2	0.0
Prop In Lane	0.00		0.97							0.41		0.00
Lane Grp Cap(c), veh/h	0	584	460							767	1203	0
V/C Ratio(X)	0.00	0.49	0.52							0.31	0.33	0.00
Avail Cap(c_a), veh/h	0	584	460							767	1203	0
HCM Platoon Ratio	1.00	1.00	1.00							1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	11.0	11.2							8.4	8.4	0.0
Incr Delay (d2), s/veh	0.0	3.0	4.2							1.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.2	2.9							2.1	1.7	0.0
LnGrp Delay(d),s/veh	0.0	14.0	15.4							9.5	9.1	0.0
LnGrp LOS		B	B							A	A	
Approach Vol, veh/h		529									626	
Approach Delay, s/veh		14.6									9.3	
Approach LOS		B									A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		
Phs Duration (G+Y+Rc), s				21.0		24.0		
Change Period (Y+Rc), s				4.5		4.5		
Max Green Setting (Gmax), s				16.5		19.5		
Max Q Clear Time (g_c+I1), s				8.7		6.4		
Green Ext Time (p_c), s				1.6		2.4		

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	33	49	0	0	0	0	0	684	97
Future Volume (veh/h)	0	0	0	33	49	0	0	0	0	0	684	97
Number				3	8	18				1	6	16
Initial Q (Qb), veh				0	0	0				0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00				1.00		0.94
Parking Bus, Adj				1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1710	1676	0				0	1676	1710
Adj Flow Rate, veh/h				33	49	0				0	684	97
Adj No. of Lanes				0	2	0				0	3	0
Peak Hour Factor				1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %				2	2	0				0	2	2
Cap, veh/h				509	757	0				0	1877	263
Arrive On Green				0.40	0.40	0.00				0.00	0.15	0.15
Sat Flow, veh/h				930	1970	0				0	4174	563
Grp Volume(v), veh/h				46	36	0				0	516	265
Grp Sat Flow(s),veh/h/ln				1374	1449	0				0	1526	1534
Q Serve(g_s), s				0.0	0.7	0.0				0.0	6.8	7.0
Cycle Q Clear(g_c), s				0.8	0.7	0.0				0.0	6.8	7.0
Prop In Lane				0.72		0.00				0.00		0.37
Lane Grp Cap(c), veh/h				687	580	0				0	1424	716
V/C Ratio(X)				0.07	0.06	0.00				0.00	0.36	0.37
Avail Cap(c_a), veh/h				687	580	0				0	1424	716
HCM Platoon Ratio				1.00	1.00	1.00				1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	0.00				0.00	1.00	1.00
Uniform Delay (d), s/veh				8.3	8.3	0.0				0.0	13.0	13.1
Incr Delay (d2), s/veh				0.2	0.2	0.0				0.0	0.7	1.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	0.3	0.0				0.0	3.0	3.2
LnGrp Delay(d),s/veh				8.5	8.5	0.0				0.0	13.8	14.6
LnGrp LOS				A	A						B	B
Approach Vol, veh/h					82						781	
Approach Delay, s/veh					8.5						14.0	
Approach LOS					A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs						6		8
Phs Duration (G+Y+Rc), s						24.0		21.0
Change Period (Y+Rc), s						3.0		3.0
Max Green Setting (Gmax), s						21.0		18.0
Max Q Clear Time (g_c+I1), s						9.0		2.8
Green Ext Time (p_c), s						3.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	380	0	0	0	0	0	303	100	0	0	0
Future Volume (veh/h)	288	380	0	0	0	0	0	303	100	0	0	0
Number	7	4	14				5	2	12			
Initial Q (Qb), veh	0	0	0				0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.90			
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1710	1676	0				0	1676	1710			
Adj Flow Rate, veh/h	288	380	0				0	303	100			
Adj No. of Lanes	0	2	0				0	3	0			
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0				0	2	2			
Cap, veh/h	472	537	0				0	1736	523			
Arrive On Green	0.31	0.31	0.00				0.00	0.51	0.51			
Sat Flow, veh/h	1057	1801	0				0	3547	1024			
Grp Volume(v), veh/h	363	305	0				0	269	134			
Grp Sat Flow(s),veh/h/ln	1333	1449	0				0	1526	1369			
Q Serve(g_s), s	11.6	8.3	0.0				0.0	2.1	2.4			
Cycle Q Clear(g_c), s	11.6	8.3	0.0				0.0	2.1	2.4			
Prop In Lane	0.79		0.00				0.00		0.75			
Lane Grp Cap(c), veh/h	558	451	0				0	1559	700			
V/C Ratio(X)	0.65	0.68	0.00				0.00	0.17	0.19			
Avail Cap(c_a), veh/h	558	451	0				0	1559	700			
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00				0.00	1.00	1.00			
Uniform Delay (d), s/veh	14.7	13.5	0.0				0.0	5.9	6.0			
Incr Delay (d2), s/veh	5.8	7.9	0.0				0.0	0.2	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.1	4.2	0.0				0.0	0.9	1.0			
LnGrp Delay(d),s/veh	20.5	21.4	0.0				0.0	6.1	6.6			
LnGrp LOS	C	C						A	A			
Approach Vol, veh/h		668						403				
Approach Delay, s/veh		20.9						6.3				
Approach LOS		C						A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				
Phs Duration (G+Y+Rc), s		27.0		18.0				
Change Period (Y+Rc), s		4.0		4.0				
Max Green Setting (Gmax), s		23.0		14.0				
Max Q Clear Time (g_c+I1), s		4.4		13.6				
Green Ext Time (p_c), s		2.6		0.2				

Intersection Summary		
HCM 2010 Ctrl Delay		15.4
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↱									↰↑↑	
Traffic Volume (veh/h)	0	235	253	0	0	0	0	0	0	56	377	0
Future Volume (veh/h)	0	235	253	0	0	0	0	0	0	56	377	0
Number	7	4	14							1	6	16
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1676	1710							1710	1676	0
Adj Flow Rate, veh/h	0	235	253							56	377	0
Adj No. of Lanes	0	2	0							0	3	0
Peak Hour Factor	1.00	1.00	1.00							1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	584	468							288	1691	0
Arrive On Green	0.00	0.37	0.37							0.43	0.43	0.00
Sat Flow, veh/h	0	1676	1276							416	4039	0
Grp Volume(v), veh/h	0	235	253							164	269	0
Grp Sat Flow(s),veh/h/ln	0	1593	1276							1541	1388	0
Q Serve(g_s), s	0.0	4.9	7.0							0.0	2.7	0.0
Cycle Q Clear(g_c), s	0.0	4.9	7.0							2.8	2.7	0.0
Prop In Lane	0.00		1.00							0.34		0.00
Lane Grp Cap(c), veh/h	0	584	468							775	1203	0
V/C Ratio(X)	0.00	0.40	0.54							0.21	0.22	0.00
Avail Cap(c_a), veh/h	0	584	468							775	1203	0
HCM Platoon Ratio	1.00	1.00	1.00							1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	10.6	11.3							8.0	8.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	4.4							0.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.5	3.0							1.4	1.1	0.0
LnGrp Delay(d),s/veh	0.0	12.6	15.7							8.6	8.4	0.0
LnGrp LOS		B	B							A	A	
Approach Vol, veh/h		488									433	
Approach Delay, s/veh		14.2									8.5	
Approach LOS		B									A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		
Phs Duration (G+Y+Rc), s				21.0		24.0		
Change Period (Y+Rc), s				4.5		4.5		
Max Green Setting (Gmax), s				16.5		19.5		
Max Q Clear Time (g_c+I1), s				9.0		4.8		
Green Ext Time (p_c), s				1.4		1.7		

Intersection Summary		
HCM 2010 Ctrl Delay		11.5
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↰↑						↑↑↱	
Traffic Volume (veh/h)	0	0	0	43	78	0	0	0	0	0	486	105
Future Volume (veh/h)	0	0	0	43	78	0	0	0	0	0	486	105
Number				3	8	18				1	6	16
Initial Q (Qb), veh				0	0	0				0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00				1.00		0.86
Parking Bus, Adj				1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1710	1676	0				0	1676	1710
Adj Flow Rate, veh/h				43	78	0				0	486	105
Adj No. of Lanes				0	2	0				0	3	0
Peak Hour Factor				1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %				2	2	0				0	2	2
Cap, veh/h				464	809	0				0	1723	354
Arrive On Green				0.40	0.40	0.00				0.00	0.15	0.15
Sat Flow, veh/h				832	2100	0				0	3843	759
Grp Volume(v), veh/h				67	54	0				0	397	194
Grp Sat Flow(s),veh/h/ln				1406	1449	0				0	1526	1399
Q Serve(g_s), s				0.0	1.0	0.0				0.0	5.2	5.5
Cycle Q Clear(g_c), s				1.1	1.0	0.0				0.0	5.2	5.5
Prop In Lane				0.64		0.00				0.00		0.54
Lane Grp Cap(c), veh/h				694	580	0				0	1424	653
V/C Ratio(X)				0.10	0.09	0.00				0.00	0.28	0.30
Avail Cap(c_a), veh/h				694	580	0				0	1424	653
HCM Platoon Ratio				1.00	1.00	1.00				1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	0.00				0.00	1.00	1.00
Uniform Delay (d), s/veh				8.4	8.4	0.0				0.0	12.3	12.5
Incr Delay (d2), s/veh				0.3	0.3	0.0				0.0	0.5	1.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.6	0.5	0.0				0.0	2.3	2.3
LnGrp Delay(d),s/veh				8.7	8.7	0.0				0.0	12.8	13.6
LnGrp LOS				A	A						B	B
Approach Vol, veh/h					121						591	
Approach Delay, s/veh					8.7						13.1	
Approach LOS					A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs						6		8
Phs Duration (G+Y+Rc), s						24.0		21.0
Change Period (Y+Rc), s						3.0		3.0
Max Green Setting (Gmax), s						21.0		18.0
Max Q Clear Time (g_c+I1), s						7.5		3.1
Green Ext Time (p_c), s						2.4		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	444	0	0	0	0	0	399	112	0	0	0
Future Volume (veh/h)	109	444	0	0	0	0	0	399	112	0	0	0
Number	7	4	14				5	2	12			
Initial Q (Qb), veh	0	0	0				0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.89			
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1710	1676	0				0	1676	1710			
Adj Flow Rate, veh/h	109	444	0				0	399	112			
Adj No. of Lanes	0	2	0				0	3	0			
Peak Hour Factor	1.00	1.00	1.00				1.00	1.00	1.00			
Percent Heavy Veh, %	2	2	0				0	2	2			
Cap, veh/h	248	789	0				0	1793	471			
Arrive On Green	0.31	0.31	0.00				0.00	0.51	0.51			
Sat Flow, veh/h	445	2612	0				0	3660	921			
Grp Volume(v), veh/h	297	256	0				0	343	168			
Grp Sat Flow(s),veh/h/ln	1532	1449	0				0	1526	1378			
Q Serve(g_s), s	4.6	6.6	0.0				0.0	2.8	3.0			
Cycle Q Clear(g_c), s	7.3	6.6	0.0				0.0	2.8	3.0			
Prop In Lane	0.37		0.00				0.00		0.67			
Lane Grp Cap(c), veh/h	586	451	0				0	1559	705			
V/C Ratio(X)	0.51	0.57	0.00				0.00	0.22	0.24			
Avail Cap(c_a), veh/h	586	451	0				0	1559	705			
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00				0.00	1.00	1.00			
Uniform Delay (d), s/veh	13.1	13.0	0.0				0.0	6.1	6.1			
Incr Delay (d2), s/veh	3.1	5.1	0.0				0.0	0.3	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.6	3.3	0.0				0.0	1.2	1.3			
LnGrp Delay(d),s/veh	16.2	18.1	0.0				0.0	6.4	6.9			
LnGrp LOS	B	B						A	A			
Approach Vol, veh/h		553						511				
Approach Delay, s/veh		17.1						6.6				
Approach LOS		B						A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				
Phs Duration (G+Y+Rc), s		27.0		18.0				
Change Period (Y+Rc), s		4.0		4.0				
Max Green Setting (Gmax), s		23.0		14.0				
Max Q Clear Time (g_c+I1), s		5.0		9.3				
Green Ext Time (p_c), s		3.3		1.5				

Intersection Summary			
HCM 2010 Ctrl Delay			12.0
HCM 2010 LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	297	250	0	0	0	0	0	0	96	542	0
Future Volume (veh/h)	0	297	250	0	0	0	0	0	0	96	542	0
Number	7	4	14							1	6	16
Initial Q (Qb), veh	0	0	0							0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.87							1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00							1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1676	1710							1710	1676	0
Adj Flow Rate, veh/h	0	297	250							96	542	0
Adj No. of Lanes	0	2	0							0	3	0
Peak Hour Factor	1.00	1.00	1.00							1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2							2	2	0
Cap, veh/h	0	584	456							331	1640	0
Arrive On Green	0.00	0.37	0.37							0.43	0.43	0.00
Sat Flow, veh/h	0	1676	1244							505	3921	0
Grp Volume(v), veh/h	0	297	250							239	399	0
Grp Sat Flow(s),veh/h/ln	0	1593	1244							1512	1388	0
Q Serve(g_s), s	0.0	6.5	7.2							1.5	4.3	0.0
Cycle Q Clear(g_c), s	0.0	6.5	7.2							4.4	4.3	0.0
Prop In Lane	0.00		1.00							0.40		0.00
Lane Grp Cap(c), veh/h	0	584	456							767	1203	0
V/C Ratio(X)	0.00	0.51	0.55							0.31	0.33	0.00
Avail Cap(c_a), veh/h	0	584	456							767	1203	0
HCM Platoon Ratio	1.00	1.00	1.00							1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00							1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	11.1	11.3							8.4	8.4	0.0
Incr Delay (d2), s/veh	0.0	3.1	4.7							1.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0							0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.3	3.0							2.2	1.7	0.0
LnGrp Delay(d),s/veh	0.0	14.2	16.0							9.5	9.2	0.0
LnGrp LOS		B	B							A	A	
Approach Vol, veh/h		547									638	
Approach Delay, s/veh		15.0									9.3	
Approach LOS		B									A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		
Phs Duration (G+Y+Rc), s				21.0		24.0		
Change Period (Y+Rc), s				4.5		4.5		
Max Green Setting (Gmax), s				16.5		19.5		
Max Q Clear Time (g_c+I1), s				9.2		6.4		
Green Ext Time (p_c), s				1.6		2.5		

Intersection Summary			
HCM 2010 Ctrl Delay			11.9
HCM 2010 LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	33	49	0	0	0	0	0	705	103
Future Volume (veh/h)	0	0	0	33	49	0	0	0	0	0	705	103
Number				3	8	18				1	6	16
Initial Q (Qb), veh				0	0	0				0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00				1.00		0.94
Parking Bus, Adj				1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1710	1676	0				0	1676	1710
Adj Flow Rate, veh/h				33	49	0				0	705	103
Adj No. of Lanes				0	2	0				0	3	0
Peak Hour Factor				1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %				2	2	0				0	2	2
Cap, veh/h				509	757	0				0	1869	269
Arrive On Green				0.40	0.40	0.00				0.00	0.15	0.15
Sat Flow, veh/h				930	1970	0				0	4155	577
Grp Volume(v), veh/h				46	36	0				0	535	273
Grp Sat Flow(s),veh/h/ln				1374	1449	0				0	1526	1531
Q Serve(g_s), s				0.0	0.7	0.0				0.0	7.1	7.2
Cycle Q Clear(g_c), s				0.8	0.7	0.0				0.0	7.1	7.2
Prop In Lane				0.72		0.00				0.00		0.38
Lane Grp Cap(c), veh/h				687	580	0				0	1424	714
V/C Ratio(X)				0.07	0.06	0.00				0.00	0.38	0.38
Avail Cap(c_a), veh/h				687	580	0				0	1424	714
HCM Platoon Ratio				1.00	1.00	1.00				1.00	0.33	0.33
Upstream Filter(I)				1.00	1.00	0.00				0.00	1.00	1.00
Uniform Delay (d), s/veh				8.3	8.3	0.0				0.0	13.1	13.2
Incr Delay (d2), s/veh				0.2	0.2	0.0				0.0	0.8	1.6
Initial Q Delay(d3),s/veh				0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.4	0.3	0.0				0.0	3.1	3.4
LnGrp Delay(d),s/veh				8.5	8.5	0.0				0.0	13.9	14.8
LnGrp LOS				A	A						B	B
Approach Vol, veh/h					82						808	
Approach Delay, s/veh					8.5						14.2	
Approach LOS					A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs						6		8
Phs Duration (G+Y+Rc), s						24.0		21.0
Change Period (Y+Rc), s						3.0		3.0
Max Green Setting (Gmax), s						21.0		18.0
Max Q Clear Time (g_c+I1), s						9.2		2.8
Green Ext Time (p_c), s						3.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Appendix C:

Predicted Crash Frequency Calculation Sheets

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		**Location Information**	
Analyst	Sam Inoue-Alexander	Roadway	
Agency or Company	Fehr & Peers	Intersection	Franklin St/17th St
Date Performed	07/29/20	Jurisdiction	Oakland, CA
		Analysis Year	2020

Input Data		**Base Conditions**	**Site Conditions**
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	13,320
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	7,880
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			5,640
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	3
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	9

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	0.99	1.00	1.00	0.91	1.00	0.90

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	3.440	1.000	3.440	0.90	1.00	3.101
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.041	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.314	1.081	0.90	1.00	0.975
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	2.271	$(5)_{TOTAL}-(5)_{FI}$ 0.686	2.358	0.90	1.00	2.126

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.975	1.000	2.126	3.101
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.439	0.483	1.027	1.466
Head-on collision	0.049	0.048	0.030	0.064	0.112
Angle collision	0.347	0.338	0.244	0.519	0.857
Sideswipe	0.099	0.097	0.032	0.068	0.165
Other multiple-vehicle collision	0.055	0.054	0.211	0.449	0.502

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.265	1.000	0.265	0.90	1.00	0.239
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.077	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.294	0.078	0.90	1.00	0.070
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.185	$(5)_{TOTAL}-(5)_{FI}$ 0.706	0.187	0.90	1.00	0.168

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted $N_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted $N_{bisv\ (PDO)}$ (crashes/year)**	**Predicted $N_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.070	1.000	0.168	0.239
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.052	0.870	0.146	0.199
Collision with other object	0.072	0.005	0.070	0.012	0.017
Other single-vehicle collision	0.040	0.003	0.023	0.004	0.007
Single-vehicle noncollision	0.141	0.010	0.034	0.006	0.016

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
4.15	1.35	1.56	8.74

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.187	8.74	1.00	1.637
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	1.637

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	3.101	0.239	3.340	0.015	1.00	0.050
Fatal and injury (FI)	--	--	--	--	1.00	0.050

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.439	1.027	1.466
Head-on collisions (from Worksheet 2D)	0.048	0.064	0.112
Angle collisions (from Worksheet 2D)	0.338	0.519	0.857
Sideswipe (from Worksheet 2D)	0.097	0.068	0.165
Other multiple-vehicle collision (from Worksheet 2D)	0.054	0.449	0.502
Subtotal	0.975	2.126	3.101
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.052	0.146	0.199
Collision with other object (from Worksheet 2F)	0.005	0.012	0.017
Other single-vehicle collision (from Worksheet 2F)	0.003	0.004	0.007
Single-vehicle noncollision (from Worksheet 2F)	0.010	0.006	0.016
Collision with pedestrian (from Worksheet 2G or 2I)	1.637	0.000	1.637
Collision with bicycle (from Worksheet 2J)	0.050	0.000	0.050
Subtotal	1.758	0.168	1.926
Total	2.732	2.295	5.027

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	5.0
Fatal and injury (FI)	2.7
Property damage only (PDO)	2.3

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		**Location Information**	
Analyst	Sam Inoue-Alexander	Roadway	
Agency or Company	Fehr & Peers	Intersection	Webster St/17th St
Date Performed	07/29/20	Jurisdiction	Oakland, CA
		Analysis Year	2020

Input Data		**Base Conditions**	**Site Conditions**
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	12,520
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	10,580
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			3,920
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	2
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	9

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	0.99	1.00	1.00	0.91	1.00	0.90

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	3.445	1.000	3.445	0.90	1.00	3.106
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.033	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.311	1.071	0.90	1.00	0.966
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	2.288	$(5)_{TOTAL}-(5)_{FI}$ 0.689	2.374	0.90	1.00	2.140

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision $Type_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.966	1.000	2.140	3.106
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.435	0.483	1.034	1.468
Head-on collision	0.049	0.047	0.030	0.064	0.112
Angle collision	0.347	0.335	0.244	0.522	0.857
Sideswipe	0.099	0.096	0.032	0.068	0.164
Other multiple-vehicle collision	0.055	0.053	0.211	0.452	0.505

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.275	1.000	0.275	0.90	1.00	0.248
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.082	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.301	0.083	0.90	1.00	0.075
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.189	$(5)_{TOTAL}-(5)_{FI}$ 0.699	0.192	0.90	1.00	0.173

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.075	1.000	0.173	0.248
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.055	0.870	0.151	0.206
Collision with other object	0.072	0.005	0.070	0.012	0.017
Other single-vehicle collision	0.040	0.003	0.023	0.004	0.007
Single-vehicle noncollision	0.141	0.011	0.034	0.006	0.016

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections			
(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
2.78	1.35	1.56	5.85

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections										
(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.181	5.85	1.00	1.057
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	1.057

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	3.106	0.248	3.354	0.015	1.00	0.050
Fatal and injury (FI)	--	--	--	--	1.00	0.050

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.435	1.034	1.468
Head-on collisions (from Worksheet 2D)	0.047	0.064	0.112
Angle collisions (from Worksheet 2D)	0.335	0.522	0.857
Sideswipe (from Worksheet 2D)	0.096	0.068	0.164
Other multiple-vehicle collision (from Worksheet 2D)	0.053	0.452	0.505
Subtotal	0.966	2.140	3.106
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.055	0.151	0.206
Collision with other object (from Worksheet 2F)	0.005	0.012	0.017
Other single-vehicle collision (from Worksheet 2F)	0.003	0.004	0.007
Single-vehicle noncollision (from Worksheet 2F)	0.011	0.006	0.016
Collision with pedestrian (from Worksheet 2G or 2I)	1.057	0.000	1.057
Collision with bicycle (from Worksheet 2J)	0.050	0.000	0.050
Subtotal	1.182	0.173	1.355
Total	2.148	2.313	4.461

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	4.5
Fatal and injury (FI)	2.1
Property damage only (PDO)	2.3

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		**Location Information**	
Analyst	Sam Inoue-Alexander	Roadway	
Agency or Company	Fehr & Peers	Intersection	Webster St/15th St
Date Performed	07/29/20	Jurisdiction	Oakland, CA
		Analysis Year	2020

Input Data		**Base Conditions**	**Site Conditions**
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	15,620
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	1,640
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			4,890
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	3
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	9

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	0.99	1.00	1.00	0.91	1.00	0.90

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	2.843	1.000	2.843	0.90	1.00	2.563
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	0.890	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.327	0.929	0.90	1.00	0.837
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	1.833	$(5)_{TOTAL}-(5)_{FI}$ 0.673	1.914	0.90	1.00	1.726

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision $Type_{(FI)}$**	**Predicted $N_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted $N_{bimv\ (PDO)}$ (crashes/year)**	**Predicted $N_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.837	1.000	1.726	2.563
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.377	0.483	0.834	1.210
Head-on collision	0.049	0.041	0.030	0.052	0.093
Angle collision	0.347	0.291	0.244	0.421	0.712
Sideswipe	0.099	0.083	0.032	0.055	0.138
Other multiple-vehicle collision	0.055	0.046	0.211	0.364	0.410

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.193	1.000	0.193	0.90	1.00	0.174
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.052	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.270	0.052	0.90	1.00	0.047
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.141	$(5)_{TOTAL}-(5)_{FI}$ 0.730	0.141	0.90	1.00	0.127

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted $N_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted $N_{bisv\ (PDO)}$ (crashes/year)**	**Predicted $N_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.047	1.000	0.127	0.174
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.035	0.870	0.110	0.145
Collision with other object	0.072	0.003	0.070	0.009	0.012
Other single-vehicle collision	0.040	0.002	0.023	0.003	0.005
Single-vehicle noncollision	0.141	0.007	0.034	0.004	0.011

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections			
(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
4.15	1.35	1.56	8.74

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections										
(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.103	8.74	1.00	0.902
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.902

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	2.563	0.174	2.737	0.015	1.00	0.041
Fatal and injury (FI)	--	--	--	--	1.00	0.041

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.377	0.834	1.210
Head-on collisions (from Worksheet 2D)	0.041	0.052	0.093
Angle collisions (from Worksheet 2D)	0.291	0.421	0.712
Sideswipe (from Worksheet 2D)	0.083	0.055	0.138
Other multiple-vehicle collision (from Worksheet 2D)	0.046	0.364	0.410
Subtotal	0.837	1.726	2.563
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.035	0.110	0.145
Collision with other object (from Worksheet 2F)	0.003	0.009	0.012
Other single-vehicle collision (from Worksheet 2F)	0.002	0.003	0.005
Single-vehicle noncollision (from Worksheet 2F)	0.007	0.004	0.011
Collision with pedestrian (from Worksheet 2G or 2I)	0.902	0.000	0.902
Collision with bicycle (from Worksheet 2J)	0.041	0.000	0.041
Subtotal	0.990	0.127	1.117
Total	1.828	1.853	3.680

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	3.7
Fatal and injury (FI)	1.8
Property damage only (PDO)	1.9

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments			
General Information		**Location Information**	
Analyst	Sam Inoue-Alexander	Roadway	Webster Street
Agency or Company	Fehr & Peers	Roadway Section	15th Street to 17th Street
Date Performed	07/29/20	Jurisdiction	Oakland, CA
		Analysis Year	2020

Input Data		**Base Conditions**	**Site Conditions**
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	0.1
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	15,240
Type of on-street parking (none/parallel/angle)		None	Parallel (Comm/Ind)
Proportion of curb length with on-street parking		--	0.6
Median width (ft) - for divided only		15	100
Lighting (present / not present)		Not Present	Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	1
Major industrial / institutional driveways (number)		--	2
Minor industrial / institutional driveways (number)		--	2
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	0
Other driveways (number)		--	0
Speed Category		--	Posted Speed 30 mph or Lower
Roadside fixed object density (fixed objects / mi)		0	50
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.43	1.29	0.92	0.91	1.00	1.55

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments									
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	1.36	1.32	0.214	1.000	0.214	1.55	1.00	0.331
Fatal and Injury (FI)	-12.76	1.28	1.31	0.065	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.286	0.061	1.55	1.00	0.095
Property Damage Only (PDO)	-12.81	1.38	1.34	0.162	$(5)_{TOTAL}-(5)_{FI}$ 0.714	0.152	1.55	1.00	0.236

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type(FI)**	**Predicted N brmv (FI) (crashes/year)**	**Proportion of Collision Type (PDO)**	**Predicted N brmv (PDO) (crashes/year)**	**Predicted N brmv (TOTAL) (crashes/year)**
	from Table 12-4	(9)FI from Worksheet 1C	from Table 12-4	(9)PDO from Worksheet 1C	(9)TOTAL from Worksheet 1C
Total	1.000	0.095	1.000	0.236	0.331
		(2)*(3)FI		(4)*(5)PDO	(3)+(5)
Rear-end collision	0.832	0.079	0.662	0.156	0.235
Head-on collision	0.020	0.002	0.007	0.002	0.004
Angle collision	0.040	0.004	0.036	0.008	0.012
Sideswipe, same direction	0.050	0.005	0.223	0.053	0.057
Sideswipe, opposite direction	0.010	0.001	0.001	0.000	0.001
Other multiple-vehicle collision	0.048	0.005	0.071	0.017	0.021

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments									
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		(4)TOTAL*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	0.059	1.000	0.059	1.55	1.00	0.092
Fatal and Injury (FI)	-8.71	0.66	0.28	0.010	(4)FI/((4)FI+(4)PDO)	0.010	1.55	1.00	0.015
					0.161				
Property Damage Only (PDO)	-5.04	0.45	1.06	0.049	(5)TOTAL-(5)FI	0.050	1.55	1.00	0.077
					0.839				

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type(FI)**	**Predicted N brsv (FI) (crashes/year)**	**Proportion of Collision Type (PDO)**	**Predicted N brsv (PDO) (crashes/year)**	**Predicted N brsv (TOTAL) (crashes/year)**
	from Table 12-6	(9)FI from Worksheet 1E	from Table 12-6	(9)PDO from Worksheet 1E	(9)TOTAL from Worksheet 1E
Total	1.000	0.015	1.000	0.077	0.092
		(2)*(3)FI		(4)*(5)PDO	(3)+(5)
Collision with animal	0.001	0.000	0.063	0.005	0.005
Collision with fixed object	0.500	0.007	0.813	0.063	0.070
Collision with other object	0.028	0.000	0.016	0.001	0.002
Other single-vehicle collision	0.471	0.007	0.108	0.008	0.015

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 n_j * N_j * $(AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.033	1.106	0.000	--
Minor commercial	1	0.011	1.106	0.011	
Major industrial/institutional	2	0.036	1.106	0.073	
Minor industrial/institutional	2	0.005	1.106	0.010	
Major residential	0	0.018	1.106	0.000	
Minor residential	0	0.003	1.106	0.000	
Other	0	0.005	1.106	0.000	
Total	--	--	--	0.095	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.095	1.000	0.095	1.55	1.00	0.146
Fatal and injury (FI)	--	0.284	0.027	1.55	1.00	0.042
Property damage only (PDO)	--	0.716	0.068	1.55	1.00	0.105

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.331	0.092	0.146	0.569	0.067	1.00	0.038
Fatal and injury (FI)	--	--	--	--	--	1.00	0.038

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.331	0.092	0.146	0.569	0.013	1.00	0.007
Fatal and injury (FI)	--	--	--	--	--	1.00	0.007

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)** (3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	**Property damage only (PDO)** (5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	**Total** (6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.079	0.156	0.235
Head-on collisions (from Worksheet 1D)	0.002	0.002	0.004
Angle collisions (from Worksheet 1D)	0.004	0.008	0.012
Sideswipe, same direction (from Worksheet 1D)	0.005	0.053	0.057
Sideswipe, opposite direction (from Worksheet 1D)	0.001	0.000	0.001
Driveway-related collisions (from Worksheet 1H)	0.042	0.105	0.146
Other multiple-vehicle collision (from Worksheet 1D)	0.005	0.017	0.021
Subtotal	0.136	0.341	0.477
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.000	0.005	0.005
Collision with fixed object (from Worksheet 1F)	0.007	0.063	0.070
Collision with other object (from Worksheet 1F)	0.000	0.001	0.002
Other single-vehicle collision (from Worksheet 1F)	0.007	0.008	0.015
Collision with pedestrian (from Worksheet 1I)	0.038	0.000	0.038
Collision with bicycle (from Worksheet 1J)	0.007	0.000	0.007
Subtotal	0.060	0.077	0.137
Total	0.197	0.418	0.614

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	0.6	0.10	6.1
Fatal and injury (FI)	0.2	0.10	2.0
Property damage only (PDO)	0.4	0.10	4.2

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments			
General Information		**Location Information**	
Analyst	Sam Inoue-Alexander	Roadway	15th Street
Agency or Company	Fehr & Peers	Roadway Section	Webster Street to Harrison Street
Date Performed	07/29/20	Jurisdiction	Oakland, CA
		Analysis Year	2020
Input Data		**Base Conditions**	**Site Conditions**
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	0.1
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	2,420
Type of on-street parking (none/parallel/angle)		None	Parallel (Comm/Ind)
Proportion of curb length with on-street parking		--	0.9
Median width (ft) - for divided only		15	100
Lighting (present / not present)		Not Present	Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	1
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	0
Other driveways (number)		--	0
Speed Category		--	Posted Speed 30 mph or Lower
Roadside fixed object density (fixed objects / mi)		0	80
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.64	1.49	0.92	0.91	1.00	2.05

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments									
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	1.36	1.32	0.017	1.000	0.017	2.05	1.00	0.036
Fatal and Injury (FI)	-12.76	1.28	1.31	0.006	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.325	0.006	2.05	1.00	0.012
Property Damage Only (PDO)	-12.81	1.38	1.34	0.013	$(5)_{TOTAL}-(5)_{FI}$ 0.675	0.012	2.05	1.00	0.024

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted $N_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted $N_{brmv\ (PDO)}$ (crashes/year)**	**Predicted $N_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.012	1.000	0.024	0.036
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.832	0.010	0.662	0.016	0.026
Head-on collision	0.020	0.000	0.007	0.000	0.000
Angle collision	0.040	0.000	0.036	0.001	0.001
Sideswipe, same direction	0.050	0.001	0.223	0.005	0.006
Sideswipe, opposite direction	0.010	0.000	0.001	0.000	0.000
Other multiple-vehicle collision	0.048	0.001	0.071	0.002	0.002

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments									
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	0.025	1.000	0.025	2.05	1.00	0.051
Fatal and Injury (FI)	-8.71	0.66	0.28	0.003	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.116	0.003	2.05	1.00	0.006
Property Damage Only (PDO)	-5.04	0.45	1.06	0.022	$(5)_{TOTAL}-(5)_{FI}$ 0.884	0.022	2.05	1.00	0.045

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted $N_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted $N_{brsv\ (PDO)}$ (crashes/year)**	**Predicted $N_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.006	1.000	0.045	0.051
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.001	0.000	0.063	0.003	0.003
Collision with fixed object	0.500	0.003	0.813	0.037	0.040
Collision with other object	0.028	0.000	0.016	0.001	0.001
Other single-vehicle collision	0.471	0.003	0.108	0.005	0.008

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments					
(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.033	1.106	0.000	--
Minor commercial	0	0.011	1.106	0.000	
Major industrial/institutional	0	0.036	1.106	0.000	
Minor industrial/institutional	1	0.005	1.106	0.001	
Major residential	0	0.018	1.106	0.000	
Minor residential	0	0.003	1.106	0.000	
Other	0	0.005	1.106	0.000	
Total	--	--	--	0.001	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.001	1.000	0.001	2.05	1.00	0.001
Fatal and injury (FI)	--	0.284	0.000	2.05	1.00	0.000
Property damage only (PDO)	--	0.716	0.000	2.05	1.00	0.001

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.036	0.051	0.001	0.088	0.067	1.00	0.006
Fatal and injury (FI)	--	--	--	--	--	1.00	0.006

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments							
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.036	0.051	0.001	0.088	0.013	1.00	0.001
Fatal and injury (FI)	--	--	--	--	--	1.00	0.001

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.010	0.016	0.026
Head-on collisions (from Worksheet 1D)	0.000	0.000	0.000
Angle collisions (from Worksheet 1D)	0.000	0.001	0.001
Sideswipe, same direction (from Worksheet 1D)	0.001	0.005	0.006
Sideswipe, opposite direction (from Worksheet 1D)	0.000	0.000	0.000
Driveway-related collisions (from Worksheet 1H)	0.000	0.001	0.001
Other multiple-vehicle collision (from Worksheet 1D)	0.001	0.002	0.002
Subtotal	0.012	0.025	0.037
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.000	0.003	0.003
Collision with fixed object (from Worksheet 1F)	0.003	0.037	0.040
Collision with other object (from Worksheet 1F)	0.000	0.001	0.001
Other single-vehicle collision (from Worksheet 1F)	0.003	0.005	0.008
Collision with pedestrian (from Worksheet 1I)	0.006	0.000	0.006
Collision with bicycle (from Worksheet 1J)	0.001	0.000	0.001
Subtotal	0.013	0.045	0.058
Total	0.025	0.070	0.095

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	0.1	0.10	1.0
Fatal and injury (FI)	0.0	0.10	0.3
Property damage only (PDO)	0.1	0.10	0.7

APPENDIX G

Transportation Demand Management Plan

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Draft Memorandum

Date: December 29, 2020

To: Jill Feyk-Miney, ESA

From: Sam Tabibnia, Fehr & Peers

Subject: 1510 Webster Street – Transportation and Parking Demand Management Plan

Ok20-0370

The proposed 1510 Webster Street project is required to prepare a Transportation and Parking Demand Management (TDM) Plan per the *City of Oakland's Transportation Impact Review Guidelines* and the City's Standard Conditions of Approval. Since the Project would generate between 50 and 99 net new peak hour trips, the goal of the TDM Plan is to achieve a 10 percent vehicle trip reduction (VTR). This memorandum describes the project and setting and lists the mandatory TDM strategies that the project shall implement to achieve the 10 percent VTR.

Project Description

The Project is located at the northeast corner of the Webster Street/15th Street intersection in Downtown Oakland and would consist of a 19-level building providing about 11,400 square feet of office on the ground and basement levels, about 3,500 square feet of retail on the ground level, and 182 residential dwelling units on the second through 19th levels of the building. The Project would not include any automobile parking facilities. The Project site is currently occupied by a vacant building and an abandoned construction site on a former parking lot.

Project Location

The Project is located in Downtown Oakland, a dense, pedestrian-friendly, urban area. The Project is near dense employment areas and is within walking distance of a variety of neighborhood-serving retail, restaurant, and entertainment (such as bars and movie theaters) uses.

The Project is located four blocks from the 12th Street City Center and 19th Street BART Stations. The Project is also within easy walking distance of several bus routes, including AC Transit's trunk routes 6, 51A, and 72/72M/72R, as well as numerous local, night, and Transbay buses, and the "Free B," Oakland's free downtown circulator shuttle. The Project's location is expected to result in a relatively high rate of pedestrian, bicycle, and transit trips.

The Project's proximity to both regional transit as well as employment centers and other neighborhood amenities is likely to result in relatively high rates of walking, bicycling and transit use by residents, workers, and visitors. This is evidenced in part by the travel patterns of the area's existing residents. Based on US Census data, **Table 1** summarizes the transportation mode split for employed residents' journey to work, and **Table 2** summarizes vehicle ownership for employed residents for Project's census tract. Although only 43 percent of households have one or more vehicles at home, only 32 percent of employed residents drive to work, while more than half take public transit, and 14 percent either walk or bike to work.

Table 3 shows the project trip generation by travel mode as summarized in the project Transportation Impact Review (TIR) Memorandum per the City's TIRG. As described in the TIR, the project trip generation is somewhat conservative in that it does not account for the limited on-site parking supply, which could limit the number of people who would drive to the project site.

Table 1: Journey to Work for Employed Residents in Nearby Census Tracts

Transportation Mode	Percent of Employed Residents
Drive Alone	29%
Carpool	3%
Public Transportation	51%
Bicycle	3%
Walk	11%
Work from Home	3%
Total	**100%**

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates, Census Tracts 4029, Table B08006.

Table 2: Vehicle Ownership for Renter Households in Nearby Census Tracts

Vehicles Available	Percent of Renter Households
No vehicle available	57%
1 vehicle available	35%
2 vehicles available	6%
3+ vehicles available	2%
Total	**100%**

Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates, Census Tracts 4029, Table B25044.

Table 3: Project Trip Generation by Travel Mode

Mode	Mode Share Adjustment Factors[1]	Daily	AM Peak Hour	PM Peak Hour
Automobile	1.00	650	44	57
Transit	0.56	364	25	32
Bike	0.10	62	4	5
Walk	0.20	129	9	11
	Total Trips	**1,205**	**82**	**105**

Notes:

1. Based on *City of Oakland TIRG*, for an urban environment within 0.5 miles of a BART station.

Source: Fehr & Peers, 2020.

The automobile trips generated by the project are estimated to be slightly more than half of all trips generated by a typical suburban development. Similarly, as discussed in the Project environmental document, the VMT per resident in the Project area is about 30 percent of the regional VMT per resident (The average VMT per resident in the Project area is about 4.5 compared to the regional average VMT of 15.0), and the VMT per worker in the Project area is about 60 percent of the regional VMT per worker (The average VMT per worker in the Project area is about 12.7 compared to the regional average VMT of 21.8).

Mandatory TDM Strategies

This section describes the mandatory strategies that shall be implemented as part of the Project. These strategies shall be directly implemented by the Project Applicant and building management. The City of Oakland Standard Conditions of Approval lists infrastructure and operational strategies that must be incorporated into a TDM plan based on Project location and development characteristics. **Table 4** presents these strategies and indicates their applicability to the Project.

Table 5 describes all mandatory TDM strategies for the Project, and the effectiveness of each strategy primarily based on research compiled in *Quantifying Greenhouse Gas Mitigation Measures* (California Air Pollution Control Officers Association [CAPCOA], August 2010). The CAPCOA report is a resource for local agencies to quantify the benefit, in terms of reduced travel demand, of implementing various TDM strategies.

Table 4: Mandatory TDM Program Components as Required by the Oakland TIRG

TDM Strategy	Required When	Required for Project?
Bus boarding bulbs or islands	• A bus boarding bulb or island does not already exist, and a bus stop is located along the project frontage; and/or • A bus stop along the project frontage serves a route with 15 minutes or better peak hour service and has a shared bus-bike lane curb	No, a bus stop is not located along the Project frontage
Bus shelter	• A stop with no shelter is located within the project frontage, or • The project is located within 0.10 miles of a flag stop with 25 or more boardings per day	No, a bus stop is not located along the Project frontage, or within 0.10 miles of the Project
Concrete bus pad	• A bus stop is located along the project frontage and a concrete bus pad does not already exist	No, a bus stop is not located along the Project frontage
Curb extensions or bulb-outs	• Identified as an improvement within site analysis	**Yes, the Project may provide bulb-out at the Webster Street/15th Street intersection if determined feasible by City staff**
Implementation of a corridor-level bikeway improvement	• A buffered Class 2 or Class 4 bikeway facility is in a local or county adopted plan within 0.10 miles of the project location; and • The project would generate 500 or more daily bicycle trips	No, the Project would not generate 500 or more daily bicycle trips
Implementation of a corridor-level transit capital improvement	• A high-quality transit facility is in a local or county adopted plan within 0.25 miles of the project location; and • The project would generate 400 or more peak period transit trips	No, the Project would not generate 400 or more peak period transit trips
Installation of amenities such as lighting; pedestrian-oriented green infrastructure, trees, or other greening landscape; and trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan	• Always required	**Yes, the Project would upgrade the pedestrian amenities adjacent to the site**

Table 4: Mandatory TDM Program Components as Required by the Oakland TIRG

TDM Strategy	Required When	Required for Project?
Installation of safety improvements identified in the Pedestrian Master Plan (such as crosswalk striping, curb ramps, count down signals, bulb outs, etc.)	• When improvements are identified in the Pedestrian Master Plan along project frontage or at an adjacent intersection	**No, improvements are not identified in the Pedestrian Master Plan, but the Project may provide bulb-outs, crosswalk stripings, and/or curb ramps at the Webster Street/15th Street intersection if determined feasible by City staff**
In-street bicycle corral	• A project includes more than 10,000 square feet of ground floor retail, is located along a Tier 1 bikeway, and on-street vehicle parking is provided along the project frontages.	No, the Project does not include more than 10,000 square feet of ground floor retail
Intersection improvements, including but not limited to visibility improvements, shortening corner radii, pedestrian safety islands, accounting for pedestrian desire lines.	• Identified as an improvement within site analysis	**Yes, the Project may provide bulb-outs and/or directional curb ramps at the Webster Street/15th Street intersection if determined feasible by City staff**
New sidewalk, curb ramps, curb and gutter meeting current City and ADA standards	• Always required	**Yes, the Project would upgrade the sidewalks along Project frontage**
No monthly permits and establish minimum price floor for public parking	• If proposed parking ratio exceeds 1:1000 sf (commercial)	No, the Project would not provide off-street parking
Parking garage is designed with retrofit capability	• Optional if proposed parking ratio exceeds 1:1.25 (residential) or 1:1000 sf (commercial)	No, the Project would not provide off-street parking
Parking space reserved for car share	• If a project is providing parking and a project is located within downtown. One car share space reserved for buildings between 50 – 200 units, then one car share space per 200 units.	No, the Project would not provide off-street parking
Paving, lane striping or restriping (vehicle and bicycle), and signs to midpoint of street section	• Typically required	**Yes, the Project would update the paving and striping along the Project frontage to midpoint of the street section**

Table 4: Mandatory TDM Program Components as Required by the Oakland TIRG

TDM Strategy	Required When	Required for Project?
Pedestrian crossing improvements, pedestrian-supportive signal changes, including but not limited to reducing signal cycle lengths to less than 90 seconds to avoid pedestrian crossings against the signal, providing a leading pedestrian interval, provide a "scramble" signal phase where appropriate.	• Identified as an improvement within site analysis • Identified as an improvement within operations analysis	**Yes, the Project would provide pedestrian signal heads and other signal improvements at the Webster Street/15th Street intersection**
Real-time transit information system	• A project frontage block includes a bus stop or BART station and is along a Tier 1 transit route with 2 or more routes or peak period frequency of 15 minutes or better	No, the Project is not adjacent to a BART station or a bus stop
Relocating bus stops to far side	• A project is located within 0.10 mile of any active bus stop that is currently near-side	No, a bus stop is not located within 0.10 miles of the Project
Signal upgrades, including typical traffic lights, pedestrian signals, bike actuated signals, transit only signals	• Project size exceeds 100 residential units, 80,000 sf of retail, or 100,000 sf of commercial; and • Project frontage abuts an intersection with signal infrastructure older than 15 years	**Yes, the Project would provide pedestrian signal heads and other signal improvements at the Webster Street/15th Street intersection**
Transit queue jumps	• Identified as a needed improvement within operations analysis of a project with frontage along a Tier 1 transit route with 2 or more routes or peak period frequency of 15 minutes or better	No, the Project does not have frontage along any transit routes
Trenching and placement of conduit for providing traffic signal interconnect	• Project size exceeds 100 units, 80,000 sf of retail, or 100,000 sf of commercial; and • Project frontage block is identified for signal interconnect improvements as part of a planned ITS improvement; and • A major transit improvement is identified within operations analysis requiring traffic signal interconnect	No, major transit improvements have not been identified in an operations analysis requiring traffic signal interconnect
Unbundled parking	• If proposed parking ratio exceeds 1:1.25 (residential)	No, the Project would not provide any off-street parking

Sources: City of Oakland Standard Conditions of Approval as of January 2020 and summarized by Fehr & Peers, 2020

Table 5: Mandatory TDM Plan Components

TDM Strategy	Description	Estimated Vehicle Trip Reduction[1]	
		Residential	Non-Residential
A. Infrastructure Improvements	Various improvements	N/A[2]	N/A[2]
B. No Parking Supply	Project would provide no parking spaces per unit, less than auto ownership of 0.5 vehicles in the Project area.	5%-10%[3]	5%–10%[3]
C. Transit Fare Subsidy	Provide a monthly transit subsidy to Project residents[4]	5%-10%	N/A
D. Bicycle Parking Supply and Monitoring	Provide bicycle parking above the minimum requirement and monitor usage of the bicycle parking facilities	<1%	<1%
E. Carpool and Ride-Matching Assistance	Assist Project residents and employees in forming carpools	<1%	<1%
F. TDM Coordinator	Coordinator responsible for implementing and managing the TDM Plan	1-2%	1-2%
G. Marketing and Education	Active marketing of carpooling, BART, AC Transit, bikesharing, and other non-auto modes		
	Component Estimated Vehicle Trip Reduction	11%-23%	6%-13%
	Percent of Total Trip Generation	77%	23%
	Total Estimated Vehicle Trip Generation	10% – 21%	

Notes:

1. The focus of the CAPCOA document is reductions to VMT but the research used to generate the reductions also indicates vehicle trip reductions are applicable as well. For the purposes of this analysis the VTR is assumed to equal the VMT reduction. See the cited CAPCOA research for more information and related information on page 8 of the BAAQMD *Transportation Demand Management Tool User's Guide* (June 2012).
2. The effectiveness of this strategy cannot be quantified at this time. This does not necessarily imply that the strategy is ineffective. It only demonstrates that at the time of the CAPCOA report development, existing literature did not provide a robust methodology for calculating its effectiveness. In addition, many strategies are complementary to each other and isolating their specific effectiveness may not be feasible.
3. CAPCOA document suggest that limited parking supply can result in up to 20% VTR. However, the CAPCOA results assume minimal other parking facilities in the area. Thus, the CAPCOA-based results are adjusted because on-street parking and paid off-street parking that is at or near capacity during the daytime is available in the Project area.
4. Assuming a subsidy of about $2.00 per residential unit per weekday (value to transit user).

Source: Fehr & Peers, 2020.

The mandatory strategies in Table 5 are generally targeted at Project residents and workers. While some of these strategies would also affect the travel behavior of residential visitors and commercial customers, these groups are not directly targeted with TDM programs. Many commercial customers would be residents and workers in Downtown Oakland who would mostly walk or bike to the site, and office visitors would visit the Project too infrequently to be aware of the TDM benefits or to make them cost-effective. However, some of the mandatory strategies, especially the ones that would improve the infrastructure, would also benefit the site visitors.

The VTR estimates in Table 5 represent conservative assumptions about potential trip reduction at the low end of the range. It is expected that the high end of the VTR range would be achieved with this TDM plan due to the Project location in Downtown Oakland and near BART and lack of on-site parking.

The TDM strategies include both one-time physical improvements and on-going operational strategies. Physical improvements will be constructed as part of the Project and are therefore anticipated to have a one-time capital cost. Some level of ongoing maintenance cost may also be required for certain improvements. Operational strategies provide on-going incentives and support for the use of non-auto transportation modes. These TDM measures have monthly or annual costs and will require on-going management.

A more detailed description of the TDM measures that comprise the mandatory TDM Plan is provided below:

A. *Infrastructure Improvements* – the following infrastructure improvements in the vicinity of the Project, as recommended in the Project TIR or required by the TIRG would improve the bicycling, walking, and transit systems in the area and further encourage the use of these modes:

    - If the proposed Class 4 protected bikeway would be provided on the east side of Webster Street, coordinating with City of Oakland to ensure:

        - Adequate sight distance between loading vehicles entering and exiting the driveway and cyclists on the bike facility.
        - Appropriate signage and striping in and around the driveway conflict zone.

    - Relocating one or both the long-term bicycle parking rooms from the basement level to a more convenient location on the ground level. If bicycle parking is provided on the basement level, ensure that appropriate signage is provided to directed people to the bicycle parking rooms and at least one elevator can accommodate a cargo bike.
    - Implementing the following at the Webster Street/15th Street intersection if determined feasible by City of Oakland staff:

- Installing directional curb ramps at all four corners of the intersection. Considering that fire hydrants, signal poles, and/or light poles are located at corners, construction of curb extensions (bulb-outs) may also be required to provide directional curb ramps.
- Provide curb extensions (bulb-outs) on the east and/or west side of Webster Street to improve pedestrian visibility and shorten the crossing distance (to be coordinated with the proposed Class 4 bikeway on Webster Street).
- High-visibility (continental) crosswalks across all four intersection approaches.
- Installing Pedestrian signal heads for all four directions at the intersection
- Installing additional signal head (overhead) at the southbound Webster Street approach
- Adding three-inch yellow reflective sheeting to signal backplates
- Replacing eight-inch red signal heads with 12-inch signal heads
- Increasing the yellow and/or all-red clearance intervals at the intersection

B. *No Parking Supply* – The Project would provide no off-street automobile parking spaces. This is less than the current average automobile ownership of 0.5 automobile per household in the Project area, as shown in Table 2. Although there are several other parking facilities in the Project vicinity that are open to the public and can be used by the Project residents, employees, and customers, and visitors, most of these public parking facilities currently operate at or near capacity on most weekdays. Since the Project would increase the number of residents and workers in Downtown Oakland without increasing the parking supply, it is expected that the Project would result in a higher overall rate of residents and workers in Downtown Oakland using non-automobile travel modes. Thus, this analysis assumes that the limited on-site parking supply would result in a five to ten percent VTR.

C. *Transit Fare Subsidy* – Provide a monthly transit benefit to each dwelling unit as required by Oakland Municipal Code, Section 17.116.105. Options may include:

  - Participate in AC Transit's Easy Pass Program, where Building Management will purchase an annual Easy Pass per unit for all units in the development
  - Offer to provide a regular Adult 31-Day AC Transit Pass at half the price to each unit (Pass is valued at $84.60 as of July 2020) that requests one
  - Offer to provide a monthly Clipper Card contribution of about $42 to each unit that requests one

D. *Bicycle Parking Supply and Monitoring* – The Project would include long-term on-site parking in secure bicycle rooms and short-term parking in the form of bike racks along the Project covered plaza. Building management shall monitor the usage of these facilities and provide additional bicycle parking, if necessary.

E. *Carpool and Ride-Matching Assistance Program* – Building management shall offer personalized ride-matching assistance to pair residents and/or workers interested in forming commute carpools. As an enhancement, the Project could use services such as ZimRide, Scoop, Enterprise RideShare, or 511.org RideShare.

F. *On-Site TDM Coordinator* – Building management shall designate an on-site TDM coordinator responsible for implementing and managing the TDM Plan. The TDM coordinator would also be responsible for ensuring that all residents, employees, and visitors are aware of their transportation options and would serve as a point of contact regarding the TDM program.

G. *Marketing and Education* – Site management shall provide residents and employees information about transportation options. This information would also be posted at central location(s) and be updated as necessary. This information shall include:

- *Transit Routes* – Promote the use of transit by providing user-focused maps. These maps provide residents and employees with wayfinding to nearby transit stops and transit-accessible destinations and are particularly useful for those without access to portable mapping applications.
- *Real-time Transit Information System* – The Project should consider installing real-time transit information, such as TransitScreen, in a visible location to provide residents, employees, customers, and visitors with up-to-date transit arrival and departure times.
- *Transit Fare Discounts* – Provide information about local discounted fare options offered by BART and AC Transit, including discounts for youth, elderly, persons with disabilities, and Medicare cardholders.
- *Car Sharing* – Promote accessible car sharing programs, such as Zipcar, and Getaround by informing residents and employees of nearby car sharing locations and applicable membership information.
- *Ridesharing* – Provide residents and employees with phone numbers and contact information for ride sharing options including Uber, Lyft, and Oakland taxicab services.
- *Carpooling* – Provide residents and employees with phone numbers and contact information for carpool matching services such as the Metropolitan Transportation Commission's 511 RideMatching.
- *Walking and Biking Events* – Provide information about local biking and walking events, such as Oaklavia, as events are planned.
- *Bikeshare/Scooters* – Educate residents and employees about nearby bike sharing station locations and membership information (nearest Bay Wheels bikeshare station is about 0.2 miles southwest of the project site on 13th Street, just west of Franklin Street) and dock-less bikeshare/scooters.

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

Monitoring, Evaluation and Enforcement

According to the City's *Standard Condition of Approval #77*, projects generating more than 100 net new peak hour trips are required to submit an annual compliance report for the first five years following completion of the Project for review and approval by the City. Since the Project would generate fewer than 100 net peak hour automobile trips, the Project applicant is not required to submit an annual compliance report to the City.

Please contact Sam Tabibnia (s.tabibnia@fehrandpeers.com or 510-835-1943) with questions or comments.