

533 KIRKHAM STREET PROJECT

CEQA Analysis

Prepared for
City of Oakland

November 2023



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City of Oakland

November 2023

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533 KIRKHAM STREET PROJECT

CEQA Checklist

1. General Project Information

1.1 Project Title

533 Kirkham Street Project

1.2 Lead Agency Name and Address

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

1.3 Project Case File Number

PLN22-173

1.4 Contact Person and Phone Number

Peterson Z. Vollmann, Planner IV
Bureau of Planning
pvollmann@oaklandca.gov
(510) 238-6167

1.5 Project Location

533 Kirkham Street
Assessor's Parcel Nos. 004-00690-0201 and 004-00690-0202

1.6 Project Applicant's Name and Address

TC II 533 Kirkham, LLC
564 Market Street
San Francisco, CA 94104

1.7 Existing General Plan Designations

Community Commercial

1.8 Existing Zoning

S-15W (Transit Oriented Development Commercial Zone)

1.9 Requested Permits

The Project would require a number of discretionary actions and approvals, including without limitation:

1.9.1 Actions by the City of Oakland

- **Bureau of Planning**— Major Conditional Use Permit (CUP), Regular Design Review (including application of State Affordable Housing Density Bonus), CEQA determination, and Parcel Map Waiver (PMW).
- **Building Department**—grading permit, approval of Post-Construction Stormwater Control Plan demonstrating compliance with Provision C.3 of the National Pollutant Discharge Elimination System (NPDES) Municipal Regional Permit (MRP).
- **Department of Transportation** - related off-site work permits (e.g., public right-of-way improvements) as well as encroachment permits.
- All other necessary development permits and entitlements from the City.

1.9.2 Actions by Other Agencies

- **California Department of Toxic Substances Control (DTSC):** Acceptance of a Response Plan and granting of required clearances to confirm that all applicable standards, regulations, and conditions for all previous contamination at the site.
- **East Bay Municipal Utility District (EBMUD):** Grant a Special Discharge Permit to discharge construction dewatering to the sanitary sewer and/or approval of new service requests and new water meter installations; Approval of water line, water hookups and review of water needs.
- **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. National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharge.

2. Executive Summary

The Project Applicant, TC II 533 Kirkham, LLC, proposes the 533 Kirkham Street Project (Project) involving demolition of the existing surface parking lot, site remediation activities, and development of a mixed-use residential building on the Project site, located on the northeast corner of 7th Street and Kirkham Street. The Project site is approximately 5,809 square feet bounded by 7th Street, Mandela Parkway, Kirkham Street, and BART tracks consisting of Assessor's Parcel Numbers (APNs) 004-00690-0201 and 004-00690-0202. The proposed building would be eight stories (approximately 85-foot-tall) with a floor area of approximately 254,854 square feet, including a ground floor parking garage and surface parking lot. The ground floor would also include a residential lobby and courtyard, amenity space, a trash collection area, 16 residential units and an approximately 2,999 square foot retail space fronting 7th Street. The proposed 289 residential units, consisting of a mix of studio/efficiency units (52), one-bedroom (133), and two-bedroom units (104), would be developed in approximately 237,857 gross square feet on levels one through eight. The Project would include approximately 14,538 square feet of open space through the interior courtyard and private terraces.

This California Environmental Quality Act (CEQA) Analysis evaluates the proposed project. The Project is eligible for CEQA streamlining provisions under CEQA Guidelines Section 15182, which provides for streamlined review for certain residential, commercial, and mixed-use projects that are consistent with an adopted specific plan. The Project is also eligible for CEQA streamlining and/or tiering provisions under CEQA Guidelines Section 15183, which provides for streamlined review when a project is consistent with a Community or General Plan and its development density, and the impacts of the project have been analyzed in a certified EIR. The Project is also eligible for CEQA streamlining and/or tiering provisions under CEQA Guidelines Section 15183.3 that are applicable to certain qualified infill projects and limit the topics that are subject to review at the project level, provided the effects of infill development have been addressed in a planning level decision, or by uniformly applying development policies or standards.

This analysis uses these CEQA streamlining and/or tiering provisions under CEQA Guidelines Section 15182, 15183 and 15183.3 to tier from the analyses completed in the City of Oakland's (City's) West Oakland Specific Plan (WOSP) and its Environmental Impact Report (WOSP EIR), which analyzed environmental impacts associated with adoption and implementation of the WOSP.^{1,2} The Project is consistent with the reasonably foreseeable maximum development program analyzed by the WOSP EIR, providing the basis for concluding that the Project is within the scope of the EIR such that no new environmental document would be required per State CEQA Guidelines Section 15162.³ As such, this Project is eligible for CEQA streamlining

¹ City of Oakland. 2013. *West Oakland Specific Plan, Draft Environmental Impact Report*. City of Oakland. 2014. *Final West Oakland Specific Plan*. June. (These documents can be obtained at the Bureau of Planning at 250 Frank Ogawa Plaza, #3115, or online at <https://www.oaklandca.gov/resources/read-the-final-west-oakland-specific-plan-environmental-impact-report>.)

² Throughout this document, except where necessary for clarity, "WOSP EIR" encompasses the Draft EIR and Final EIR for the West Oakland Specific Plan.

³ State CEQA Guidelines Section 15164 state that an Addendum to a certified EIR is allowed if some changes or additions are necessary but none of the conditions calling for preparation of a subsequent EIR or negative declaration, per Section 15162, have occurred.

provisions under CEQA Guidelines Section 15164, for the use of an Addendum to the WOSP EIR, and CEQA Guidelines Section 15168 by tiering from the program-level analyses completed in the WOSP EIR.

This analysis also assumes the implementation of the City's Standard Conditions of Approval (SCAs) included as **Attachment A**, as the Project would be required to implement the uniformly applied SCAs to avoid or reduce potential impacts.

The WOSP EIR serves as the previous CEQA document considered in this CEQA Analysis. The document is hereby incorporated by reference and can be obtained from the City of Oakland Bureau of Planning at 250 Frank H. Ogawa Plaza, Suite 2114, Oakland, California, 94612, and on the City of Oakland West Oakland Specific Plan Documents webpage at: <https://www.oaklandca.gov/resources/read-the-final-west-oakland-specific-plan>.

3. Background

3.1 Planning Context

The Project site is located within the West Oakland Specific Plan (WOSP, or Plan), for which the City of Oakland certified an Environmental Impact Report (EIR) in July 2014, pursuant to the California Environmental Quality Act (CEQA). The WOSP provides a framework for future growth and development in an approximately 1,900-acre area in Oakland near the hub of the Bay Area’s freeway system and regional transit system, bounded by Interstate 580 (I-580) to the north, I-980 to the east, and I-880 to the west and south. The “vision” expressed in the proposed WOSP is to provide a set of comprehensive and multi-faceted strategies for development and redevelopment of vacant and/or underutilized commercial and industrial properties. It establishes a land use and development framework, identifies needed transportation and infrastructure improvements, and recommends implementation strategies needed to develop those parcels. The Plan is also a marketing tool for attracting developers to key sites and for encouraging new, targeted economic development. As such, the WOSP seeks to promote high density development near the West Oakland Bay Area Rapid Transit (BART) station, consistent with prior planning strategies.

Within West Oakland, the WOSP identifies four “Opportunity Areas” targeted for growth and development. Development facilitated by the Specific Plan would occur in these Opportunity Areas, which contain vacant and underutilized properties, and older buildings that no longer meet current standards and market conditions. The Project site is located within the “7th Street Opportunity Area” of the WOSP. The vision for the 7th Street Opportunity Area includes transit-oriented development (TOD) on vacant sites and parking lots around the West Oakland BART Station. The WOSP EIR provided an analysis of two different design options for buildout of the West Oakland BART Station TOD. Under the first option, the TOD would be primarily high-density residential development above mostly ground-floor neighborhood-serving retail and custom manufacturing/industrial arts/artist exhibition space. Under the second option, the TOD would include higher-density housing, but also commercial office and government/institutional office space around the core of the BART Station and atop the new parking garage.

Although it does not propose specific private developments, the WOSP establishes development plans for certain Opportunity Areas and Opportunity Sites to project the maximum level of feasible development that can reasonably be expected to occur by 2035 (i.e., up to 5,000 new dwelling units, up to 4.7 million square feet of net new non-residential building space, including approximately 8,720-11,000 new residents, and approximately 15,000-16,500 new jobs contingent upon the buildout scenario of the TOD described above). As described below, the WOSP EIR analyzed the environmental impacts of adoption and implementation of the WOSP, and where the level of detail available was adequate for analyzing potential environmental effects, the WOSP EIR provided project-level CEQA review for foreseeable and anticipated development.

3.2 CEQA Context

3.2.1 WOSP EIR

The WOSP EIR, a program EIR, anticipated that the environmental review of specific development projects assumed as part of the WOSP would be streamlined in accordance with CEQA.

Preparation of a planning-level document in the WOSP Area simplifies the task of preparing subsequent project-level environmental documents for future projects under the WOSP for which the details are currently unknown. Further, where feasible, and where an adequate level of detail was available such that the potential environmental effects may be understood and analyzed, the WOSP EIR provides a project-level analysis to eliminate or minimize the need for subsequent CEQA review of projects that could occur under the WOSP. This CEQA Checklist is an addendum to the WOSP EIR which provides the planning level analysis evaluating the potential significant environmental impacts that could result from the reasonably foreseeable maximum development under the WOSP. Specifically, it evaluates the physical and land use changes from potential development that could occur with adoption and implementation of the WOSP.

Environmental Effects Summary –WOSP EIR

The WOSP EIR determined that development consistent with the WOSP would result in the following impacts that would be **reduced to a less-than-significant level with the implementation of mitigation measures and/or standard conditions of approval** (described in Section 3.2.2 through 3.2.4): aesthetics (light and glare); air quality (construction dust, construction-related toxic air contaminant emissions); biological resources (special-status species, movement and breeding, local policy conflicts); cultural resources; geology and soils (seismic hazards, expansive soils and soil erosion); greenhouse gas emissions and climate change (flooding associated with predicted sea level rise); hazards and hazardous materials (hazardous materials use, exposure, storage, and disposal, hazardous materials within ¼ mile of a school, emergency access routes); hydrology and water quality (water quality, stormwater runoff); noise (construction noise and vibration, stationary operational noise); public services, parks, and recreation facilities (fire services); transportation (circulation system during construction); and utilities and service systems (wastewater and stormwater facilities, solid waste services).

Less-than-significant impacts were identified for the following resources in the WOSP EIR: aesthetics (scenic vistas or resources, visual character or quality, shadows, wind), air quality (construction toxic air emissions); biological resources (fish or wildlife species, sensitive natural communities, conflict with habitat conservation plan); geology and soils (fault rupture, landslides); greenhouse gases and climate change (GHG emissions, consistency with applicable GHG plans); hydrology and water quality (use of groundwater, flooding and substantial risks from flooding, dam failure, inundation, and seiche, tsunami, and mudflow); land use (division of existing community, conflict with land uses, land use plans); noise (traffic noise, airport noise, noise exposure/compatibility); population and housing; public services, parks, and recreation facilities (police and school services, parks and recreation); transportation (congestion management program, conflict with plans, transportation hazards); utilities and service systems (water supplies, energy).

No impacts were identified for the following environmental resources in the WOSP EIR: aesthetics (adequate lighting); agriculture and forestry resources; biological resources (federally protected wetlands); geology and soils (soils supporting septic systems); hazards and hazardous materials (airport hazards, wildland fire risk); land use (conflict with habitat conservation plans); and mineral resources.

Significant unavoidable impacts were identified for the following environmental resources in the 2014 WOSP EIR:

- air quality (odor impacts, construction criteria air pollutant emissions, operational criteria air pollutant emissions, operational and exposure to toxic air contaminant emissions);
- greenhouse gases and climate change (GHG emissions for individual development projects); and
- transportation/circulation (existing plus project, cumulative plus project level of service effects at intersections).

Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's certification of the WOSP EIR.

3.2.2 Previous Mitigation Measures and Current Standard Conditions of Approval (SCAs)

The CEQA Checklist provided in Section 5 of this document evaluates the potential project-specific environmental effects of the Project and evaluates whether such impacts were adequately covered by the WOSP EIR to allow the provisions afforded by Guidelines Sections 15182, 15183, 15183.3, 15162, 15164, and 15168 to apply. The analysis conducted incorporates by reference the information contained in the previous CEQA document. The Project is legally required to incorporate and/or comply with the applicable requirements of the mitigation measures identified in the WOSP EIR. Therefore, the mitigation measures are herein assumed to be included as part of the Project, including those that have been modified to reflect the City's current standard language and requirements, as discussed below.

3.2.3 SCA Application in General

The City established its *Standard Conditions of Approval and Uniformly Applied Development Standards* (SCAs) in 2008, and they have since been amended and revised several times.⁴ The City's SCAs are incorporated into new and changed projects as conditions of approval regardless of a project's environmental determination. The SCAs incorporate policies and standards from various adopted plans, policies, and ordinances (such as the Oakland Planning and Municipal Codes, Oakland Creek Protection Ordinance, Stormwater Water Management and Discharge Control Ordinance, Oakland Protected Trees Ordinance, Oakland Grading Regulations, National Pollutant Discharge Elimination System (NPDES) permit requirements, Housing Element-related mitigation measures, California Building Code and Uniform Fire Code, among others), which have been found to substantially mitigate environmental effects. When a project is approved by the City, all

⁴ A revised set of SCAs was recently published by the City of Oakland on September 26, 2023.

applicable SCAs are adopted as conditions of approval and required, as applicable, to be implemented during project construction and operation. The SCAs are adopted as enforceable conditions of approval and are incorporated and required as part of a project, so they are not listed as mitigation measures.

3.2.4 Prior Mitigations and SCA Application in this CEQA Checklist

Mitigation measures identified in the WOSP EIR that would apply to the Project are listed in Attachment A to this document, which is attached to this CEQA Checklist. It is noted that no mitigation measures beyond the SCAs would be required for the Project. Mitigation measures identified in the WOSP EIR are now included in the City's SCA's such as Mitigation Measure Air-9B (SCA #24), Mitigation Measure Air-9C (SCA #24 and SCA #26), and Mitigation Measure Air-10 (SCA #23) and are functionally equivalent to mitigation measures. All transportation mitigation measures identified in the WOSP EIR are included in the Citywide Transportation Impact Fee (TIF) and payment of this fee, as required by SCA #84, constitutes adequate mitigation. In addition, SCAs identified in the WOSP EIR, as updated, that would apply to the Project are listed in Attachment A to this document (see Sections 3.2.2 and 3.2.3 above). 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 as each independently applies to the Project.

Most of the SCAs that are identified for the Project were also identified in the WOSP EIR. As discussed specifically in Attachment A to this document, since certification of the WOSP EIR, the City of Oakland has revised its SCAs, and the most current SCAs are identified in this CEQA Checklist.

4. Project Description

4.1 533 Kirkham Street Project Site

4.1.1 Project Location

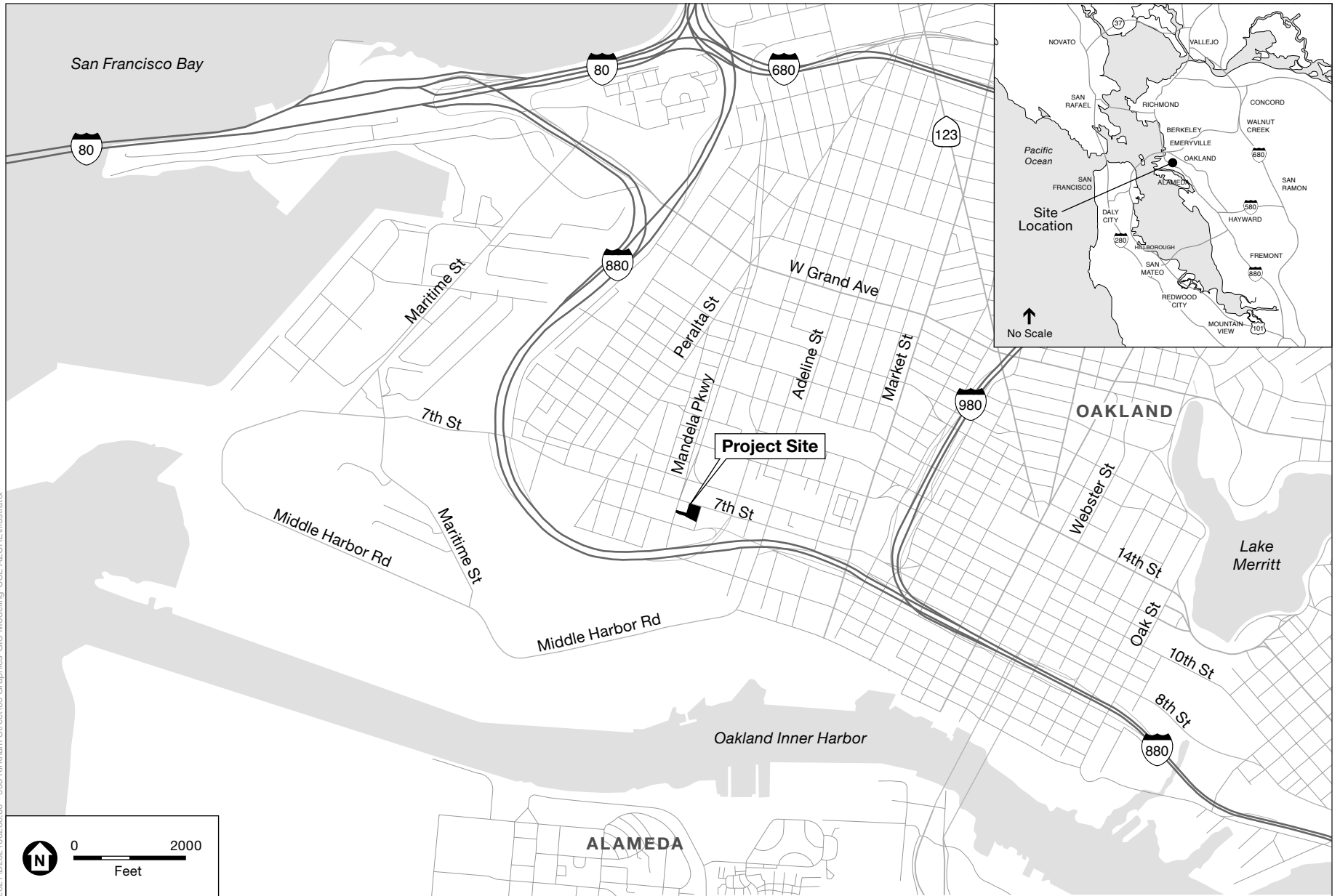
The 533 Kirkham Street Project Site (Project site) is located on the northeast corner of Kirkham and 7th Streets in the West Oakland neighborhood of Oakland. The larger block is bounded by Kirkham Street, 7th Street, Mandela Parkway, and Bay Area Rapid Transit District (BART) elevated light rail tracks (see **Figure 1**). The Project site is approximately 50,893 square feet (1.17 acres) and consists of Assessor’s Parcel Numbers (APNs) 004-00690-0201 and 004-00690-0202. The Project site is accessible from 7th Street to the north and Kirkham Street to the east. Multiple transit routes serve the Project site, including Alameda-Contra Costa County Transit District (AC Transit) Bus Routes 14, 29, 36, 62, and 800. The nearest bus stops to the Project site are located at the West Oakland BART Station across Mandela Parkway, adjacent to the west of the Project site.

4.1.2 Existing Site Conditions and Surrounding Context

The 50,893 square foot site is predominantly flat, consisting of a surface parking lot with no landscaping. There are no existing structures on the Project site and the entirety of the Project site is paved. A row of three street trees line 7th Street along the northern border of the Project site, and one bush exists along Mandela Parkway along the fence at the western border of the Project site.

Existing uses in the Project site vicinity are centered around the West Oakland BART Station including commercial (e.g., retail, grocery, and restaurants) and residential uses as well as parking. The Project site shares the block with a gas station that includes surface parking located to the northwest of the Project site. To the east of the Project site, across from Kirkham Street, there is another parking lot. The south of the Project Site is bordered by a vacant lot as well as elevated BART train tracks. To the west of the Project Site, across from Mandela Parkway, is the West Oakland BART Station which also contains a surface parking lot. All three of these adjacent properties have approved applications for redevelopment to multi-story mixed-use developments. To the north, across from 7th Street land uses are mostly residential apartment buildings as well as some commercial uses. Existing building heights in the surrounding blocks range from surface parking lots and single-story buildings to approximately four stories. The Project site’s location with respect to adjacent properties is shown in **Figure 2**.

The Project site is within the West Oakland Specific Plan S-15W Transit Oriented Development Commercial Zone (S-15W) and has a Community Commercial (CC) General Plan land use designation. The intent of the S-15W zone is to “enhance areas devoted primarily to serve multiple nodes of transportation and to feature high-density residential, commercial, and mixed-use developments to encourage concentrated, pedestrian-oriented development near transit stations”. It allows for a mix of residential, civic, commercial, and light industrial activities. The WOSP identifies the Project site as an “opportunity site” and part of a “West Oakland BART Transit Village.”



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SOURCE: ESA, 2023

533 Kirkham Street

Figure 1
Project Location





SOURCE: Solomon Cordwell Buenz, 2022

533 Kirkham Street

Figure 2
Site Context and Surrounding Approved Projects

4.2 Project Characteristics

4.2.1 Project Components

The Project Applicant for the 533 Kirkham Street Project (Project) proposes to develop an eight-story mixed-use residential building with approximately 289 residential units and 2,999 square feet of ground floor retail space. The maximum height of the proposed Project building would be approximately 85 feet tall and thus comply with the 160-foot height limit identified for the Project site. The Project characteristics are summarized below in **Table 1**.

**TABLE 1
PROJECT CHARACTERISTICS**

Lot	Dimensions
Size	50,893 square feet (1.17 acres)
Proposed Building Uses	Area (gsf)
Residential	237,857 (289 units)
Retail	2,999
Parking / Amenities / Lobby / Utility	13,998
Total	254,854
Proposed Parking	Number of Spaces
Vehicle Parking Spaces	40 (23 garage, 17 existing surface)
Bicycle Parking Spaces	97 (81 long-term, 16 short-term)
Open Space	Area (sf)
Group (Courtyard, Terrace, Dog Run, and Roof)	4,568
Private (Patios and Terraces)	9,970
Total Open Space	14,538

SOURCE: SCB, 2023.

The ground floor would include a residential lobby, a residential courtyard, private patios, amenity space, a trash collection area, storage space, 16 residential units, and approximately 2,999 square feet of retail space fronting 7th Street. Vehicle parking, bike storage, and a loading area would occupy the remainder of the ground floor within a proposed parking garage. The second through eighth floors would contain approximately 39 residential units per floor. The Project would include up to 289 residential units on the first through eighth floors, consisting of approximately 52 studio/efficiency units, 133 one-, and 104 two-bedroom units. Approximately 13 units would also be affordable residential units. Approximately 14,538 square feet of group and private open space would be provided through interior courtyards and private terraces and patios.

The Project site plan, typical floor plans, building elevations, and building renderings are shown in **Figures 3 through 8**.



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SOURCE: Solomon Cordwell Buenz, 2022

533 Kirkham Street

Figure 4
Second Floor Plan





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SOURCE: Solomon Cordwell Buenz, 2022

533 Kirkham Street

Figure 5
Third through Eighth Floor Plan





North Elevation - 7th St



South Elevation

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SOURCE: Solomon Cordwell Buenz, 2022

533 Kirkham Street

Figure 6
North-South Elevations





East Elevation - Kirkham St



West Elevation

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SOURCE: Solomon Cordwell Buenz, 2022

533 Kirkham Street

Figure 7
East-West Elevations





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SOURCE: Solomon Cordwell Buenz, 2022

533 Kirkham Street

Figure 8
Building Perspective - Kirkham and 7th Streets



4.2.2 Landscaping and Open Space

Construction of the Project would not involve tree removal. Three existing street trees along 7th Street would be preserved in place. The Project also proposes to add new street trees on 7th Street and Kirkham Street for a total of approximately eight new street trees. Approximately 20 new trees would also be planted within private patio space and interior courtyards within raised planters.

As described above, the Project would construct approximately 14,538 square feet of group and private open space. The ground floor would include a central courtyard, a dog run and bioretention area along the southern portion of the site, and private patios on the eastern and western sides of the building. A group terrace with stairs connecting to the ground floor courtyard and private terraces would be located on the second floor. The second-floor group terrace would also include an approximately 10-foot-high sound wall to reduce noise levels in the terrace and courtyard areas.

4.2.3 Parking and Circulation

The Project would provide approximately 40 vehicle parking spaces. Approximately 23 parking spaces would be provided in a ground floor parking garage and 17 existing surface parking spaces would be retained on the dog-leg portion of the site that fronts Mandela Parkway. The parking garage would also contain approximately 81 long-term bicycle parking spaces, and one loading space. Approximately 16 short-term bicycle parking spaces would be provided in bike racks along the sidewalk on 7th Street.

Vehicular access to the proposed parking garage would be from a proposed curb cut on Kirkham Street. Primary pedestrian access to the retail component of the Project would be via entrances on 7th Street. Primary pedestrian access to the residential component of the Project would be through the residential lobby on 7th Street (see Figure 2).

4.2.4 Project Construction

Construction activities would consist of grading and site preparation (including site remediation activities and removal of parking lot asphalt); foundation and below-grade construction; and construction of the building and interiors. Project construction is expected to occur over approximately 24 months, with construction scheduled to commence in the second quarter 2024 and be completed in 2026.

Site preparation is anticipated to require excavation and off-haul of approximately 3,400 cubic yards of soil and off-haul of approximately 2,545 tons of asphalt. Groundwater in the vicinity of the Project site is expected to fluctuate several feet seasonally with potentially larger fluctuations annually, and is assumed to be approximately 3 feet below ground surface (bgs) and was measured in 2020 between 5 and 14 feet bgs.⁵ Foundation columns are anticipated to potentially reach a depth of 30 feet; therefore, dewatering during construction may be required.

⁵ Rockridge Geotechnical, 2022. *Draft Geotechnical Investigation Proposed Residential Development 533 Kirkham Street Oakland, California. Prepared for TC 11533 Kirkham, LLC.* January 10, 2022.

4.2.5 Sustainability and Efficiency

The Project would comply with the City of Oakland’s Green Building Ordinance and the Project building is targeted to achieve LEED Gold certification. The Project also would be required to comply with the City of Oakland Building Electrification Ordinance, adopted December 15, 2020.

5. CEQA Checklist

5.1 Overview

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 WOSP EIR that covered the environmental effects of various projects encompassing the Project site and that is still applicable for the Project. Given the timespan between the preparation of the WOSP EIR and today, there are variations in the specific environmental topics addressed and significance criteria; however, as discussed above in Section 3 and throughout this Checklist, the overall environmental effects identified in the WOSP EIR are largely the same; any significant differences are noted.

The Project would be required to implement several SCAs due to the Project's characteristics. All SCAs identified in the WOSP EIR that would be required for the Project are listed in Attachment A to this document, which is incorporated 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.

Most of the SCAs that are identified for the Project were also identified in the WOSP EIR. As discussed specifically in Attachment A to this document, since certification of the WOSP EIR, 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 WOSP EIR 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 certified WOSP EIR. This CEQA Checklist provides a determination of whether the Project would result in:

- Equal or Less Severity of Impact Previously Identified in the WOSP EIR;
- Substantial Increase in Severity of Previously Identified Significant Impact in the 2014 WOSP EIR; 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 WOSP EIR, the checkbox for "Equal or Less Severity of Impact Previously Identified in the WOSP EIR" is checked.

Where the checkbox for "Substantial Increase in Severity of Previously Identified Significant Impact in the WOSP EIR" or "New Significant Impact" checked, there would be significant impacts that are:

- Peculiar to Project or Project site (per CEQA Guidelines Section 15183);

- Not identified in the WOSP EIR including offsite and cumulative impacts (per CEQA Guidelines Section 15162, 15168, and 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 WOSP EIR was certified (per CEQA Guidelines Sections 15162, 15168, or 15183).

However, 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 E) that specifically describe how the Project meets the criteria and standards specified in the CEQA Guidelines Sections 15162 through 15164, 15168, 15182, 15183, and 15183.3.

5.2 Aesthetics, Shadow, and Wind

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Scenic Vistas or Resources (Impacts Aesth-1, Aesth-2)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
b. Visual Character or Quality (Impact Aesth-3)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA AES-1: Trash and Blight Removal SCA AES-2: Graffiti Control SCA AES-3: Landscape Plan SCA UTIL-2: Underground Utilities	LTS w/ SCAs
c. Light or Glare (Impact Aesth-4)	LTS w/ SCA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA AES-4: Lighting	LTS w/ SCA
d. Shadow (Impact Aesth-5)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
e. Adequate Lighting (Impact Aesth-6)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA AES-4	LTS
f. Wind (Impact Aesth-7)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS

Since certification of the WOSP EIR in 2014, 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.”⁶ 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.⁷
- The project is on an infill site.⁸
- The project is residential, mixed-use residential, or an employment center.

The Project meets all three of the above criteria because the Project (1) is in a transit priority area, and is located adjacent to the east (across Mandela Parkway) of the West Oakland BART Station; (2) is on an infill site that has been previously developed within an urban area of Oakland; and (3) is a mixed-use residential project that includes residential and retail uses.⁹ Thus, this document does not consider aesthetics, including the aesthetic impacts of light and glare, in

⁶ CEQA Section 21099(d)(1).

⁷ 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.

⁸ 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.

⁹ <https://opendata.mtc.ca.gov/datasets/transit-priority-areas-2017>.

determining the significance of Project impacts under CEQA.¹⁰ Additionally, it is noted that since certification of the WOSP EIR in 2014, the City has updated its *CEQA Thresholds of Significance Guidelines* to align with those that exist in Appendix G of the CEQA Guidelines, and shadow and wind impacts are no longer considered significant impacts on the environment under CEQA.¹¹ Nevertheless, the City recognizes that the public and decision makers may be interested in information about the effects of the proposed project related to aesthetics, shadow, and wind for this project; therefore, the information contained in this section is provided solely for informational purposes, and is not used to determine the significance of environmental impacts pursuant to CEQA.

5.2.1 WOSP EIR Findings

Scenic Vistas, Scenic Resources, and Visual Character

The WOSP EIR determined that potential impacts to scenic vistas and resources, and visual character from development under the WOSP would be less than significant with implementation of SCAs, and that no mitigation measures were necessary. The WOSP EIR found that no scenic vistas or view corridors would be substantially obstructed, degraded, or adversely affected by future development in accordance with the WOSP because there are no officially designated scenic vistas within the WOSP Area. Development and public realm improvements in accordance with the WOSP would not substantially damage scenic resources including trees or historic buildings, but rather would improve the quality of views of the WOSP Area from the I-580 scenic highway. Infill development and redevelopment would repair the existing inconsistent urban fabric where such inconsistencies exist, and result in a more unified and coherent development character. The proposed land use patterns and development types, and focusing change in the Opportunity Areas while preserving established residential neighborhoods, would provide sensitive transitions to existing development, reinforce the character of residential and non-residential areas, and harmonize existing incompatibilities. Gateway and streetscape improvements, and development of new activity nodes, would improve visual quality and reinforce community identity. Changes anticipated under the WOSP would generally create a more pedestrian-oriented aesthetic in the WOSP Area. Development in the WOSP Area will be required to comply with SCAs related to trash and blight removal, graffiti control, landscape plans, and lighting.

Light and Glare

The WOSP EIR determined that development facilitated by the WOSP would result in less than significant impacts from light and glare with implementation of SCAs requiring a Lighting Plan. Development under the WOSP would create new sources of light and glare, but these new sources would be consistent with typical light and glare conditions for residential and non-residential uses and would not create new sources of substantial light or glare which would substantially and adversely affect nighttime views in the area. The WOSP EIR concluded that subsequent individual projects would also be required to implement SCAs requiring a Lighting Plan.

¹⁰ 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.

¹¹ City of Oakland, 2023. *CEQA Thresholds of Significance Guidelines*, updated September 26, 2023.

Shadow

The WOSP EIR determined that development under the WOSP would result in less-than-significant impacts from shading. Modeling of shadow impacts conducted for the WOSP EIR found that development pursuant to the WOSP would shadow only a limited portion of five West Oakland parks, and only for a limited duration. No shadows would be cast on the 23 other parks, open spaces or school grounds in the WOSP Area. With evaluation of shadows as part of the City's standard design and environmental review of development applications, development allowed by the WOSP would not cast substantial shadows on solar collectors or passive solar heating, or onto historic resources with light-sensitive features.

Wind

The WOSP EIR determined that the WOSP Area does not lie within the area identified by the City as requiring modeling for evaluation of wind impacts. The City of Oakland requires wind modeling for proposed structures that are 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 (as defined in the General Plan). With the exception of the West Oakland BART Station TOD, new development would generally not exceed 100 feet. Although higher density development near the West Oakland BART Station could reach as high as 160 feet in certain locations, the TOD site is not adjacent to the Oakland Estuary, Lake Merritt or San Francisco Bay, nor is it located in Downtown. Therefore, the wind impacts of the WOSP would be less than significant.

5.2.2 Project Analysis

Scenic Vistas, Scenic Resources, and Visual Character

The Project site is located approximately 1.5 miles south of I-580. From that distance, the Project would not result in a noticeable change that would substantially damage scenic resources within a scenic highway. The Project vicinity contains a mix of multi-story commercial and residential buildings, and the Project is within the height limit analyzed in the WOSP EIR. No public scenic vistas, view corridors, or scenic resources would be substantially obstructed, degraded, or adversely affected by the Project.

The Project site is currently a surface parking lot with no landscaping. The Project would construct a mixed-use residential building that would incorporate design elements that are compatible with the mixed residential and commercial character of the area and would blend-in with surrounding elements. Additionally, the Project would add a line of street trees that would enhance the visual character of the site. The Project would, as a result, improve visual quality and reinforce community identity, and its impact on the visual character and quality of the area would be less than significant, consistent with the conclusions of the WOSP EIR.

Development of the Project would also be required to comply with Section 17.73.015 of the Oakland Planning Code, the Project is subject to Design Review, as well as the City of Oakland SCAs. SCA AES-1, Trash and Blight Removal, would require the Project site to be maintained free of blight, and trash receptacles near public entryways to be installed and maintained, as needed, to provide sufficient capacity for building users. SCA AES-2, Graffiti Control, would

require landscaping, approved anti-graffiti coating, and ongoing graffiti removal using the gentlest means possible in order to protect the aesthetics and physical integrity of the building. SCA AES-3, Landscape Plan, would require review and approval of detailed landscape plans in addition to implementation and ongoing landscape maintenance. SCA UTIL-2, Underground Utilities, requires any new utilities to be placed underground. Together, these SCAs would protect the visual character of the Project site and WOSP Area. Therefore, the visual impacts of the Project would be less than significant.

Although not considered significant under CEQA, the potential impacts of the Project regarding scenic vistas, scenic resources, and visual character would be similar to, or less severe than, those identified in the WOSP EIR.

Light and Glare

The Project would include new exterior lighting fixtures. These fixtures would be subject to SCA-AES-4, Lighting, which requires new exterior lighting fixtures to be adequately shielded to prevent unnecessary glare onto adjacent properties. This condition would be satisfied prior to final building permits and would be monitored and inspected by the City's Bureau of Building. With implementation of SCA AES-4, the Project would not result in a new source of light or glare that would adversely affect views in the area, consistent with the conclusions of the 2014 WOSP EIR.

Although not considered significant under CEQA, the potential impacts of the Project regarding light and glare would be similar to, or less severe than, those identified in the WOSP EIR.

Shadow

The WOSP EIR found that none of the resources documented in the 7th Street Opportunity Area contains a light-sensitive feature, the shadowing of which would materially impair the resource's historic significance. No known historic architectural resources in the vicinity would be affected by new Project shadows.

Known existing solar collectors in the area include a commercial-industrial building at 1260 7th Street (The Crucible Building) located approximately 440 feet (0.1-mile) northeast of the Project site, and at 1435 8th Street located approximately 515 feet (0.1-mile) northwest of the Project site. Additionally, existing open space in the area includes the Mandela Parkway median park and open space area, and open space at Mandela Parkway and 8th Street. The Project would construct a building approximately 85 feet in height on 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 the late morning and early afternoon, the shadows of objects 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 panels collect the most energy from the sun when the sun's rays strike the Earth's surface at 90 degrees (directly overhead). The time of day when solar panels collect the most energy from the sun is typically noon, however, this time varies depending on the sun's position in the sky, clouds, and other atmospheric conditions. Solar panels generally collect energy from the sun for up to four hours before and after noon. Due to daylight savings, this

period is approximately 8 a.m. to 4 p.m. during the late fall and most of the winter and 9:00 a.m. to 5:00 p.m. for the remainder of the year.¹²

Using interactive map and shadow length tools, projected shadows were assessed for the 85-foot Project building at various times of the day and year to determine when the Project would shade these nearby solar collectors. Based on the height of the Project building, position of the sun, and distance to the areas potentially affected, shadows only have the potential to reach the solar collectors at the Crucible Building.¹³ Shading was found to occur during the very late afternoons, during spring and fall only, thus allowing peak-hour energy collection to continue to occur. While this additional shading could reduce the ability of solar panels at this address to collect sun power during this period, 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. Therefore, the shadow impacts of the Project would be less than significant, consistent with the findings of the WOSP EIR.

Although not considered significant under CEQA, the potential shadow impacts of the Project would be similar to, or less severe than, those identified in the WOSP EIR.

Wind

According to the City's previously adopted CEQA Thresholds of Significance, wind analysis only needed to be done if a project's height is 100 feet or greater (measured to the roof) and one of the following conditions exist: (a) the project is located adjacent to a substantial water body (i.e., Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the project is located in Downtown. The Project would be 85 feet in height, which is below the 100-foot threshold that triggers an analysis of wind. The WOSP Area does not lie within the area identified by the City as requiring modeling for evaluation of wind impacts. Therefore, the wind impacts of the Project would be less than significant, consistent with the findings of the WOSP EIR.

Although not considered significant under CEQA, the potential wind impacts of the Project would be similar to, or less severe than, those identified in the WOSP EIR.

5.2.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR, implementation of the Project would not substantially increase the severity of significant impacts identified in the WOSP EIR, nor would it result in new significant impacts related to aesthetics,

¹² Solar Power Authority, 2023. *How to Calculate Your Peak Sun-Hours*. <https://www.solarpowerauthority.com/how-to-calculate-your-peak-sun-hours/>, accessed March 28, 2023.

¹³ Interactive map used for shade analysis available at: <https://www.suncalc.org>.

shadow, or wind that were not identified in the WOSP EIR. Although not considered significant under CEQA, **SCAs AES-1, Trash and Blight Removal; AES-2, Graffiti Control; AES-3, Landscape Plan; AES-4 Lighting; and SCA UTIL-2, Underground Utilities** (see Attachment A) would be required for 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.

5.3 Air Quality

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Construction Criteria Air Pollutant Emissions (Impacts Air-4, Air-5)	SU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA AIR-1: Dust Controls-Construction Related SCA AIR-2: Criteria Air Pollutant Controls -Construction and Operation Related SCA AIR-3: Toxic Air Contaminant Controls-Construction Related	LTS w/ SCAs
b. Construction Toxic Air Contaminant Emissions (Impact Air-6)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA AIR-1: Dust Controls-Construction Related SCA AIR-3: Toxic Air Contaminant Controls-Construction Related SCA AIR-4: Reduce Exposure to Air Pollution (Toxic Air Contaminants)	LTS w/ SCAs
c. Operational Criteria Air Pollutant Emissions (Impact Air-7)	SU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	---	LTS
d. Operational Toxic Air Contaminant Emissions (Impact Air-9)	Conservatively SU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA AIR-4: Reduce Exposure to Air Pollution (Toxic Air Contaminants)	LTS w/ SCA
e. Cancer and Health Risk (Impact Air-10)	SU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA AIR-1: Dust Controls-Construction Related SCA AIR-3: Toxic Air Contaminant Controls-Construction Related SCA AIR-4: Reduce Exposure to Air Pollution (Toxic Air Contaminants)	LTS w/ SCAs

5.3.1 WOSP EIR Findings

Construction Criteria Air Pollutant Emissions

Project-related construction activities would generate fugitive dust and criteria air pollutant emissions that could adversely affect regional air quality. These impacts were studied in the WOSP EIR under Impact Air-4: *Construction Period Fugitive Dust* and Impact Air-5: *Construction Period Criteria Emissions*, respectively. Impact Air-4 of the WOSP EIR would be reduced to a less-than-significant level with the identified SCAs. The WOSP EIR established that an individual construction project would be unlikely to result in a significant impact from criteria

air pollutants if all Bay Area Air Quality Management District (BAAQMD) screening criteria are met. However, Impact Air-5 of the WOSP EIR found that implementation of SCAs may not be fully capable of reducing construction-related criteria pollutants to a less-than-significant level.

Operational Criteria Air Pollutant Emissions

Project-related operational activities would generate area and source emissions of criteria air pollutants that could adversely affect regional air quality. Impact Air-7: *Operational-Related Criteria Air Pollutants*, studied the impact of operational criteria air pollutant emissions. The WOSP EIR established that an individual subsequent project would be unlikely to result in a significant impact from the generation of criteria air pollutants if all BAAQMD screening criteria are met. However, the WOSP identifies that this impact is conservatively considered to generate criteria air pollutants and ozone precursor emissions at a level that would be significant and unavoidable.

Toxic Air Contaminants (TACs)

Project-related construction activities and operations would generate Toxic Air Contaminant (TAC) emissions that could adversely affect human health. Under the WOSP EIR, Impact Air-6: *Construction-Period TAC Emissions* was found to be less than significant with implementation of required SCA A: Construction-Related Air Pollution Controls for Dust and Equipment Emissions. The WOSP EIR found that Impact Air-9: *Operational TAC Emissions*, would be conservatively significant and unavoidable as the impacts to existing sensitive receptors could potentially remain, even after implementation of SCA B: Exposure to Air Pollution (Toxic Air Contaminants).¹⁴

Cancer and Health Risk

As noted in the WOSP EIR, CEQA requires the analysis of potential adverse effects of a project on the environment. Potential effects of the environment on a project are legally not required to be analyzed or mitigated under CEQA. However, Impact Air-10: *Exposure to Toxic Air Contaminants and PM_{2.5}* of the WOSP EIR, nevertheless analyzed potential effects of the environment on the project (i.e., siting new receptors near existing TAC sources) in order to provide information to the public and decisionmakers. The portions of the WOSP Area within 500 feet of I-880 are subject to emissions from the I-880 freeway and are indicated to result in a risk of contracting cancer. At 500 feet from the freeway, this risk is reduced to approximately 32 in one million, exceeding the threshold level of 10 in one million. Similarly, the site is subject to PM_{2.5} concentrations that exceed the threshold of 0.3 ug/m³.

The WOSP EIR identifies SCAs to minimize these impacts but recognizes that they cannot with certainty reduce risks to an acceptable level. While the site planning and filtration methods can capture/screen out airborne particulate matter and will reduce PM_{2.5} concentrations to less than-significant levels, these methods do not reduce risks from gaseous TACs. There are no known feasible technologies or site planning considerations that have been shown to reduce risks of gaseous TACs. Therefore, impacts related to gaseous TACs were found to be significant and unavoidable.

¹⁴ Currently SCA # 23, Reduce Exposure to Air Pollution (Toxic Air Contaminants).

5.3.2 Project Analysis

The Project Applicant proposes to develop an eight-story mixed-use residential building with approximately 289 residential units and 2,999 square feet of ground floor retail space. The Project is located on the northeast corner of Kirkham and 7th Streets in the West Oakland neighborhood of Oakland. There are no existing structures on the Project site and the entirety of the Project site is paved. The WOSP EIR accounted for the construction and operational emissions from the development proposed on the Project site within its analysis. The Project would be required to comply with applicable SCAs related to construction and operation source emissions. The Project's construction and operational impacts are detailed below.

Construction and Operational Emissions

Construction Air Emissions

Methodology and Assumptions

The 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 the most recent version of CalEEMod (version 2020.4.0);
- Construction was assumed to begin in May 2024, and last for approximately 24 months. The durations of the various construction phases (e.g., demolition, grading, building construction) were provided by the Project Applicant;¹⁵
- 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 and vendor trips) during each phase were model defaults per the request of the Project Applicant;
- Demolition of 50,900 square feet of paved area on the Project site;
- Off-haul of 3,400 cubic yards of soil material and 2,545 tons of concrete & asphalt material;
- Hauling trips were estimated by CalEEMod based on the demolition area and off-haul volume provided by the Project Applicant;
- The Project would construct a total of 254,845 square feet including 289 residential dwelling units, 2,999 square feet of retail space, 23 parking spaces in a ground floor parking garage and 17 existing surface parking spaces; and
- Default CalEEMod inputs where Project-specific information was not available.
- For the evaluation of cumulative health risks to existing and Project receptors, health risk screening values were obtained from the BAAQMD's Permitted Stationary Sources Risk and Hazards web tool and the BAAQMD GIS database for health risks from mobile sources. Sources within the 1,000-foot zone of influence were included.
- Screening values for stationary sources were adjusted based on distance to the Project site using the BAAQMD's distance multiplier.

¹⁵ This analysis conservatively assumes the earliest possible project construction start-date. A later construction start-date means the default fuel mix would be the same or cleaner and the overall effect will be the same.

- In addition, proposed projects within 1,000 feet of the maximum exposed offsite receptor and future Project receptors were considered based on the Major Projects List from the City of Oakland Planning Bureau.

Analysis

With 289 dwelling units in a mid-rise apartment, the Project is above the BAAQMD screening threshold of 240 dwelling units in a mid-rise apartment and could result in a significant impact for construction related criteria air pollutants. The average daily construction-related emissions for the Project, as estimated using CalEEMod based on the assumptions above, are presented in **Table AIR-1**. As shown in the table, annual average daily construction emissions for the Project would not exceed the City's thresholds for ROG, NO_x, PM₁₀, or PM_{2.5}. These thresholds were developed to represent a cumulatively considerable contribution to regional air quality. As shown in Table AIR-1, the Project would result in less-than-significant project-level impacts with respect to criteria pollutant emissions during construction. While the City does not have quantitative standards for fugitive dust emissions from construction activities, the Project would be required to implement SCA AIR-1, Dust Controls – Construction-Related, which would reduce fugitive dust emissions to less than significant levels. Further, implementation of SCA AIR-2, Criteria Air Pollutant Controls – Construction and Operation Related, and SCA AIR-3, Toxic Air Contaminant Controls – Construction Related, (discussed under Toxic Air Contaminants below) would further reduce emissions from criteria air pollutants as shown in Table AIR-1. Therefore, the Project would not result in a new or more severe significant construction impact compared to that identified in the WOSP EIR.

TABLE AIR-1
PROJECT CONSTRUCTION EMISSIONS (AVERAGE LBS PER DAY)^a

Average Daily Construction Exhaust Emissions by Construction Year	ROG	NO _x	Exhaust PM ₁₀	Exhaust PM _{2.5}
Uncontrolled Scenario (without SCA reduction measures)				
2024	1.8	13.6	0.50	0.48
2025	1.8	12.2	0.41	0.39
2026	2.3	15.3	0.52	0.50
With Tier 4 Final Construction Equipment (required SCA)				
2024	0.7	4.7	0.05	0.05
2025	0.8	5.5	0.05	0.05
2026	1.0	6.6	0.06	0.06
City of Oakland Thresholds	54	54	82	54
Significant (Yes or No)?	No	No	No	No

NOTE:

- a Project construction emissions estimates were made using CalEEMod, version 2020.4.0. Emissions are average daily pounds per day and are estimated by dividing the total construction emissions generated by the Project with the total number of construction workdays.

SOURCE: Appendix A.

Operational Air Emissions

Methodology and Assumptions

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

- Vehicle trip rates were generated from CalEEMod defaults.
- Fireplaces and woodstoves were not included in the modeling as they are prohibited as part of the City of Oakland's requirements.
- All other inputs in CalEEMod were based on model defaults.

Analysis

The Project includes 289 dwelling units in a mid-rise apartment, putting it below the BAAQMD's screening threshold of 494 dwelling units, and all other screening level size limitations for a significant impact of Impact Air-7 of the WOSP EIR. Nevertheless, the daily operational emissions for the Project, based on the assumptions above, are presented in **Table AIR-2**. As shown in the table, annual average daily regional emissions for the Project would not exceed the City's thresholds for ROG, NO_x, PM₁₀, or PM_{2.5}. As with the construction thresholds, these thresholds were developed to represent a cumulatively considerable contribution to regional air quality. As shown in Table AIR-2, the Project would have less-than-significant project-level impacts with respect to operational emissions. It would not result in a new or more severe significant impact compared with the WOSP EIR.

TABLE AIR-2
PROJECT EMISSIONS FROM OPERATION^a

	ROG	NO _x	PM ₁₀	PM _{2.5}
Area Source Emissions (lbs/day)	6.4	0.1	0.07	0.07
Energy Emissions ^b (lbs/day)	0.0	0.0	0.0	0.0
Project Mobile Source Emissions (lbs/day)	3.1	3.9	7.2	1.9
Average Daily Project Emissions (lbs/day)	9.6	4.0	7.2	2.0
City of Oakland Thresholds	54	54	82	54
Significant (Yes or No)?	No	No	No	No
Annual Emissions (tons/year)	1.75	0.74	1.32	0.37
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 2020.4.0.

b Consistent with Ordinance 13632 adopted by the City Council in December 2020, project buildings would be constructed as all electric buildings. Therefore, there would be no direct air pollutant emissions generated.

SOURCE: Appendix A.

Toxic Air Contaminants

Assumptions and Methodology

Toxic Air Contaminants (TACs) are 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. Such an assessment evaluates chronic, long-term effects, calculating the increased lifetime risk of cancer as a result of exposure to one or more TACs. Health risks from TACs generated during project construction and operation are evaluated below. In addition, consistent with the City's CEQA significance thresholds, the analysis also evaluates cumulative health risks from the Project and nearby sources of TACs to existing receptors in the vicinity as well the cumulative health risks to the new sensitive receptors introduced by the Project.

Analysis

Construction TAC Emissions

Project construction activities would produce TACs primarily in the form of diesel particulate matter (DPM) and PM_{2.5} emissions from the exhaust of diesel fueled construction equipment such as loaders, backhoes, cranes, etc., as well as heavy duty truck trips. These emissions could result in elevated concentrations of DPM and PM_{2.5} at existing receptors in the project vicinity. Exposure of receptors in the vicinity of the Project site to these elevated concentrations could lead to an increase in cancer risk or chronic health impacts.

The Project's construction-related activities over the 24-month construction period would result in the generation of DPM from on-road heavy-duty trucks and off-road equipment. The generation of TACs from construction would be temporary and due to the variable nature of construction activity, exposure would also vary based on the time equipment would operate 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.¹⁶ Closest sensitive receptors to the Project site are the residential receptors at the Mandela Gateway Apartments, approximately 100 feet to the north of the Project site boundary across 7th Street. Consequently, an HRA was conducted to determine the level of risk generated by construction-related TACs to nearby residential and school receptors and to satisfy the requirements of SCA AIR-3a(i). The methods and results of the HRA are described below. Specific calculation tables and model outputs are included in **Appendix A**.

In accordance with the Office of Environmental Health and Hazard Assessment's (OEHHA) 2015 *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*,¹⁷ the HRA applied the highest estimated concentrations of DPM 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 USEPA's AERMOD dispersion model occurred at the residential receptors at the Mandela Gateway Apartments located to the north of the Project site and represent the Maximum Exposed Individual Receptor (MEIR). Increased cancer risks were calculated using the modeled maximum DPM concentrations and OEHHA-recommended methodologies for infants (third trimester through two years of age), the most sensitive age group. Child and adult exposure at this location would be less than the risk assessed for infants.

¹⁶ BAAQMD, 2017. California Environmental Quality Act – Air Quality Guidelines, May 2017.

¹⁷ OEHHA, 2015. Air Toxics Hotspots Program – Risk Assessment Guidelines, February 2015.

Table AIR-3 shows that the cancer risk, chronic Hazard Index (HI), and PM_{2.5} concentrations at the residential MEIR from project-related construction activities. As shown in Table AIR-3, uncontrolled risks would exceed the City’s threshold for cancer risk at the MEIR. Consistent with SCA AIR-3a(i), this analysis identifies the use of all off-road diesel equipment equipped with Tier 4 Final engines as the DPM reduction measure to reduce risks below the thresholds. Currently, Tier 4 Final engines represent best available control technology for control of DPM from construction equipment and are expected to reduce emissions by approximately 85 percent.¹⁸

**TABLE AIR-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
Uncontrolled Scenario (without SCA reduction measures)			
Residential Receptor	29.9	0.02	0.10
Project-level Threshold	10	1.0	0.3
Significant?	Yes	No	No
With Tier 4 Final Construction Equipment (required SCA)			
Residential Receptor	2.4	<0.01	0.01
Project-level Threshold	10	1.0	0.3
Significant?	No	No	No

SOURCE: Appendix A.

Table AIR-3 shows that with the use of Tier 4 Final engines in construction equipment, health risk at the MEIR would be less than the City’s significance thresholds. Therefore, with the implementation of SCA AIR-3a(i), health risks from Project construction to nearby sensitive receptors would not exceed the City’s CEQA significance thresholds. The potential impact of the Project regarding exposure of existing receptors to construction related health risks would be less than significant and no additional mitigation measures would be required.

Operational TAC Emissions

The Project would not include any stationary source of TAC emissions, as it does not include any back up generators, and would not contribute to any potential health risks to sensitive receptors. The Project is primarily a residential development project with a retail component approximately 2,999 square feet in area. Diesel vehicle traffic associated with the retail uses would be limited to a small number of delivery and service vehicle trips which would not contribute a substantial amount to the health risk exposure to the Project or offsite receptors. The Project would result in a less-than-significant impact with respect to operational TAC emissions, and an operational HRA would not be required.

¹⁸ <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>

Cumulative Health Risk Impacts to Existing Receptors

Cumulative community risk impacts were addressed through an evaluation of TAC sources located within 1,000 feet of the existing off-site MEIR. These sources include freeways or highways, busy surface streets, railways, and stationary sources identified by BAAQMD. For local mobile sources, BAAQMD has provided locationally based risk information from roadway sources and rail and railyard sources. A review of BAAQMD's stationary source GIS map tool identified a gas dispensing facility located south of 7th Street as a stationary source with the potential to affect the MEIR.

Table AIR-4 reports both the project and cumulative community risk impacts. Without SCA reduction measures, the Project could have a significant impact with respect to community risk caused by project construction activities, since the maximum cancer risk exceeds the single-source threshold of 10.0 per million (i.e., 29.9 per million as shown in Table AIR-3) and since the cumulative cancer risk exceeds the cumulative threshold of 100 per million (i.e., 101.6 per million as shown in Table AIR-4). However, with the use of Tier 4 Final engines (as required by the SCAs) in construction equipment, health risk at the MEIR would be less than the City's significance thresholds. Under both the uncontrolled scenario and controlled scenario, the cumulative chronic hazard index and PM_{2.5} concentrations would not exceed their cumulative source thresholds of greater than 10 and greater than 0.8 µg/m³, respectively. As shown in Table AIR-4, implementation of the SCA would further reduce impacts. Thus, a less-than-significant cumulative impact would occur during construction and operation of the Project.

**TABLE AIR-4
CUMULATIVE HEALTH IMPACTS TO EXISTING RESIDENTIAL RECEPTORS**

Source	Source Type	Distance to Project Receptors (feet)	Cancer Risk (persons per million)	Chronic Hazard Impact	PM _{2.5} Concentration (µg/m ³)
Project Construction					
Uncontrolled Scenario			29.9	0.02	0.10
With Tier 4 Final Construction Equipment (required SCA)			2.4	<0.01	0.01
Existing Permitted Stationary Sources (BAAQMD Plant Number) within 1,000 feet					
Bart Gas & Food (8550)	Gas Dispensing Facility	375	2.6	0.01	0.00
Mobile Sources					
Roadways			22.6	0.06	0.42
Rail and Railyards			46.4	0.01	0.06
Uncontrolled Scenario Cumulative Impacts^a			101.6	0.11	0.57
City of Oakland Cumulative Significance Criteria			100	10	0.8
Potentially Significant Impact?			Yes	No	No
Controlled Scenario Cumulative Impacts (required SCA)^a			73.9	0.09	0.49
City of Oakland Cumulative Significance Criteria			100	10	0.8
Potentially Significant Impact?			No	No	No

NOTES:

a Cumulative totals may not add up due to rounding.

SOURCE: Appendix A.

Cumulative Health Risk Impacts to New Project Receptors

The Project proposes residential uses and would therefore introduce sensitive receptors to the area. In addition, as described above one stationary pollutant source requiring a permit from BAAQMD is located within 1,000 feet of the Project site. Therefore, in compliance with SCA AIR-4, Reduce Exposure to Air Pollution (Toxic Air Contaminants), a screening analysis was conducted in accordance with the BAAQMD CEQA Guidelines to determine if the Project exceeds the health risk screening criteria. **Table AIR-5** summarizes the results of the screening analysis and summarizes cumulative health risks to project receptors from existing and reasonably foreseeable sources within 1,000 feet of the Project site. The screening analysis shows that health risks to the Project receptors would also be less than the City's cumulative thresholds and hence, less than significant.

**TABLE AIR-5
CUMULATIVE HEALTH IMPACTS TO PROJECT RESIDENTIAL RECEPTORS**

Source	Source Type	Distance to Project Receptors (feet)	Cancer Risk (persons per million)	Chronic Hazard Impact	PM _{2.5} Concentration (µg/m ³)
Existing Permitted Stationary Sources (BAAQMD Plant Number) within 1,000 feet					
Bart Gas & Food (8550)	Gas Dispensing Facility	190	3.9	0.02	0.0
Mobile Sources					
	Roadways		21.2	0.06	0.49
	Rail and Railyards		52.6	0.01	0.07
	Cumulative Impacts^a		77.7	0.09	0.55
	City of Oakland Cumulative Significance Criteria		100	10	0.8
	Potentially Significant Impact?		No	No	No

NOTES:

a Cumulative totals may not add up due to rounding.

SOURCE: Appendix A.

5.3.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR considered throughout this analysis, implementation of the Project would not result in new or more severe significant impacts related to air quality than those already identified in the WOSP EIR. 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 and Operation Related; SCA AIR-3, Toxic Air Contaminant Controls-Construction Related; and SCA AIR-4, Reduce Exposure to Air Pollution (Toxic Air Contaminants);** (see Attachment A) would be applicable to and would be implemented by the Project to ensure that air quality impacts would be less than significant. No mitigation measures are required.

5.4 Biological Resources

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Special-Status Species (Impact Bio-1), Wildlife Corridors (Impact Bio-4)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
b. Riparian Habitat and Sensitive Natural Communities (Impact Bio-2)	No Impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
c. Wetlands (Impact Bio-3)	No Impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
d. Tree and Creek Protection (Impact Bio-5)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
e. Habitat Conservation Plan (Impact Bio-6)	No Impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS

5.4.1 WOSP EIR Findings

The WOSP EIR found that impacts related to candidate, sensitive, or special status species; riparian habitat or other sensitive natural community; protected wetlands; migratory fish or wildlife species; and protected trees would be less than significant with the implementation of SCAs. The WOSP EIR concluded that future development pursuant to the Specific Plan would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The WOSP EIR did conclude that tree removal, building demolition and other construction activities can cause disturbance, noise, or loss of habitat for resident or migratory birds and mammals (including bat roosts), and required implementation of SCA pertaining to tree removal during breeding season and bird collision reduction. The WOSP EIR also concluded that future development pursuant to or consistent with the Specific Plan may require the removal of trees that are protected by the City of Oakland Tree Protection Ordinance, and required implementation of SCAs pertaining to tree removal permits, tree replacement plantings, and tree protection during construction.

5.4.2 Project Analysis

Special-Status Species, Wildlife Corridors, Riparian and Sensitive Habitat, Wetlands

The approximately 50,809 square foot Project site is located in an urban setting on a site that is fully developed as an existing parking lot. The Project site is disturbed and covered entirely by impervious surfaces. Aside from a row of three street trees along 7th Street, there is no vegetation on the Project site. Wildlife resources present within the Project site are adapted to disturbed, urban conditions and would not be adversely affected by the implementation of the Project. According to the Open Space, Conservation, and Recreation Element (OSCAR) Element of the City of Oakland General Plan and database searches performed as part of the WOSP EIR, no

known special-status species are found in the WOSP area. Due to the lack of suitable habitat, no special-species status species would be expected to be found on the Project site.

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 of water. The Project would not include a vegetated roof deck and therefore 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.

The Project site is in a developed portion of the City that, according to the OSCAR Element and WOSP EIR, does not contain riparian habitat or other sensitive natural communities and the Project would not involve the direct removal or fill of wetlands or indirectly affect the hydrology, soil, vegetation, or wildlife of wetlands. The Project site is not located adjacent to a river, stream, or creek that would accommodate aquatic species or habitat. In addition, no natural vegetation exists on the Project site and the site would not constitute a wildlife corridor. The Project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan, as there are no such plans in the Project vicinity. The Project's impacts on these biological resources would be less than significant, consistent with the conclusions of the WOSP EIR.

Nesting Birds or Mammals and Tree Protection

Construction of the Project would not require demolition of any structures or involve any removal of trees. As such, potential impacts on nesting birds and mammals would be less than significant. Three existing street trees along 7th Street would be preserved in place. The Project would add eight new street trees on 7th and Kirkham Streets for a total of approximately 11 street trees. Approximately 20 new trees would also be planted within private patio space and interior courtyards within raised planters. Therefore, the Project's impact would be consistent with the WOSP EIR, and no further analysis is required with respect to tree protection.

5.4.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR, implementation of the Project would not substantially increase the severity of significant impacts identified in the WOSP EIR, nor would it result in new significant impacts related to biological resources that were not identified in the WOSP EIR. The WOSP EIR did not identify any mitigation measures related to biological resources, and none would be needed for the Project. Because the Project site does not possess any potential sensitive habitat and tree removal is not proposed, certain SCAs identified in the WOSP EIR would not pertain to the Project, such as those pertaining to creek protection or the Creek Protection Ordinance, and tree removal. Therefore, the Project impacts related to biological resources would be less than significant. No mitigation measures are required.

5.5 Cultural Resources

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Historical Resources (Impact CR-1)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
b. Archaeological Resources, Paleontological Resources, and Human Remains (Impact CR-2)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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	LTS w/ SCAs

5.5.1 WOSP EIR Findings

Historical Resources

The WOSP covers one of the oldest and most historically dense areas of Oakland. The WOSP EIR notes that over 1,400 Local Register properties are located within the WOSP Area, including 32 designated historic and A-rated properties, three Areas of Primary Importance (API)¹⁹ containing over 800 individual parcels, and over 600 individual parcels in S-20 Preservation Combining Zones or an Area of Secondary Importance (ASI).²⁰ The vast number of individual properties in the WOSP area are considered Potentially Designated Historic Properties (PDHPs) and are older than 45 years of age. Despite the abundance of historic and potentially historic properties, the WOSP Opportunity Areas are primarily adjacent to but do not include historic architectural resources. The WOSP EIR found that development within the WOSP Opportunity Areas would not result in the physical demolition, destruction, relocation, or alteration of historic resources that are listed in or may be eligible for listing in the federal, state, or local registers of historical resources. Development under the WOSP would not demolish historic resources and would require all alterations to historic resources to be compliant with the existing SCAs, all regulations protecting historical resources, and the Secretary of the Interior’s Standards for the Treatment of Historic Properties. Specifically, the WOSP EIR identified Oakland Municipal Code Section 17.136.075, Regulations for Demolition or Removal of Designated Historic Properties and Potentially Designated Historic Properties (PDHP), as well as SCA-39: Property Relocation and SCA-75 Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities which also address impacts to historical resources. Therefore, implementation of the

¹⁹ An Area of Primary Importance is an area or district that appears eligible for the National Register of Historic Places and is considered a historical resource under CEQA.

²⁰ An Area of Secondary Importance is an area or district that is of local interest but does not appear eligible for the National Register of Historic Places and is not considered a historical resource under CEQA.

WOSP would result in less-than-significant impacts to historical resources. The WOSP EIR did not identify mitigations for historic architectural resources beyond compliance with the SCAs.

Archaeological and Paleontological Resources

Records from the Northwest Information Center of the California Historical Resources Information System indicate that no archaeological resources have been recorded in the Project site (File No. 21-1575); however, several historic-era archaeological resources and a Native American pre-contact archaeological resource have been previously identified in the nearby vicinity. Historic-era archaeological resources represent late-nineteenth to early-twentieth century residential remnants and refuse deposits, primarily uncovered by archaeologists along the Interstate-880 corridor following the collapse of the Cypress Freeway.²¹ The Native American archaeological resource consists of a small midden deposit uncovered during construction and represents pre-contact indigenous use and occupation of the area.²² The WOSP EIR indicated that the WOSP Area is potentially sensitive for both pre-contact Native American and historic-era archaeological resources that are not visible due to urban development. The WOSP DEIR determined that implementation of the City's SCAs, which would ensure that resources are recovered and that appropriate procedures are followed in the event of discovery, would minimize potential risk of impact to archaeological resources to a less-than-significant level.

The WOSP EIR indicated the WOSP Area has a low to moderate paleontological sensitivity and, while unlikely, it is possible that fossils could be discovered during excavation. Implementation of the City's SCA, which would require a qualified paleontologist to document a discovery and follow appropriate procedures, would ensure that the potential impact to paleontological resources would be less than significant.

Human Remains

Although the WOSP EIR did not identify any locations of buried human remains in the WOSP Area, the inadvertent discovery of human remains during ground-disturbing activities could not be entirely discounted. In the event that human remains are discovered during excavation, implementation of the City's SCA, which would ensure that the appropriate procedures for handling and identifying the remains are followed, would reduce impacts to a less-than-significant level.

The WOSP EIR determined that with implementation of existing SCAs, cumulative impacts to historical resources including architectural resources, archaeological resources, paleontological resources or site or unique geologic features that could result from development of projects within Opportunity Areas under the WOSP, would be less-than-significant.

²¹ Praetzellis, Mary (editor), *Block Technical Reports: Historical Archaeology I-880 Cypress Freeway Replacement Project*. Anthropological Studies Center, Sonoma State University, Rohnert Park, California. Prepared for California Department of Transportation District 4, Oakland, 2001.

²² Archeo-Tec, Final Archaeological Report, East Block of the Mandela Gateway Project, City of Oakland, Alameda County, California. 2003.

5.5.2 Project Analysis

Historic Architectural Resources

The Project site is located on the northeast corner of Kirkham and 7th Streets within the 7th Street Opportunity Area adjacent to the West Oakland BART Station. The parcel is currently vacant. It does not include and is not adjacent to any of the historically significant structures identified in the WOSP EIR and therefore identified SCAs related to historic preservation and vibration adjacent to historic structures are not applicable.

The WOSP EIR shows that the Project site is near, but not within, the Oakland Point Area of Primary Importance (Oakland Point API), whose southern boundary is one half to one full block north of the Project site across 7th Street. The WOSP EIR concludes that properties surrounding the Oakland Point API, other than some 7th Street commercial strip properties that abut the district (which does not include the Project site), do not contribute to its historical significance. The WOSP EIR further concludes that proposed development elsewhere in the 7th Street Opportunity Area, including on the Project site, would not cause a substantial adverse change in the significance of this API or of the individual historical resources within the API. The WOSP EIR determined that ASIs do not qualify as significant historical resources under CEQA. Therefore, while the Project site is adjacent across Chester Street to the South Prescott ASI to the west, there would be no potential for significant historical impacts on this area. Therefore, the Project impact would be consistent with the impacts identified in the WOSP EIR and no further analysis is required.

Archaeological and Paleontological Resources and Human Remains

None of the historic-era archaeological resources identified in the WOSP EIR would be impacted by the Project; however, similar types of archaeological resources may be present in the Project site if more recent construction and ground disturbance have not impacted or destroyed such resources. The Project would require excavation of approximately 1,000 cubic yards of soil and off-haul of approximately 2,545 tons of asphalt. Groundwater in the vicinity of the Project site is expected to fluctuate several feet seasonally and is assumed to be approximately 3 feet below ground surface (bgs). Foundation columns are anticipated to potentially reach a depth of 30 feet bgs. The Project site is underlain by up to 6.5 feet of fill consisting of loose to medium dense sand with variable amounts of silt, clay, and gravel and occasional concrete and brick debris. Immediately underlying the fill is Holocene- to Pleistocene-age Merritt sand that extends to a depth of approximately 50 to 60 feet bgs.²³ Native American archaeological sites in this geologic framework would be at or very near to the surface and because the upper several feet consist of fill, the sensitivity for Native American archaeological resources to be in the Project site is significantly lessened.

The earliest Sanborn Fire Insurance Company (Sanborn) map of the Project site from 1902 shows several one and two-story dwellings and flats on the block bounded by 5th, 7th, Kirkham, and Cypress (Mandela) Streets, all with rear outbuildings. The Washington Brewery is shown on the southwest corner of the block at the corner of 5th and Kirkham. By 1912, the Sanborn map shows

²³ Rockridge Geotechnical, Geotechnical Investigation Proposed Residential Development 533 Kirkman Street, Oakland, CA. Prepared for TC 11533 Kirkham, LLC. January 2022.

that residences on the corner of 7th Street and Kirkham had been replaced with industrial buildings for the Golden West Brewing Company. The 1951 Sanborn map shows that all residential buildings on the block had been demolished and the entire block contained industrial buildings associated with the Goebel Brewing Company and the Consumer Yeast and Vinegar Works. In 1961, the Sanborn map shows the same buildings as the Pacific Brewing Company and the Red Star Yeast Company. Most of the buildings were demolished in the late 1960s.

Given the previous disturbance at the Project site from construction of numerous industrial buildings, there is a lessened potential for artifact-filled deposits such as privies or wells associated with earlier residential dwellings to have been preserved. However, because of the general archaeological sensitivity of the area, implementation of SCA CUL-1, Archaeological and Paleontological Resources – Discovery During Construction; SCA CUL-2, Archaeologically Sensitive Areas – Pre-Construction Measures; and SCA CUL 3, Human Remains – Discovery During Construction are required for the Project and, as outlined in the WOSP EIR, would reduce any potential impacts to a less-than-significant level by ensuring that if any archaeological resources and/or paleontological resources are uncovered during construction appropriate actions are taken including notified a qualified archaeologist/paleontologist to inspect the find and provide additional recommendations.

5.5.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR considered throughout this analysis, the Project would not result in any more severe significant impacts than those identified in the WOSP EIR, nor would it result in new significant impacts related to cultural resources that were not identified in the WOSP EIR. Implementation of **SCA CUL-1, Archaeological and Paleontological Resources – Discovery During Construction; SCA CUL-2, Archaeologically Sensitive Areas – Pre-Construction Measures; and SCA CUL-3 Human Remains – Discovery During Construction** (see Attachment A) would further ensure that potential impacts associated with cultural resources would be less than significant. No mitigation measures are required.

5.6 Geology, Soils, and Geohazards

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Seismic Hazards (Impact Geo-1, Impact Geo-2, and Impact Geo-3)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA GEO-1: Construction-Related Permit(s) SCA GEO-2: Seismic Hazards Zone (Landslide/Liquefaction)	LTS w/ SCAs
b. Expansive Soils & Soil Erosion (Impact Geo-4, and Impact Geo-5)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA GEO-1: Construction-Related Permit(s) SCA GEO-2: Seismic Hazards Zone (Landslide/Liquefaction) SCA HYD-1: Erosion and Sedimentation Control Plan for Construction SCA HYD-2: State General Construction Permit	LTS w/ SCAs
c. Soils Incapable of Supporting Septic Systems (Impact Geo-6)	No Impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS

5.6.1 WOSP EIR Findings

Seismic Hazards

The WOSP EIR determined that there was no significant impact related to fault rupture since there are no Alquist-Priolo Earthquake Fault Zones within the WOSP area. Additionally, the WOSP Area is flat and far from hillsides, and therefore not subject to risk from landslides.

The WOSP EIR noted that the WOSP Area is located within the greater San Francisco Bay Area, which is recognized as one of the more seismically active regions of California. The active Hayward fault is the closest fault to West Oakland, located approximately 3.5 miles to the east along the southwestern base of the East Bay Hills, paralleling Highway 13. Within West Oakland, the combination of strong ground shaking; underlying geological material consisting of sand, alluvial fluvial deposits, and artificial fill; and shallow depth to the groundwater result in a high potential for liquefaction throughout most of the WOSP Area. The WOSP EIR identified an SCA requiring a site-specific, design level liquefaction geotechnical investigation for individual projects seeking a subdivision map within a Seismic Hazard Zone, thus reducing risks to less-than-significant levels.

Expansive Soils and Soil Erosion

The WOSP EIR determined that the flat topography within the WOSP Area would limit the potential for substantial soil erosion. Furthermore, there are only limited areas within West

Oakland where native topsoil has not been covered with impermeable surfaces such as paving and buildings. Implementation of SCAs requiring site specific erosion and sedimentation control plans and measures would reduce potential impacts from future grading and excavation activities that could potentially expose underlying soils.

The majority of the WOSP Area is located within a designated Seismic Hazard Zone due to high liquefaction potential, and the western margins of West Oakland near the Bay are comprised of artificial fill, or man-made deposit of various materials and ages. Additionally, future development in accordance with the WOSP could be located on expansive soil which could potentially expose people or structures to substantial adverse effects. The WOSP EIR identified SCAs requiring site-specific, design level liquefaction geotechnical investigation and corrective measures, as well as site-specific soils reports that identify geologic and soil-related hazards and necessary corrective measures which would reduce potential impacts to less-than-significant.

Soils Incapable of Supporting Septic Systems

The WOSP EIR determined that all properties within the WOSP Area are connected to the City of Oakland sanitary sewer system. Furthermore, wastewater is conveyed to, treated, and disposed of at the East Bay Municipal Utilities District wastewater treatment plant. Therefore, the WOSP EIR identified no impacts related to the capacity of local soils to adequately support the use of septic tanks or alternative wastewater disposal systems.

5.6.2 Project Analysis

Seismic Hazards

The nearest active fault to the Project site is the Hayward-Rodgers Creek Fault, which is located approximately 4.5 miles east of the Project site and would experience strong to very strong ground shaking in the event of a large earthquake to one of the nearby faults.²⁴ The Project site is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone, and therefore would not result in significant impacts with respect to rupture of a known earthquake fault. The Project site is flat and far from hillsides and is not located within an earthquake-induced landslides hazard zone.²⁵

The Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) Hazard Viewer Map shows the Project site had moderate earthquake liquefaction susceptibility.²⁶ According to a geotechnical investigation (Geotech Report) prepared for the Project by Rockridge Geotechnical in 2022, the Project site is within a liquefaction zone as mapped by the *State of California Earthquake Zones of Required Investigation, Oakland West Quadrangle, Official Map*, prepared by the California Geological Survey (CGS), dated February 14, 2003. The Geotech Report evaluated the liquefaction potential of soil encountered below groundwater at the site and determined that there are layers of silty sand below the

²⁴ Rockridge Geotechnical, 2022. *Draft Geotechnical Investigation Proposed Residential Development 533 Kirkham Street Oakland, California. Prepared for TC 11533 Kirkham, LLC.* January 10, 2022. Accessed November 21, 2022.

²⁵ ABAG, 2021. *Earthquake-induced Landslides Map.* Available: <https://mtc.maps.arcgis.com/apps/mapviewer/index.html?layers=9893ad6702d94f99b467a09525f14534>. Accessed November 21, 2022.

²⁶ MTC/ABAG, 2021. *Hazard Viewer Map.* Available: <https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8>. Accessed November 21, 2022.

groundwater table that are susceptible to liquefaction. However, the Geotech Report concluded that the potential for lateral spreading, which is generally the most pervasive and damaging type of liquefaction-induced ground failure generated by earthquakes, was low. Groundwater was concluded to be at 3 feet below the existing ground surface.²⁷

The Project site is located in a Seismic Hazard Zone. These hazards are fully addressed through compliance with the California Building Code, compliance with the seismic requirements of the City of Oakland Building Code and SCA GEO-1, Construction-Related Permit(s), and compliance with recommendations of a site-specific geotechnical investigation and soils report as required pursuant to SCA GEO-2, Seismic Hazards Zones. Therefore, the impacts associated with seismic hazards as a result of the Project would be less than significant, consistent with the conclusions of the WOSP EIR.

Expansive Soils and Soil Erosion

Liquefaction/seismic settlement analysis performed at the time of the Geotech Report revealed there are layers of silty sand below the groundwater table that are susceptible to liquefaction. The soil borings and laboratory test data identified potentially liquefiable soil layers between depths of 3 and 24 feet below ground surface (bgs). Considering the potentially liquefiable soil is relatively shallow and thick at the site, the potential for surface manifestations from liquefaction, such as sand boils and loss of bearing capacity, is high at the Project site. However, as mentioned above, the potential for lateral spreading is low. Additionally, cyclic densification of non-saturated sand (sand above groundwater table) can occur during an earthquake and result in settlement of the ground surface and overlying improvements. The Geotech Report concluded that because the soil above the groundwater table will be removed or reworked during construction, ground settlement due to cyclic densification beneath the proposed building would not occur.

Furthermore, resistivity test results indicate that the near-surface soil is mildly to extremely corrosive to buried metallic structures. Therefore, the Geotech Report recommended that all buried iron, steel, cast iron, ductile iron, galvanized steel, and dielectric-coated steel or iron should be protected against corrosion depending upon the critical nature of the structure.

The Geotech Report noted that the primary geotechnical concerns at the site are the presence of soil susceptible to liquefaction and providing adequate foundation support. The report recommendations for foundation and settlement are that spread footings or a mat foundation bearing on improved soil would be an appropriate foundation system for the proposed building provided: the ground improvement is capable of transferring building loads to dense Merritt sand below depths of about 24 to 28 feet bgs, and the ground improvement reduces total and differential settlements of the structure under both static and seismic conditions to a tolerable amount.²⁸ Ground improvements serve to stiffen the overall soil matrix by densifying loose soil layers and/or transferring the foundation loads to more competent materials. The Geotech Report recommends drill displacement columns (DDCs) or soil-cement (SMX) columns be used for

²⁷ Rockridge Geotechnical, 2022. *Draft Geotechnical Investigation Proposed Residential Development 533 Kirkham Street Oakland, California. Prepared for TC 11533 Kirkham, LLC.* January 10, 2022. Accessed November 21, 2022.

²⁸ Merritt sand generally consists of sand with variable amounts of silt and clay.

ground improvement. Furthermore, the Geotech Report anticipates excavation to be generally limited to foundations, elevator pits, and new underground utilities.

Additionally, the Geotech Report includes recommendations for site preparation and grading, foundation design, ground improvement, seismic design, and other geotechnical aspects of the Project. The Project would be required to comply with the City's SCAs related to geology and soils prior to the approval of construction-related permits. SCA GEO-1, Construction-Related Permit(s), requires the Project to comply with all standards, requirements, and conditions contained in construction-related codes to ensure structural integrity and safe construction. SCA GEO-2, Seismic Hazards Zone (Landslide/Liquefaction), would require the Project to implement the recommendations of the Geotech Report discussed above to address seismic hazards that may be present on site. Likewise, the Project would be required to comply with SCA HYD-1, Erosion and Sedimentation Control Plan for Construction, and SCA HYD-2, State Construction General Permit, which would ensure that the Project would reduce the risk of soil erosion impacts. With required implementation of these SCAs, potential adverse effects related to soil erosion would be less than significant, consistent with the conclusions of the WOSP EIR.

Soils Incapable of Supporting Septic Systems

The Project site would continue to be served by existing municipal sewage systems, and no septic tanks or alternative wastewater disposal systems are necessary or proposed for the Project. Therefore, the Project would have no impact related to the capacity of local soils to adequately support the use of septic tanks or alternative wastewater disposal systems, which is consistent with the conclusions of the WOSP EIR.

5.6.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the 2014 WOSP EIR, implementation of the Project would not result in any new or more significant impacts related to geology, soils, and geohazards than those identified in the 2014 WOSP EIR. The 2014 WOSP EIR identified no mitigation measures related to geology, soils, and geohazards, and none would be required for the Project. SCAs identified in Attachment A to this CEQA Checklist related to geology, soils, and geohazards that would apply include: **SCA GEO-1, Construction-Related Permit(s)**; **SCA GEO-2 and Seismic Hazards Zone (Landslide/Liquefaction)**; as well as **SCA HYD-1, Erosion and Sedimentation Control Plan for Construction** and **SCA HYD-2, State Construction General Permit** (see Section 5.9, *Hydrology and Water Quality*). These SCAs would be implemented by the Project and would ensure that potential impacts associated with hazardous geologic and soils conditions would be less than significant. No mitigation measures are required.

5.7 Greenhouse Gas and Climate Change

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. GHG Emissions (Impact GHG-1)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA GHG-1: Project Compliance with the ECAP Consistency Checklist	LTS w/SCA
b. Consistency with Applicable GHG Plans (Impact GHG-2)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA GHG-1	LTS w/SCA
c. New Stationary Sources of GHG Emissions, Individual Development Projects (Impact GHG-3)	SU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS

5.7.1 WOSP EIR Findings

The WOSP EIR concluded that development facilitated by the WOSP would allow for the construction and operation of land uses that would produce greenhouse gas emissions (GHGs). The WOSP EIR analyzed the quantity of GHG emissions attributable to projected future development within the WOSP Opportunity Areas as compared to existing (2013) emissions as well as the GHG emissions projected from current land uses in the West Oakland Opportunity Areas as they would occur in 2035 (without future development as envisioned under the Specific Plan). The WOSP EIR found that future projects and development under the WOSP would be required to implement SCAs that would reduce GHG emissions during construction and operation of projects and, with the exception of new stationary sources of GHG, would be expected to meet applicable thresholds and result in less-than-significant impacts.

The WOSP EIR also concluded that the WOSP did not conflict with applicable plans, policies and regulations adopted for the purpose of reducing GHG emissions as it would not exceed the numeric thresholds at either the Plan or Project level. The WOSP EIR stated that the WOSP includes several policy-based design features that would be effective in reducing GHG emissions on an area-wide basis as individual development projects are incrementally proposed and developed, and future development consistent with the WOSP would comply with the applicable requirements of the City's Energy and Climate Action Plan. Therefore, the WOSP EIR determined that the impact related to consistency with applicable plans, policies or regulations to reduce GHG emissions would be less than significant.

With respect to stationary sources, however, even with implementation of SCAs, the WOSP EIR determined that GHG impacts from new industrial and commercial development that introduces new stationary sources of GHG emissions could be significant and avoidable. Until such projects are proposed and evaluated, the efficacy of any measures in reducing GHG emissions below relevant thresholds could not be determined with certainty, and this impact was conservatively considered significant and unavoidable in the WOSP EIR.

5.7.2 Project Analysis

Greenhouse Gas Emissions

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 analysis in the WOSP EIR relied on the BAAQMD thresholds adopted by the City to address the GHG reduction goals for 2020 established by Assembly Bill (AB) 32. Senate Bill (SB) 32 expanded upon AB 32 establishing a target to reduce GHG emissions to 40 percent below 1990 levels by 2030. To address SB 32 goals, the City of Oakland adopted the 2030 ECAP in July 2020. The City’s current adopted thresholds for GHG emissions rely upon the technical and scientific basis for the 2030 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 SB 32). Therefore, reductions below the City of Oakland’s efficiency metric also meet the State’s adopted 2030 goals.

An ECAP Consistency Review Checklist (ECAP Checklist) was prepared for the Project (see **Appendix B**). The purpose of the ECAP 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. If a development project can qualitatively demonstrate compliance with all the measures included in the ECAP Checklist as part of the project’s design, or alternatively, demonstrate to the City’s satisfaction why the measure is not applicable, then the project will be considered in compliance with the City’s ECAP. If a development project cannot meet all of the ECAP Checklist items, the project will alternatively need to demonstrate consistency with the ECAP by preparing and implementing a project-specific GHG Reduction Plan consistent with City SCA 46 (Greenhouse Gas Reduction Plan). 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.

According to the Project’s ECAP 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 Checklist, Project GHG emissions associated with land use development would be less than significant.

As noted above in Section 5.3, *Air Quality*, Pacific Gas and Electric (PG&E) is the electricity service provider for the Project site and is considered as a reliable source of power for the Project. Thus, the Project would not require an emergency back-up generator. Therefore, Project operations would not include GHG emissions associated with an emergency generator and no stationary sources of GHG would be associated with the Project.

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 AES-3, Landscape Plan; SCA AIR-2, Criteria Air Pollutant Controls – Construction and Operation Related; SCA AIR-3, Toxic Air Contaminant Controls - Construction Related; SCA TRA-2, Bicycle Parking; SCA TRA-4, Transportation and Parking Demand Management; SCA TRA-6, Plug-In Electric Vehicle (PEV) Charging Infrastructure; 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).

Therefore, the Project would not substantially increase the severity of significant impacts identified in the WOSP EIR, nor would it result in new significant impacts related to GHG emissions that were not identified in the WOSP EIR.

Consistency with GHG Emissions Plans and Policies

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 ECAP Checklist in Appendix B) in that it has committed to all applicable GHG emissions reductions strategies and would include a number of sustainability design features. 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.

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 would comply with the City of Oakland’s Green Building Ordinance and the Project building is targeted to achieve LEED Gold certification. The Project would optimize the efficiency of its building envelope, and it would limit the building’s energy use through the use of efficient lighting and HVAC systems. Also, the Project would meet the most recently implemented Title 24 Building Energy Efficiency Standards. Additionally, the Project would be 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 consistent with all applicable goals, policies and regulations adopted to reduce GHG emissions and this impact would be less than significant. As such, the impacts associated with consistency with applicable GHG plans as a result of the Project would be less than significant, consistent with the conclusions of the WOSP EIR.

5.7.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR considered throughout this analysis, implementation of the Project would not substantially increase the severity of significant impacts identified in the WOSP EIR, nor would it result in new significant impacts related to GHG emissions or compliance with applicable plans, policies, or regulations adopted for the purposes of reducing GHG emissions that were not identified in the WOSP EIR. 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 6.2, 6.3, 6.14, 6.15 and Attachment A) including **SCA AES-3, Landscape Plan; SCA AIR-2, Criteria Air Pollutant Controls - Construction and Operation Related; SCA AIR-3, Toxic Air Contaminant Controls - Construction Related; SCA TRA-2, Bicycle Parking; SCA TRA-4, Transportation and Parking Demand Management; SCA TRA-6, Plug-In Electric Vehicle (PEV) Charging Infrastructure; 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.

5.8 Hazards and Hazardous Materials

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Hazardous Materials Use, Exposure, Storage & Disposal (Impact Haz-1, Haz-2, Haz-3)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA HAZ-1: Hazards Materials Related to Construction SCA HAZ-2: Hazardous Building Materials and Site Contamination	LTS w/ SCAs
b. Hazardous Materials within a Quarter Mile of a School (Impact Haz-4)	LTS w/ SCA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA HAZ-1 SCA HAZ-2	LTS w/ SCAs
c. Airport Hazards (Impact Haz-5)	No Impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	No Impact
d. Emergency Access Routes (Impact Haz-6)	LTS w/ SCA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA TRA-1: Construction Activity in the Public Right-of-Way	LTS w/ SCA
e. Wildland Fires (Impact Haz-7)	No Impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	No Impact

5.8.1 WOSP EIR Findings

Hazardous Materials Use, Exposure, Storage and Disposal

The WOSP EIR found that the WOSP Area contains numerous sites that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. At the time of the WOSP EIR, of the 11 Opportunity Sites in the 7th Street Opportunity Area, 6 Opportunity Sites had reported hazardous materials releases, and each of these 6 sites remained as open cases. There is also one federal National Priorities List (Superfund), the former AMCO Chemical facility, located within the 7th Street Opportunity Area at 1414 3rd Street (Opportunity Site 25). Continued occupancy and use or future redevelopment of these hazardous materials sites in accordance with the WOSP could create a significant hazard to the public or the environment. However, with required implementation of City of Oakland SCAs and required compliance with local, state and federal regulations for treatment, remediation, or disposal of contaminated soil or groundwater, the WOSP EIR found that these impacts would be reduced to a level of less than significant.

The WOSP EIR also found that asbestos or lead based paint present within older structures in the WOSP Area could be released into the environment during demolition or construction activities, which could result in soil contamination or pose a health risk to construction workers or future occupants. However, with required implementation of the City's SCAs, and other applicable laws, regulations, standards and oversight currently in place, the potential impact of implementation of the WOSP related to exposure to hazardous building materials would be less than significant.

The WOSP EIR concluded that development allowed by the WOSP could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions involving the release

of hazardous materials into the environment. However, with required implementation of the City's SCA, as well as required compliance with hazardous materials laws, regulations, standards and oversight currently in place, the potential impact of implementation of the WOSP related to the routine transport, use, or disposal of hazardous materials would be less than significant.

Hazardous Materials within a Quarter Mile of a School

The WOSP EIR found that all schools within the WOSP Area are located within a quarter mile of an existing permitted hazardous materials use or an identified environmental case. The WOSP could also facilitate the addition of new businesses that emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of a school. However, with required implementation of City SCAs and compliance with all other applicable federal, state, and local laws, regulations, standards and oversight currently in place, the WOSP EIR found these impacts to be reduced to a level of less than significant.

Airport Hazards

The WOSP EIR found that the WOSP Area is not located within an airport land use WOSP Area or within two miles of a public airport or public use airport, or near a private airstrip. Therefore, the WOSP EIR found that the WOSP would have no impact related to airport hazards.

Emergency Access Routes

The WOSP EIR determined that with implementation of the City's SCA requiring an encroachment permit for work within street rights-of-way, and standard construction period notification requirements to first responders, the impacts related to interference with an emergency response plan or emergency evacuation plan would be less than significant.

Wildland Fires

The WOSP EIR found that the WOSP Area is located in an urbanized part of Oakland, within a non-Very High Fire Hazard Severity Zone as mapped by the California Department of Forestry and Fire Protection, and well outside of the City's Fire Prevention and Assessment District boundary. Therefore, the WOSP EIR determined that the WOSP would have no impact related to wildland fires.

5.8.2 Project Analysis

The Project site is not located near any public or private airports or airstrips (Impact Haz-5), nor is it located near any wildland areas or fire hazard severity zones (Impact Haz-7). Therefore, consistent with the findings of the WOSP EIR, there would be no risk of airport hazards or risk of wildland fires at the Project site and these topics are not further discussed in this document.

Hazardous Materials Use, Exposure, Storage and Disposal

At the time of the WOSP EIR, the DTSC EnviroStor Maps showed one open case on Opportunity Site 23 (1396 5th Street/Red Star Yeast adjacent to the Project site) that was referred to the local agency, Alameda County Environmental Health (ACEH), to provide regulatory oversight for investigation and cleanup. However, as stated in the WOSP EIR, additional properties within the WOSP Area may be placed in environmental agency databases in the future due to the discovery

of then unknown previous releases or new releases of hazardous substances. Therefore, a preliminary review of the Project site on the DTSC's EnviroStor database and the SWRCB's GeoTracker database was conducted and revealed an open Voluntary Cleanup case with DTSC.²⁹ Various other open and closed cases are located on adjacent parcels^{30,31} and are further described in the Phase I Environmental Site Assessment (Phase I ESA) prepared for the Project site in December 2020 by AEI Consultants.³² The following is a summary of the Phase I ESA findings for the Project site:

Phase I ESA

The Phase I prepared for the Project site summarized the history of land uses on the site that included residential in the early 1900s, development for use as a brewery (with some residences remaining in 1912) through 1963, and then vacant land used as parking through the present. The Phase I ESA revealed a recognized environmental condition (REC) associated with the Project site.³³ As part of brewery operations, two above ground tanks with unknown contents were located on the northern portion of the Project site within a stock house. Additionally, one 15,000-gallon underground tank (UST) containing crude oil was depicted in historical maps from 1951-1961 on the central-eastern portion of the Project site. By 1967 all structures had been removed from the Project site. The Project site was not identified in the regulatory database; however, these operations took place during a time that pre-dates regulatory oversight of hazardous materials and petroleum products. The contents of the two above ground tanks are unknown, and it is unknown if piping associated with these tanks were located above or below ground. Pipes located below ground present the possibility of leaks that could directly impact the subsurface. Due to the lack of details pertaining to the above ground tanks and UST, it is possible that these historical features resulted in adverse subsurface impacts and are considered an REC.

Additionally, the Phase I ESA described two adjacent properties to the north (1395 7th Street) and south (1384/1396 5th Street) that are documented release sites and could represent an environmental concern for the Project site:

- The Park Gas & Food (former Chevron) site located at 1395 7th Street adjacent to the north and northwest of the Project site has an open leaking underground storage tank (LUST) case with ACDEH. Past documented releases from waste oil and fuel USTs have been observed on the site. Activities associated with UST removals in 1997 documented chemicals of potential concern including total petroleum hydrocarbons as gasoline (TPH-g) and diesel (TPH-d), total oil and grease (TOG), total recoverable petroleum hydrocarbons (TRPH), lead, and zinc in soil and TPH-d in groundwater. Based on the close proximity of this site to the Project site

²⁹ DTSC, 2023. EnviroStor Database, TC II 533 Kirkham, LLC (60003136). Available: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60003136.

³⁰ DTSC, 2023. EnviroStor Database. Available: <https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=533+kirkhma+oakland>. Accessed March 23, 2023.

³¹ RWQCB, 2023. Geotracker Database. Available: <https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=533+kirkham+street+oakland#>. Accessed March 23, 2023.

³² AEI Consultants, 2020. *Phase I Environmental Site Assessment*, 533 Kirkham Court, Oakland, Alameda County, California 94607, December 14, 2020.

³³ 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.

as well as the open status of this release case, there is a potential that the release at this site has impacted the Project site.

- The former Red Star Yeast site located at 1384/1396 5th Street adjacent to the south of the Project site also has a closed Cleanup Program site case (as of May 2017) and an open Cleanup Program site case with ACDEH (as of September 2021). The release case associated with this site was opened by ACDEH in 2005 in conjunction with a proposed residential redevelopment of the former Red Star Yeast Company manufacturing plant which operated from approximately 1902 until 2003. Extensive excavation of metal impacted soil was conducted in conjunction with site redevelopment which began in 2011; however, in 2012 a fire occurred during the construction phase and significantly damaged the site structure and surrounding properties. The remaining structure from the fire consisted of a concrete podium which was removed in April 2016. Additional investigation activities were conducted in 2016 to: (1) assess data gaps in the confirmation sampling of the previously excavated areas of the site and assess fill material used to backfill the remedial excavation; and (2) assess soil and groundwater conditions in the vicinity of underground storage tanks discovered in the sidewalk during site development in 2011 as well as the potential for upgradient off-site sources of petroleum contamination. Results of groundwater samples collected in June 2016 in the northern portion of the site (closest to the Project site) indicate that there was TPH-g; TPH-d; benzene, toluene, ethylbenzenes and total xylenes (BTEX); and tertiary butyl alcohol (TBA) impacts to groundwater in the northern portion of the site. The most likely source of this contamination was deemed to be the railroad right-of-way immediately north of the site or the former service station located north of the site (this is the former Chevron site discussed in the bullet above). Additionally, investigations performed related to the redevelopment of the site have recommended that a vapor barrier be installed across the footprint of the proposed building and that the remainder of the site be hardscaped to address contamination from hazardous materials release.³⁴ Based on this, there is a potential that the southern portion of the Project site may have been impacted by this site.

Based on the proximity of these sites to the Project site, it is possible that releases from these sites have impacted the subsurface of the Project site, and these sites represent RECs.

Two other documented release sites are located adjacent to the Project site that were determined to not represent a significant environmental concern by the Phase I ESA:

- Smilo Chemical Company (500 Kirkham) was occupied by residential and commercial/ industrial buildings until the 1990s. Various types of commercial/industrial operations were operated on this site including clothing, canned goods, paper products, automotive and truck repairs, and chemical repacking. In 1995, one UST was excavated and removed from the site. The chemicals of potential concern are total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), organochlorine pesticides (OCPs), lead, arsenic, and other metals in soil, groundwater, and soil gas. 500 Kirkham, LLC. entered into a Voluntary Cleanup Agreement on May 19, 2017, and a Preliminary Endangerment Assessment Report (PEA) was performed to address potential environmental concerns for a planned development on the site which included residential and commercial units. A revised draft PEA Addendum dated July 14, 2020 was submitted to DTSC for review and approval that recommended installing vapor intrusion mitigation systems (VIMS) under the future buildings, and establishing a Land Use Covenant and an Operation and

³⁴ City of Oakland, 2022. *1396 5th Street CEQA Analysis*, June 2022. Available: <https://www.oaklandca.gov/resources/current-environmental-review-ceqa-eir-documents-2011-present>. Accessed June 14, 2023.

Maintenance Plan. Review of the aggregate data indicates the site does not exhibit significant environmental impacts, with the exception of VOCs in groundwater; however, VOC concentrations appear to be stable or decreasing. Based on review of the current and past environmental data, the 500 Kirkham site presents minimal future risk to human health or the environment assuming restricted land use associated with limitations of future groundwater use. A review of contamination plume maps indicates that groundwater contamination is flowing off site to the south; it does not appear that the groundwater plume has impacted the Project site. Based on this information as well as the ongoing regulatory oversight, this site relative to the Project site does not appear to represent a significant concern at this time.³⁵

- A release of kerosene associated with Kelly's Truck Repair (1390 7th Street) was reported and noted to have impacted groundwater. The case was then granted closure in 1997. This property has since been redeveloped for multi-family residential uses (Mandela Gateway Apartments). Based on the case closure, time elapsed since the release as well as the fact that this property has since been redeveloped, this site is not expected to represent a significant environmental concern for the Project site.

Due to the RECs identified, the Phase I ESA recommended a subsurface investigation be performed.

Site Assessment Workplan and Report of Findings

DTSC and the Project Applicant entered into a California Land Reuse and Revitalization Act (CLRRA) Agreement on October 7, 2021.³⁶ Under CLRRA, the site is required to submit a Site Assessment Workplan followed by a Report of Findings, and if necessary, a Response Plan. The final *Site Assessment Plan and Report of Findings* (June 2022) to assess Project site conditions prior to redevelopment, considering the above identified RECs. AEI Consultants completed the following:³⁷

- 1) A geophysical survey of the Project site to assess if the historical 15,000-gallon UST may remain at the Project site;
- 2) Collection of soil gas samples; and
- 3) Shallow soil samples to assess the shallow soil conditions with regard to known metal impacts to shallow soil.

No indication of a UST was identified by the geophysical survey performed as part of the Site Assessment. Regarding soil gas, benzene was detected in several soil gas samples at relatively low concentrations, with the exception of one location where benzene was reported slightly above the residential screening level during the first sampling event. It is noted that this location is proposed as a surface, open-air parking area located outside the footprint of the proposed building, where vapor intrusion would not be a concern. During a second sampling event, benzene was not

³⁵ The 2022 *Site Assessment Plan and Report of Findings* (described below) clarified that due to the downgradient nature of this site, the impacts at the property are not anticipated to have impacted the Project site.

³⁶ DTSC, 2021. CLRRA Agreement TC II 533 Kirkham, Docket No. HAS -FY20/21-159, October 7, 2021. Available: [https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F7804077625%2FCLRRA%20Agreement%20TC%20II%20533%20Kirkham%20\(Signed\).pdf](https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F7804077625%2FCLRRA%20Agreement%20TC%20II%20533%20Kirkham%20(Signed).pdf).

³⁷ AEI Consultants, 2022. *Site Assessment Plan and Report of Findings, Revision 1*, June 2, 2022. Available: [https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F4087111532%2F431172%20SA%20Plan%20and%20Report%20of%20Findings_2022%20June%20%20\(2\).pdf](https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F4087111532%2F431172%20SA%20Plan%20and%20Report%20of%20Findings_2022%20June%20%20(2).pdf).

detected at this location. The lack of benzene in this location during the second sampling event, immediately downgradient from the adjacent gasoline station, provides further confirmation that a significant hydrocarbon plume from the adjacent gasoline station does not appear to have migrated onto the Project site. Oxygenated conditions supportive of a bioattenuation zone for benzene was also observed in soil gas. Additionally, the proposed construction plans call for the installation of a 3-foot-thick concrete slab beneath the building that would provide an additional layer of protection against any potential for vapor intrusion to occupied spaces. As such, the Report of Findings concluded that an unacceptable risk for vapor intrusion is not present at the Project site; therefore, no further action with regards to soil vapor is recommended.

Regarding soil sampling, the Report of Findings identified lead, TPH-d, and dibenz(a,h)anthracene in soil. Based on the nature of the observed contamination, metals, and TPHd in the isolated area, contaminated soil is anticipated to be limited to the upper two to three feet of shallow soil. Preparation and submittal of a Response Plan for review and approval prior to commencement of redevelopment activities was recommended to address soil contamination. The Response Plan will include excavation and relocation or removal of impacted soil, followed by completion of a cover/cap for areas where residual impacts are left in place at the Project site. The Response Plan will include a Soil Management Plan including soil management techniques to be implemented by construction personnel to address an elevated cumulative noncancer hazard estimate as well as notifications with an action plan if unexpected contamination is encountered. The Response Plan will also include a Community Air Monitoring Plan (CAMP) to address fugitive dust monitoring that may be necessary to be protective of offsite receptors during the excavation portion of the redevelopment activities.

Upon completion of the soil removal activities, a completion report will be prepared to document soil conditions that remain following mass removal efforts. If contaminants of concern concentrations exceed the applicable screening levels, they will be covered by hardscape and the completion report will contain a cap maintenance plan outlining reporting and maintenance requirements to assure a competent cap remains in place. If contaminants of concern in shallow soil remain above the Human Health Risk Assessment Screening Level for Residential Soil, or established background concentrations, whichever is higher, soil may be capped and a Land Use Covenant will be prepared to document existing conditions and outline the necessary administrative controls to assure the soil does not result in an unacceptable risk to human health or the environment.

DTSC approved the June 2, 2022, *Site Assessment Plan and Report of Findings, Revision 1* for the 533 Kirkham Street Site on July 22, 2022.³⁸

³⁸ DTSC, 2022. DTSC Approval Letter RE: Site Assessment Plan and Report of Findings, Revision 1, June 2, 2022, 533 Kirkham Street, Oakland, California (Site Code: 202370). Available: https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F8263798594%2F533%20Kirkham%20Report%20of%20Findings%20approval%20DTSC%20July%202022%202022%20sign%5B28036%5D.pdf.

Response Plan and Future Activities

A draft of the aforementioned Response Plan was submitted to DTSC in December 2022 and last revised on September 18, 2023.^{39,40} The cleanup activities identified in the Response Plan involve excavation and off-site disposal of approximately 3,400 cubic yards of soil from the site during construction. The CLRRRA Response Plan (Health & Safety Code 25395.96, equivalent to a Removal Action Work Plan) is required to include provisions for DTSC to require further response actions based on the discovery of hazardous materials that pose an unreasonable risk to human health and safety or the environment that are discovered during the course of the response action or subsequent development of the Project site.⁴¹ The draft Response Plan contains the protocol for removal of site contaminants of concern, protocols for appropriate soil management procedures during construction, measures to mitigate potential exposure risks to onsite workers, nearby residents, and pedestrians from fugitive dust encountered during excavation and grading, and provides for the proper management of previously unknown environmental conditions if identified during construction. If exceedances above the applicable residential and/or construction worker screening levels remain following implementation of the Response Plan, the Response Plan Implementation report would include a recommendation for a LUC and an Operation and Maintenance (O&M) Plan (or a Cap Maintenance Plan) outlining reporting and maintenance requirements to assure a competent cap remains in place.⁴² With respect to soil, it is common for LUCs and associated plans and agreements to identify a specific depth horizon to prevent future excavations into potentially contaminated soil. Once a depth horizon has been established, permission must be obtained from the oversight regulatory agency (in this case, DTSC) prior to excavations, borings, or similar subsurface activity.

Project Analysis and Consistency with WOSP EIR Findings

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/Site Assessment Plan and Report of Findings 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 the DTSC approved Response Plan, and required clearances by the applicable local, state, or federal regulatory agency (including in this case DTSC). As such, compliance with SCA HAZ-2 would ensure that the recommendations of the Site Assessment Workplan and Report of Findings, Response Plan (including the Soil Management Plan and CAMP), and requirements for remediation by the lead environmental regulatory agency (DTSC) are implemented.

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 activities. The Project would not require demolition of any structures and as such would not pose any risk associated with asbestos-containing materials, lead-based paint, polychlorinated biphenyls (PCBs), and any other hazardous building materials. The Project uses during operation include

³⁹ AEI Consultants, 2022. Response Plan, December 6, 2022.

⁴⁰ AEI Consultants, 2023. Response Plan, Revision 3, September 18, 2023.

⁴¹ DTSC, 2021. DTSC Office of Brownfields, Cleanup In Vulnerable Communities Initiative, Quick Reference Guide, August 2021. Available: https://dtsc.ca.gov/wp-content/uploads/sites/31/2021/10/Quick-Reference-guide_8-21-002-1.pdf.

⁴² AEI Consultants, 2022. Response Plan, December 6, 2022.

residential and retail uses, which by their nature 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.

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 WOSP EIR, the potential Project impacts related to hazardous materials use, exposure, storage, and disposal would be reduced to less-than-significant levels.

Hazardous Materials within a Quarter Mile of a School

The Project site is located within 0.25 mile of the Pentecostal Way of Truth School Academy, a private K-12 school, located at 1575 7th Street northwest of the Project site. The Project would involve residential and retail 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 and HAZ-2 to ensure that the Soil Management Plan and CAMP (to address fugitive dust) are implemented. The WOSP EIR determined that the potential risks related to hazardous materials use in the vicinity of schools would be less than significant given incorporation of SCAs and other existing regulatory requirements. Therefore, potential impacts of the Project would be less than significant, consistent with the findings and conclusions of the WOSP EIR.

Emergency Access Routes

The WOSP EIR described 7th Street as an emergency evacuation route. Construction of the Project could result in temporary lane closures or other traffic disruptions to the streets surrounding the Project site during construction, including 7th Street. However, as described in the WOSP EIR, any need for traffic lane reductions or street closures due to construction would be short-term and localized. The Project Applicant would comply with SCA TRA-1, Construction Activity in the Public Right-of-Way, which requires an obstruction permit from the City prior to approval of the construction-related permit. Any temporary roadway closures required during construction of the Project would be subject to City of Oakland review and approval, to ensure consistency with City of Oakland requirements and to ensure that appropriate emergency access is maintained at all times during construction activities. During operation, vehicular access to the proposed parking garage would be from a proposed curb cut on Kirkham Street. The Project would also be reviewed by the Oakland Fire Department to ensure the provision of adequate emergency access ways to the Project site for emergency vehicles. Therefore, consistent with the findings and conclusions of the WOSP EIR, the potential impacts related to emergency evacuation plans and emergency access would be less-than-significant levels.

5.8.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR, the Project would not result in any new or more severe significant impacts related to hazards and hazardous materials than those identified in the WOSP EIR. Implementation of **SCA HAZ-1, Hazards Materials Related to Construction; SCA HAZ-2, Hazardous Building Materials and Site Contamination; 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.

5.9 Hydrology and Water Quality

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Water Quality (Impact Hydro-1, Hydro-3, and Hydro-4)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA HYD-1: Erosion and Sedimentation Control Plan for Construction SCA HYD-2: State Construction General Permit	LTS w/ SCAs
b. Use of Groundwater (Impact Hydro-2)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
c. Stormwater Drainages & Drainage Patterns (Impact Hydro-5)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA HYD-1: Erosion and Sedimentation Control Plan for Construction SCA HYD-2: State Construction General Permit SCA HYD-3: NPDES C.3 Stormwater Requirements for Regulated Projects SCA GEO-1: Construction-Related Permit(s) SCA UTIL-6: Storm Drain System	LTS w/ SCA
d. Flooding & Substantial Risks from Flooding (Impact Hydro-6)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
e. Dam Failure Inundation and Seiche, Tsunami, and Mudflow (Impacts Hydro-7 and Hydro-8)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS

5.9.1 WOSP EIR Findings

Water Quality, Stormwater, and Drainages and Drainage Patterns

The WOSP EIR determined that development in the WOSP Area would result in construction activities that would generate stormwater runoff, resulting in impacts to hydrology and water quality. The WOSP EIR identified several SCAs that would reduce impacts to a less-than-significant level by minimizing runoff and erosion, as well as sedimentation and contamination to stormwater and surface water during construction activities.

Use of Groundwater

Potable water is supplied to the WOSP Area through imported surface water by EBMUD, and groundwater is generally not used in the WOSP Area. The WOSP Area is primarily developed and covered in impervious surfaces, and the amount of water able to infiltrate the aquifer in the East Bay Plain groundwater basin would not substantially decrease with development under the WOSP. Additionally, compliance with the C.3 provisions of the National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit for the Alameda County Clean

Water Program would require that recharge rates at a project site be equivalent to the recharge rate at the site prior to development.

Flooding and Substantial Risks from Flooding

The WOSP EIR identified no portion of the WOSP Area as being located in the 100-year or 500-year flood zone. The WOSP identified a portion of the WOSP Area north of I-580 as located within the Temescal Lake dam failure inundation area. However, the City participates in the California Office of Emergency Services Dam Failure Inundation Mapping and Emergency Procedure Program and has included potential dam failure in its emergency preparedness, response and evacuation programs. The WOSP does not propose any land use changes or improvements to the area north of I-580 and would not affect established emergency procedures for the evacuation and control of populated areas below Temescal Lake dam. Therefore, the potential flooding impacts related to failure of the Temescal Lake dam were found to be less than significant.

Additionally, the WOSP EIR identified the WOSP Area as being flat and far from hillsides, so it is not subject to risk from landslides as mapped by the Association of Bay Area Governments, based on data from the U.S. Geological Survey.

5.9.2 Project Analysis

Water Quality, Stormwater, and Drainages and Drainage Patterns

The Project site is currently developed with a paved surface parking lot. Impervious surfaces generally cover the entire site, totaling 50,809 square feet (approximately 1.17 acres). The Project would result in approximately 39,430 square feet of new impervious surface area and 10,915 square feet of new pervious surface area on the Project site. This is a decrease in impervious surface area when compared to the pre-project 50,345 square feet of impervious surface. The Project would include 10,914 square feet of group open space in the form of a residential courtyard that would reduce impervious surfaces on the Project site (relative to the existing condition). Because the Project would involve the replacement of over 10,000 square feet of impervious surfaces, the Project would be required to comply with the Provision C.3 of the National Pollutant Discharge Elimination System (NPDES) Municipal Regional Permit (MRP).⁴³ Since the Project would adhere to national, state, and local regulations, as well as the City's SCAs, the potential for the Project to substantially alter drainage patterns, increase the flow of runoff, or affect water quality would be less than significant.

The Project is located within a highly urbanized environment. There are no lakes, creeks, or other surface waters in the immediate proximity that the Project would alter. The Project would not substantially alter a natural watercourse because there are no creeks crossing or located near the Project site. Implementation of SCA HYD-1, Erosion and Sedimentation Control Plan for Construction, would reduce potential erosion and sedimentation impacts to less than significant levels. The Project would also comply with SCA HYD-2, State Construction General Permit, which would require submission of a Stormwater Pollution Prevention Plan (SWPPP) and other

⁴³ California Regional Water Quality Control Board (RWQCB), 2022. San Francisco Bay Region Municipal Regional Stormwater NPDES Permit, Order No. R2-2022-0018, NPDES Permit No. CAS612008, May 11, 2022. Available: https://www.waterboards.ca.gov/rwqcb2/board_decisions/adopted_orders/2022/R2-2022-0018.pdf.

required Permit Registration Documents to the SWRCB. Additionally, the Project would be required to comply with SCA HYD-3, NPDES C.3 Stormwater Requirements for Regulated Projects, which requires the Project's Stormwater Control Plan to comply with Provision C.3 of the Municipal Regional Stormwater Permit issued under the NPDES. The Project would include the use of micro-detention, including distributed landscape based detention; permeable paving; and treatment planters. Additionally, the Project would minimize stormwater runoff by directing stormwater to flow through planters; overflow to the treatment planter; and direct runoff from the roof to flow through the planter via roof leaders. The Project has incorporated stormwater quantity and quality control that include maximizing on-site infiltration, incorporating efficient water use practices, and utilizing bioretention areas in accordance with the C.3 requirements and City of Oakland Storm Drainage Design Guidelines. Additionally, the City of Oakland Storm Drainage Design Guidelines require to the extent feasible a net reduction of 25 percent in peak stormwater runoff rate from new projects to the extent possible, in an effort to better address the citywide stormwater drainage capacity.

In addition, implementation of SCA GEO-1, Construction-Related Permit(s); and SCA UTIL-6, Storm Drain System would further reduce potential impacts related to sedimentation and erosion. Compliance with the aforementioned SCAs as well as other local and state regulations would ensure that all impacts related to water quality, stormwater drainages, and drainage patterns would be less than significant, consistent with the findings of the WOSP EIR.

Use of Groundwater

Groundwater in the vicinity of the Project site is not expected to be encountered as the measured groundwater table is assumed to be approximately 3 feet bgs according to the Geotechnical Report (see Section 5.6, *Geology, Soils, and Geohazards*). If groundwater is encountered during excavation, dewatering during construction may be required. Construction-related dewatering would be temporary and limited to the area of the Project site and would not substantially contribute to depletion of groundwater supplies or reduce the quality of groundwater. As mentioned above, The Project site has 50,345 square feet of existing impervious surface, all of which intends to be replaced. The Project would create 39,490 square feet of new impervious surface and 10,915 square feet of post-project pervious surface. The Project would decrease impervious surfaces on the Project site and increase pervious surfaces, thereby potentially increasing groundwater recharge occurring at the site.

Regardless, the WOSP EIR noted that the local water district, EBMUD, relies on surface water and does not use the groundwater basin for municipal water supply so the impact in regard to use of groundwater would be less-than-significant, consistent with the findings of the WOSP EIR.

Flooding and Substantial Risks from Flooding

The Project site is not located in a designated 100-year or 500-year flood zone.⁴⁴ Since the Project site is not located in a designated 100-year or 500-year flood zone the risk of flooding on the Project site is very low and the impacts to substantial risks from flooding are less than significant, consistent with the findings of the WOSP EIR.

Dam Failure Inundation and Seiche, Tsunami, and Mudflow

The Project site is located in a tsunami inundation zone.⁴⁶ Flooding from tsunamis would affect low-lying areas along San Francisco Bay and the Oakland Estuary, especially filled areas that are only a few feet above sea level. Although the probability of a tsunami affecting Oakland is low, given the rarity and unpredictability of the hazard, the impact from a rare tsunami would be high. As described in the WOSP EIR, the National Weather Service operates the Alaska Tsunami Warning Center and is responsible for issuing warnings about potential tsunamis along the West Coast of the United States. In the event that an earthquake occurred that would be capable of producing a tsunami that could affect West Oakland, the City of Oakland would receive the warning through the State Warning System. The Oakland Office of Emergency Services (OES) operates a network of outdoor warning sirens to alert the public in the case of an emergency. Warning times vary depending on the distance to the earthquake epicenter. For most tsunamis approaching the coast, several hours are available to evacuate residents and undertake other emergency preparations. The National Weather Service, State Warning System, and Oakland Office of Emergency Services, including the outdoor warning sirens in West Oakland, would provide early notification of an advancing tsunami allowing evacuation of people and ensuring potential impacts related to tsunami inundation are less than significant, consistent with the findings of the WOSP EIR.

Seiches are water level oscillations in an enclosed or semi-enclosed body of water such as a lake, reservoir, or harbor. The City of Oakland General Plan Safety Element describes the occurrence of devastating seiches in Oakland as highly unlikely. In Oakland, the only threat of large-scale damage from seiches appears to come from downstream flooding that would be caused by large volumes of water overtopping a dam or reservoir. Seiche risk at areas along Oakland's shoreline, including the Project site, is considered to be very low risk.⁴⁷

The Project site is not located in a dam failure inundation area from Lake Temescal.⁴⁸ The Project site is flat and far from hillsides and is not subject to landslides. Therefore, potential flooding impacts would be less than significant, consistent with the findings of the WOSP EIR.

⁴⁴ A 10-year flood event has a 1 percent probability of being exceeded in any given year. Because this event's probability resets each year, it is possible, although unlikely, for more than one 100-year flood to occur within any given period 100 years long. A 500-year flood event has a 0.2 percent probability of being exceeded in any given year.

⁴⁵ Metropolitan Transportation Commission and Association of Bay Area Governments, 2021. *MTC/ABAG Hazard Viewer Map*. Available: <https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8>.

⁴⁶ Ibid.

⁴⁷ City of Oakland. 2021. *2021-2026 Hazard Mitigation Plan*, July 2021. Available: <https://www.oaklandca.gov/topics/2021-local-hazard-mitigation-plan>.

⁴⁸ Department of Water Resources, 2022. *Inundation Maps*. Available: <https://water.ca.gov/programs/all-programs/division-of-safety-of-dams/inundation-maps#:~:text=An%20Inundation%20map%20shows%20flooding,maps%20and%20emergency%20action%20plans>.

5.9.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR, 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 WOSP EIR. The WOSP EIR identified no mitigation measures related to hydrology and water quality, and none would be required for the Project. SCAs identified in Attachment A to this CEQA Checklist related to hydrology and water quality that would apply include **SCA HYD-1, Erosion and Sedimentation Control Plan for Construction; SCA HYD-2, State Construction General Permit; SCA HYD-3, NPDES C.3 Stormwater Requirements for Regulated Projects; SCA GEO-1, Construction-Related Permit(s); and SCA UTIL-6, Storm Drain System.** These SCAs would be implemented by the Project and would further ensure that impacts related to hydrology and water quality would be less than significant. No mitigation measures are required.

5.10 Land Use, Plans, and Policies

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Division of Existing Community (Impact LU-1)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
b. Conflict with Land Uses (Impact LU-2)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
c. Land Use Plans (Impact LU-3)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
d. Habitat and Natural Community Conservation (Impact LU-3)	No Impact	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	No Impact

5.10.1 WOSP EIR Findings

Division of Existing Community, Conflict with Land Uses, Land Use Plans, or Habitat and Natural Community Conservation

The WOSP EIR found that the WOSP would not disrupt or divide the physical arrangement of the West Oakland community or any surrounding community, but rather would improve certain existing conditions that currently divide the community and would result in a gradual improvement in compatibility between residential and other types of surrounding land uses. It also concluded that the WOSP would not fundamentally conflict with any applicable land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and that there were no Habitat Conservation Plan, Natural Community Conservation Plan or other adopted habitat conservation plan applicable to the WOSP Area such that the WOSP would not conflict with such plans.

5.10.2 Project Analysis

Division of Existing Community

The Project site is within an urbanized portion of West Oakland on an existing city block within a public street grid. Redevelopment of the Project site would not introduce features that would impair mobility within the community or between the community and outlying areas. The Project would not include the construction or removal of a roadway. Existing sidewalks and roadway access adjacent to the Project site would remain. Therefore, the Project would not result in a physical division of an established community and impacts would be less than significant, consistent with the findings of the WOSP EIR.

Conflict with Land Uses / Land Use Plans

Land uses surrounding the Project site, as described in Section 4, Project Description, are centered around the West Oakland BART Station including commercial (e.g., retail, grocery, and restaurants) and residential uses as well as parking. The Project would develop a mixed-use residential building, which would be compatible with existing uses while furthering the housing and economic development goals of the WOSP. By replacing the existing high volume surface

parking with residential units, the Project would be compatible with existing residential uses and support the gradual transition to the higher density types of mixed-use land uses envisioned in the WOSP, and consistent with the findings of the WOSP EIR, potential impacts resulting from conflicts with land uses would be less than significant.

The Project site is zoned S-15W Transit Oriented Development Commercial Zone (S-15W) and has a Community Commercial (CC) General Plan land use designation. The intent of the S-15W zone is to “encourage concentrated, pedestrian-oriented development near transit stations”. It allows for a mix of medium density residential development, civic, commercial, and light industrial activities. The Project would provide residential use along with retail space fronting 7th Street and is therefore consistent with the intent of the zoning classification.

The Project site’s General Plan land use classification is CC which is intended to “create, maintain, and enhance areas with a wide range of commercial and institutional operations along the City’s major corridors and in shopping districts or centers.” Combined with the Project’s retail component on the ground floor, new Project residents would activate the area during both day and night and on weekdays and weekends and thereby enhance 7th Street as a commercial corridor.

The Project site is within the 160-foot height area of the WOSP Area, which allows a density of one dwelling unit per 225 square feet of lot area, 1 efficiency dwelling unit per 110 square feet of lot area, and a 5.0 maximum Floor Area Ratio (FAR) for non-residential uses. The Project is utilizing the State Affordable Housing Density Bonus and would provide 5 percent of the base units to very low-income households which allows for a 20 percent density bonus by right. The maximum height within 10 feet of the front property line is either the height limit on the subject lot (160 feet) or the height maximum for the height area of the parcel directly across the principal street or 7th Street (75 feet), whichever is less. However, the Project Applicant has requested a waiver of this regulation because it would result in the loss of units as part of the affordable housing density bonus project. Providing the required setback would result in the loss eight units on the 8th floor, precluding construction of all 289 units. Additionally, the Project Applicant is seeking a development waiver for the required open space.

The Oakland density bonus regulations, Planning Code Chapter 17.107, are a component of Oakland’s zoning regulations; therefore, a project that receives a density bonus and otherwise complies with the applicable zoning requirements is consistent with the density provided in the applicable zoning designation. The density bonus regulations state that the granting of a density bonus shall not be interpreted in and of itself to require a General Plan amendment, zoning change, or other discretionary approval (Planning Code Section 17.107.040.F). This is consistent with the State density bonus law, which states that the granting of a density bonus “shall not require, or be interpreted, in and of itself, to require a general plan amendment, local coastal plan amendment, zoning change, or other discretionary approval” (Gov. Code Sec 65915(f)(5)). Further, the State Housing Accountability Act, Government Code Section 65589.5, clearly states that a city cannot use the receipt of a density bonus as a basis on which to find that a proposed housing development project is inconsistent with an applicable development standard. In other words, a project that is otherwise consistent with the applicable general plan and zoning requirements is eligible to receive a qualifying density bonus without also seeking a general plan

amendment or rezoning. Therefore, the Project would be consistent with land use regulations and the impact would be less than significant, consistent with the conclusions of the WOSP EIR.

Habitat and Natural Community Conservation Plans

The Project would not conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan, as there are no such plans in the Project vicinity. Therefore, no impact would occur, consistent with the findings of the WOSP EIR.

5.10.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR, implementation of the Project would not substantially increase the severity of any significant land use impacts identified in the WOSP EIR, nor would it result in new significant impacts related to land uses, plans, or policies that were not identified in the WOSP EIR. The WOSP EIR did not identify any mitigation measures for significant impacts related to land uses, plans, or policies, and none would be necessary for the Project. No SCAs pertaining to this topic are required for the Project.

5.11 Noise

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Construction Noise and Vibration (Impacts Noise-1, Noise-4)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA NOI-1: Construction Days/Hours SCA NOI-2: Construction Noise SCA NOI-3: Extreme Construction Noise SCA NOI-4: Construction Noise Complaints	LTS w/ SCAs
b. Operational Noise and Vibration (Impacts Noise-2, Noise-5)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA NOI-6: Operational Noise SCA NOI-7: Exposure to Vibration	LTS w/ SCAs
c. Airport Noise (Impact Noise-8)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
d. Noise Exposure/Compatibility (Impact Noise-9)	LTS w/ SCAs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA NOI-5: Exposure to Community Noise SCA NOI-7: Exposure to Vibration	LTS w/ SCAs

5.11.1 WOSP EIR Findings

Construction and Operational Noise and Vibration, Exposure of Receptors to Noise

Overall, the WOSP EIR determined that noise impacts related to construction and operation of development under the WOSP would be less than significant. Construction-related activities associated with development under the WOSP would temporarily increase ambient noise levels and vibration in the vicinity of construction sites. Implementation of City SCAs would minimize construction noise and vibration impacts by limiting hours of construction activities; requiring best available noise control technology on construction equipment; requiring vibration monitoring when construction activities take place adjacent to historic structures; and requiring project applicants and/or their contractors to notify residents in the project vicinity of construction activities and hours, and to track and respond to any noise complaints. The WOSP EIR determined implementation of these measures would reduce construction noise impacts associated with extreme construction noise activities and vibration to less than significant levels.

Operational Noise and Vibration

During operation, mechanical equipment used in projects developed under the WOSP would generate noise; however, equipment would be standardized and would be required to comply with the City of Oakland Noise Ordinance. Potential impacts would be reduced with implementation of SCAs that would require project design to achieve acceptable interior noise levels for buildings; limit ground-borne vibration at the project site; and require mechanical equipment to comply with applicable noise performance standards.

The WOSP EIR determined that development under the WOSP would increase noise levels adjacent to nearby roads due to additional vehicles traveling throughout the WOSP Area. The EIR found that the increase in traffic from the existing plus project scenario as compared to existing conditions would increase peak-hour noise levels by less than 5 A-weighted decibels (dBA) at all studied roadway segments. The increase in traffic noise between the cumulative without project to cumulative plus project, would increase peak-hour noise levels by less than 5 dBA at all studied roadway segments, with the exception of 7th Street west of Adeline, where the increase in roadside noise would be 5.4 dBA. However, the contribution of roadway traffic noise from development under the WOSP is not cumulatively considerable because it would contribute an estimated increase of less than 3 dBA.

Airport Noise

The WOSP Area is located more than two miles outside of the Oakland International Airport noise contour, which the Federal Aviation Administration regards as a significance threshold for noise-sensitive land uses. Impacts from aircraft noise under the WOSP EIR were determined to be less than significant within Impact Noise-8 of the WOSP EIR.

Noise Exposure/Compatibility

As described in the WOSP EIR, noise levels from BART and the I-880 freeway indicate that the ambient noise environment in the WOSP Area would be considered “normally unacceptable” for residential uses, and “conditionally acceptable” for business commercial uses at the proposed West Oakland BART Station TOD site. The WOSP EIR identified an SCA and strategies from the WOSP to reduce noise exposure from BART trains that would ensure that project components are appropriately sound-rated to meet land use compatibility requirements throughout the WOSP Area.

5.11.2 Project Analysis

The Project site is in the 7th Street Opportunity Area of the WOSP. While the residential dwelling unit assumptions in the WOSP EIR for the 7th Street Opportunity Area are expected to be exceeded due to approved and current projects undergoing review, the WOSP development program is not intended to be a cap that restricts development. The WOSP allows for flexibility with respect to the quantity and profile of future development within each subarea and between subareas as long as such development conforms to the general traffic generation parameters established by the WOSP. The Project conforms to the traffic generation parameters analyzed in the WOSP EIR, as described in Section 5.14, *Transportation and Circulation*, below. As such, the Project is within the envelope of the development program analyzed in the WOSP EIR.

Construction Noise and Vibration

Construction Noise

Construction activities for the Project would be expected to occur over approximately 24 months and would entail grading and site preparation (including removal of parking lot asphalt), foundation and below-grade construction, and construction of the building and interiors. Pile driving is not a proposed method of foundation construction for the Project. Required implementation of applicable SCAs would 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. Specifically, Project construction would comply with the following SCAs: SCA NOI-1, Construction Days/Hours which limits construction hours mirroring the City's Noise Ordinance requirements; SCA NOI-2, Construction Noise which requires projects to implement construction noise reduction measures; SCA NOI-3, Extreme Construction Noise which requires the preparation of a Construction Noise Management Plan with site-specific noise attenuation measures to reduce impacts to specific receptors and notification to property owners and occupants located within 300 feet of the construction activities; and SCA NOI-4, Construction Noise Complaints which sets a protocol for receiving and addressing construction noise complaints from the public. Although the Project would not include any construction activities that would generate off-site noise levels above 90 dBA, a Construction Noise Management Plan has been prepared for the Project and is included as **Appendix C**. Construction activities proposed as part of the project would be similar to those analyzed in the WOSP EIR resulting in similar impacts. Consistent with the findings of the WOSP EIR, implementation of identified SCAs would reduce construction noise impacts to nearby receptors to a less than significant level.

Construction Vibration

The Project would involve construction that includes the use of heavy off-road equipment to perform earthwork stationary construction equipment. Pile driving is not a proposed method of foundation construction for the Project. The nearest structure is a service station at a distance of 60 feet west from the property line. At this distance, vibration impacts from drilling or hoe ram demolition (the noisiest pieces of expected construction equipment) would attenuate to below the most stringent thresholds; therefore, construction vibration activities would result in a less-than-significant impact and mitigation is not required.

Operational Noise and Vibration

Noise from Project Stationary Sources

Once operational, the Project would include stationary sources such as heating, ventilating, and air conditioning (HVAC) mechanical equipment. The Project does not propose or require a backup generator. HVAC equipment would be operated 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. Development of the Project would be required to comply with SCA NOI-6, Operational Noise, which would ensure 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. This is consistent with the findings of the WOSP EIR.

Traffic Noise

Based on the traffic analysis prepared by Fehr & Peers and as described below in Section 5.14, *Transportation and Circulation*, the Project conforms to the traffic generation parameters for the WOSP Area analyzed in the WOSP EIR. Therefore, the WOSP EIR accounted for traffic generated by development such as the Project within its analysis. Nevertheless, because the residential dwelling unit assumptions in the WOSP EIR for the 7th Street Opportunity Area are expected to be exceeded, the increase in operational traffic noise due to the Project was analyzed based on

existing and projected traffic volumes at the three intersections that would receive the largest increase in vehicular traffic from the Project:

- Mandela Parkway and 7th Street
- Kirkham Street and 7th Street
- Kirkham Street and 5th Street

Table NOI-1 summarizes the results of this analysis. As shown in the table, Project traffic would not generate noise resulting in a 5 dBA permanent increase in ambient noise levels above levels existing without the Project in the Project vicinity.

**TABLE NOI-1
TRAFFIC NOISE LEVELS ALONG ROADWAYS AFFECTED BY PROJECT TRAFFIC**

Roadway Segment	Traffic Noise Level from a distance of 50 feet from Center of Roadway, dBA, DNL ^a					
	Existing (A)	Existing + P (B)	Project Increase over Existing (B-A)	2040 NP (C)	2040 + P (D)	Cumulative Project Increase over Existing (D-A)
Weekday P.M. Peak-Hour Noise Levels						
Mandela Parkway from 5th Street to 7th Street	63.8	63.9	+0.1	65.4	65.4	+1.6
7th Street from Mandela Parkway to Kirkham Street	66.4	66.5	+0.1	68.3	68.3	+1.9
Kirkham Street from 7th Street and 5th Street	55.9	57.1	+1.2	57.8	58.6	+2.7
5th Street from Mandela Parkway to Kirkham Street	62.1	62.2	+0.1	63.6	63.7	+1.6
Mandela Parkway from 8th Street to 7th Street	63.9	63.9	0.0	65.5	65.6	+1.7
7th Street from Kirkham Street to Union Street	66.8	66.9	+0.1	68.3	68.4	+1.6
7th Street from Mandela Parkway to Center Street	64.8	64.8	0.0	66.5	66.6	+1.8

NOTES: dBA = A-weighted decibels

a Noise levels were determined using algorithms from the FHWA's *Traffic Noise Model Technical Manual*.

SOURCES: Modeling performed by Environmental Science Associates in 2023 based on traffic data provided by Fehr & Peers.

In the WOSP EIR, modeled existing plus project traffic noise levels and cumulative plus project noise levels were compared with modeled existing traffic noise levels as the baseline. This method of analysis is conservative because the actual existing noise environment includes other, non-vehicle sources that may result in higher ambient noise levels. Using this conservative methodology, increases in traffic noise were found to be less than significant at intersections in the vicinity of the Project. Consistent with the findings of the WOSP EIR, Table NOI-1 shows that under the cumulative scenario, increase in traffic with the Project would not result 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) at all three intersections most impacted by Project traffic.

Therefore, the Project would not substantially increase the severity of significant impacts identified in the WOSP EIR or result in new significant impacts.

Operational Vibration

The Project would not include any sources that would generate vibration that would be perceptible to adjacent receptors during the operational period. As the Project would not include any operational sources of vibration, it would not exacerbate any vibration-related impacts. Although impacts of the environment on the Project as they relate to existing sources of vibration in the Project vicinity are not within the scope of CEQA, for informational purposes, vibration from adjacent BART tracks to the Project site were considered and determined that vibration from BART tracks could be noticeable to future residents. Therefore, City SCA-7, Exposure to Vibration, would apply to the Project which requires the preparation of a Vibration Reduction Plan with vibration reduction measures to reduce impacts of groundborne vibration to Project residences.

Airport Noise

The WOSP Area is located more than two miles outside of the Oakland International Airport noise contour, which the Federal Aviation Administration regards as a significance threshold for noise-sensitive land uses. The Project's impacts would be less than significant with respect to Impact Noise-8 of the WOSP EIR.

Noise Exposure/Compatibility

The Project proposes sensitive land uses in the form of residential uses that would be subject to the 45 dBA interior noise standard per California Noise Insulation Standards (CCR Part 2, Title 24). 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. The Land Use Compatibility standards of the City's General Plan are exterior noise standards which allow for an assessment of exterior noise levels to determine whether standard construction techniques would be sufficient to achieve appropriate noise levels for each land use. For multifamily dwellings, hotels, motels, dormitories and long-term care facilities, the land use compatibility standard of 60 dBA for normally acceptable environments assumes that standard construction techniques would achieve 15 dBA of attenuation and provide for an interior environment of 45 dBA. Traffic and BART operations are the primary sources of noise at the Project site. Based on results of the traffic noise modeling shown in Table NOI-1 above, existing noise levels at the Project site are above 60 dBA. A typical BART train produces a noise level of 85 dBA, at 100 feet from the BART tracks.⁴⁹ Trains would be slower at approaching and departing the West Oakland Station; hence, noise levels are generally lower in the immediate vicinity, but would still exceed the 65 dBA Land Use Compatibility standard. Also, within the vicinity of the BART station and elevated sections of the BART tracks, noise levels exceed 70 dBA Leq/CNEL from BART and the I-880 freeway.

⁴⁹ City of Oakland, Gateway Community Development Project Draft EIR, ESA, August 2007, with technical studies by Illingworth & Rodkin, 2004.

Therefore, SCA NOI-5, Exposure to Community Noise, would apply to the Project to ensure that appropriate sound-rated assemblies, and/or other features/measures would be implemented to ensure that interior noise levels are reduced to 45 dBA. Consequently, the Project would not be anticipated to substantially increase the severity of significant impacts identified in the WOSP EIR or result in new significant impacts with respect to exposure of Project receptors to excessive noise levels. This would be consistent with the findings of the WOSP EIR.

5.11.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR and considered throughout this analysis, implementation of the Project would not substantially increase the severity of impacts identified in the WOSP EIR, nor would it result in new significant impacts related to noise that were not identified in the WOSP EIR. Therefore, Project construction and operation would result in less-than-significant impacts relating to noise. **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, Operational Noise; SCA NOI-6, Exposure to Community Noise; and SCA NOI-7, Exposure to Vibration** (see Appendix A) would be applicable and would be implemented with the Project to ensure that noise-related impacts would be less than significant. No mitigation measures are required.

5.12 Population and Housing

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Population Growth (Impact PHE-1)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS
b. Displacement of Housing & People (Impact PHE-2)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS

5.12.1 WOSP EIR Findings

Population Growth and Displacement of Housing and People

The WOSP EIR determined that impacts related to population growth and displacement of housing and people would be less than significant. Development under the WOSP would add up to 5,090 housing units and 11,136 residents to the WOSP area between 2005 and 2035. This would represent approximately 2 percent of the total population anticipated for Oakland in 2035 and would not be considered substantial.⁵⁰ The WOSP would also add up to 14,850 new jobs. This increase in employment would contribute to the employment growth expected in Oakland in the future. The amount of employment growth anticipated from development of the WOSP would account for about 5.4 percent of total employment anticipated for Oakland in 2035.⁵¹ The WOSP EIR concluded that WOSP build-out projections are consistent with ABAG projections for household and employment growth. Population and employment growth facilitated or induced by the WOSP would not represent growth for which adequate planning has not occurred, and the growth inducement impacts of the WOSP were found to be less than significant. The WOSP EIR also concluded that overall, the potential loss of certain housing units and associated direct displacement of people as a result of development facilitated by the WOSP would be offset by the number of new units anticipated to be developed under the WOSP, and by new units identified under the Housing Element.

5.12.2 Project Analysis

Population Growth

The Project would provide a mix of 133 one-bedroom, 104 two-bedroom, and 52 studio/efficiency units for a total of 289 units with five percent of the Project's base density units as affordable housing to very low income households. The Project site is currently occupied by a surface parking lot and would see an increase in the employment numbers on site as well as a new residential population. Based on population generation rates used in the WOSP EIR, the new

⁵⁰ $11,136$ (new residents added under the WOSP) / $557,710$ (total projected residents in Oakland 2035) = $0.019 * 100 = 1.9$ percent. Projections available: https://mtc.ca.gov/sites/default/files/Projections_2040-ABAG-MTC-web.pdf.

⁵¹ $14,850$ (new jobs added under the WOSP) / $223,170$ (total projected jobs in Oakland 2035) = $0.535 * 100 = 5.35$ percent. Projections available: https://mtc.ca.gov/sites/default/files/Projections_2040-ABAG-MTC-web.pdf.

units would result in a net increase of approximately 838 residents.⁵² The retail component is anticipated to provide approximately 6 new retail employees.⁵³

Population growth in the WOSP Area through new housing is a key component of the vision for transit-oriented districts identified in the General Plan. Specifically, the General Plan encourages mixed-use transit-oriented districts in areas around BART stations, such as the West Oakland BART Station. According to the *Plan Bay Area 2050*, north Alameda County is projected to have an increase of approximately 107,000 households between 2015 and 2050. Thus, the Project would not result in “substantial” population growth in comparison to the amount of population growth anticipated for north Alameda County and Oakland in the future.

Additionally, the Project would be located in the 7th Street Opportunity Area of the WOSP. The WOSP EIR development program estimated the WOSP would result in up to 2,839 new residential units in the in the 7th Street Opportunity Area. While this estimate is already expected to be exceeded due to approved and current projects undergoing review, the WOSP development program is not intended to be a cap that restricts development. The WOSP allows for flexibility with respect to the quantity and profile of future development within each subarea and between subareas as long as such development conforms to the general traffic generation parameters established by the WOSP. The Project conforms to the traffic generation parameters analyzed in the WOSP EIR, as described in Section 5.14, *Transportation and Circulation*, below. As such, the Project is within the envelope of the development program analyzed in the WOSP EIR. The 838 projected new residents represent 7.5 percent of the expected population increase as indicated in the WOSP EIR.⁵⁴ Therefore, population and employment growth associated with the Project would be consistent with the development program analyzed in the WOSP EIR.

The Project site is surrounded by urban development and the Project’s residents would utilize existing infrastructure for public services and utilities. As such, the Project would not result in any growth inducing impacts.

Altogether, the Project would result in a less than significant impact in relation to population growth outlined by the *Plan Bay Area 2050*, the General Plan or WOSP. Therefore, the impacts associated with population growth as a result of the Project would be less than significant, consistent with the conclusions of the WOSP EIR.

Displacement

The Project would construct a 289-unit, eight-story residential building with approximately 2,999 square feet of retail space on the Project site currently occupied by a surface parking lot. The Project site does not contain any structures or provide housing or employment. The Project would not demolish or displace any existing housing units or businesses and therefore would not

⁵² The WOSP EIR approximately 2.90 residents per household. $289 \text{ units} * 2.90 \text{ persons per household} = 838.1$ residents.

⁵³ Net jobs are calculated using a standard retail generation rate of 500 square feet per employee and does not account for jobs eliminated due to the removal of existing uses ($2,999 \text{ retail square feet} \div 500 \text{ square feet per employee} =$ approximately 6 new retail employees).

⁵⁴ $838 \text{ projected residents} / 11,136 \text{ projected WOSP residents} = 0.075 * 100 = 7.5 \text{ percent}$

necessitate the construction of replacement housing. Therefore, Project impacts associated with displacement would be less than significant, consistent with the conclusions of the WOSP EIR.

5.12.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR, the Project would not result in any new or more severe significant impacts related to population and housing above those identified in the WOSP EIR. The WOSP did not identify any mitigation measures related to population and housing, and none would be required for the Project. Overall, the Project's potential impacts to population and housing would be less than significant. No mitigation measures are required.

5.13 Public Services, Parks and Recreation Facilities

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Fire, Police, and School Services (Impact PSR-1, PSR-2, and PSR-3)	LTS w/ SCA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA PUB-1: Capital Improvements Impact Fee	LTS
b. Parks & Recreation (Impact PSR-4)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS

5.13.1 WOSP EIR Findings

Public Services

The WOSP EIR found less than significant impacts related to police protection, schools, and other public services. Development under the WOSP would result in an increase in Oakland Fire Department (OFD) and Oakland Police Department (OPD) service calls and a commensurate incremental need for additional staffing, equipment, and facilities to maintain the City's response time goals and staffing ratios. SCAs requiring all projects to implement site design and fire safety features to adequately address potential fire hazards would help offset the increased demand for fire services. The WOSP may reduce crime by incorporating crime prevention through environmental design principles and up-to-date security features and technology in new development. The WOSP would also bring additional annual revenue to the City in the form of increased local property taxes and sales taxes that would help offset the increased demand for fire and police services. Nonetheless, should the potential increase in service calls resulting from development under the WOSP result in the need for new or expanded facilities, until the timing, location, size and characteristics of any associated facilities expansion needs are identified, the environmental impacts are too speculative for evaluation. If and when any proposal for expanded or new OFD or OPD facilities is identified, it may require its own environmental review under CEQA. Potentially significant impacts associated with the construction of fire and police facilities would be expected to be reduced to a less-than-significant level with implementation of SCAs.

The WOSP EIR concluded that development in accordance with the WOSP would generate additional students attending the Oakland Unified School District (OUSD) incrementally through 2035 or longer. The OUSD collects school impact fees from residential and non-residential development and, pursuant to California Government Code Sections 65995, 65996(a) and 65996(b), and payment of these fees is deemed to be full and complete mitigation. Therefore, impact of the WOSP related to schools was found to be less than significant.

Parks and Recreation

The WOSP EIR concluded that development under the WOSP would generate a need for additional parkland, adding to the existing deficiency of parkland acreage in the City, and would increase the use of existing City parks and recreational facilities. No new public parks or recreational facilities were proposed as part of the WOSP. Furthermore, the increased demand

would occur incrementally over the 25-year timeframe of the WOSP. The WOSP EIR stated that parks and recreational facilities may be required as part of new development projects and on-site useable open space or recreational facilities in new residential developments may offset some of the need. The population growth associated with development under the WOSP would not be expected to increase the use of existing parks and recreational facilities such that substantial physical deterioration of such facilities may occur or be accelerated. Additionally, the WOSP would also bring additional annual revenue to the City in the form of increased local property taxes and sales taxes that would help fund new or expanded parks and recreational facilities.

5.13.2 Project Analysis

The Project would be located in the 7th Street Opportunity Area of the WOSP. While the residential dwelling unit assumptions for the WOSP EIR in the 7th Street Opportunity Area are expected to be exceeded due to approved and current projects undergoing review, the WOSP development program is not intended to be a cap that restricts development. The WOSP allows for flexibility with respect to the quantity and profile of future development within each subarea and between subareas as long as such development conforms to the general traffic generation parameters established by the WOSP. The Project conforms to the traffic generation parameters analyzed in the WOSP EIR, as described in Section 5.14, *Transportation and Circulation*, below. As such, the Project is within the envelope of the development program analyzed in the WOSP EIR. Therefore, public services and recreation demands associated with the Project would be consistent with the development program analyzed in the WOSP EIR.

Public Services

The Project would add approximately 2,999 square feet of retail space and up to 289 residential units along with associated residential amenities, open space, 40 parking spaces, and 97 bike parking spaces. The Project development would represent approximately 7.5 percent of the WOSP's expected population increase. This incremental increase would not result in a significant increase in demand for additional public services throughout West Oakland. The Project by itself would not significantly increase demand for police, fire or other public services, and would be subject to the City's policies, regulations, standards (including building and fire code requirements, crime prevention through environmental design principles, appropriate standards for emergency access roads, emergency water supply, and fire preparedness, capacity and response).

Implementation of SCA PUB-1, Capital Improvements Impact Fee, would require the applicant to comply with the City's Capital Improvements Impact Fee Ordinance (Chapter 15.74 of the Oakland Municipal Code) and would address potential public services facilities impacts. The Project's increase in demand for public services was considered in the WOSP EIR analysis, which stated that evaluation of new facilities or expanded facilities was too speculative at the time. The Project by itself would not result in the need for the construction of additional fire or police facilities. The WOSP EIR stated that if and when any proposal for expanded or new public services facilities are identified by the City, it may require its own environmental review under CEQA. Therefore, the Project's impacts related to fire and police protection services would be less than significant.

The Project would increase student enrollment at OUSD schools. As authorized by California Government Code Sections 65995, 65996(a), and 65996(b), OUSD collects school impact fees when building permits are issued. The Project would be required to contribute a fair-share amount of school impact fees, which would offset potential impacts from new development on school facilities and ensure impacts on school services would be less than significant. Therefore, the effects of the Project on public services would be less than significant, consistent with the conclusions of the WOSP EIR.

Parks and Recreational Facilities

The Project would add an estimated 289 new residential units. As described above, no new parks or recreational facilities, nor expansion of existing parks or recreational facilities, would be required as a result of development under the WOSP. The Project would provide approximately 14,538 total square feet of open space, consisting of 9,970 square feet of private and 4,568 square feet of shared open space through interior courtyards, private terraces, and patios. The ground floor would include a central courtyard, a dog run and bioretention area along the southern portion of the site, and private patios on the eastern and western sides of the building. A group terrace with stairs connecting to the ground floor courtyard and private terraces would be located on the second floor.

Although the Project would incrementally increase demand for public open space and recreation facilities in the WOSP area, it would not result in a demand that would require construction of new facilities, nor would it deteriorate existing facilities in a way that would significantly impact the environment. Therefore, the impacts associated with parks and recreation as a result of the Project would be less than significant, consistent with the conclusions of the WOSP EIR.

5.13.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR, implementation of the Project would not result in any new or more severe significant impacts related to public services above impacts identified in the WOSP EIR, nor would it result in new significant impacts related to parks and recreational facilities that above what was identified in the WOSP EIR. SCAs identified in Attachment A to this CEQA Checklist related to public services, parks, and recreational facilities that would apply include **SCA PUB-1, Capital Improvements Impact Fee**. This SCA would be implemented by the Project and would further ensure that impacts related to public services, parks, and recreational facilities would be less than significant. No mitigation measures are required.

5.14 Transportation and Circulation

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Conflict with Circulation Plans (Impact Trans-15)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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 SCA TRA-5: Transportation Impact Fee SCA TRA-6: Plug-In Electric Vehicle (PEV) Charging Infrastructure	LTS
b. Substantial Additional VMT ^a	LTS - SU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA TRA-4: Transportation and Parking Demand Management	LTS
c. Induce Automobile Travel	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	--	LTS

a The City of Oakland has replaced Level of Service impact analysis with VMT-based analysis. WOSP EIR findings were for potential Level of Service impacts.

5.14.1 WOSP EIR Findings

Transportation and circulation impacts throughout the WOSP were analyzed in the WOSP EIR, which found Level of Service (LOS) impacts at Intersection #13 (Broadway/West Grand Avenue), Intersection #15 (Adeline Street/18th Street), and Intersection #24 (Adeline Street/5th Street) to be less than significant with implementation of mitigation measures or SCAs. LOS and queuing Impacts at Intersection #1 (40th Street/Hollis Street) and Intersection #2 (40th Street/San Pablo Avenue), and LOS impact at Intersection #7 (West Grand Avenue/Mandela Parkway) were found to be significant and unavoidable under the WOSP EIR. All other transportation and circulation impacts under the WOSP were found to have no impacts or less-than-significant impacts.

5.14.2 Project Analysis

On September 21, 2016, the City of Oakland's Planning Commission directed staff to update the City of Oakland's California Environmental Quality Act (CEQA) Thresholds of Significance Guidelines related to transportation impacts in order to implement the directive from Senate Bill 743 (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 the final guidance from the Governor's Office of Planning and Research and the City's approach to transportation impact analysis with adopted plans and policies related to transportation, which promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.

Thus, this Section evaluates the impacts of the Project with respect to VMT. In addition, consistent with previous developments proposed under the WOSP, this Section also evaluates the consistency of the Project, combined with the other developments currently approved, proposed, or under construction in the WOSP area, with the approved WOSP EIR.⁵⁵

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

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).

Construction activities associated with the Project could potentially temporarily disrupt transportation, bicycle, and pedestrian movement in the project area. Compliance with SCA TRA-1, Construction Activity in the Public Right-of-Way, would ensure that adequate movement and access would remain during construction and these impacts would be less than significant.

The 1998 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 providing residential and retail uses in a dense, walkable urban environment that is well-served by both local and regional transit. The Project also encourages the use of non-automobile transportation modes by providing minimal on-site residential parking. The Project is consistent with both the City's Pedestrian Master Plan (*2017 Oakland Walks!*) and Bicycle Master Plan (*2019 Let's Bike Oakland*) as it would not make major modifications to existing pedestrian or bicycle facilities in the surrounding areas and would not adversely affect installation of future facilities. On-site short- and long-term bicycle parking would also be provided in accordance with the City of Oakland Bicycle Parking Requirements (Chapter 17.118 of the Oakland Planning Code) consistent with SCA TRA-2, Bicycle Parking.

Because the Project would generate more than 50 peak hour trips, preparation and implementation of a Transportation and Demand Management Plan (TDM Plan, which is provided in Appendix D) is required per SCA TRA-4, Transportation and Parking Demand Management. The TDM Plan includes operational strategies and infrastructure improvements to encourage the use of non-automobile travel modes. The infrastructure improvements included in the TDM Plan would not only benefit the Project residents, but also residents, workers, and visitors in the areas surrounding the Project site. In addition, these improvements are also consistent with the City's adopted plans, ordinances, and policies relating to safety and performance of the circulation system because they improve the pedestrian and bicycle environment in the vicinity of the Project.

In addition, the Project is required to implement SCA TRA-3, which addresses off-site Transportation Improvements required by the Project. The implementation of this SCA would ensure the Project's consistency with the City's plans, ordinances, and policies addressing the

⁵⁵ The City still uses LOS analysis to determine project-specific impacts on intersections, crosswalks, neighborhood noise, and other impacts, but does not use this analysis for CEQA purposes.

safety and performance of the circulation system and would further reduce the less-than-significant effects of the Project.

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. In addition, the Project is consistent with the WOSP EIR, which evaluated the impacts of developments in the West Oakland area, as described below.

WOSP EIR Traffic Analysis

The Project site is located within the WOSP Area. The development evaluated in the WOSP EIR represents the reasonably foreseeable development expected to occur in the next 20 to 25 years in the WOSP Area. The WOSP and its EIR intend to provide flexibility in the location, amount, and type of development. Thus, as long as the trip generation for the overall WOSP Area remains below the levels estimated in the WOSP EIR, the traffic impact analysis presented in the WOSP EIR continues to remain valid.

Since the approval of the WOSP EIR, 14 developments, including this Project, have been proposed and have either been constructed or are currently in some stage of the City's approval process. **Table TRA-1** summarizes the trip generation for these developments. The 14 developments combined would generate about 1,473 AM peak hour and 1,693 PM peak hour trips, which are about 27 percent of the total AM peak hour and 25 percent of the total PM peak hour trip generation estimated in the WOSP EIR.

The Project is in and is consistent with the assumptions used in the WOSP EIR for the 7th Street Opportunity Area. Since the Project, combined with other approved developments in the WOSP Area, would generate fewer automobile trips than assumed in the WOSP EIR, the Project would not result in additional impacts on traffic operations at the intersections analyzed in the WOSP EIR. In addition, all mitigation measures identified in the WOSP EIR are included in the citywide Transportation Impact Fee (TIF) and payment of this fee, as required by SCA TRA-5, Transportation Impact Fee, constitutes adequate mitigation.

Cause Substantial Additional Vehicle Miles Traveled

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

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

**TABLE TRA-1
TRIP GENERATION FOR DEVELOPMENT PROJECTS WITHIN THE WOSP AREA**

Project Name	AM Peak Hour	PM Peak Hour
2201 Filbert (Icehouse) ^a	52	84
532 Union Street (The Union Project) ^b	34	47
1708 Wood Street (Roadway Express) ^c	50	58
Mandela Parkway Hotel ^d	135	141
914 West Grand Avenue ^e	15	17
34th and San Pablo Affordable Housing Development ^f	38	41
1450 32nd Street ^g	12	15
1919 Market Street ^h	34	41
500 Kirkham Street ⁱ	345	379
801 Pine Street (The Phoenix) ^j	84	97
West Oakland BART Project ^k	472	548
2715 Adeline Street ^l	92	95
1396 5th Street ^m	42	52
533 Kirkham Street ⁿ	68	78
Total Projects Trips	1,473	1,693
WOSP Estimated Trip Generation ^o	5,537	6,698
Percent Complete	27%	25%

NOTES:

- a Source: *West Grand Avenue & Market Street CEQA Analysis (August 20, 2015)*.
b Source: *532 Union Street CEQA Analysis (July 15, 2016)*.
c Source: *1708 Wood Street CEQA Analysis (June 20, 2016)*.
d Source: *914 West Grand Avenue Project in Oakland – Transportation Impact Review (November 17, 2017)*.
e Source: *Mandela Hotel in Oakland – Transportation Assessment (November 29, 2017)*.
f Source: *34th and San Pablo Project – Transportation Impact Review (October 20, 2017)*.
g Source: *1450 32nd Street – Preliminary Transportation Impact Analysis (July 28, 2017)*.
h Source: *1919 Market Street Project in Oakland – Preliminary Transportation Assessment (August 8, 2017)*.
i Source: *500 Kirkham Street – Planning-Related Non-CEQA Transportation Impact Review (March 31, 2019)*.
j Source: *The Phoenix – Transportation Assessment (Non-CEQA Memorandum (November 29, 2018)*.
k Source: *West Oakland BART Project Planning-Related Non-CEQA Transportation Impact Review (January 29, 2019)*.
l Source: *2715 Adeline – Transportation Assessment (Non-CEQA) Memorandum (June 21, 2019)*.
m Source: *1396 5th Street - Transportation Impact Review (Non-CEQA) Memorandum (January 22, 2021)*.
n Source: *535 Kirkham Street - Transportation Impact Review (Non-CEQA) Memorandum (August 21, 2023)*.
o Source: *West Oakland Specific Plan Draft EIR, Table 4.10-4 (May 2014)*.

SOURCE: Fehr & Peers, 2023.

Estimating VMT

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 uses the latest version of the Alameda County Transportation Commission (CTC) Travel Demand Model which was released in May 2019 and is consistent with the Metropolitan Transportation Commission (MTC) Plan Bay Area 2040 (i.e., Sustainable Communities Strategy) transportation network and land uses for 2020 and 2040. The model produces forecasts that are generally consistent with the travel demand forecasts that the

MTC has produced for Plan Bay Area 2040 for the Plan horizon year of 2040 and meets the regional model consistency requirements.

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 Alameda CTC Travel Demand Model includes 369 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. Based on the transportation network and land use inputs, such as population and employment characteristics by TAZ, the model assigns all predicted trips within, across, or to/from the county 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 Alameda CTC Model outputs the household VMT per capita, which measures all the VMT by passenger vehicles on a typical weekday that begin or end at homes. Based on the Alameda CTC Travel Demand Model, the regional average household VMT per capita is 19.8 under 2020 conditions and 19.1 under 2040 conditions.

Thresholds of Significance

According to the *City of Oakland Transportation Impact Review Guidelines* dated April 14, 2017, the following are thresholds of significance related to substantial additional VMT:

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

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

1. **Small Projects:** The project generates fewer than 100 vehicle trips per day;
2. **Low-VMT Areas:** The project meets map-based screening criteria by being located in an area that exhibits below threshold VMT, or 15 percent or more below the regional average; or

3. **Near Transit Stations:** The project is located in a Transit Priority Area⁵⁶ or within a one-half mile of a Major Transit Corridor or Stop⁵⁷ and satisfies the following:
- Has a Floor Area Ratio (FAR) of more than 0.75;
 - Includes less parking for use by residents, customers, or employees of the project than other typical nearby uses, or more than required by the City (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site); and
 - Is consistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Transportation Commission).

VMT Screening Analysis

The Project satisfies the Low-VMT Area (number 2) and Near-Transit Stations (number 3) screening criteria, as detailed below.

Criterion Number 1: Small Projects

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

Criterion Number 2: Low-VMT Area

Table TRA-2 shows the 2020 and 2040 VMT metrics for TAZ 255, the Alameda CTC model TAZ in which the Project is located as well as applicable VMT thresholds of 15 percent below the regional average. The 2020 and 2040 estimated averages of the daily household VMT per capita in the Project TAZ are less than the regional averages minus 15 percent, satisfying criterion number 2.

**TABLE TRA-2
DAILY VEHICLE MILES TRAVELED SUMMARY**

Metric	Total VMT per Capita (2020)	Total VMT per Capita (2040)
Project TAZ (Alameda CTC Model TAZ 255) ^a	11.0	10.3
Regional Average ^a	19.8	19.1
Regional Average minus 15% (i.e., screening criterion)	16.9	16.2
Meet Screening Criterion?	Yes	Yes

NOTE:

^a Alameda CTC Travel Demand Model results (<https://www.alamedactc.org/planning/sb743-vmt/>) accessed in March 2023.

SOURCE: Fehr & Peers, 2023.

⁵⁶ According to the California Public Resource Code, a Transit Priority Area is defined as a one-half mile area around an existing major transit stop or an existing stop along a high-quality transit corridor. Public Resources Code, § 21064.3 defines major transit stop as a site containing an existing 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 15 minutes or less during the morning and afternoon peak commute periods. Public Resources Code, § 21155 defines a high-quality transit corridor as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

⁵⁷ 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.

According to the City of Oakland TIRG, retail 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 would consist of approximately 3,000 square feet of ground level retail, would not result in substantial additional VMT and Project impacts with respect to VMT would be less-than-significant.

Criterion Number 3: Near Transit Stations

The Project would be located about 0.1 miles from the West Oakland BART Station, which is a Major Transit Stop. The Project is in a Transit Priority Area and would satisfy criterion number 3 because it would meet all of the following three conditions for this criterion:

- The Project has a FAR of 5.0, which is greater than 0.75
- Since the Project is located within 0.5 miles of the West Oakland BART Station, which is considered a Major Transit Stop, parking minimums do not apply to the Project per California Assembly Bill 2097 (adopted in 2022). Thus, the 40 parking spaces proposed by the Project would exceed the minimum parking required for the Project. However, according to the US Census data,⁵⁸ the average automobile ownership for renter households in the vicinity of the Project is about 1.3 vehicles per household. Since the 40 parking spaces proposed by the Project corresponds to about 0.14 parking spaces per unit, the Project would provide fewer parking spaces than other typical uses nearby. Therefore, the Project would meet this condition.
- The Project is located within the West Oakland 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 (number 2) and the Near Transit Stations (number 3) criteria and is therefore presumed to have a less-than-significant impact on VMT. Furthermore, implementation of SCA TRA-4, which requires the Project to develop and implement a TDM Plan (provided in Appendix D), would further reduce the VMT effects of the Project.

Substantially induce additional automobile travel by increasing physical roadway capacity in congested areas or by adding new roadways to the network

The Project would not modify the roadway network surrounding the Project site. Therefore, the Project would not substantially induce additional automobile travel by increasing the physical roadway capacity in congested areas (i.e., by adding new mixed-flow lanes) and would not add new roadways to the network and would have a less-than-significant impact on inducing additional automobile traffic, consistent with the findings of the WOSP EIR.

5.14.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR, implementation of the Project would not result in any new or more severe significant impacts related to transportation and circulation than those identified in the WOSP EIR. **SCA TRA-1, Construction Activity in the Public Right-of-Way; SCA TRA-2, Bicycle Parking;**

⁵⁸ American Community Survey 2017-2021 Five-Year Estimates, Census Tract 4022, Table B25044.

SCA TRA-3, Transportation Improvements; SCA TRA-4, Transportation and Parking Demand Management; SCA TRA-5, Transportation Impact Fee; and SCA TRA-6, Plug-In Electric Vehicle (PEV) Charging Infrastructure (see Attachment A) apply to the Project and would further reduce transportation-related effects.

While not required under the City's thresholds of significance, a trip generation analysis, a site plan assessment, and a collision summary are provided for informational purposes. Appendix E describes the analysis and recommendations that could improve multi-modal access, circulation, and safety.



5.15 Utilities and Service Systems

Impact Topics:	WOSP EIR Findings	PROJECT			
		Relationship to WOSP EIR Findings		Applicable SCAs or Mitigation Measures	Project Level of Significance
		Equal or Less Severity	Substantial Increase in Severity		
a. Wastewater and Stormwater Facilities (Impact Util-1, Util-3)	LTS w/ SCA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA UTIL-5: Sanitary Sewer System SCA UTIL-6: Storm Drain System SCA HYD-1: Erosion and Sedimentation Control Plan for Construction SCA HYD-3: NPDES C.3 Stormwater Requirements for Regulated Projects	LTS w/ SCAs
b. Water Supplies (Impact Util-2)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA UTIL-4: Green Building Requirements SCA UTIL-7: Water Efficient Landscape Ordinance (WELO)	LTS w/ SCAs
c. Solid Waste Services (Impact Util-4)	LTS w/ SCA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA UTIL-1: Construction and Demolition Waste Reduction and Recycling SCA UTIL-3: Recycling Collection and Storage Space	LTS w/ SCA
d. Energy (Impact Util-5)	LTS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SCA UTIL-2: Underground Utilities SCA UTIL-4: Green Building Requirements SCA AIR-2: Criteria Air Pollutant Controls – Construction and Operation Related SCA TRA-2: Bicycle Parking SCA TRA-6: Plug-In Electric Vehicle (PEV) Charging Infrastructure	LTS w/ SCAs

5.15.1 WOSP EIR Findings

Water, Wastewater, and Stormwater

The Water Supply Assessment prepared by EBMUD for the WOSP EIR concluded that EBMUD would have sufficient water supplies to meet current water demand and future water demand through 2035, including the increased water demand associated with the WOSP, during normal, single dry, and multiple dry years. Construction of necessary water system improvements would typically occur within existing public rights-of-way and construction period traffic, noise, air quality, water quality and other potential impacts would be mitigated through the City's SCAs and standard construction mitigation practices.

The WOSP EIR concluded that future development in accordance with the WOSP would consist of redevelopment of previously developed properties, so there would be limited change in

impervious surface area and stormwater runoff. New development would likely decrease storm-drain runoff, as proposed projects would be required to incorporate additional pervious areas through landscaping, in compliance with City of Oakland requirements. Development facilitated by the WOSP would not result in an increase in stormwater runoff with implementation of applicable SCAs.

The WOSP EIR concluded that with construction of needed sewer system improvements pursuant to City SCAs (including payment of improvements and hook-up fees), the wastewater collection and treatment system would have adequate capacity to serve future development in accordance with the WOSP. Construction of necessary wastewater system improvements would typically occur within existing public rights-of-way and potential construction period impacts would be mitigated through the City's SCAs and standard construction mitigation practices.

Solid Waste

The WOSP EIR concluded that the Altamont Landfill and Vasco Road Landfill have sufficient permitted capacity to accommodate the solid waste disposal needs of future development under the WOSP, and that with required implementation of SCAs related to waste reduction and recycling, the WOSP would not violate applicable federal, state, and local statutes and regulations related to solid waste. Therefore, the WOSP EIR found impacts associated with solid waste to be less than significant.

Energy

The WOSP EIR concluded that Pacific Gas & Electric Company (PG&E) has capacity to handle projected energy demands with its current system, and that with the City's SCA pertaining to compliance with the green building ordinance, development under the WOSP would not cause a violation of regulations relating to energy standards nor result in a determination by PG&E that it does not have adequate capacity to serve. Additionally, developments would be required to comply with the standards of Title 24 of the California Code of Regulations. Therefore, the WOSP EIR found that impacts related to energy would be less than significant.

5.15.2 Project Analysis

The Project site is in the 7th Street Opportunity Area of the WOSP Area. While the residential dwelling unit assumptions in the WOSP EIR for the 7th Street Opportunity Area are expected to be exceeded due to approved and current projects undergoing review, the WOSP development program is not intended to be a cap that restricts development. The WOSP allows for flexibility with respect to the quantity and profile of future development within each subarea and between subareas as long as such development conforms to the general traffic generation parameters established by the WOSP. The Project conforms to the traffic generation parameters analyzed in the WOSP EIR, as described in Section 5.14, *Transportation and Circulation*, above. As such, the Project is within the envelope of the development program analyzed in the WOSP EIR. Therefore, water and sanitary sewer demand and stormwater facilities, as well as solid waste and energy associated with the Project, would be consistent with the development program analyzed in the WOSP EIR.

Wastewater and Stormwater Facilities

The Project would include the use of micro-detention, including distributed landscape-based detention; permeable paving; and treatment planters. Additionally, the Project would minimize stormwater runoff by directing stormwater to flow through planters, overflows to the treatment planter, and direct runoff from the roof to flow through the planter via roof leaders. Furthermore, the Project would construct a new storm drain lateral that would connect to existing storm drain line in Kirkham Street. Construction of new on-site storm drains would connect to the new treatment planter bio-filtration system. After appropriate water quality treatment, the on-site storm drain system would connect to an existing storm drain line in Kirkham Street. Pursuant to SCA-UTIL-6, Storm Drain System, the new on-site stormwater infrastructure would be required to accommodate stormwater runoff from the Project and comply with all WOSP policies for future development to reduce stormwater runoff and increased demand in the WOSP area.

The Project would construct new sewer laterals that would connect to an existing sewer line in Kirkham Street. Pursuant to SCA-UTIL-5, Sanitary Sewer System, the new on-site sewer infrastructure would be required to accommodate flows from the Project and comply with all City standards. The City requires individual projects to pay development and connection fees to account for future wastewater demand projections, as well as fair-share fees to fund needed sewer system facilities. Additionally, SCA HYD-1, Erosion and Sedimentation Control Plan for Construction, would require submission of an Erosion and Sedimentation Control Plan that includes measures to prevent excessive stormwater runoff during construction. SCA HYD-3, NPDES C.3 Stormwater Requirements for Regulated Projects, requires submission of a Post-Construction Stormwater Management Plan. Therefore, the impacts associated with wastewater and stormwater facilities as a result of the Project would be less than significant, consistent with the conclusions of the WOSP EIR.

Water Supplies

The Project's demand for water services was included in the WOSP EIR and no increased water demands would be required by the Project beyond what was analyzed in the WOSP EIR. The Project would also be required to implement SCA UTIL-4, Green Building Requirements, and SCA UTIL-7, Water Efficient Landscape Ordinance (WELO), which would reduce the water demands of the Project.

The Project would construct new water laterals that would connect to existing water lines in 7th Street and Kirkham Street. There is an existing fire hydrant at the corner of 7th Street and Kirkham Street which would remain in place. The existing water distribution system is sized to accommodate West Oakland's historically heavy industrial and manufacturing uses and would have capacity to accommodate the planned mixed-use development envisioned by the WOSP. As part of EBMUD's water services agreement, the Project Applicant would pay applicable City development and connection fees, pay fair-share development fees for improvements and future maintenance, and submit water design plans for approval by the City's Public Works Department. The City also includes project-specific engineering recommendations to address concerns regarding new water mains, pipe corrosion, and water transmission capacity. Therefore, the impacts associated with water supplies as a result of the Project would be less than significant, consistent with the conclusions of the WOSP EIR.

Solid Waste

The Project would be required to implement SCA UTIL-1, Construction and Demolition Waste Reduction and Recycling, during the construction process to minimize waste-to-landfill requirements, consistent with City requirements. Additionally, the Project would include garbage and recycling collection and storage space adjacent to the parking garage, consistent with SCA UTIL-3, Recycling Collection and Storage Space. The City would continue to provide waste collection and recycling services and would be expected to continue to meet its target diversion rates. The Project would be served by a landfill with sufficient permitted capacity to accommodate solid waste disposal needs and would not violate applicable federal, state, and local statutes and regulations related to solid waste. Therefore, the impacts associated with solid waste as a result of the Project would be less than significant, consistent with the conclusions of the WOSP EIR.

Energy

The Project would connect to existing electric and telecommunications infrastructure. Since the Project is within the envelope of the development program analyzed in the WOSP EIR, the energy demand associated with the Project would also be consistent with the development program analyzed in the WOSP EIR and PG&E would have capacity to handle the Project's energy demands with its current system. Pursuant to SCA UTIL-2, Underground Utilities, the Project would underground all new utilities serving the Project and under the control of the Project Applicant and the City.

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 be required to comply with all standards of Title 24 of the California Code of Regulations and the City of Oakland's Green Building Ordinance, as applicable, that include incorporation of energy-conserving design and construction. Furthermore, the Project building is targeted to achieve LEED Gold certification. The Project is anticipated to have similar energy requirements as other similar modern developments in the vicinity and pursuant to SCA UTIL-4, Green Building Requirements, the overall building energy demands of the Project would be reduced. The Project would constitute higher density transit-oriented development by locating housing in immediate proximity to major transit options (including the adjacent West Oakland BART station) which would reduce the need for vehicle use and associated fuel, and would reduce the wasteful, inefficient, or unnecessary consumption of fuel during Project operation. Additionally, SCA TRA-2, Bicycle Parking, and SCA TRA-6, Plug-In Electric Vehicle (PEV) Charging Infrastructure would further reduce the need for vehicle use and associated fuel (see Section 5.14, *Transportation and Circulation*). Therefore, the impacts associated with energy as a result of the Project would be less than significant, consistent with the conclusions of the WOSP EIR.

5.15.3 Conclusion

Based on an examination of the analysis, findings, and conclusions of the WOSP EIR, implementation of the Project would not substantially increase the severity of significant impacts to utilities and service systems as identified in the WOSP EIR, nor would it result in new significant impacts related to utilities and service systems that were not identified in the WOSP EIR. The WOSP EIR did not identify any mitigation measures related to utilities and service systems, and none would be required for the Project. 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; SCA UTIL-7, Water Efficient Landscape Ordinance (WELO); SCA HYD-1, Erosion and Sedimentation Control Plan for Construction; SCA HYD-3, NPDES C.3 Stormwater Requirements for Regulated Projects; SCA AIR-2, Criteria Air Pollutant Controls – Construction and Operation Related; SCA TRA-2, Bicycle Parking; and SCA TRA-6, Plug-In Electric Vehicle (PEV) Charging Infrastructure** (see Attachment A), as well as compliance with Title 24 and CALGreen requirements, would ensure that impacts to wastewater capacity, stormwater drainage facilities, water supply, solid waste services, and energy would be less than significant.

6. Summary of Findings

The evaluation in the CEQA Checklist in Section 5 above, provides substantial evidence that the Project qualifies for an exemption/addendum from additional environmental review. The Project was found to be consistent with the development density and land use characteristics established by the WOSP. The WOSP EIR allows for the distribution of density and development types between categories and sub-areas, and accounts for the construction and operational impacts from the development proposed within the WOSP area. Any potential environmental impacts associated with the Project's development were adequately analyzed and covered by the analysis in the WOSP EIR.

The Project would be required to comply with the applicable City of Oakland SCAs presented in Attachment A to this document: Standard Conditions of Approval Reporting Plan. It is noted that no mitigation measures beyond the SCAs would be required for the Project. Mitigation measures identified in the WOSP EIR are now included in the City's SCA's such as Mitigation Measure Air-9B (SCA #24), Mitigation Measure Air-9C (SCA #24 and SCA #26), and Mitigation Measure Air-10 (SCA #23) and are functionally equivalent to mitigation measures. All transportation mitigation measures identified in the WOSP EIR are included in the Citywide Transportation Impact Fee (TIF) and payment of this fee, as required by SCA #84, constitutes adequate mitigation. In addition, SCAs identified in the WOSP EIR, as updated, that would apply to the Project are listed in Attachment A to this document. Most of the SCAs that are identified for the Project were also identified in the WOSP EIR. As discussed specifically in Attachment A to this document, since certification of the WOSP EIR, the City of Oakland has revised its SCAs, and the most current SCAs are identified in this CEQA Checklist. With implementation of the applicable SCAs, the Project would not result in a substantial increase in the severity of significant impacts previously identified in the WOSP EIR, nor would result in any new significant impacts that were not previously identified in the WOSP EIR. In particular:

- (1) Although the Project adds project-level details to a site identified in the WOSP for development and leverages the State Density Bonus Law to allow for increased density, these project changes would not result in new significant environmental effects or a substantial increase in the severity of impacts identified in the WOSP EIR.
- (2) There would be no new significant environmental effect or a substantial increase in the severity of impacts identified in the WOSP EIR due to changes in circumstances.
- (3) There would be no new significant environmental effect or a substantial increase in the severity of impacts identified in the WOSP EIR due to new information.

In accordance with Public Resources Code Sections 21083.3, 21094.5, 21155.4, and 21166 and CEQA Guidelines Sections 15162, 15164, 15182, 15183, 15183.3, and as set forth in the CEQA Checklist below, the Project qualifies for an exemption/addendum because the following findings can be made:

- **Addendum.** The WOSP EIR analyzed the impacts of development within the WOSP Area. The Project would not cause new significant impacts not previously identified in the WOSP EIR and would not result in a substantial increase in the severity of previously identified significant impacts. No new mitigation measures are necessary to reduce significant impacts.

The Project meets the requirements for an addendum, as evidenced in Attachment B to this document: Criteria for Use of Addendum, per CEQA Guidelines Section 15164. Therefore, no supplemental environmental review can be required in accordance with Public Resources Code Section 21166, and CEQA Guidelines Sections 15162 and 15164.

- **Projects Pursuant to a Specific Plan.** Based on the analysis in this document, the Project is an eligible mixed-use residential project within a transit priority area as described in Public Resources Code Section 21099(a)(7), is consistent with the WOSP and its EIR, and with Plan Bay Area, the applicable sustainable communities strategy. None of the conditions requiring subsequent analysis per CEQA Guidelines Section 15162 apply. Therefore, the Project is exempt from further environmental review in accordance with Public Resources Code Section 21155.4 and CEQA Guidelines Section 15182, as evidenced in in Attachment C to this document: Project Consistency with the West Oakland Specific Plan, per CEQA Guidelines Section 15182.
- **Community Plan Exemption.** Based on the analysis conducted in this document, the Project also qualifies for a community plan exemption. The Project is permitted in the zoning district where the Project site is located, and is consistent with the bulk, density, and land uses envisioned for the site, as described in the WOSP EIR. This CEQA Analysis concludes that the Project would not result in significant impacts that (1) are peculiar to the project or Project site; (2) were not identified as significant project-level, cumulative, or off-site effects; or (3) were previously identified as significant effects but are determined to have a more severe adverse impact than discussed in the EIR. Findings regarding the project's consistency with the zoning are included as Attachment D: Project Consistency with Community Plan or Zoning, Per CEQA Guidelines Section 15183, to this document.
- **Qualified Infill Exemption.** The analysis indicates that the Project qualifies for an infill exemption and is generally consistent with the required performance standards provided in CEQA Guidelines Appendix M, as evaluated in Attachment E: Infill Performance Standards, Per CEQA Guidelines Section 15183.3, to this document. This CEQA Analysis finds that the Project would not cause any new specific effects or more significant effects than previously identified in the WOSP EIR, and that uniformly applicable development policies or standards (SCAs) would substantially mitigate the Project's effects. The Project site has been previously developed and is surrounded by urban uses. The Project is consistent with the land use, density, building intensity, and applicable policies for the site. The Project therefore meets the requirements for an infill exemption, as evidenced in Attachment E: Infill Performance Standards, Per CEQA Guidelines Section 15183.3, to this document.

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

7. References

(References for the West Oakland Specific Plan and EIR and Oakland Planning Code cited below are available at the Oakland Bureau of Planning, Agency, 250 Frank Ogawa Plaza, Suite 3330, Oakland, California)

7.1 West Oakland Specific Plan and EIR

City of Oakland, West Oakland Specific Plan, Final Plan, June 2014.
<https://www.oaklandca.gov/resources/read-the-final-west-oakland-specific-plan>.

City of Oakland, Draft EIR, January 2014. <https://www.oaklandca.gov/resources/read-the-final-west-oakland-specific-plan-environmental-impact-report>.

City of Oakland, Final EIR, May 2014. <https://www.oaklandca.gov/resources/read-the-final-west-oakland-specific-plan-environmental-impact-report>.

7.2 Oakland Planning Code

City of Oakland, 2022. City of Oakland Planning Code, Codified through Ordinance No. 13684, enacted April 19, 2022. https://library.municode.com/ca/oakland/codes/planning_code, accessed March 27, 2023.

Attachments

- A. Standard Conditions of Approval Reporting Program
- B. Criteria for Use of Addendum, Pursuant to CEQA Guidelines Section 15164
- C. Project Consistency with the West Oakland Specific Plan, per CEQA Guidelines Section 15182
- D. Project Consistency with Community Plan or Zoning, per CEQA Guidelines Section 15183
- E. In-fill Performance Standards, Per CEQA Guidelines Section 15183.3

Appendices

- A. Air Quality and Health Risk Assessment Supporting Information
- B. ECAP Consistency Review Checklist
- C. Construction Noise Management Plan
- D. Transportation and Parking Demand Management Plan
- E. Non-CEQA Transportation Analysis

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 533 Kirkham 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 City SCAs that apply to the Project. It is noted that no mitigation measures beyond the SCAs would be required for the Project. Mitigation measures identified in the WOSP EIR are now included in the City’s SCA’s such as Mitigation Measure Air-9B (SCA #24), Mitigation Measure Air-9C (SCA #24 and SCA #26), and Mitigation Measure Air-10 (SCA #23) and are functionally equivalent to those mitigation measures. All transportation mitigation measures identified in the WOSP EIR are included in the Citywide Transportation Impact Fee (TIF) and payment of this fee, as required by SCA #84, constitutes adequate mitigation. The SCARP also lists other SCAs that apply to the Project that have been updated or otherwise modified by the City since publication of the WOSP EIR. Specifically, on September 26, 2023, 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. 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. Although the SCA numbers listed below may not correspond to the SCA numbers in the WOSP EIR, all of the environmental topics and potential effects addressed by the SCAs in the WOSP EIR are included in this SCARP (as applicable to the Project). This SCARP also identifies the mitigation monitoring requirements for each SCA.

To the extent that there is any inconsistency between any SCAs, the more restrictive conditions shall govern; to the extent any SCAs 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 SCA can apply to more than one topic, it is listed in its entirety only under its primary topic (as indicated in the 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 are included in parenthesis for cross-reference purposes.⁵⁹

- 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 and with all SCAs set forth herein at its sole cost and expense, unless otherwise expressly provided in a specific condition of approval, and subject to the review and approval of the City of Oakland. Overall monitoring and compliance with the SCAs will be the responsibility of the Bureau of Planning, and 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.

⁵⁹ Dated September 26, 2023 as amended.

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
General		
<p>SCA GEN-1 (Standard Condition Approval 15) Regulatory Permits and Authorizations from Other Agencies <u>Requirement:</u> 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.</p>	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		
<p>SCA AES-1 (Standard Condition of Approval 16) Trash and Blight Removal <u>Requirement:</u> 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.</p>	Ongoing.	City of Oakland Bureau of Building
<p>SCA AES-2 (Standard Condition of Approval 17) Graffiti Control <u>Requirement:</u></p> <p>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:</p> <ol style="list-style-type: none"> i. Installation and maintenance of landscaping to discourage defacement of and/or protect likely graffiti-attracting surfaces. ii. Installation and maintenance of lighting to protect likely graffiti-attracting surfaces. iii. Use of paint with anti-graffiti coating. iv. Incorporation of architectural or design elements or features to discourage graffiti defacement in accordance with the principles of Crime Prevention Through Environmental Design (CPTED). v. Other practices approved by the City to deter, protect, or reduce the potential for graffiti defacement. <p>b. The project applicant shall remove graffiti by appropriate means within seventy-two (72) hours. Appropriate means include the following:</p> <ol style="list-style-type: none"> i. Removal through scrubbing, washing, sanding, and/or scraping (or similar method) without damaging the surface and without discharging wash water or cleaning detergents into the City storm drain system. ii. Covering with new paint to match the color of the surrounding surface. iii. Replacing with new surfacing (with City permits if required). 	Ongoing.	City of Oakland Bureau of Building

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<p>SCA AES-3 (Standard Condition of Approval 18) Landscape Plan</p> <p>a. Landscape Plan Required <u>Requirement:</u> 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.</p> <p>b. Landscape Installation <u>Requirement:</u> The project applicant shall implement the approved Landscape Plan unless a bond, cash deposit, letter of credit, or other equivalent instrument acceptable to the Director of City Planning, is provided. The financial instrument shall equal the greater of \$2,500 or the estimated cost of implementing the Landscape Plan based on a licensed contractor's bid.</p> <p>c. Landscape Maintenance <u>Requirement:</u> All required planting shall be permanently maintained in good growing condition and, whenever necessary, replaced with new plant materials to ensure continued compliance with applicable landscaping requirements. The property owner shall be responsible for maintaining planting in adjacent public rights-of-way. All required fences, walls, and irrigation systems shall be permanently maintained in good condition and, whenever necessary, repaired or replaced.</p>	<p>a. Prior to approval of construction-related permit.</p> <p>b. Prior to building permit final.</p> <p>c. Ongoing</p>	<p>a. City of Oakland Bureau of Planning</p> <p>b. City of Oakland Bureau of Planning and Bureau of Building</p> <p>c. City of Oakland Bureau of Building</p>
<p>SCA AES-4 (Standard Condition of Approval 19): Lighting <u>Requirement:</u> Proposed new exterior lighting fixtures shall be adequately shielded to a point below the light bulb and reflector to prevent unnecessary glare onto adjacent properties.</p>	<p>Prior to building permit final.</p>	<p>City of Oakland Bureau of Building</p>
<p>See SCA UTIL-2, Underground Utilities. See <i>Utilities and Service Systems</i>, below.</p>		
<p>Air Quality</p>		
<p>SCA AIR-1 (Standard Condition of Approval 20) Dust Controls – Construction-Related <u>Requirement:</u> The project applicant shall implement all of the following applicable dust control measures during construction of the project:</p> <p>a. Water all exposed surfaces of active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever feasible.</p> <p>b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).</p> <p>c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.</p> <p>d. Limit vehicle speeds on unpaved roads to 15 miles per hour.</p> <p>e. All excavation, grading, and/or demolition activities (if any) shall be suspended when average wind speeds exceed 20 mph.</p> <p>f. All trucks and equipment, including tires, shall be washed off prior to leaving the site.</p>	<p>During construction.</p>	<p>City of Oakland Bureau of Building</p>

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<p>g. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.</p> <p>h. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.</p>		
<p>SCA AIR-2 (Standard Condition of Approval 21) Criteria Air Pollutant Controls – Construction and Operation Related <u>Requirement:</u> The project applicant shall implement all of the following applicable basic and enhanced control measures for criteria air pollutants during construction of the project as applicable:</p> <p>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.</p> <p>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”).</p> <p>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.</p> <p>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 propane or natural gas generators cannot meet the electrical demand.</p> <p>e. Low VOC (i.e., ROG) coatings shall be used that comply with BAAQMD Regulation 8, Rule 3: Architectural Coatings.</p> <p>f. All equipment to be used on the construction site shall comply with 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 (and the Air District if specifically requested), the project applicant shall provide written documentation that fleet requirements have been met.</p> <p>g. Criteria Air Pollutant Reduction Measures <u>Requirement:</u> Project applicants proposing projects that exceed BAAQMD screening levels (as amended to specify projects that include extensive demolition i.e., demolition greater than 100,000 square feet of building space) shall retain a qualified air quality consultant to prepare a project-level criteria air pollutant assessment of construction and operational emissions at the time the project is proposed. The project-level assessment shall either include a comparison of the project with other similar projects where a quantitative analysis has been conducted or shall provide a project-specific criteria air pollutant analysis to determine whether the project exceeds the City’s criteria air pollutant thresholds. In the event that a project-specific analysis finds that the project could result in criteria air pollutant emissions that exceed City significance thresholds (54 pounds per day of ROG, NO_x, or PM_{2.5} or 82 pounds per day of PM₁₀), the project applicant shall identify criteria air pollutant reduction measures to reduce the project's average daily emissions below these thresholds. The following emission reduction measures shall be implemented to the degree necessary to reduce emissions to levels below the significance thresholds. Additional measures shall be implemented if necessary. Quantified emissions and identified reduction measures shall be submitted to the City (and the Air District if specifically requested) for review and approval prior to the issuance of building permits and the approved criteria air pollutant reduction measures shall be implemented during construction.</p>	<p>During construction.</p>	<p>City of Oakland Bureau of Building</p>

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<p>i) <i>Clean Construction Equipment</i></p> <p>a. Where access to grid-powered electricity is reasonably available, portable diesel engines shall be prohibited and electric engines shall be used for concrete/industrial saws, sweepers/scrubbers, aerial lifts, welders, air compressors, fixed cranes, forklifts, cement and mortar mixers, pressure washers, and pumps.</p> <p>b. Diesel off-road equipment shall have engines that meet the Tier 4 Final off-road emission standards, as certified by CARB, as required to reduce the emissions to less than the thresholds of significance shown in Table 2-1 of BAAQMD CEQA Guidelines (BAAQMD 2017b). This requirement shall be verified through submittal of an equipment inventory that includes the following information: (1) type of equipment; (2) engine year and age; (3) number of years since rebuild of engine (if applicable); (4) type of fuel used; (5) engine HP; (6) engine certification (tier rating); (7) verified diesel emission control strategy (VDECS) information if applicable, and other related equipment data. A Certification Statement is also required to be made by the Contractor as documentation of compliance and for future review by the air district as necessary. The Certification Statement must state that the Contractor agrees to comply and acknowledges that a violation of this requirement shall constitute a material breach of contract.</p> <p>c. Any other best available technology that reduces emissions offered at the time that future projects are reviewed may be included in the construction emissions minimization plan (e.g. alternative fuel sources, etc.).</p> <p>d. Exceptions to requirements a), b), and c) above may be granted if the project sponsor has submitted information providing evidence that meeting the requirement (1) is technically not feasible, (2) would not produce desired emissions reductions due to expected operating modes, or (3) there is a compelling emergency need to use equipment that do not meet the engine standards and the sponsor has submitted documentation that the requirements of this exception provision apply. In seeking an exception, the project sponsor shall demonstrate that the project will use the cleanest piece of construction equipment available and feasible and strive to meet a performance standard of average construction emissions of ROG, NO_x, PM_{2.5} below 54 lbs/day, and PM₁₀ emissions below 82 lbs/day.</p> <p>ii) <i>Super-Compliant VOC Architectural Coatings during Construction.</i> The Project sponsor shall use super-compliant VOC architectural coatings during construction for all interior and exterior spaces and shall include this requirement on plans submitted for review by the City's building official. "Super-Compliant" refers to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District rule 1113 which requires a limit of 10 grams VOC per liter.</p> <p>iii) <i>Use Low and Super-Compliant VOC Architectural Coatings in Maintaining Buildings.</i> Subsequent projects shall use super-compliant VOC architectural coatings in maintaining buildings. "Super-Compliant" refers to paints that meet the more stringent regulatory limits in South Coast Air Quality Management District rule 1113, which requires a limit of 10 grams VOC per liter.</p> <p>iv) <i>Promote Use of Green Consumer Products.</i> To reduce ROG emissions associated with the Project, the Project Sponsor and/or future developer(s) shall provide education for residential tenants concerning green consumer products. The Project sponsor and/or future developer(s) shall develop electronic correspondence to be distributed by email annually and upon any new lease signing to residential tenants of each building on the Project site that encourages the purchase of consumer products that generate lower than typical VOC emissions. The correspondence shall encourage environmentally preferable purchasing.</p>		

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<p>v) <i>Best Available Control Technology for Projects with Diesel Backup Generators and Fire Pumps.</i></p> <p>The Project sponsor shall implement the following measures. 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:</p> <ul style="list-style-type: none"> a. Pursuant to SCA 24, non-diesel fueled generators shall be installed to replace diesel-fueled generators if feasible. Alternative fuels used in generators, such as biodiesel, renewable diesel, natural gas, or other biofuels or other nondiesel emergency power systems, must be demonstrated to reduce criteria pollutant emissions compared to diesel fuel. b. Pursuant to SCA 24, all new diesel backup generators shall have engines that meet or exceed CARB Tier 4 off-road Compression Ignition Engine Standards (title 13, CCR, section 2423). If CARB adopts future emissions standards that exceed the Tier 4 requirement, the emissions standards resulting in the lowest criteria pollutant emissions shall apply. c. All new diesel backup generators shall have an annual maintenance testing limit of 20 hours, subject to any further restrictions as may be imposed by BAAQMD in its permitting process. d. For each new diesel backup generator permit submitted to BAAQMD for the Project, the Project sponsor shall submit the anticipated location and engine specifications to the City for review and approval prior to issuance of a permit for the generator from the City of Oakland Department of Building Inspection. Once operational, all diesel backup generators shall be maintained in good working order for the life of the equipment and any future replacement of the diesel backup generators shall be required to be consistent with these emissions specifications. The operator of the facility at which the generator is located shall be required to maintain records of the testing schedule for each diesel backup generator for the life of that diesel backup generator and to provide this information for review to the planning department within three months of requesting such information. <p>vi) <i>Electric Vehicle Charging</i></p> <p>Prior to the issuance of the building's final certificate of occupancy, the project applicant shall demonstrate that the project is designed to comply with EV requirements in the most recently adopted version of CALGreen Tier 2 at the time of project-specific CEQA review. The installation of all EV charging equipment shall be included on the project drawings submitted for the construction-related permit(s) or on other documentation submitted to the City.</p> <p>vii) <i>Additional Operational Emissions Reduction Measures</i></p> <p>Subsequent projects that do not meet the screening criteria and exceed the applicable criteria air pollutant thresholds of significance shall implement the following additional measures to reduce operational criteria air pollutant emissions:</p> <ul style="list-style-type: none"> a. Prohibit TRUs from operating at loading docks for more than 30 minutes by posting signs at each loading dock presenting this TRU limit. b. All newly constructed loading docks that can accommodate trucks with TRUs shall be equipped with electric vehicle (EV) charging equipment for heavy-duty trucks. This measure does not apply to temporary street parking for loading or unloading. c. Require that all future tenants have a plan to convert their vehicle fleet(s) to zero emission vehicles (ZEVs) no later than 2040. This would be a condition of all leases at the project site. d. Other measures that become available and are shown to effectively reduce criteria air pollutant emissions on site or off site if emission reductions are realized within the air basin. Measures to reduce emissions on site are preferable to off-site emissions reductions. 		

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<p>h. Construction Emissions Minimization Plan</p> <p>Requirement: For projects that involve construction activities with average daily emissions exceeding the CEQA thresholds for construction activity, currently 54 pounds per day of ROG, NO_x, of PM_{2.5} or 82 pounds per day of PM₁₀, the project applicant shall prepare a Construction Emissions Minimization Plan (Emissions Plan) for all identified criteria air pollutant reduction measures. The Emissions Plan shall be submitted to the City (and the Air District if specifically requested) for review and approval prior to the issuance of building permits. The Emissions Plan shall include the following:</p> <ul style="list-style-type: none"> 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 Verified Diesel Emissions Control Strategies (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. 		
<p>SCA AIR-3 (Standard Condition of Approval 22) Toxic Air Contaminant Controls-Construction Related</p> <p>a. Particulate Matter Reduction Measures</p> <p>Requirement: 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) and particulate matter less than 2.5 microns in diameter (PM_{2.5}) in exhaust and fugitive emissions from construction activities. The project applicant shall choose to implement i or both ii and iii:</p> <ul style="list-style-type: none"> 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), the Office of Environmental Health and Hazard Assessment, and the Bay Area Air Quality Management District (BAAQMD) to determine the health risk to sensitive receptors exposed to DPM and PM_{2.5} from exhaust and fugitive emissions from project construction. The HRA shall be based on project-specific construction schedule, equipment, and activity data. Estimated project-level health risks shall be compared to the City's health risk significance thresholds for projects. 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 the City's health risk significance thresholds for projects, then DPM and PM_{2.5} reduction measures are not required. If the HRA concludes that the health risk exceeds the City's health risk significance thresholds for projects, DPM and PM_{2.5} reduction measures shall be identified to reduce the health risk to below the City's health risk significance thresholds as set forth under subsection b below. Identified DPM and PM_{2.5} reduction measures shall be submitted to the City for review and approval prior to the issuance of building permits and the approved DPM and PM_{2.5} reduction measures shall be implemented during construction. <p>- or -</p> <ul style="list-style-type: none"> ii. The project applicant shall incorporate the following health risk reduction measures into the project to reduce TAC emissions from construction equipment. 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: <ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> a. Prior to issuance of a construction related permit (i), during construction (ii). b. Prior to issuance of a construction related permit. 	<ul style="list-style-type: none"> 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
<p>agrees to compliance and acknowledges that a significant violation of this requirement shall constitute a material breach of contract.</p> <ul style="list-style-type: none"> Where access to grid-powered electricity is available, portable diesel engines shall be prohibited and electric engines shall be used for concrete/industrial saws, sweepers/scrubbers, aerial lifts, welders, air compressors, fixed cranes, forklifts, cement and mortar mixers, pressure washers, and pumps. Any other best available technology that reduces emissions offered at the time that future projects are reviewed may be included in the construction emissions minimization plan (e.g., alternative fuel sources, etc.). <p>-and-</p> <p>iii. The project applicant shall implement all enhanced control measures included in SCA 20 (Dust Controls – Construction Related).</p> <p>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:</p> <ul style="list-style-type: none"> 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. 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. 		
<p>SCA AIR-4 (Standard Condition of Approval 23) Reduce Exposure to Air Pollution (Toxic Air Contaminants)</p> <p>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 one of the following methods:</p> <ul style="list-style-type: none"> 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 and in accordance with Bay Area Air Quality Management District (BAAQMD) CEQA guidance for HRAs to determine the health risk of exposure of project residents/occupants/users to air pollutants and the exposure of existing off-site sensitive receptors to project-generated TAC emissions. The HRA shall be based on project-specific activity data. Estimated project-level health risks shall be compared to the City’s health risk significance thresholds for projects. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below the City’s health risk significance thresholds for projects, then health risk reduction measures are not required. If the HRA concludes that the health risk exceeds the City’s health risk significance thresholds for projects, health risk reduction measures shall be identified to reduce the health risk to below the City’s health risk significance thresholds for projects. 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. <p>- or -</p>	<ul style="list-style-type: none"> a. Prior to approval of construction-related permit b. Ongoing 	<ul style="list-style-type: none"> 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
<p>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:</p> <ul style="list-style-type: none"> • Installation of mechanical ventilation systems 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. Mechanical ventilation systems shall be capable of achieving the protection from particulate matter (PM_{2.5}) equivalent to that associated with a MERV-16 filtration (as defined by American Society of Heating, Refrigerating, and Air-Conditioning Engineers standard 52.2). As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required. • Where appropriate, install passive electrostatic filtering systems, especially those with low air velocities (i.e., 1 mph). • Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible. • The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall be located as far away as feasible from a loading dock or where trucks concentrate to deliver goods. • Sensitive receptors shall be located on the upper floors of buildings, if feasible. • Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (<i>Pinus nigra</i> var. <i>maritima</i>), Cypress (<i>X Cupressocyparis leylandii</i>), Hybrid poplar (<i>Populus deltoids X trichocarpa</i>), and Redwood (<i>Sequoia sempervirens</i>). • Sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible. • Existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible. • Emissions from diesel trucks shall be reduced through implementing the following measures, if feasible: <ul style="list-style-type: none"> – Installing electrical hook-ups for diesel trucks at loading docks. – Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards. – Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels. – Prohibiting trucks from idling for more than two minutes. – Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented. <p>b. Maintenance of Health Risk Reduction Measures</p> <p><u>Requirement:</u> The project applicant shall maintain, repair, and/or replace installed health risk reduction measures, including but not limited to the HVAC system (if applicable), on an ongoing and as-needed basis. Prior to occupancy, the project applicant shall prepare and then distribute to the building manager/operator an operation and maintenance manual for the HVAC system and filter including the maintenance and replacement schedule for the filter.</p>		

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
Cultural Resources		
<p>SCA CUL-1 (Standard Condition of Approval 36): Archaeological and Paleontological Resources – Discovery During Construction <u>Requirement:</u> 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.</p> <p>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.</p> <p>In the event of excavation of paleontological resources, the project applicant shall submit an excavation plan prepared by a qualified paleontologist to the City for review and approval. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by a qualified paleontologist, as appropriate, according to current professional standards and at the expense of the project applicant.</p>	During construction.	City of Oakland Bureau of Building
<p>SCA CUL-2 (Standard Condition of Approval 37): Archaeologically Sensitive Areas – Pre-Construction Measures <u>Requirement:</u> The project applicant shall implement Provision A (Intensive Pre-Construction Study) and Provision B (Construction ALERT Sheet) concerning archaeological resources. If Native American archaeological resources are identified or suspected in a project site, the City shall consult with a Native American representative(s) registered with the Native American Heritage Commission that is traditionally and culturally affiliated with the geographic area as described in Public Resources Code Section 21080.3.</p> <p>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:</p> <ol style="list-style-type: none"> 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. A report disseminating the results of this research. 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	
	Schedule	Responsibility
<p>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.</p> <p>Provision B: Construction ALERT Sheet.</p> <p>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.</p> <p>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.</p>		
<p>SCA CUL-3 (Standard Condition of Approval SCA 38): Human Remains – Discovery During Construction</p> <p><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.</p>	During construction.	City of Oakland Bureau of Building
<p>Geology, Soils, and Geohazards</p>		
<p>SCA GEO-1 (Standard Condition of Approval 40): Construction-Related Permit(s)</p> <p><u>Requirement:</u> 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.</p>	Prior to approval of construction-related permit.	City of Oakland Bureau of Building

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<p>SCA GEO-2 (Standard Condition of Approval 43): Seismic Hazards Zone (Landslide/Liquefaction) <u>Requirement:</u> The project applicant shall submit a site-specific geotechnical report, consistent with California Geological Survey Special Publication 117 (as amended), prepared by a registered geotechnical engineer for City review and approval containing at a minimum a description of the geological and geotechnical conditions at the site, an evaluation of site-specific seismic hazards based on geological and geotechnical conditions, and recommended measures to reduce potential impacts related to liquefaction and/or slope stability hazards. The project applicant shall implement the recommendations contained in the approved report during project design and construction.</p>	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 <i>Hydrology and Water Quality</i> , below.		
See SCA HYD-2, State General Construction Permit. See <i>Hydrology and Water Quality</i> , below.		
Greenhouse Gases and Climate Change		
<p>SCA GHG-1 (Standard Condition of Approval 45): Project Compliance with the Equitable Climate Action Plan (ECAP) Consistency Checklist <u>Requirement:</u> 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.</p> <p>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.</p> <p>b. For physical ECAP Consistency Checklist measures to be incorporated into the design of the project, the measures shall be implemented during construction.</p> <p>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.</p>	<p>a. Prior to approval of construction-related permit</p> <p>b. During construction</p> <p>c. Ongoing</p>	<p>a. City of Oakland Bureau of Planning</p> <p>b. City of Oakland Bureau of Planning and Bureau of Building</p> <p>c. City of Oakland Bureau of Planning</p>
See SCA AES-3, Landscape Plan. See <i>Aesthetics, Wind, and Shadow</i> , above.		
See SCA AIR-2, Criteria Air Pollutant Controls - Construction and Operation Related. See <i>Air Quality</i> , above.		
See SCA AIR-3, Toxic Air Contaminant Controls - Construction Related. See <i>Air Quality</i> , above.		
See SCA TRA-2, Bicycle Parking. See <i>Transportation and Circulation</i> , below.		
See SCA TRA-4, Transportation and Parking Demand Management. See <i>Transportation and Circulation</i> , below.		
See SCA TRA-6, Plug-In Electric Vehicle (PEV) Charging Infrastructure. See <i>Transportation and Circulation</i> , below.		
See SCA UTIL-1, Construction and Demolition Waste Reduction and Recycling. See <i>Utilities and Service Systems</i> , below.		
See SCA UTIL-4, Green Building Requirements. See <i>Utilities and Service Systems</i> , below.		
See SCA UTIL-7, Water Efficient Landscape Ordinance (WELO). See <i>Utilities and Service Systems</i> , below		

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
Hazards and Hazardous Materials		
<p>SCA HAZ-1 (Standard Condition of Approval 47): 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:</p> <ul style="list-style-type: none"> 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. 	During construction.	City of Oakland Bureau of Building
<p>SCA HAZ-2 (Standard Condition of Approval 48): Hazardous Building Materials and Site Contamination</p> <p>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.</p> <p>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.</p> <p>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.</p>	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<p>d. Best Management Practices (BMPs) Required for Contaminated Sites</p> <p><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:</p> <ul style="list-style-type: none"> i. Soil generated by construction activities shall be stockpiled on-site in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state, and federal requirements. ii. Groundwater pumped from the subsurface shall be contained on-site in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building. 		
See SCA TRA-1, Construction Activity in the Public Right-of-Way. See <i>Transportation and Traffic</i> , below.		
Hydrology and Water Quality		
<p>SCA HYD-1 (Standard Condition of Approval 53): Erosion and Sedimentation Control Plan for Construction</p> <p>a. Erosion and Sedimentation Control Plan Required</p> <p><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.</p> <p>b. Erosion and Sedimentation Control During Construction</p> <p><u>Requirement:</u> 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.</p>	<ul style="list-style-type: none"> a. Prior to approval of construction-related permit b. During construction 	<ul style="list-style-type: none"> a. City of Oakland Bureau of Building b. City of Oakland Bureau of Building
<p>SCA HYD-2 (Standard Condition of Approval 54): State Construction General Permit</p> <p><u>Requirement:</u> The project applicant shall comply with the requirements of the Construction General Permit issued by the State Water Resources Control Board (SWRCB). The project applicant shall submit a Notice of Intent (NOI), Stormwater Pollution Prevention Plan (SWPPP), and other required Permit Registration Documents to SWRCB. The project applicant shall submit evidence of compliance with Permit requirements to the City.</p>	Prior to approval of construction-related permit	State Water Resources Control Board
<p>SCA HYD-3 (Standard Condition of Approval 58): NPDES C.3 Stormwater Requirements for Regulated Projects</p> <p>a. Post-Construction Stormwater Management Plan Required</p> <p><u>Requirement:</u> The project applicant shall comply with the requirements of Provision C.3 of the Municipal Regional Stormwater Permit issued under the National Pollutant Discharge Elimination System (NPDES). The project applicant shall submit a Post-Construction Stormwater Management Plan to the City for review and approval with the project drawings submitted for site improvements, and shall implement the approved Plan during construction. The Post-Construction Stormwater Management Plan shall include and identify the following:</p>	<ul style="list-style-type: none"> a. Prior to approval of construction-related permit. b. Prior to building permit final. 	<ul style="list-style-type: none"> a. City of Oakland Planning and Bureau of Building b. City of Oakland Bureau of Building

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<p>i. Location and size of new and replaced impervious surface;</p> <p>ii. Directional surface flow of stormwater runoff;</p> <p>iii. Location of proposed on-site storm drain lines;</p> <p>iv. Site design measures to reduce the amount of impervious surface area;</p> <p>v. Source control measures to limit stormwater pollution;</p> <p>vi. Stormwater treatment measures to remove pollutants from stormwater runoff, including the method used to hydraulically size the treatment measures; and</p> <p>vii. Hydromodification management measures, if required by Provision C.3, so that post-project stormwater runoff flow and duration match pre-project runoff.</p>		
<p>b. Maintenance Agreement Required</p> <p><u>Requirement:</u> The project applicant shall enter into a maintenance agreement with the City, based on the Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement, in accordance with Provision C.3, which provides, in part, for the following:</p> <p>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</p> <p>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.</p> <p>The maintenance agreement shall be recorded at the County Recorder's Office at the applicant's expense.</p>		
<p>See SCA GEO-1, Construction-Related Permit(s). See <i>Geology, Soils, and Geohazards</i>, above.</p>		
<p>See SCA UTIL-6, Storm Drain System. See <i>Utilities and Service Systems</i>, below.</p>		
<p>Noise</p>		
<p>SCA NOI-1 (Standard Condition of Approval 67) Construction Days/Hours</p> <p><u>Requirement:</u> The project applicant shall comply with the following restrictions concerning construction days and hours:</p> <p>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.</p> <p>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.</p> <p>c. No construction is allowed on Sunday or federal holidays.</p> <p>Construction activities include, but are not limited to, truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.</p> <p>Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the City, with criteria including the urgency/emergency nature of the work, the proximity of residential or other sensitive uses, and a consideration of nearby residents'/occupants' preferences. The project applicant shall notify property owners and occupants located within 300 feet at least 14 calendar days prior to construction activity proposed outside of the above days/hours. When submitting a request to the City to allow construction activity</p>	<p>During construction.</p>	<p>City of Oakland Bureau of Building</p>

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
outside of the above days/hours, the project applicant shall submit information concerning the type and duration of proposed construction activity and the draft public notice for City review and approval prior to distribution of the public notice.		
<p>SCA NOI-2: (Standard Condition of Approval 68) Construction Noise</p> <p>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:</p> <ol style="list-style-type: none"> Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) wherever feasible. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures. Applicant shall use temporary power poles instead of generators where feasible. Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction. The noisiest phases of construction shall be limited to less than 10 days 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
<p>SCA NOI-3 (Standard Condition of Approval 69) Extreme Construction Noise</p> <p>a. Construction Noise Management Plan Required</p> <p>Requirement: Prior to any extreme noise generating construction activities (e.g., pier drilling, pile driving and other activities generating greater than 90dBA), the project applicant shall submit a Construction Noise Management Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction impacts associated with extreme noise generating activities. The project applicant shall implement the approved Plan during construction. Potential attenuation measures include, but are not limited to, the following:</p> <ol style="list-style-type: none"> Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings; 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; Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site; Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and Monitor the effectiveness of noise attenuation measures by taking noise measurements. <p>b. Public Notification Required</p> <p>Requirement: The project applicant shall notify property owners and occupants located within 300 feet of the construction activities at least 14 calendar days prior to commencing extreme noise generating activities. Prior to providing the notice, the project applicant shall submit to the City for review and approval the proposed type and duration of extreme noise generating activities and the proposed public notice. The public notice shall provide the estimated start and end dates of the extreme noise generating activities and describe noise attenuation measures to be implemented.</p>	<ol style="list-style-type: none"> Prior to approval of construction-related permit. During construction. 	<ol style="list-style-type: none"> City of Oakland Bureau of Building City of Oakland Bureau of Building

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<p>SCA NOI-4 (Standard Condition of Approval 71) Construction Noise Complaints</p> <p><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:</p> <ol style="list-style-type: none"> Designation of an on-site construction complaint and enforcement manager for the project; A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager and City Code Enforcement unit; Protocols for receiving, responding to, and tracking received complaints; and Maintenance of a complaint log that records received complaints and how complaints were addressed, which shall be submitted to the City for review upon the City's request. 	Prior to approval of construction-related permit.	City of Oakland Bureau of Building
<p>SCA NOI-5 (Standard Condition of Approval 72) Exposure to Community Noise</p> <p><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:</p> <ol style="list-style-type: none"> 45 dBA: Residential activities, civic activities, hotels 50 dBA: Administrative offices; group assembly activities 55 dBA: Commercial activities 65 dBA: Industrial activities 	Prior to approval of construction-related permit.	City of Oakland Bureau of Planning and Bureau of Building
<p>SCA NOI-6 (Standard Condition of Approval 73) Operational Noise</p> <p><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.</p>	Ongoing.	City of Oakland Bureau of Building
<p>SCA NOI-7 (Standard Condition of Approval 74) Exposure to Vibration</p> <p><u>Requirement:</u> Requirement: The project applicant shall submit a Vibration Reduction Plan prepared by a qualified acoustical consultant for City review and approval that contains vibration reduction measures to reduce groundborne vibration to acceptable levels per Federal Transit Administration (FTA) standards. The applicant shall implement the approved Plan during construction. Potential vibration reduction measures include, but are not limited to, the following:</p> <ol style="list-style-type: none"> Isolation of foundation and footings using resilient elements such as rubber bearing pads or springs, such as a "spring isolation" system that consists of resilient spring supports that can support the podium or residential foundations. The specific system shall be selected so that it can properly support the structural loads, and provide adequate filtering of groundborne vibration to the residences above. Trenching, which involves excavating soil between the railway and the project so that the vibration path is interrupted, thereby reducing the vibration levels before they enter the project's structures. Since the reduction in vibration level is based on a ratio between trench depth and vibration wavelength, additional measurements shall be conducted to determine the vibration wavelengths affecting the project. Based on the resulting measurement findings, an adequate trench depth and, if required, suitable fill shall be identified (such as foamed styrene packing pellets [i.e., Styrofoam] or low-density polyethylene). 	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
Public Services, Parks, and Recreation Facilities		
<p>SCA PUB-1 (Standard Condition of Approval 78) 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).</p>	Prior to issuance of building permit	City of Oakland Bureau of Building
Transportation and Circulation		
<p>SCA TRA-1 (Standard Condition of Approval 80) Construction Activity in the Public Right-of-Way</p> <p>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.</p> <p>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.</p> <p>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.</p>	<p>a. Prior to approval of construction-related permit.</p> <p>b. Prior to approval of construction-related permit.</p> <p>c. Prior to building permit final.</p>	<p>a. City of Oakland Department of Transportation</p> <p>b. City of Oakland Department of Transportation</p> <p>c. City of Oakland Department of Transportation</p>
<p>SCA TRA-2 (Standard Condition of Approval 81) 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.</p>	Prior to approval of construction-related permit.	City of Oakland Bureau of Planning and Bureau of Building
<p>SCA TRA-3 (Standard Condition of Approval 82): Transportation Improvements. <u>Requirement:</u> 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:</p> <p>a. 2070L Type Controller with cabinet accessory</p>	Prior to building permit final or as otherwise specified	City of Oakland Bureau of Building and City of Oakland Department of Transportation

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
b. GPS communication (clock) 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)		
<p>SCA TRA-4 (Standard Condition of Approval 83) Transportation and Parking Demand Management</p> <p>a. Transportation and Parking Demand Management (TDM) Plan Required</p> <p><u>Requirement:</u> The project applicant shall submit a Transportation and Parking Demand Management (TDM) Plan for review and approval by the City.</p> <p>i. The goals of the TDM Plan shall be the following:</p> <ul style="list-style-type: none"> • Reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable. • Achieve the following project vehicle trip reductions (VTR): <ul style="list-style-type: none"> – 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. <p>ii. The TDM Plan should include the following:</p> <ul style="list-style-type: none"> • 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. • Proposed TDM strategies to achieve VTR goals (see below). <p>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.</p> <p>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</p>	a. Prior to approval of planning application. 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 Department of Transportation

Standard Conditions of Approval/Mitigation Measures		Mitigation Implementation/Monitoring	
		Schedule	Responsibility
Improvement	Required by code or when...		
Bus boarding bulbs or islands	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> A bus stop is located along the project frontage and a concrete bus pad does not already exist 		
Curb extensions or bulb-outs	<ul style="list-style-type: none"> Identified as an improvement within site analysis 		
Implementation of a corridor-level bikeway improvement	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Always required 		
Installation of safety improvements identified in the Pedestrian Master Plan (such as crosswalk striping, curb ramps, count down signals, bulb outs, etc.)	<ul style="list-style-type: none"> When improvements are identified in the Pedestrian Master Plan along project frontage or at an adjacent intersection 		
In-street bicycle corral	<ul style="list-style-type: none"> 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. 		

Standard Conditions of Approval/Mitigation Measures		Mitigation Implementation/Monitoring	
		Schedule	Responsibility
Improvement	Required by code or when...		
Intersection improvements⁶⁰	<ul style="list-style-type: none"> Identified as an improvement within site analysis 		
New sidewalk, curb ramps, curb and gutter meeting current City and ADA standards	<ul style="list-style-type: none"> Always required 		
No monthly permits and establish minimum price floor for public parking⁶¹	<ul style="list-style-type: none"> If proposed parking ratio exceeds 1:1000 sf. (commercial) 		
Parking garage is designed with retrofit capability	<ul style="list-style-type: none"> Optional if proposed parking ratio exceeds 1:1.25 (residential) or 1:1000 sf. (commercial) 		
Parking space reserved for car share	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Typically required 		
Pedestrian crossing improvements	<ul style="list-style-type: none"> Identified as an improvement within site analysis 		
Pedestrian-supportive signal changes⁶²	<ul style="list-style-type: none"> Identified as an improvement within operations analysis 		
Real-time transit information system	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> A project is located within 0.10 mile of any active bus stop that is currently near-side 		
Signal upgrades⁶³	<ul style="list-style-type: none"> 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 		

⁶⁰ Including but not limited to visibility improvements, shortening corner radii, pedestrian safety islands, accounting for pedestrian desire lines.

⁶¹ May also provide a cash incentive or transit pass alternative to a free parking space in commercial properties.

⁶² 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.

⁶³ Including typical traffic lights, pedestrian signals, bike actuated signals, transit-only signals

Standard Conditions of Approval/Mitigation Measures		Mitigation Implementation/Monitoring	
		Schedule	Responsibility
Improvement	Required by code or when...		
Transit queue jumps	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> If proposed parking ratio exceeds 1:1.25 (residential) 		
<p>v. Other TDM strategies to consider include, but are not limited to, the following:</p> <ul style="list-style-type: none"> 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 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 any applicable streetscape plan. Construction and development of transit stops/shelters, pedestrian access, way finding signage, and lighting around transit stops per transit agency plans or negotiated improvements. Direct on-site sales of transit passes purchased and sold at a bulk group rate (through programs such as AC Transit Easy Pass or a similar program through another transit agency). Provision of a transit subsidy to employees or residents, determined by the project applicant and subject to review by the City, if employees or residents use transit or commute by other alternative mode. 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. 			

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<ul style="list-style-type: none"> 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. <p>The TDM Plan shall indicate the estimated VTR for each strategy, based on published research or guidelines where feasible. For TDM Plans containing ongoing operational VTR strategies, the Plan shall include an ongoing monitoring and enforcement program to ensure the Plan is implemented on an ongoing basis during project operation. If an annual compliance report is required, as explained below, the TDM Plan shall also specify the topics to be addressed in the annual report.</p>		
<p>b. TDM Implementation – Physical Improvements</p> <p><u>Requirement:</u> For VTR strategies involving physical improvements, the project applicant shall obtain the necessary permits/ approvals from the City and install the improvements prior to the completion of the project.</p> <p>c. TDM Implementation – Operational Strategies</p> <p><u>Requirement:</u> For projects that generate 100 or more net new a.m. or p.m. peak hour vehicle trips and contain ongoing operational VTR strategies, the project applicant shall submit an annual compliance report for the first five years following completion of the project (or completion of each phase for phased projects) for review and approval by the City. The annual report shall document the status and effectiveness of the TDM program, including the actual VTR achieved by the project during operation. If deemed necessary, the City may elect to have a peer review consultant, paid for by the project applicant, review the annual report. If timely reports are not submitted and/or the annual reports indicate that the project applicant has failed to implement the TDM Plan, the project will be considered in violation of the Conditions of Approval and the City may initiate enforcement action as provided for in these Conditions of Approval. The project shall not be considered in violation of this Condition if the TDM Plan is implemented but the VTR goal is not achieved.</p>		
<p>SCA TRA-5 (Standard Condition of Approval 84) Transportation Impact Fee</p> <p><u>Requirement:</u> 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).</p>	Prior to issuance of building permit	City of Oakland Bureau of Building
<p>SCA TRA-6 (Standard Condition of Approval 86) Plug-In Electric Vehicle (PEV) Charging Infrastructure</p> <p>a. PEV-Ready Parking Spaces</p> <p><u>Requirement:</u> The applicant shall submit, for review and approval of the Building Official and the Zoning Manager, plans that show the location of parking spaces equipped with full electrical circuits designated for future PEV charging (i.e. “PEV-Ready”) per the requirements of Chapter 15.04 of the Oakland Municipal Code. Building electrical plans shall indicate sufficient electrical capacity to supply the required PEV-Ready parking spaces.</p>	<p>a. Prior to issuance of building permit</p> <p>b. Prior to issuance of building permit</p>	<p>a. City of Oakland Bureau of Building</p> <p>b. City of Oakland Bureau of Building</p>

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<p>b. PEV-Capable Parking Spaces</p> <p><u>Requirement:</u> The applicant shall submit, for review and approval of the Building Official, plans that show the location of inaccessible conduit to supply PEV-capable parking spaces per the requirements of Chapter 15.04 of the Oakland Municipal Code. Building electrical plans shall indicate sufficient electrical capacity to supply the required PEV-capable parking spaces.</p>		
Utilities and Service Systems		
<p>SCA UTIL-1 (Standard Condition of Approval 87) Construction and Demolition Waste Reduction and Recycling</p> <p><u>Requirement:</u> 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.</p>	Prior to approval of construction-related permit	City of Oakland Public Works Department, Environmental Services Division
<p>SCA UTIL-2 (Standard Condition of Approval 88) Underground Utilities</p> <p><u>Requirement:</u> 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.</p>	During construction	City of Oakland Bureau of Building
<p>SCA UTIL-3 (Standard Condition of Approval 89) Recycling Collection and Storage Space</p> <p><u>Requirement:</u> 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 (2) cubic feet of storage and collection space per residential unit is required, with a minimum of ten (10) cubic feet. For nonresidential projects, at least two (2) cubic feet of storage and collection space per 1,000 square feet of building floor area is required, with a minimum of ten (10) cubic feet.</p>	Prior to approval of construction-related permit.	City of Oakland Bureau of Planning and Bureau of Building
<p>SCA UTIL-4 (Standard Condition of Approval 90) Green Building Requirements</p> <p>a. Compliance with Green Building Requirements During Plan-Check</p> <p><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).</p> <p>i. The following information shall be submitted to the City for review and approval with the application for a building permit:</p> <ul style="list-style-type: none"> • 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. 	<p>a. Prior to approval of construction-related permit.</p> <p>b. During construction.</p> <p>c. Prior to Final Approval.</p>	<p>a. City of Oakland Bureau of Building</p> <p>b. City of Oakland Bureau of Building</p> <p>c. City of Oakland Bureau of Planning and Bureau of Building</p>

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<ul style="list-style-type: none"> • 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. <p>ii. The set of plans in subsection (i) shall demonstrate compliance with the following:</p> <ul style="list-style-type: none"> • CALGreen mandatory measures. • Green building point level/certification requirement per the appropriate 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. <p>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:</p> <p>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.</p> <p>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.</p> <p>iii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.</p> <p>c. Compliance with Green Building Requirements After Construction <u>Requirement:</u> 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.</p>		
<p>SCA UTIL-5 (Standard Condition of Approval 92) Sanitary Sewer System <u>Requirement:</u> The project applicant shall prepare and submit a Sanitary Sewer Impact Analysis to the City for review and approval in accordance with the City of Oakland Sanitary Sewer Design Guidelines. The Impact Analysis shall include an estimate of pre-project and post-project wastewater flow from the project site. In the event that the Impact Analysis indicates that the net increase in project wastewater flow exceeds City-projected increases in wastewater flow in the sanitary sewer system, the project applicant shall pay the Sanitary Sewer Impact Fee in accordance with the City’s Master Fee Schedule for funding improvements to the sanitary sewer system.</p>	Prior to approval of construction-related permit.	City of Oakland Public Works Department, Department of Engineering and Construction
<p>SCA UTIL-6 (Standard Condition of Approval 93) Storm Drain System <u>Requirement:</u> The project storm drainage system shall be designed in accordance with the City of Oakland’s Storm Drainage Design Guidelines. To the maximum extent practicable, peak stormwater runoff from the project site shall be reduced by at least 25 percent compared to the pre-project condition.</p>	Prior to approval of construction-related permit.	City of Oakland Bureau of Building
<p>SCA UTIL-7 (Standard Condition of Approval 95) Water Efficient Landscape Ordinance (WELO) <u>Requirement:</u> The project applicant shall comply with California’s Water Efficient Landscape Ordinance (WELO) in order to reduce landscape water usage. For the specific ordinance requirements, see the link below: http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/Title%2023%20extract%20-%20Official%20CCR%20pages.pdf</p>	Prior to approval of construction-related permit.	City of Oakland Bureau of Planning

Standard Conditions of Approval/Mitigation Measures	Mitigation Implementation/Monitoring	
	Schedule	Responsibility
<p>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.</p> <p><i>Prescriptive Measures:</i> Prior to construction, the project applicant shall submit the Project Information (detailed below) and documentation showing compliance with Appendix D of California’s Model Water Efficient Landscape Ordinance (see page 38.14(g) in the link above).</p> <p><i>Performance Measures:</i> Prior to construction, the project applicant shall prepare and submit a Landscape Documentation Package for review and approval, which includes the following:</p> <ul style="list-style-type: none"> a. Project Information: <ul style="list-style-type: none"> 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. Project contacts ix. 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.” b. Water Efficient Landscape Worksheet <ul style="list-style-type: none"> 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 <p>Upon installation of the landscaping and irrigation systems, and prior to the final of a construction-related permit, the Project applicant shall submit a Certificate of Completion (see page 38.6 in the link above) and landscape and irrigation maintenance schedule for review and approval by the City. The Certificate of Completion shall also be submitted to the local water purveyor and property owner or his or her designee.</p>		
See SCA AIR-2, Criteria Air Pollutant Controls – Construction and Operation Related , See <i>Air Quality</i> , above.		
See SCA HYD-1, Erosion and Sedimentation Control Plan for Construction . See <i>Hydrology and Water Quality</i> , above.		
See SCA HYD-3 NPDES C.3 Stormwater Requirements for Regulated Projects . See <i>Hydrology and Water Quality</i> , above.		
See SCA TRA-2, Bicycle Parking . See <i>Transportation and Circulation</i> , above.		
See SCA TRA-6, Plug-In Electric Vehicle (PEV) Charging Infrastructure . See <i>Transportation and Circulation</i> , above.		

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ATTACHMENT B

Criteria for Use of Addendum, Pursuant to CEQA Guidelines Section 15164

Section 15164(a) of the California Environmental Quality Act (CEQA) Guidelines states that “a lead agency or responsible agency shall prepare an addendum to a previously certified EIR [Environmental Impact Report] if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.” Section 15164(e) states that “a brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR.”

As discussed in detail in Section 5 of this document, the analysis in the 2014 West Oakland Specific Plan (WOSP) EIR is considered for this assessment under Section 15162 and 15164.

Project Modifications

The WOSP EIR analyzed the WOSP, which establishes development plans for certain Opportunity Areas and Opportunity Sites to project the maximum level of feasible development that can reasonably be expected to occur by 2035 (i.e., up to 5,000 new dwelling units, up to 4.7 million square feet of net new non-residential building space, including approximately 8,720-11,000 new residents, and approximately 15,000-16,500 new jobs contingent upon the buildout scenario of the transit-oriented development described below). The WOSP and the WOSP EIR intend to provide flexibility in the location, amount, and type of development. Based on a review of the WOSP EIR environmental analysis and development assumptions, traffic capacity was identified as the primary environmental factor constraining development. Air quality and noise are also considerations, which are influenced by transportation assumptions. The City of Oakland is tracking and measuring vehicle trip generation created by projects proposed under the WOSP along with land uses to monitor when thresholds established have been met. Thus, traffic capacity is the primary indicator of development potential under the WOSP, not uses, which were contemplated to evolve and, as long as impacts fall within the maximum development analyzed in the WOSP EIR, additional CEQA analysis may not be required.

The Project site is located within the “7th Street Opportunity Area” of the WOSP. The vision for the 7th Street Opportunity Area includes transit-oriented development (TOD) on vacant sites and parking lots around the West Oakland BART Station. The WOSP EIR provided an analysis of two different design options for buildout of the West Oakland BART Station TOD. Under the first option, the TOD would be primarily high-density residential development above mostly ground-floor neighborhood-serving retail and custom manufacturing /industrial arts/ artist exhibition space. Under the second option, the TOD would include higher-density housing, but

also commercial office and government/institutional office space around the core of the BART Station and atop the new parking garage.

As shown in **Table B-1**, the Project's 2,999 square feet of retail use, combined with other constructed, approved, proposed, and under construction projects, would be well below the up to 2.4 million square feet contemplated in the 7th Street Opportunity Area. The Project's 289 residential units, combined with other constructed, approved, proposed, and under construction projects, would likely exceed the estimated increase in residential land use in the 7th Street Opportunity Area and analyzed in the WOSP EIR if currently proposed projects are also approved. However, the Project conforms to the traffic generation parameters analyzed in the WOSP EIR, as described in Section 5.14, *Transportation and Circulation*, of this CEQA Checklist. As such, the Project is within the envelope of the development program analyzed in the WOSP EIR.

TABLE B-1
COMPARISON OF WOSP DEVELOPMENT PROGRAM,
7TH STREET OPPORTUNITY AREA DEVELOPMENT PROGRAM, AND THE PROJECT

Development Characteristics	Total WOSP Development Program	7th Street Opportunity Area Development Program	7th Street Opportunity Area Constructed, Approved, Proposed, or Under Construction	Project
Residential Units (net)	4,016 – 4,999	1,856 – 2,839	3,338	289
Non-residential Square Footage (net)	4 – 4.7 million	1.8 – 2.4 million	515,855	2,999

As described in Section 5.14, *Transportation and Circulation*, of this CEQA Checklist, the Project would generate approximately 68 net new vehicle trips during the weekday AM peak hour and approximately 78 net new vehicle trips during the weekday PM peak hour. Together with trips generated by other projects that are currently under construction, approved, or proposed for development in the WOSP area (see Table TRA-1 in Section 5.14, *Transportation and Circulation*), this would represent approximately 27 percent of the AM and 25 percent of the PM peak-hour trips anticipated in the WOSP EIR for the WOSP Area. The AM and PM peak hour trip generation numbers are below the WOSP EIR estimates for the WOSP buildout. The traffic impact analysis presented in the EIR continues to remain valid, and the trip generation from the Project combined with other projects currently being developed under the WOSP would be within the program analyzed under the WOSP EIR for the WOSP area.

To ensure that the Project would not result in significant impacts that were not previously identified in the WOSP EIR because the residential dwelling unit assumptions in the WOSP EIR for the 7th Street Opportunity Area are expected to be exceeded, additional quantitative air quality and noise analysis was performed. As described in Section 5.3, *Air Quality*, of this CEQA Checklist, the Project would not exceed any of the City's applicable significance thresholds related to air quality. As described in Section 5.11, *Noise*, of this CEQA Checklist, Project traffic would not generate noise resulting in a 5 dBA permanent increase in ambient noise levels above levels existing without the Project in the Project vicinity as well as under cumulative conditions and the Project would not exceed any of the City's applicable significance thresholds related to noise.

Therefore, the Project would represent a minor change in the WOSP land use development assumptions, and such changes were anticipated in the EIR.

Conditions for Addendum

As demonstrated in the CEQA Checklist, none of the following conditions for preparation of a subsequent EIR per Sections 15162(a) apply to the Project:

- (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or Negative Declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the Negative Declaration was adopted, shows any of the following:
 - (A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
 - (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Project Consistency with Section 15162 of the CEQA Guidelines

Since certification of the WOSP EIR, no changes have occurred in the circumstances under which the Project would be implemented that would change the severity of the Project's physical impacts, as explained in the CEQA Checklist in Section 5 of this document. No new information has emerged that would substantially change the analyses or conclusions set forth in the WOSP EIR.

Furthermore, as demonstrated in the CEQA Checklist, the Project would not result in any new significant environmental impacts, result in any substantial increases in the significance of previously identified impacts, necessitate implementation of additional or considerably different mitigation measures than those identified in the WOSP EIR, or render any mitigation measures or alternatives found not to be feasible, feasible. The effects of the Project would be substantially the same as those reported in the WOSP EIR. No major revisions to the WOSP EIR are required.

The analysis presented in this CEQA Checklist also considers potential effects of additional residential dwelling units in the 7th Street Opportunity Area than were assumed in the WOSP EIR. The Checklist demonstrates that implementation of the Project would not substantially increase the severity of significant impacts identified in the WOSP EIR, nor would it result in new significant impacts that were not identified in the WOSP EIR. No mitigation measures would be required for the Project.

The analysis presented in this CEQA Checklist, combined with the prior WOSP EIR analysis, demonstrates that the Project would not result in significant impacts that were not previously identified in the WOSP EIR. The Project would not result in a substantial increase in the significance of impacts, nor would the Project contribute considerably to cumulative effects that were not already accounted for in the certified WOSP EIR. Overall, the Project's impacts are similar to those identified and discussed in the WOSP EIR, as described in the CEQA Checklist, and the findings reached in the WOSP EIR are applicable.

ATTACHMENT C

Project Consistency with the West Oakland Specific Plan, per CEQA Guidelines Section 15182

Section 15182 of the California Environmental Quality Act (CEQA) Guidelines states that “Certain residential, commercial and mixed-use projects that are consistent with a specific plan adopted pursuant to Title 7, Division 1, Chapter 3, Article 8 of the Government Code are exempt from CEQA as described in subdivisions (b) and (c) of this section.” Table C-1, below, shows how the Project satisfies the eligibility criteria for an exemption under Section 15182.

**TABLE C-1
SECTION 15182 ELIGIBILITY**

CEQA Eligibility Criteria	Eligible?/Notes for Proposed Project
<p>15182 (b) Eligibility. A residential or mixed-use project, or a project with a floor area ratio of at least 0.75 on commercially-zoned property, including any required subdivision or zoning approvals, is exempt if the project satisfies the following criteria: (CEQA Guidelines Section 15182[b])</p>	<p>Yes. The Project is a mixed-use residential project, as described in the Project Description, above (Section 4).</p>
<p>(A) It is located within a transit priority area as defined in Public Resources Code Section 21099(a)(7).</p>	<p>Yes. 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 morning and afternoon peak commute periods. As described in Section 5.14, <i>Transportation and Circulation</i>, the Project would be located about 0.1 mile from the West Oakland Bay Area Rapid Transit (BART) Station, which is a major transit stop.</p>
<p>(B) It is consistent with a specific plan for which an environmental impact report was certified.</p>	<p>Yes. See Attachment D below. As determined by the City of Oakland Bureau of Planning, the Project is permitted in the zoning district in which it is located, and is consistent with the bulk, density, and land uses envisioned in the WOSP Area.</p>

CEQA Eligibility Criteria		Eligible?/Notes for Proposed Project
15182 (b) (cont.)	(C) It is 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 for which the State Air Resources Board has accepted the determination that the sustainable communities strategy or the alternative planning strategy would achieve the applicable greenhouse gas emissions reduction targets.	Yes. The adopted Plan Bay Area (2021) serves as the Sustainable Communities' Strategy for the Bay Area, per Senate Bill 375. As described in Section 5.14, the Project is located within the West Oakland Priority Development Area (PDA) as defined by Plan Bay Area. A core strategy of Plan Bay Area is focused growth within PDAs which are generally areas served by public transit and near existing job centers and are locally identified for housing and job growth. The Project site is within the WOSP Area, an area the City has identified for housing, commercial, and office redevelopment. The Project would support many of Plan Bay Area's goals and strategies, such as building affordable housing and reducing GHG by locating development near transit. As such, the Project is consistent with the region's Sustainable Communities Strategy. As described in Section 5.7, <i>Greenhouse Gas and Climate Change</i> , 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 in that it has committed to all applicable GHG emissions reductions strategies and would include a number of sustainability design features.
15182 (c)	Eligibility. Where a public agency has prepared an EIR on a specific plan after January 1, 1980, a residential project undertaken pursuant to and in conformity to that specific plan is exempt from CEQA if the project meets the requirements of this section. Residential projects covered by this section include but are not limited to land subdivisions, zoning changes, and residential planned unit developments.	Yes. The WOSP EIR was certified by the City Council on July 15 2014. See Section 3, <i>Background</i> , above.

The information presented in this environmental review document and attachments supports that the Project is within the scope of the project described in the WOSP EIR and meets all eligibility criteria under CEQA Guidelines Section 15182(b) and (c), including the conclusion that none of the events in CEQA Guidelines Section 15162 have occurred with respect to the Project, as documented by Section 5, *CEQA Checklist*. As such, the Project satisfies the requirements of CEQA under CEQA Guidelines Section 15182 and no supplemental environmental review is required.

ATTACHMENT D

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,

- (1) 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.
- (2) 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 Project site is within the boundaries of the WOSP Area's S-15W (Transit Oriented Development Commercial Zone). The Transit-Oriented Development (S-15) Zones are intended to create, preserve and enhance areas devoted primarily to serve multiple nodes of transportation and to feature high-density residential, commercial, and mixed-use developments to encourage a balance of pedestrian-oriented activities, transit opportunities, and concentrated development; and encourage a safe and pleasant pedestrian environment near transit stations by allowing a mixture of Residential, Civic, Commercial, and Light Industrial Activities, allowing for amenities such as benches, kiosks, lighting, and outdoor cafes; and by limiting conflicts between vehicles and pedestrians, and is typically appropriate around transit centers such as BART stations, AC Transit centers, and other transportation nodes. The Project would develop an eight-story mixed-use residential building with approximately 289 residential units and 2,999 square feet of ground floor retail space on a parcel adjacent to the West Oakland BART station, consistent with the intent of the S-15W zoning classification.
- The Project is located within the 160-foot height area of the WOSP Plan, which allows a density of one dwelling unit per 225 square feet of lot area, one efficiency dwelling unit per 110 square feet of lot area, and a 5.0 maximum Floor Area Ratio (FAR) for non-residential uses. The Project is utilizing the State Affordable Housing Density Bonus and would provide 5 percent of the base units to very low-income households which allows for a 20 percent density bonus by right. The maximum height within 10 feet of the front property line is either the height limit on the subject lot (160 feet) or the height maximum for the height area of the parcel directly across the principal street or 7th Street (75 feet), whichever is less. However, the Project Applicant has requested a waiver of this regulation because it would result in the loss of units as part of the affordable housing density bonus project. Providing the required setback would result in the loss eight units on the 8th floor, precluding construction of all 289 units. Additionally, the Project Applicant is seeking a development waiver for the required open space. The Oakland density bonus regulations, Planning Code Chapter 17.107, are a component of Oakland's zoning regulations; therefore, a project that receives a density bonus and otherwise complies with the applicable zoning requirements is consistent with the density provided in the applicable zoning designation. Based on the above, the Project would be consistent with the land use regulations in the General Plan, Planning Code, and WOSP. Therefore, with the affordable housing density bonus, the Project would comply with the height, density, and non-residential FAR allowed under the Planning Code.
- The Project is consistent with the development density established by existing zoning and General Plan policies for the site, and there are no peculiar aspects that would increase the severity of any of the previously identified significant cumulative effects in the WOSP EIR.

Project-specific impacts peculiar to the project or site, or those not analyzed in a prior EIR.

The Project is consistent with the policies, land use designation, and development parameters in the WOSP and the Project's potential contribution to cumulatively significant effects has already been addressed in the WOSP EIR. Therefore, consistent with CEQA Guidelines Section 15183 which allows for streamlined environmental review, this document need only consider whether there are project-specific effects peculiar to the Project or its site by relying 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 WOSP EIR. The analysis of the Project in the CEQA Checklist 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 the WOSP EIR.

Specifically, the CEQA Checklist analysis includes the resource topics that the WOSP EIR determined could have significant unavoidable impacts:

- Air Quality
- Greenhouse Gas Emissions/Climate Change
- Transportation/Circulation

As demonstrated in Section 5, CEQA Checklist, the Project would not substantially increase the severity of the significant impacts identified in the WOSP EIR nor would it result in new significant impacts that were not identified in the EIR. Further, there have been no substantial changes in circumstances following certification of the WOSP EIR 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 WOSP EIR was certified that would cause more severe adverse impacts than discussed in the WOSP EIR. There have been no significant changes in the underlying development assumptions, nor in the applicability or feasibility of SCAs included in the WOSP EIR.

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.

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ATTACHMENT E

In-fill 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 E-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 WOSP EIR, or by uniformly applicable development policies (Standard Conditions of Approval or SCA) which mitigate such impacts. As the analysis in Section 5 demonstrates, the Project would not substantially increase the severity of the significant impacts identified in the WOSP EIR, nor would it result in new significant impacts that were not identified in the WOSP EIR. Further, there have been no substantial changes in circumstances following certification of the WOSP 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 E-1
PROJECT INFILL ELIGIBILITY**

CEQA Eligibility Criteria	Eligible?/Notes for Proposed Project
<p>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])</p>	<p>Yes. The Project site has been previously developed with commercial uses and surface parking lots, and adjoins existing urban uses, as described in the Project Description, above (Section 4).</p>
<p>2. Satisfy the performance Standards provided in Appendix M (CEQA Guidelines Section 15183.3[b][2]) as presented in 2a and 2b below:</p>	<p>—</p>
<p>2a. <i>Performance Standards Related to Project Design.</i> All projects must implement all of the following:</p>	<p>—</p>
<p>Renewable Energy. <i>Non-Residential Projects.</i> All nonresidential projects shall include onsite renewable power generation, such as solar photovoltaic, solar thermal, and wind power generation, or clean back-up power supplies, where feasible. <i>Residential Projects.</i> Residential projects are also encouraged to include such on site renewable power generation.</p>	<p>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.</p>
<p>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.</p>	<p>As discussed in Section 5.8, <i>Hazards and Hazardous Materials</i>, above, a preliminary review of the Project site on the California Department of Toxic Substances Control (DTSC's) EnviroStor database and the California State Water Resources Control Board (SWRCB's) GeoTracker database was conducted and revealed an open Voluntary Cleanup case with DTSC classifying the Project site as a "Cortese List" site.</p> <p>DTSC and the Project Applicant entered into a California Land Reuse and Revitalization Act (CLRRA) Agreement on October 7, 2021. Under CLRRA, the site is required to submit a Site Assessment Workplan and a Report of Findings, and if necessary, a Response Plan.</p> <p>Based on the nature of the observed contamination, metals, and TPHd in an isolated area on the Project site, contaminated soil is anticipated to be limited to the upper two to three feet of shallow soil. Preparation and submittal of a Response Plan for review and approval prior to commencement of redevelopment activities was recommended to address soil contamination. The Response Plan will include excavation and relocation or removal of impacted soil, followed by completion of a cover/cap for areas where residual impacts are left in place at the Project site. The Response Plan will include a Soil Management Plan including soil management techniques to be implemented by construction personnel to address an elevated cumulative noncancer hazard estimate as well as notifications with an action plan if unexpected contamination is encountered. The Response Plan will also include a Community Air Monitoring Plan (CAMP) to address fugitive dust monitoring that may be necessary to be protective of offsite receptors during the excavation portion of the redevelopment activities. The aforementioned Response Plan is estimated to be submitted to DTSC for approval in 2023.</p>

	CEQA Eligibility Criteria	Eligible?/Notes for Proposed Project
2. cont.		SCA HAZ-2 further requires the Project Applicant to submit to the City evidence of approval for any proposed remedial action, including the DTSC approved Response Plan, and required clearances by the applicable local, state, or federal regulatory agency (including in this case DTSC). As such, compliance with SCA HAZ-2 would ensure that the recommendations of the Site Assessment Workplan and Report of Findings, Response Plan (including the Soil Management Plan and CAMP), and requirements for remediation by the lead environmental regulatory agency (DTSC) are implemented.
	<p>Residential Units Near High-Volume Roadways and Stationary Sources.</p> <p>If a project includes residential units located within 500 feet, or other distance determined to be appropriate by the local agency or air district based on local conditions, of a high volume roadway or other significant sources of air pollution, the project shall comply with any policies and standards identified in the local general plan, specific plan, zoning code, or community risk reduction plan for the protection of public health from such sources of air pollution.</p> <p>If the local government has not adopted such plans or policies, the project shall include measures, such as enhanced air filtration and project design, that the lead agency finds, based on substantial evidence, will promote the protection of public health from sources of air pollution. Those measures may include, among others, the recommendations of the California Air Resources Board, air districts, and the California Air Pollution Control Officers Association.</p>	<p>Yes.</p> <p>As discussed in Section 5.3, <i>Air Quality</i>, above, the Project would not include any stationary source of TAC emissions and would not contribute to any potential cumulative health risks to sensitive receptors from existing and reasonably foreseeable future sources of TACs. The Project would result in a less-than-significant impact with respect to operational TAC emissions. The Project would not result in new significant impacts related to air quality that were not identified in the WOSP EIR.</p> <p>The Project site is within 1,000 feet of one permitted stationary source of TACs. This source along with background health risks from freeways, roadways, and rail were included in a screening analysis conducted in accordance with the BAAQMD CEQA Guidelines to determine if the Project exceeds the health risk screening criteria (see Section 5.3 above). The screening analysis shows that future residents of the Project would not be exposed to cumulative cancer risks exceeding 100 in one million, health risks to the Project receptors would be less than the City's cumulative thresholds and hence, less than significant.</p>
	2b. <i>Additional Performance Standards by Project Type.</i> In addition to implementing all the features described in 2a above, the project must meet eligibility requirements provided below by project type.	
	<p>Residential. A residential project must meet <u>one</u> of the following:</p> <p>A. <i>Projects achieving below average regional per capita vehicle miles traveled (VMT).</i> A residential project is eligible if it is located in a "low vehicle travel area" within the region;</p> <p>B. <i>Projects located within ½ mile of an Existing Major Transit Stop or High Quality Transit Corridor.</i> A residential project is eligible if it is located within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor; <u>or</u></p> <p>C. <i>Low - Income Housing.</i> A residential or mixed-use project consisting of 300 or fewer residential units all of which are affordable to low income households is eligible if the developer of the development project provides sufficient legal commitments to the lead agency to ensure the continued availability and use of the housing units for lower income households, as defined in Section 50079.5 of the Health and Safety Code, for a period of at least 30 years, at monthly housing costs, as determined pursuant to Section 50053 of the Health and Safety Code.</p>	<p>Yes.</p> <p>The Project is eligible under Sections (A) and (B).</p> <p>(A) As summarized in Section 5.14, <i>Transportation and Circulation, 2020 and 2040</i> estimated averages of daily VMT per capita in TAZ 255, the TAZ in which the Project is located, are less than the regional averages minus 15 percent.</p> <p>(B) The Project site is well-served by multiple transit providers. 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 morning and afternoon peak commute periods. As described in Section 5.14, <i>Transportation and Circulation</i>, the Project would be located about 0.1 mile from the West Oakland Bay Area Rapid Transit (BART) Station, which is a major transit stop.</p>

CEQA Eligibility Criteria	Eligible?/Notes for Proposed Project
<p>2. Commercial/Retail. A commercial/retail project must meet one of the following:</p> <p>A. <i>Regional Location.</i> A commercial project with no single-building floor-plate greater than 50,000 square feet is eligible if it locates in a “low vehicle travel area”; or</p> <p>B. <i>Proximity to Households.</i> A project with no single-building floor-plate greater than 50,000 square feet located within ½ mile of 1,800 households is eligible.</p>	<p>Not Applicable.</p> <p>According to Section IV (G) of CEQA Appendix M, for mixed-use projects “...the performance standards in this Section that apply to the predominant use shall govern the entire project.” Because the predominant use is residential, the requirements for commercial/retail projects do not apply.</p>
<p>Office Building. An office building project must meeting one of the following:</p> <p>A. <i>Regional Location.</i> Office buildings, both commercial and public, are eligible if they locate in a low vehicle travel area; or</p> <p>B. <i>Proximity to a Major Transit Stop.</i> Office buildings, both commercial and public, within ½ mile of an existing major transit stop, or ¼ mile of an existing stop along a high quality transit corridor, are eligible.</p>	<p>Not Applicable.</p>
<p>Schools.</p> <p>Elementary schools within 1 mile of 50 percent of the projected student population are eligible. Middle schools and high schools within 2 miles of 50 percent of the projected student population are eligible. Alternatively, any school within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor is eligible.</p> <p>Additionally, to be eligible, all schools shall provide parking and storage for bicycles and scooters, and shall comply with the requirements of Sections 17213, 17213.1, and 17213.2 of the California Education Code.</p>	<p>Not Applicable.</p>
<p>Transit.</p> <p>Transit stations, as defined in Section 15183.3(f)(1), are eligible.</p>	<p>Not Applicable.</p>
<p>Small Walkable Community Projects.</p> <p>Small walkable community projects, as defined in Section 15183.3, subdivision (f)(5), that implement the project features in 2a above are eligible.</p>	<p>Not Applicable.</p>
<p>3. Be consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, except as provided in CEQA Guidelines Sections 15183.3(b)(3)(A) or (b)(3)(B) below:</p>	<p>Yes (see explanation below table)</p>
<p>(b)(3)(A). Only where an infill project is proposed within the boundaries of a metropolitan planning organization for which a sustainable communities strategy or an alternative planning strategy will be, but is not yet in effect, a residential infill project must have a density of at least 20 units per acre, and a retail or commercial infill project must have a floor area ratio of at least 0.75; or</p>	
<p>3. cont. (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])</p>	

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 E-1 above)

The adopted Plan Bay Area (2021) 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 a PDA that includes all of the WOSP Area. A core strategy of Plan Bay Area is to focused growth within PDAs which are generally areas served by public transit and near existing job centers and are locally identified for housing and job growth. The Project site is within the WOSP Area, an area the City has identified for housing, commercial, and office redevelopment. The Project would support many of Plan Bay Area's goals and strategies, such as building affordable housing and reducing GHG emissions by locating development near transit. As such, the Project is consistent with the region's Sustainable Communities Strategy. The Project is consistent with the Oakland General Plan and the Planning Code, as discussed in Attachment D and noted below.

- The General Plan land use designation for the site is Community Commercial, which is intended to “create, maintain, and enhance areas with a wide range of commercial and institutional operations along the City’s major corridors and in shopping districts or centers.” Combined with the Project’s retail component on the ground floor, new Project residents would activate the area during both day and night and on weekdays and weekends and thereby enhance 7th Street as a commercial corridor in West Oakland.
- The Project site is within the boundaries of the WOSP Area’s S-15W (Transit Oriented Development Commercial Zone). The Transit-Oriented Development (S-15) Zones are intended to create, preserve and enhance areas devoted primarily to serve multiple nodes of transportation and to feature high-density residential, commercial, and mixed-use developments to encourage a balance of pedestrian-oriented activities, transit opportunities, and concentrated development; and encourage a safe and pleasant pedestrian environment near transit stations by allowing a mixture of Residential, Civic, Commercial, and Light Industrial Activities, allowing for amenities such as benches, kiosks, lighting, and outdoor cafes; and by limiting conflicts between vehicles and pedestrians, and is typically appropriate around transit centers such as BART stations, AC Transit centers, and other transportation nodes. The Project would develop an eight-story mixed-use residential building with approximately 289 residential units and 2,999 square feet of ground floor retail space on a parcel adjacent to the West Oakland BART station, consistent with the intent of the S-15W zoning classification.
- The Project is located within the 160-foot height area of the WOSP Plan, which allows a density of one dwelling unit per 225 square feet of lot are, 1 efficiency dwelling unit per 110 square feet of lot area, and a 5.0 maximum Floor Area Ratio (FAR) for non-residential uses. The Project is utilizing the State Affordable Housing Density Bonus and would provide 5 percent of the base units to very low-income households which allows for a 20 percent density bonus by right. The maximum height within 10 feet of the front property line is either the height limit on the subject lot (160 feet) or the height maximum for the height area of the parcel directly across the principal street or 7th Street (75 feet), whichever is less. However, the Project Applicant has requested a waiver of this regulation because it would result in the loss of units as part of the affordable housing density bonus project. Providing the required setback would result in the loss eight units on the 8th floor, precluding construction of all 289 units. Additionally, the Project Applicant is seeking a development waiver for the required open space. The Oakland density bonus regulations, Planning Code Chapter 17.107,

are a component of Oakland's zoning regulations; therefore, a project that receives a density bonus and otherwise complies with the applicable zoning requirements is consistent with the density provided in the applicable zoning designation. Based on the above, the Project would be consistent with the land use regulations in the General Plan, Planning Code, and WOSP. Therefore, with the affordable housing density bonus, the Project would comply with the height, density, and non-residential FAR allowed under the Planning Code.

Appendix A

Air Quality and Health Risk Assessment Supporting Information

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CALEEMOD EMISSIONS SUMMARY

CONSTRUCTION EMISSIONS - Criteria Air Pollutants - Unmitigated

Year	Number of Workdays	Tons per year				Average Pounds per day			
		ROG	NOx	Ex PM-10	Ex PM-2.5	ROG	NOx	Ex PM-10	Ex PM-2.5
2024	175	0.16	1.19	0.044	0.042	1.8	13.6	0.50	0.48
2025	261	0.24	1.59	0.053	0.051	1.8	12.2	0.41	0.39
2026	72	0.08	0.55	0.019	0.018	2.3	15.3	0.52	0.50
Project Total	508	0.48	3.33	0.12	0.11	1.9	13.1	0.46	0.44
BAAQMD THRESHOLDS						54	54	82	54

CONSTRUCTION EMISSIONS - Criteria Air Pollutants - Mitigated Tier 4

Year	Number of Workdays	Tons per year				Average Pounds per day			
		ROG	NOx	Ex PM-10	Ex PM-2.5	ROG	NOx	Ex PM-10	Ex PM-2.5
2024	175	0.06	0.41	0.004	0.004	0.7	4.7	0.05	0.05
2025	261	0.11	0.71	0.006	0.006	0.8	5.5	0.05	0.05
2026	72	0.03	0.24	0.002	0.002	1.0	6.6	0.06	0.06
Project Total	508	0.20	1.36	0.01	0.01	0.8	5.4	0.05	0.05
BAAQMD THRESHOLDS						54	54	82	54

OPERATIONAL EMISSIONS - Criteria Air Pollutants

Source	Tons per year				Pounds per day			
	ROG	NOx	Total PM-10	Total PM-2.5	ROG	NOx	Total PM-10	Total PM-2.5
Proposed Uses								
Area	1.1748	0.0247	0.0119	0.0119	6.4	0.1	0.07	0.07
Energy	0.0000	0.0000	0.0000	0.0000	0.0	0.0	0.0	0.0
Mobile	0.5706	0.7130	1.3055	0.3545	3.1	3.9	7.2	1.9
TOTAL	1.75	0.74	1.32	0.37	9.6	4.0	7.2	2.0

533 Kirkham Street Addendum - Alameda County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

**533 Kirkham Street Addendum
Alameda County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	23.00	Space	0.03	9,200.00	0
Apartments Mid Rise	289.00	Dwelling Unit	0.98	237,857.00	827
Strip Mall	1.00	1000sqft	0.01	2,999.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2026
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	CH4 Intensity (lb/MWhr)	0.033	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project Specific Information, Refer to RFI

Construction Phase - Project Specific Construction Schedule

Demolition -

Grading - Project Specific Info, updated 11/3/23

Woodstoves - Project Specific Info

Energy Use - Project Specific Information, Zero out NG

Construction Off-road Equipment Mitigation - Project Specific Information: Tier 4 Final

Trips and VMT -

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
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	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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
tblConstructionPhase	NumDays	200.00	470.00
tblConstructionPhase	NumDays	20.00	11.00
tblConstructionPhase	NumDays	4.00	31.00
tblConstructionPhase	NumDays	10.00	8.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstructionPhase	NumDays	2.00	12.00
tblEnergyUse	NT24NG	3,155.00	0.00
tblEnergyUse	T24NG	5,226.68	0.00
tblEnergyUse	T24NG	2.34	0.00
tblFireplaces	FireplaceDayYear	11.14	0.00
tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	43.35	0.00
tblFireplaces	NumberNoFireplace	11.56	0.00
tblFireplaces	NumberWood	49.13	0.00
tblGrading	AcresOfGrading	31.00	1.17
tblGrading	AcresOfGrading	11.25	1.17
tblGrading	MaterialExported	0.00	3,400.00
tblLandUse	LandUseSquareFeet	289,000.00	237,857.00
tblLandUse	LandUseSquareFeet	1,000.00	2,999.00
tblLandUse	LotAcreage	0.21	0.03
tblLandUse	LotAcreage	7.61	0.98
tblLandUse	LotAcreage	0.02	0.01
tblWoodstoves	NumberCatalytic	5.78	0.00
tblWoodstoves	NumberNoncatalytic	5.78	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2024	0.1564	1.1908	1.3237	3.3600e-003	0.2775	0.0442	0.3216	0.1063	0.0419	0.1482	0.0000	296.3244	296.3244	0.0366	0.0110	300.5029
2025	0.2407	1.5878	2.2183	5.4600e-003	0.2481	0.0534	0.3015	0.0667	0.0515	0.1181	0.0000	477.6277	477.6277	0.0440	0.0163	483.5798
2026	0.0814	0.5493	0.7652	1.8500e-003	0.0831	0.0188	0.1019	0.0223	0.0181	0.0404	0.0000	162.0708	162.0708	0.0161	5.2800e-003	164.0469
Maximum	0.2407	1.5878	2.2183	5.4600e-003	0.2775	0.0534	0.3216	0.1063	0.0515	0.1482	0.0000	477.6277	477.6277	0.0440	0.0163	483.5798

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					
2024	0.0597	0.4098	1.4140	3.3600e-003	0.1930	4.1800e-003	0.1972	0.0662	4.1000e-003	0.0703	0.0000	296.3242	296.3242	0.0366	0.0110	300.5027
2025	0.1061	0.7134	2.3077	5.4600e-003	0.2481	6.1400e-003	0.2542	0.0667	6.0100e-003	0.0727	0.0000	477.6274	477.6274	0.0440	0.0163	483.5795
2026	0.0349	0.2392	0.7992	1.8500e-003	0.0831	2.1100e-003	0.0852	0.0223	2.0700e-003	0.0244	0.0000	162.0707	162.0707	0.0161	5.2800e-003	164.0468
Maximum	0.1061	0.7134	2.3077	5.4600e-003	0.2481	6.1400e-003	0.2542	0.0667	6.0100e-003	0.0727	0.0000	477.6274	477.6274	0.0440	0.0163	483.5795

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	58.07	59.06	-4.96	0.00	13.88	89.31	25.98	20.55	89.07	45.45	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	5-1-2024	7-31-2024	0.5319	0.1174
2	8-1-2024	10-31-2024	0.4870	0.2084
3	11-1-2024	1-31-2025	0.4815	0.2112
4	2-1-2025	4-30-2025	0.4469	0.2011
5	5-1-2025	7-31-2025	0.4585	0.2044
6	8-1-2025	10-31-2025	0.4602	0.2062
7	11-1-2025	1-31-2026	0.4630	0.2089
8	2-1-2026	4-30-2026	0.4661	0.2023
9	5-1-2026	7-31-2026	0.0050	0.0022
		Highest	0.5319	0.2112

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1748	0.0247	2.1440	1.1000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	3.5057	3.5057	3.3600e-003	0.0000	3.5896
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	110.7378	110.7378	0.0179	2.1700e-003	111.8328
Mobile	0.5706	0.7130	5.2995	0.0116	1.2969	8.6500e-003	1.3055	0.3465	8.0700e-003	0.3545	0.0000	1,072.3969	1,072.3969	0.0672	0.0562	1,090.8204
Waste						0.0000	0.0000		0.0000	0.0000	27.1988	0.0000	27.1988	1.6074	0.0000	67.3838
Water						0.0000	0.0000		0.0000	0.0000	5.9972	13.3229	19.3201	0.6181	0.0148	39.1854
Total	1.7454	0.7377	7.4435	0.0117	1.2969	0.0206	1.3174	0.3465	0.0200	0.3664	33.1960	1,199.9632	1,233.1592	2.3140	0.0732	1,312.8120

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	1.1748	0.0247	2.1440	1.1000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	3.5057	3.5057	3.3600e-003	0.0000	3.5896
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	110.7378	110.7378	0.0179	2.1700e-003	111.8328
Mobile	0.5706	0.7130	5.2995	0.0116	1.2969	8.6500e-003	1.3055	0.3465	8.0700e-003	0.3545	0.0000	1,072.3969	1,072.3969	0.0672	0.0562	1,090.8204
Waste						0.0000	0.0000		0.0000	0.0000	27.1988	0.0000	27.1988	1.6074	0.0000	67.3838
Water						0.0000	0.0000		0.0000	0.0000	5.9972	13.3229	19.3201	0.6181	0.0148	39.1854
Total	1.7454	0.7377	7.4435	0.0117	1.2969	0.0206	1.3174	0.3465	0.0200	0.3664	33.1960	1,199.9632	1,233.1592	2.3140	0.0732	1,312.8120

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

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	5/1/2024	5/15/2024	5	11	
2	Site Preparation	Site Preparation	5/16/2024	5/31/2024	5	12	
3	Grading	Grading	6/1/2024	7/15/2024	5	31	

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Building Construction	Building Construction	7/15/2024	5/1/2026	5	470
5	Paving	Paving	4/1/2026	4/10/2026	5	8

Acres of Grading (Site Preparation Phase): 1.17

Acres of Grading (Grading Phase): 1.17

Acres of Paving: 0.03

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	252.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	425.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	213.00	33.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	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 - 2024

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					0.0272	0.0000	0.0272	4.1200e-003	0.0000	4.1200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9200e-003	0.0764	0.0742	1.3000e-004		3.4700e-003	3.4700e-003		3.2400e-003	3.2400e-003	0.0000	11.6004	11.6004	2.9400e-003	0.0000	11.6738
Total	7.9200e-003	0.0764	0.0742	1.3000e-004	0.0272	3.4700e-003	0.0307	4.1200e-003	3.2400e-003	7.3600e-003	0.0000	11.6004	11.6004	2.9400e-003	0.0000	11.6738

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2024

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	0.0166	3.7700e-003	7.0000e-005	2.1400e-003	1.4000e-004	2.2800e-003	5.9000e-004	1.4000e-004	7.2000e-004	0.0000	7.2344	7.2344	1.6000e-004	1.1400e-003	7.5789
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.1000e-004	1.4800e-003	0.0000	5.7000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4260	0.4260	1.0000e-005	1.0000e-005	0.4297
Total	4.3000e-004	0.0167	5.2500e-003	7.0000e-005	2.7100e-003	1.4000e-004	2.8500e-003	7.4000e-004	1.4000e-004	8.7000e-004	0.0000	7.6603	7.6603	1.7000e-004	1.1500e-003	8.0086

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					0.0123	0.0000	0.0123	1.8600e-003	0.0000	1.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5500e-003	6.7000e-003	0.0810	1.3000e-004		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	11.6003	11.6003	2.9400e-003	0.0000	11.6737
Total	1.5500e-003	6.7000e-003	0.0810	1.3000e-004	0.0123	2.1000e-004	0.0125	1.8600e-003	2.1000e-004	2.0700e-003	0.0000	11.6003	11.6003	2.9400e-003	0.0000	11.6737

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Demolition - 2024

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	0.0166	3.7700e-003	7.0000e-005	2.1400e-003	1.4000e-004	2.2800e-003	5.9000e-004	1.4000e-004	7.2000e-004	0.0000	7.2344	7.2344	1.6000e-004	1.1400e-003	7.5789
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.1000e-004	1.4800e-003	0.0000	5.7000e-004	0.0000	5.7000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4260	0.4260	1.0000e-005	1.0000e-005	0.4297
Total	4.3000e-004	0.0167	5.2500e-003	7.0000e-005	2.7100e-003	1.4000e-004	2.8500e-003	7.4000e-004	1.4000e-004	8.7000e-004	0.0000	7.6603	7.6603	1.7000e-004	1.1500e-003	8.0086

3.3 Site Preparation - 2024

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					0.0324	0.0000	0.0324	0.0175	0.0000	0.0175	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.6400e-003	0.0710	0.0398	1.0000e-004		2.8900e-003	2.8900e-003		2.6600e-003	2.6600e-003	0.0000	9.0676	9.0676	2.9300e-003	0.0000	9.1409
Total	6.6400e-003	0.0710	0.0398	1.0000e-004	0.0324	2.8900e-003	0.0353	0.0175	2.6600e-003	0.0201	0.0000	9.0676	9.0676	2.9300e-003	0.0000	9.1409

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.4000e-004	0.0281	6.3600e-003	1.2000e-004	3.6000e-003	2.4000e-004	3.8400e-003	9.9000e-004	2.3000e-004	1.2200e-003	0.0000	12.2008	12.2008	2.6000e-004	1.9300e-003	12.7819
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	8.0000e-005	1.0000e-003	0.0000	3.8000e-004	0.0000	3.8000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2860	0.2860	1.0000e-005	1.0000e-005	0.2885
Total	5.6000e-004	0.0281	7.3600e-003	1.2000e-004	3.9800e-003	2.4000e-004	4.2200e-003	1.0900e-003	2.3000e-004	1.3200e-003	0.0000	12.4868	12.4868	2.7000e-004	1.9400e-003	13.0704

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					0.0146	0.0000	0.0146	7.8600e-003	0.0000	7.8600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2600e-003	5.4800e-003	0.0520	1.0000e-004		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	9.0676	9.0676	2.9300e-003	0.0000	9.1409
Total	1.2600e-003	5.4800e-003	0.0520	1.0000e-004	0.0146	1.7000e-004	0.0148	7.8600e-003	1.7000e-004	8.0300e-003	0.0000	9.0676	9.0676	2.9300e-003	0.0000	9.1409

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.4000e-004	0.0281	6.3600e-003	1.2000e-004	3.6000e-003	2.4000e-004	3.8400e-003	9.9000e-004	2.3000e-004	1.2200e-003	0.0000	12.2008	12.2008	2.6000e-004	1.9300e-003	12.7819
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	8.0000e-005	1.0000e-003	0.0000	3.8000e-004	0.0000	3.8000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.2860	0.2860	1.0000e-005	1.0000e-005	0.2885
Total	5.6000e-004	0.0281	7.3600e-003	1.2000e-004	3.9800e-003	2.4000e-004	4.2200e-003	1.0900e-003	2.3000e-004	1.3200e-003	0.0000	12.4868	12.4868	2.7000e-004	1.9400e-003	13.0704

3.4 Grading - 2024

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					0.0940	0.0000	0.0940	0.0514	0.0000	0.0514	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0202	0.2142	0.1349	3.2000e-004		8.8700e-003	8.8700e-003		8.1600e-003	8.1600e-003	0.0000	28.0606	28.0606	9.0800e-003	0.0000	28.2875
Total	0.0202	0.2142	0.1349	3.2000e-004	0.0940	8.8700e-003	0.1028	0.0514	8.1600e-003	0.0595	0.0000	28.0606	28.0606	9.0800e-003	0.0000	28.2875

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.5000e-004	3.2100e-003	1.0000e-005	1.2300e-003	1.0000e-005	1.2300e-003	3.3000e-004	1.0000e-005	3.3000e-004	0.0000	0.9234	0.9234	3.0000e-005	2.0000e-005	0.9315
Total	3.8000e-004	2.5000e-004	3.2100e-003	1.0000e-005	1.2300e-003	1.0000e-005	1.2300e-003	3.3000e-004	1.0000e-005	3.3000e-004	0.0000	0.9234	0.9234	3.0000e-005	2.0000e-005	0.9315

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					0.0423	0.0000	0.0423	0.0231	0.0000	0.0231	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9100e-003	0.0169	0.1691	3.2000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	28.0606	28.0606	9.0800e-003	0.0000	28.2874
Total	3.9100e-003	0.0169	0.1691	3.2000e-004	0.0423	5.2000e-004	0.0428	0.0231	5.2000e-004	0.0236	0.0000	28.0606	28.0606	9.0800e-003	0.0000	28.2874

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.5000e-004	3.2100e-003	1.0000e-005	1.2300e-003	1.0000e-005	1.2300e-003	3.3000e-004	1.0000e-005	3.3000e-004	0.0000	0.9234	0.9234	3.0000e-005	2.0000e-005	0.9315
Total	3.8000e-004	2.5000e-004	3.2100e-003	1.0000e-005	1.2300e-003	1.0000e-005	1.2300e-003	3.3000e-004	1.0000e-005	3.3000e-004	0.0000	0.9234	0.9234	3.0000e-005	2.0000e-005	0.9315

3.5 Building Construction - 2024

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	0.0866	0.6749	0.7636	1.3500e-003		0.0275	0.0275		0.0265	0.0265	0.0000	110.7829	110.7829	0.0185	0.0000	111.2441
Total	0.0866	0.6749	0.7636	1.3500e-003		0.0275	0.0275		0.0265	0.0265	0.0000	110.7829	110.7829	0.0185	0.0000	111.2441

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3.5 Building Construction - 2024

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	1.9900e-003	0.0884	0.0261	4.0000e-004	0.0132	5.4000e-004	0.0138	3.8300e-003	5.1000e-004	4.3400e-003	0.0000	38.3393	38.3393	5.3000e-004	5.7400e-003	40.0643
Worker	0.0317	0.0208	0.2694	8.4000e-004	0.1027	5.1000e-004	0.1032	0.0273	4.7000e-004	0.0278	0.0000	77.4033	77.4033	2.1600e-003	2.1000e-003	78.0819
Total	0.0337	0.1092	0.2955	1.2400e-003	0.1160	1.0500e-003	0.1170	0.0312	9.8000e-004	0.0321	0.0000	115.7426	115.7426	2.6900e-003	7.8400e-003	118.1462

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0179	0.2264	0.8006	1.3500e-003		1.8500e-003	1.8500e-003		1.8500e-003	1.8500e-003	0.0000	110.7827	110.7827	0.0185	0.0000	111.2440
Total	0.0179	0.2264	0.8006	1.3500e-003		1.8500e-003	1.8500e-003		1.8500e-003	1.8500e-003	0.0000	110.7827	110.7827	0.0185	0.0000	111.2440

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3.5 Building Construction - 2024

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	1.9900e-003	0.0884	0.0261	4.0000e-004	0.0132	5.4000e-004	0.0138	3.8300e-003	5.1000e-004	4.3400e-003	0.0000	38.3393	38.3393	5.3000e-004	5.7400e-003	40.0643
Worker	0.0317	0.0208	0.2694	8.4000e-004	0.1027	5.1000e-004	0.1032	0.0273	4.7000e-004	0.0278	0.0000	77.4033	77.4033	2.1600e-003	2.1000e-003	78.0819
Total	0.0337	0.1092	0.2955	1.2400e-003	0.1160	1.0500e-003	0.1170	0.0312	9.8000e-004	0.0321	0.0000	115.7426	115.7426	2.6900e-003	7.8400e-003	118.1462

3.5 Building Construction - 2025

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	0.1729	1.3589	1.6233	2.8800e-003		0.0512	0.0512		0.0494	0.0494	0.0000	237.0300	237.0300	0.0387	0.0000	237.9975
Total	0.1729	1.3589	1.6233	2.8800e-003		0.0512	0.0512		0.0494	0.0494	0.0000	237.0300	237.0300	0.0387	0.0000	237.9975

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3.5 Building Construction - 2025

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	4.1600e-003	0.1889	0.0550	8.3000e-004	0.0283	1.1500e-003	0.0294	8.1800e-003	1.1000e-003	9.2800e-003	0.0000	80.5595	80.5595	1.1300e-003	0.0121	84.1861
Worker	0.0637	0.0401	0.5400	1.7500e-003	0.2198	1.0400e-003	0.2208	0.0585	9.5000e-004	0.0594	0.0000	160.0381	160.0381	4.2100e-003	4.2000e-003	161.3961
Total	0.0679	0.2289	0.5950	2.5800e-003	0.2481	2.1900e-003	0.2503	0.0666	2.0500e-003	0.0687	0.0000	240.5976	240.5976	5.3400e-003	0.0163	245.5823

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0382	0.4844	1.7127	2.8800e-003		3.9500e-003	3.9500e-003		3.9500e-003	3.9500e-003	0.0000	237.0298	237.0298	0.0387	0.0000	237.9973
Total	0.0382	0.4844	1.7127	2.8800e-003		3.9500e-003	3.9500e-003		3.9500e-003	3.9500e-003	0.0000	237.0298	237.0298	0.0387	0.0000	237.9973

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3.5 Building Construction - 2025

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	4.1600e-003	0.1889	0.0550	8.3000e-004	0.0283	1.1500e-003	0.0294	8.1800e-003	1.1000e-003	9.2800e-003	0.0000	80.5595	80.5595	1.1300e-003	0.0121	84.1861
Worker	0.0637	0.0401	0.5400	1.7500e-003	0.2198	1.0400e-003	0.2208	0.0585	9.5000e-004	0.0594	0.0000	160.0381	160.0381	4.2100e-003	4.2000e-003	161.3961
Total	0.0679	0.2289	0.5950	2.5800e-003	0.2481	2.1900e-003	0.2503	0.0666	2.0500e-003	0.0687	0.0000	240.5976	240.5976	5.3400e-003	0.0163	245.5823

3.5 Building Construction - 2026

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	0.0576	0.4530	0.5411	9.6000e-004		0.0171	0.0171		0.0165	0.0165	0.0000	79.0100	79.0100	0.0129	0.0000	79.3325
Total	0.0576	0.4530	0.5411	9.6000e-004		0.0171	0.0171		0.0165	0.0165	0.0000	79.0100	79.0100	0.0129	0.0000	79.3325

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2026

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	1.3600e-003	0.0628	0.0181	2.7000e-004	9.4300e-003	3.8000e-004	9.8100e-003	2.7300e-003	3.6000e-004	3.0900e-003	0.0000	26.3608	26.3608	3.8000e-004	3.9500e-003	27.5479
Worker	0.0200	0.0122	0.1699	5.6000e-004	0.0733	3.3000e-004	0.0736	0.0195	3.0000e-004	0.0198	0.0000	51.7005	51.7005	1.2800e-003	1.3200e-003	52.1272
Total	0.0214	0.0749	0.1880	8.3000e-004	0.0827	7.1000e-004	0.0834	0.0222	6.6000e-004	0.0229	0.0000	78.0612	78.0612	1.6600e-003	5.2700e-003	79.6751

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0128	0.1615	0.5709	9.6000e-004		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	79.0099	79.0099	0.0129	0.0000	79.3324
Total	0.0128	0.1615	0.5709	9.6000e-004		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	79.0099	79.0099	0.0129	0.0000	79.3324

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Building Construction - 2026

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	1.3600e-003	0.0628	0.0181	2.7000e-004	9.4300e-003	3.8000e-004	9.8100e-003	2.7300e-003	3.6000e-004	3.0900e-003	0.0000	26.3608	26.3608	3.8000e-004	3.9500e-003	27.5479
Worker	0.0200	0.0122	0.1699	5.6000e-004	0.0733	3.3000e-004	0.0736	0.0195	3.0000e-004	0.0198	0.0000	51.7005	51.7005	1.2800e-003	1.3200e-003	52.1272
Total	0.0214	0.0749	0.1880	8.3000e-004	0.0827	7.1000e-004	0.0834	0.0222	6.6000e-004	0.0229	0.0000	78.0612	78.0612	1.6600e-003	5.2700e-003	79.6751

3.6 Paving - 2026

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	2.2900e-003	0.0213	0.0352	5.0000e-005		9.9000e-004	9.9000e-004		9.1000e-004	9.1000e-004	0.0000	4.7094	4.7094	1.4900e-003	0.0000	4.7467
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	2.2900e-003	0.0213	0.0352	5.0000e-005		9.9000e-004	9.9000e-004		9.1000e-004	9.1000e-004	0.0000	4.7094	4.7094	1.4900e-003	0.0000	4.7467

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	7.0000e-005	9.5000e-004	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.2902	0.2902	1.0000e-005	1.0000e-005	0.2926
Total	1.1000e-004	7.0000e-005	9.5000e-004	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.2902	0.2902	1.0000e-005	1.0000e-005	0.2926

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	6.4000e-004	2.7700e-003	0.0394	5.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	4.7094	4.7094	1.4900e-003	0.0000	4.7467
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.4000e-004	2.7700e-003	0.0394	5.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	4.7094	4.7094	1.4900e-003	0.0000	4.7467

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Paving - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	7.0000e-005	9.5000e-004	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.2902	0.2902	1.0000e-005	1.0000e-005	0.2926
Total	1.1000e-004	7.0000e-005	9.5000e-004	0.0000	4.1000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.2902	0.2902	1.0000e-005	1.0000e-005	0.2926

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust 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	0.5706	0.7130	5.2995	0.0116	1.2969	8.6500e-003	1.3055	0.3465	8.0700e-003	0.3545	0.0000	1,072.3969	1,072.3969	0.0672	0.0562	1,090.8204
Unmitigated	0.5706	0.7130	5.2995	0.0116	1.2969	8.6500e-003	1.3055	0.3465	8.0700e-003	0.3545	0.0000	1,072.3969	1,072.3969	0.0672	0.0562	1,090.8204

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,572.16	1,418.99	1182.01	3,451,807	3,451,807
Enclosed Parking Structure	0.00	0.00	0.00		
Strip Mall	44.32	42.04	20.43	62,497	62,497
Total	1,616.48	1,461.03	1,202.44	3,514,304	3,514,304

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.571499	0.056472	0.178543	0.111785	0.020654	0.005249	0.014294	0.013034	0.000787	0.000550	0.024393	0.000348	0.002396
Enclosed Parking Structure	0.571499	0.056472	0.178543	0.111785	0.020654	0.005249	0.014294	0.013034	0.000787	0.000550	0.024393	0.000348	0.002396

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Strip Mall	0.571499	0.056472	0.178543	0.111785	0.020654	0.005249	0.014294	0.013034	0.000787	0.000550	0.024393	0.000348	0.002396
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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	110.7378	110.7378	0.0179	2.1700e-003	111.8328
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	110.7378	110.7378	0.0179	2.1700e-003	111.8328
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.1174e+006	103.3859	0.0167	2.0300e-003	104.4082
Enclosed Parking Structure	48300	4.4689	7.2000e-004	9.0000e-005	4.5131
Strip Mall	31159.6	2.8830	4.7000e-004	6.0000e-005	2.9115
Total		110.7378	0.0179	2.1800e-003	111.8328

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.1174e+006	103.3859	0.0167	2.0300e-003	104.4082
Enclosed Parking Structure	48300	4.4689	7.2000e-004	9.0000e-005	4.5131
Strip Mall	31159.6	2.8830	4.7000e-004	6.0000e-005	2.9115
Total		110.7378	0.0179	2.1800e-003	111.8328

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.1748	0.0247	2.1440	1.1000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	3.5057	3.5057	3.3600e-003	0.0000	3.5896
Unmitigated	1.1748	0.0247	2.1440	1.1000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	3.5057	3.5057	3.3600e-003	0.0000	3.5896

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	0.1692					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9413					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0644	0.0247	2.1440	1.1000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	3.5057	3.5057	3.3600e-003	0.0000	3.5896
Total	1.1748	0.0247	2.1440	1.1000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	3.5057	3.5057	3.3600e-003	0.0000	3.5896

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.1692					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9413					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0644	0.0247	2.1440	1.1000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	3.5057	3.5057	3.3600e-003	0.0000	3.5896
Total	1.1748	0.0247	2.1440	1.1000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	3.5057	3.5057	3.3600e-003	0.0000	3.5896

7.0 Water Detail

7.1 Mitigation Measures Water

PhaseNum	PhaseNam	PhaseType	PhaseStartDat	PhaseEndDate	NumDaysWeek	NumDays				
1	Demoliti	Demolition	2024/05/01	2024/05/15	5	11	5/1/2024	5/15/2024		14
2	Site Prepa	Site Preparati	2024/05/16	2024/05/31	5	12	5/16/2024	5/31/2024		15
3	Grading	Grading	2024/06/01	2024/07/15	5	31	6/1/2024	7/15/2024		44
4	Building Cr	Building Constr	2024/07/15	2026/05/01	5	470	7/15/2024	5/1/2026		655
5	Paving	Paving	2026/04/01	2026/04/10	5	8	4/1/2026	4/10/2026		9

Unmitigated			DPM				PM2.5			
			Off-Road	Hauling	Vendor	Worker	Off-Road	Hauling	Vendor	Worker
2024	5/1/2024	12/31/2024	0.04273	0.00021	0.00054		0.04056	0.00109	0.00434	0.02836
2025	1/1/2025	12/31/2025	0.0512	0	0.00115		0.0494	0	0.00928	0.05945
2026	1/1/2026	5/1/2026	0.01809	0	0.00038		0.01741	0	0.00309	0.01991
			23.93442623							

Unmitigated			DPM				PM2.5			
			Off-Road	Hauling	Vendor	Worker	Off-Road	Hauling	Vendor	Worker
2024	5/1/2024	12/31/2024	0.00275	0.00021	0.00054		0.00275	0.00109	0.00434	0.02836
2025	1/1/2025	12/31/2025	0.00395	0	0.00115		0.00395	0	0.00928	0.05945
2026	1/1/2026	5/1/2026	0.00141	0	0.00038		0.00141	0	0.00309	0.01991

* AERMOD (22112)													
* AERMET (18081)													
* MODELING OPTIONS USED													
* PLOT FILE OF ANNUAL VALUES AVERAGE ACROSS 5 YEARS FOR SOURCE GROUP													
* FOR A TOTAL OF 415 RECEPTORS.													
* FORMAT													
* X	* Y	* AVERAGE	* CONC	* ZELEV	* ZHILL	* ZFLAG	* AVE	* GRP	* NUM	* YRS	* NET	* ID	
562040	4184080	2.0876	3.12	3.12	1.5	ANNUAL	CSTN		5				
561980	4184160	2.33354	2.85	2.85	1.5	ANNUAL	CSTN		5				
562000	4184160	2.54862	2.9	2.9	1.5	ANNUAL	CSTN		5				
562020	4184160	2.78477	3.08	3.08	1.5	ANNUAL	CSTN		5				
562040	4184160	3.04395	3.04	3.04	1.5	ANNUAL	CSTN		5				
561960	4184180	2.24547	3.12	3.12	1.5	ANNUAL	CSTN		5				
561980	4184180	2.46845	3.05	3.05	1.5	ANNUAL	CSTN		5				
562000	4184180	2.72099	2.89	2.89	1.5	ANNUAL	CSTN		5				
562020	4184180	3.00234	3.23	3.23	1.5	ANNUAL	CSTN		5				
562040	4184180	3.3213	3.07	3.07	1.5	ANNUAL	CSTN		5				
561940	4184200	2.12334	3.09	3.09	1.5	ANNUAL	CSTN		5				
561960	4184200	2.34127	3.23	3.23	1.5	ANNUAL	CSTN		5				
561980	4184200	2.59264	3.15	3.15	1.5	ANNUAL	CSTN		5				
562000	4184200	2.88314	2.91	2.91	1.5	ANNUAL	CSTN		5				
562020	4184200	3.2144	3.16	3.16	1.5	ANNUAL	CSTN		5				
562040	4184200	3.59683	3.22	3.22	1.5	ANNUAL	CSTN		5				
561940	4184220	2.18512	3.18	3.18	1.5	ANNUAL	CSTN		5				
561960	4184220	2.42354	3.18	3.18	1.5	ANNUAL	CSTN		5				
561980	4184220	2.70213	3.04	3.04	1.5	ANNUAL	CSTN		5				
562000	4184220	3.02774	3.02	3.02	1.5	ANNUAL	CSTN		5				
562080	4184220	5.0085	3.82	3.82	1.5	ANNUAL	CSTN		5				
562100	4184220	5.73961	3.67	3.67	1.5	ANNUAL	CSTN		5				
561940	4184240	2.23209	3.39	3.39	1.5	ANNUAL	CSTN		5				
561960	4184240	2.48719	3.45	3.45	1.5	ANNUAL	CSTN		5				
561980	4184240	2.78871	3.4	3.4	1.5	ANNUAL	CSTN		5				
562000	4184240	3.14833	3.2	3.2	1.5	ANNUAL	CSTN		5				
562060	4184240	4.72297	3.36	3.36	1.5	ANNUAL	CSTN		5				
562520	4184240	16.06042	4.35	4.35	1.5	ANNUAL	CSTN		5				
561920	4184260	2.03731	3.15	3.15	1.5	ANNUAL	CSTN		5				
561940	4184260	2.26377	3.49	3.49	1.5	ANNUAL	CSTN		5				
561960	4184260	2.53154	3.68	3.68	1.5	ANNUAL	CSTN		5				
561980	4184260	2.85225	3.6	3.6	1.5	ANNUAL	CSTN		5				
562000	4184260	3.23973	3.36	3.36	1.5	ANNUAL	CSTN		5				
562020	4184260	3.71186	3.1	3.1	1.5	ANNUAL	CSTN		5				
562040	4184260	4.28693	3.39	3.39	1.5	ANNUAL	CSTN		5				
562460	4184260	25.19614	4.18	4.18	1.5	ANNUAL	CSTN		5				
562480	4184260	21.96916	4.49	4.49	1.5	ANNUAL	CSTN		5				
562500	4184260	19.26797	4.6	4.6	1.5	ANNUAL	CSTN		5				
562520	4184260	16.98998	4.73	4.73	1.5	ANNUAL	CSTN		5				
561920	4184280	2.04635	3.18	3.18	1.5	ANNUAL	CSTN		5				
561940	4184280	2.27869	3.59	3.59	1.5	ANNUAL	CSTN		5				
561960	4184280	2.55495	3.88	3.88	1.5	ANNUAL	CSTN		5				
561980	4184280	2.88845	3.88	3.88	1.5	ANNUAL	CSTN		5				
562000	4184280	3.29586	3.66	3.66	1.5	ANNUAL	CSTN		5				
562020	4184280	3.80077	3.19	3.19	1.5	ANNUAL	CSTN		5				
562460	4184280	27.33614	4.63	4.63	1.5	ANNUAL	CSTN		5				
562480	4184280	23.50545	4.82	4.82	1.5	ANNUAL	CSTN		5				
561920	4184300	2.04143	3.26	3.26	1.5	ANNUAL	CSTN		5				
561940	4184300	2.27655	3.62	3.62	1.5	ANNUAL	CSTN		5				
561960	4184300	2.55695	3.95	3.95	1.5	ANNUAL	CSTN		5				
561980	4184300	2.89754	3.95	3.95	1.5	ANNUAL	CSTN		5				
562000	4184300	3.31599	3.8	3.8	1.5	ANNUAL	CSTN		5				
562020	4184300	3.83929	3.39	3.39	1.5	ANNUAL	CSTN		5				
561920	4184320	2.02235	3.42	3.42	1.5	ANNUAL	CSTN		5				
561940	4184320	2.25772	3.48	3.48	1.5	ANNUAL	CSTN		5				

561960	4184320	2.53805	3.78	3.78	1.5 ANNUAL	CSTN	5
561980	4184320	2.88046	3.64	3.64	1.5 ANNUAL	CSTN	5
562000	4184320	3.30189	3.47	3.47	1.5 ANNUAL	CSTN	5
561920	4184340	1.99055	3.39	3.39	1.5 ANNUAL	CSTN	5
561940	4184340	2.22235	3.31	3.31	1.5 ANNUAL	CSTN	5
562540	4184340	16.78742	5.86	5.86	1.5 ANNUAL	CSTN	5
562560	4184340	14.78703	6.06	6.06	1.5 ANNUAL	CSTN	5
562580	4184340	13.13332	6.18	6.18	1.5 ANNUAL	CSTN	5
561920	4184360	1.94613	3.53	3.53	1.5 ANNUAL	CSTN	5
562500	4184360	21.30077	6.09	6.09	1.5 ANNUAL	CSTN	5
562520	4184360	18.54083	5.99	5.99	1.5 ANNUAL	CSTN	5
562540	4184360	16.22118	6.3	6.3	1.5 ANNUAL	CSTN	5
562560	4184360	14.35397	6.27	6.27	1.5 ANNUAL	CSTN	5
562580	4184360	12.78867	6.27	6.27	1.5 ANNUAL	CSTN	5
561920	4184380	1.88917	4.29	4.29	1.5 ANNUAL	CSTN	5
561940	4184380	2.10753	3.6	3.6	1.5 ANNUAL	CSTN	5
562400	4184380	44.08802	5.38	5.38	1.5 ANNUAL	CSTN	5
562440	4184380	30.65153	5.71	5.71	1.5 ANNUAL	CSTN	5
562460	4184380	26.18932	5.53	5.53	1.5 ANNUAL	CSTN	5
562480	4184380	22.49347	5.78	5.78	1.5 ANNUAL	CSTN	5
562500	4184380	19.47928	6.19	6.19	1.5 ANNUAL	CSTN	5
562520	4184380	17.11995	6.07	6.07	1.5 ANNUAL	CSTN	5
562540	4184380	15.13163	6.13	6.13	1.5 ANNUAL	CSTN	5
562560	4184380	13.47068	6.16	6.16	1.5 ANNUAL	CSTN	5
562580	4184380	12.0128	6.7	6.7	1.5 ANNUAL	CSTN	5
561920	4184400	1.82741	4.66	4.66	1.5 ANNUAL	CSTN	5
561940	4184400	2.03547	3.98	3.98	1.5 ANNUAL	CSTN	5
562320	4184400	62.3143	4.85	4.85	1.5 ANNUAL	CSTN	5
562380	4184400	38.97406	5.44	5.44	1.5 ANNUAL	CSTN	5
562400	4184400	33.23531	5.79	5.79	1.5 ANNUAL	CSTN	5
562420	4184400	28.69119	5.83	5.83	1.5 ANNUAL	CSTN	5
562440	4184400	24.98523	5.71	5.71	1.5 ANNUAL	CSTN	5
562460	4184400	21.79467	5.9	5.9	1.5 ANNUAL	CSTN	5
562480	4184400	19.16988	5.97	5.97	1.5 ANNUAL	CSTN	5
562500	4184400	16.95945	6.07	6.07	1.5 ANNUAL	CSTN	5
562520	4184400	15.10838	6.07	6.07	1.5 ANNUAL	CSTN	5
562540	4184400	13.50812	6.24	6.24	1.5 ANNUAL	CSTN	5
562560	4184400	12.15057	6.32	6.32	1.5 ANNUAL	CSTN	5
562580	4184400	10.95015	6.71	6.71	1.5 ANNUAL	CSTN	5
561920	4184420	1.76473	4.68	4.68	1.5 ANNUAL	CSTN	5
561940	4184420	1.9602	4.38	4.38	1.5 ANNUAL	CSTN	5
562240	4184420	34.28664	4.57	4.57	1.5 ANNUAL	CSTN	5
562260	4184420	37.90102	4.63	4.63	1.5 ANNUAL	CSTN	5
562280	4184420	39.2631	4.83	4.83	1.5 ANNUAL	CSTN	5
562300	4184420	38.53637	5	5	1.5 ANNUAL	CSTN	5
562320	4184420	36.09525	5.24	5.24	1.5 ANNUAL	CSTN	5
562380	4184420	26.71017	5.52	5.52	1.5 ANNUAL	CSTN	5
562400	4184420	23.91362	5.7	5.7	1.5 ANNUAL	CSTN	5
562420	4184420	21.38306	5.97	5.97	1.5 ANNUAL	CSTN	5
562440	4184420	19.20483	6.06	6.06	1.5 ANNUAL	CSTN	5
562460	4184420	17.26804	6.19	6.19	1.5 ANNUAL	CSTN	5
562480	4184420	15.56933	6.29	6.29	1.5 ANNUAL	CSTN	5
562500	4184420	14.09354	6.28	6.28	1.5 ANNUAL	CSTN	5
562520	4184420	12.70644	6.85	6.85	1.5 ANNUAL	CSTN	5
562540	4184420	11.61114	6.51	6.51	1.5 ANNUAL	CSTN	5
562560	4184420	10.58352	6.65	6.65	1.5 ANNUAL	CSTN	5
562580	4184420	9.6277	7.3	7.3	1.5 ANNUAL	CSTN	5
561940	4184440	1.88794	4.45	4.45	1.5 ANNUAL	CSTN	5
562180	4184440	14.18904	4.58	4.58	1.5 ANNUAL	CSTN	5
562200	4184440	17.16792	4.71	4.71	1.5 ANNUAL	CSTN	5
562220	4184440	19.97555	4.77	4.77	1.5 ANNUAL	CSTN	5
562240	4184440	22.21015	4.67	4.67	1.5 ANNUAL	CSTN	5
562260	4184440	23.57043	4.89	4.89	1.5 ANNUAL	CSTN	5

562280	4184440	23.9896	5.35	5.35	1.5 ANNUAL	CSTN	5
562300	4184440	23.71472	5.66	5.66	1.5 ANNUAL	CSTN	5
562320	4184440	22.80057	5.85	5.85	1.5 ANNUAL	CSTN	5
562400	4184440	17.10394	5.79	5.79	1.5 ANNUAL	CSTN	5
562420	4184440	15.74155	6.01	6.01	1.5 ANNUAL	CSTN	5
562440	4184440	14.45085	6.41	6.41	1.5 ANNUAL	CSTN	5
562460	4184440	13.34476	6.45	6.45	1.5 ANNUAL	CSTN	5
562480	4184440	12.31164	6.56	6.56	1.5 ANNUAL	CSTN	5
562500	4184440	11.40302	6.39	6.39	1.5 ANNUAL	CSTN	5
562520	4184440	10.48892	6.83	6.83	1.5 ANNUAL	CSTN	5
562540	4184440	9.70987	6.82	6.82	1.5 ANNUAL	CSTN	5
562560	4184440	8.99462	6.84	6.84	1.5 ANNUAL	CSTN	5
562100	4184460	5.54178	4.46	4.46	1.5 ANNUAL	CSTN	5
562120	4184460	6.63697	4.61	4.61	1.5 ANNUAL	CSTN	5
562140	4184460	7.94881	4.91	4.91	1.5 ANNUAL	CSTN	5
562160	4184460	9.44158	5.29	5.29	1.5 ANNUAL	CSTN	5
562180	4184460	11.09326	5.14	5.14	1.5 ANNUAL	CSTN	5
562200	4184460	12.74917	4.91	4.91	1.5 ANNUAL	CSTN	5
562220	4184460	14.12414	5.22	5.22	1.5 ANNUAL	CSTN	5
562240	4184460	15.04788	5.64	5.64	1.5 ANNUAL	CSTN	5
562260	4184460	15.76099	5.53	5.53	1.5 ANNUAL	CSTN	5
562280	4184460	15.92995	6.02	6.02	1.5 ANNUAL	CSTN	5
562300	4184460	15.95235	6.15	6.15	1.5 ANNUAL	CSTN	5
562320	4184460	15.66712	6.17	6.17	1.5 ANNUAL	CSTN	5
562340	4184460	15.06964	6.11	6.11	1.5 ANNUAL	CSTN	5
562400	4184460	12.54793	6.16	6.16	1.5 ANNUAL	CSTN	5
562420	4184460	11.77897	6.13	6.13	1.5 ANNUAL	CSTN	5
562440	4184460	10.99293	6.53	6.53	1.5 ANNUAL	CSTN	5
562460	4184460	10.33462	6.5	6.5	1.5 ANNUAL	CSTN	5
562480	4184460	9.71277	6.49	6.49	1.5 ANNUAL	CSTN	5
562500	4184460	9.12768	6.47	6.47	1.5 ANNUAL	CSTN	5
562520	4184460	8.56275	6.58	6.58	1.5 ANNUAL	CSTN	5
562540	4184460	8.01853	6.85	6.85	1.5 ANNUAL	CSTN	5
562560	4184460	7.51656	7.05	7.05	1.5 ANNUAL	CSTN	5
562020	4184480	2.80185	4.48	4.48	1.5 ANNUAL	CSTN	5
562040	4184480	3.2099	4.58	4.58	1.5 ANNUAL	CSTN	5
562060	4184480	3.70484	4.75	4.75	1.5 ANNUAL	CSTN	5
562080	4184480	4.31655	4.51	4.51	1.5 ANNUAL	CSTN	5
562100	4184480	5.02924	4.88	4.88	1.5 ANNUAL	CSTN	5
562120	4184480	5.8455	5.47	5.47	1.5 ANNUAL	CSTN	5
562140	4184480	6.7576	5.85	5.85	1.5 ANNUAL	CSTN	5
562160	4184480	7.72605	5.94	5.94	1.5 ANNUAL	CSTN	5
562180	4184480	8.71725	5.62	5.62	1.5 ANNUAL	CSTN	5
562200	4184480	9.71537	5.01	5.01	1.5 ANNUAL	CSTN	5
562220	4184480	10.51846	5.16	5.16	1.5 ANNUAL	CSTN	5
562240	4184480	10.95121	5.89	5.89	1.5 ANNUAL	CSTN	5
562260	4184480	11.2879	5.91	5.91	1.5 ANNUAL	CSTN	5
562280	4184480	11.42512	6.14	6.14	1.5 ANNUAL	CSTN	5
562300	4184480	11.51758	6.12	6.12	1.5 ANNUAL	CSTN	5
562320	4184480	11.42984	6.17	6.17	1.5 ANNUAL	CSTN	5
562340	4184480	11.1396	6.19	6.19	1.5 ANNUAL	CSTN	5
562400	4184480	9.62113	6.18	6.18	1.5 ANNUAL	CSTN	5
562420	4184480	9.09865	6.2	6.2	1.5 ANNUAL	CSTN	5
562440	4184480	8.61031	6.25	6.25	1.5 ANNUAL	CSTN	5
562460	4184480	8.15177	6.37	6.37	1.5 ANNUAL	CSTN	5
562480	4184480	7.72451	6.51	6.51	1.5 ANNUAL	CSTN	5
562500	4184480	7.33917	6.49	6.49	1.5 ANNUAL	CSTN	5
562520	4184480	6.95933	6.65	6.65	1.5 ANNUAL	CSTN	5
562540	4184480	6.57256	7.18	7.18	1.5 ANNUAL	CSTN	5
562560	4184480	6.2412	7.23	7.23	1.5 ANNUAL	CSTN	5
561960	4184500	1.88061	4.57	4.57	1.5 ANNUAL	CSTN	5
561980	4184500	2.10043	4.45	4.45	1.5 ANNUAL	CSTN	5
562000	4184500	2.35815	4.58	4.58	1.5 ANNUAL	CSTN	5

562020	4184500	2.6621	4.84	4.84	1.5 ANNUAL	CSTN	5
562040	4184500	3.02369	5.01	5.01	1.5 ANNUAL	CSTN	5
562060	4184500	3.45554	4.92	4.92	1.5 ANNUAL	CSTN	5
562080	4184500	3.95982	4.79	4.79	1.5 ANNUAL	CSTN	5
562100	4184500	4.51882	5.14	5.14	1.5 ANNUAL	CSTN	5
562120	4184500	5.12072	5.62	5.62	1.5 ANNUAL	CSTN	5
562140	4184500	5.74484	5.92	5.92	1.5 ANNUAL	CSTN	5
562160	4184500	6.36875	5.89	5.89	1.5 ANNUAL	CSTN	5
562180	4184500	6.98691	5.54	5.54	1.5 ANNUAL	CSTN	5
562200	4184500	7.59986	5.1	5.1	1.5 ANNUAL	CSTN	5
562220	4184500	8.10926	5.11	5.11	1.5 ANNUAL	CSTN	5
562240	4184500	8.36563	5.76	5.76	1.5 ANNUAL	CSTN	5
562260	4184500	8.5379	5.85	5.85	1.5 ANNUAL	CSTN	5
562280	4184500	8.58062	6.26	6.26	1.5 ANNUAL	CSTN	5
562300	4184500	8.66643	6.19	6.19	1.5 ANNUAL	CSTN	5
562320	4184500	8.6883	6.05	6.05	1.5 ANNUAL	CSTN	5
562340	4184500	8.58156	5.93	5.93	1.5 ANNUAL	CSTN	5
562360	4184500	8.3329	5.96	5.96	1.5 ANNUAL	CSTN	5
562380	4184500	7.99044	6.1	6.1	1.5 ANNUAL	CSTN	5
562400	4184500	7.61966	6.18	6.18	1.5 ANNUAL	CSTN	5
562420	4184500	7.23253	6.4	6.4	1.5 ANNUAL	CSTN	5
562440	4184500	6.86967	6.58	6.58	1.5 ANNUAL	CSTN	5
562460	4184500	6.54573	6.62	6.62	1.5 ANNUAL	CSTN	5
562480	4184500	6.25255	6.58	6.58	1.5 ANNUAL	CSTN	5
562500	4184500	5.98091	6.52	6.52	1.5 ANNUAL	CSTN	5
562520	4184500	5.72291	6.5	6.5	1.5 ANNUAL	CSTN	5
562540	4184500	5.44939	6.97	6.97	1.5 ANNUAL	CSTN	5
562560	4184500	5.20994	7.11	7.11	1.5 ANNUAL	CSTN	5
561960	4184520	1.80901	4.94	4.94	1.5 ANNUAL	CSTN	5
561980	4184520	2.0135	4.73	4.73	1.5 ANNUAL	CSTN	5
562000	4184520	2.24794	4.91	4.91	1.5 ANNUAL	CSTN	5
562020	4184520	2.51414	5.53	5.53	1.5 ANNUAL	CSTN	5
562040	4184520	2.83221	5.38	5.38	1.5 ANNUAL	CSTN	5
562060	4184520	3.18733	5.62	5.62	1.5 ANNUAL	CSTN	5
562080	4184520	3.59809	5.11	5.11	1.5 ANNUAL	CSTN	5
562100	4184520	4.02432	5.3	5.3	1.5 ANNUAL	CSTN	5
562120	4184520	4.45263	5.73	5.73	1.5 ANNUAL	CSTN	5
562140	4184520	4.87886	5.8	5.8	1.5 ANNUAL	CSTN	5
562160	4184520	5.28481	5.76	5.76	1.5 ANNUAL	CSTN	5
562180	4184520	5.67988	5.61	5.61	1.5 ANNUAL	CSTN	5
562200	4184520	6.07741	5.34	5.34	1.5 ANNUAL	CSTN	5
562220	4184520	6.41197	5.29	5.29	1.5 ANNUAL	CSTN	5
562240	4184520	6.5998	5.56	5.56	1.5 ANNUAL	CSTN	5
562260	4184520	6.6967	5.64	5.64	1.5 ANNUAL	CSTN	5
562280	4184520	6.73193	5.89	5.89	1.5 ANNUAL	CSTN	5
562300	4184520	6.79511	5.84	5.84	1.5 ANNUAL	CSTN	5
562320	4184520	6.81654	5.88	5.88	1.5 ANNUAL	CSTN	5
562340	4184520	6.7534	6.05	6.05	1.5 ANNUAL	CSTN	5
562360	4184520	6.60954	6.22	6.22	1.5 ANNUAL	CSTN	5
562380	4184520	6.39709	6.43	6.43	1.5 ANNUAL	CSTN	5
562400	4184520	6.17445	6.28	6.28	1.5 ANNUAL	CSTN	5
562420	4184520	6.89019	6.65	6.65	1.5 ANNUAL	CSTN	5
562440	4184520	5.63274	6.7	6.7	1.5 ANNUAL	CSTN	5
562460	4184520	5.39279	6.66	6.66	1.5 ANNUAL	CSTN	5
562480	4184520	5.15899	6.77	6.77	1.5 ANNUAL	CSTN	5
562500	4184520	4.95044	6.74	6.74	1.5 ANNUAL	CSTN	5
562520	4184520	4.76659	6.51	6.51	1.5 ANNUAL	CSTN	5
562540	4184520	4.56849	6.79	6.79	1.5 ANNUAL	CSTN	5
561980	4184540	1.92504	5	5	1.5 ANNUAL	CSTN	5
562000	4184540	2.13598	5.08	5.08	1.5 ANNUAL	CSTN	5
562020	4184540	2.36583	5.9	5.9	1.5 ANNUAL	CSTN	5
562040	4184540	2.63088	6.02	6.02	1.5 ANNUAL	CSTN	5
562060	4184540	2.92705	5.76	5.76	1.5 ANNUAL	CSTN	5

562080	4184540	3.24346	5.43	5.43	1.5 ANNUAL	CSTN	5
562100	4184540	3.56033	5.44	5.44	1.5 ANNUAL	CSTN	5
562120	4184540	3.857	5.91	5.91	1.5 ANNUAL	CSTN	5
562140	4184540	4.14939	5.79	5.79	1.5 ANNUAL	CSTN	5
562160	4184540	4.43034	5.57	5.57	1.5 ANNUAL	CSTN	5
562180	4184540	4.71113	5.34	5.34	1.5 ANNUAL	CSTN	5
562200	4184540	4.97984	5.31	5.31	1.5 ANNUAL	CSTN	5
562220	4184540	5.19842	5.39	5.39	1.5 ANNUAL	CSTN	5
562240	4184540	5.33566	5.38	5.38	1.5 ANNUAL	CSTN	5
562260	4184540	5.39322	5.42	5.42	1.5 ANNUAL	CSTN	5
562280	4184540	5.41922	5.56	5.56	1.5 ANNUAL	CSTN	5
562300	4184540	5.44047	5.84	5.84	1.5 ANNUAL	CSTN	5
562320	4184540	5.44519	6.21	6.21	1.5 ANNUAL	CSTN	5
562340	4184540	5.44664	6.1	6.1	1.5 ANNUAL	CSTN	5
562360	4184540	5.35837	6.45	6.45	1.5 ANNUAL	CSTN	5
562380	4184540	5.24306	6.48	6.48	1.5 ANNUAL	CSTN	5
562400	4184540	5.09497	6.42	6.42	1.5 ANNUAL	CSTN	5
562420	4184540	4.90085	6.71	6.71	1.5 ANNUAL	CSTN	5
562440	4184540	4.71818	6.65	6.65	1.5 ANNUAL	CSTN	5
562460	4184540	4.52847	6.72	6.72	1.5 ANNUAL	CSTN	5
562480	4184540	4.34662	6.79	6.79	1.5 ANNUAL	CSTN	5
562500	4184540	4.17399	6.9	6.9	1.5 ANNUAL	CSTN	5
562520	4184540	4.03253	6.56	6.56	1.5 ANNUAL	CSTN	5
562540	4184540	3.86951	6.97	6.97	1.5 ANNUAL	CSTN	5
561980	4184560	1.83323	5.3	5.3	1.5 ANNUAL	CSTN	5
562000	4184560	2.02186	5	5	1.5 ANNUAL	CSTN	5
562020	4184560	2.21973	5.69	5.69	1.5 ANNUAL	CSTN	5
562040	4184560	2.43692	5.97	5.97	1.5 ANNUAL	CSTN	5
562060	4184560	2.67158	5.75	5.75	1.5 ANNUAL	CSTN	5
562080	4184560	2.90974	5.56	5.56	1.5 ANNUAL	CSTN	5
562100	4184560	3.13858	5.59	5.59	1.5 ANNUAL	CSTN	5
562120	4184560	3.35372	5.61	5.61	1.5 ANNUAL	CSTN	5
562140	4184560	3.55755	5.49	5.49	1.5 ANNUAL	CSTN	5
562160	4184560	3.75179	5.5	5.5	1.5 ANNUAL	CSTN	5
562180	4184560	3.94914	5.51	5.51	1.5 ANNUAL	CSTN	5
562200	4184560	4.13899	5.58	5.58	1.5 ANNUAL	CSTN	5
562220	4184560	4.30075	5.44	5.44	1.5 ANNUAL	CSTN	5
562240	4184560	4.38589	5.49	5.49	1.5 ANNUAL	CSTN	5
562260	4184560	4.41587	5.56	5.56	1.5 ANNUAL	CSTN	5
562280	4184560	4.43092	5.67	5.67	1.5 ANNUAL	CSTN	5
562300	4184560	4.45326	5.85	5.85	1.5 ANNUAL	CSTN	5
562320	4184560	4.46417	6.24	6.24	1.5 ANNUAL	CSTN	5
562340	4184560	4.48023	6.15	6.15	1.5 ANNUAL	CSTN	5
562360	4184560	4.43134	6.54	6.54	1.5 ANNUAL	CSTN	5
562380	4184560	4.36513	6.56	6.56	1.5 ANNUAL	CSTN	5
562400	4184560	4.26334	6.65	6.65	1.5 ANNUAL	CSTN	5
562420	4184560	4.13713	6.77	6.77	1.5 ANNUAL	CSTN	5
562440	4184560	4.00251	6.77	6.77	1.5 ANNUAL	CSTN	5
562460	4184560	3.85175	7	7	1.5 ANNUAL	CSTN	5
562480	4184560	3.70824	7.09	7.09	1.5 ANNUAL	CSTN	5
562500	4184560	3.57619	7.02	7.02	1.5 ANNUAL	CSTN	5
562520	4184560	3.46016	6.69	6.69	1.5 ANNUAL	CSTN	5
562000	4184580	1.90219	5.09	5.09	1.5 ANNUAL	CSTN	5
562020	4184580	2.07141	5.32	5.32	1.5 ANNUAL	CSTN	5
562040	4184580	2.24884	5.42	5.42	1.5 ANNUAL	CSTN	5
562060	4184580	2.42907	5.42	5.42	1.5 ANNUAL	CSTN	5
562080	4184580	2.60355	5.51	5.51	1.5 ANNUAL	CSTN	5
562100	4184580	2.76704	5.62	5.62	1.5 ANNUAL	CSTN	5
562120	4184580	2.91802	5.7	5.7	1.5 ANNUAL	CSTN	5
562140	4184580	3.0574	5.89	5.89	1.5 ANNUAL	CSTN	5
562160	4184580	3.1994	5.94	5.94	1.5 ANNUAL	CSTN	5
562180	4184580	3.34565	6.01	6.01	1.5 ANNUAL	CSTN	5
562200	4184580	3.49054	5.93	5.93	1.5 ANNUAL	CSTN	5

562220	4184580	3.61761	5.47	5.47	1.5 ANNUAL	CSTN	5
562240	4184580	3.66872	5.61	5.61	1.5 ANNUAL	CSTN	5
562260	4184580	3.67848	5.8	5.8	1.5 ANNUAL	CSTN	5
562280	4184580	3.68793	5.86	5.86	1.5 ANNUAL	CSTN	5
562300	4184580	3.70746	5.98	5.98	1.5 ANNUAL	CSTN	5
562320	4184580	3.72719	6.23	6.23	1.5 ANNUAL	CSTN	5
562340	4184580	3.74159	6.33	6.33	1.5 ANNUAL	CSTN	5
562360	4184580	3.72282	6.6	6.6	1.5 ANNUAL	CSTN	5
562380	4184580	3.68568	6.63	6.63	1.5 ANNUAL	CSTN	5
562400	4184580	3.61579	6.83	6.83	1.5 ANNUAL	CSTN	5
562420	4184580	3.53749	6.74	6.74	1.5 ANNUAL	CSTN	5
562440	4184580	3.43303	6.95	6.95	1.5 ANNUAL	CSTN	5
562460	4184580	3.32377	7.06	7.06	1.5 ANNUAL	CSTN	5
562480	4184580	3.21362	7.09	7.09	1.5 ANNUAL	CSTN	5
562500	4184580	3.10365	7.13	7.13	1.5 ANNUAL	CSTN	5
562020	4184600	1.92049	5.19	5.19	1.5 ANNUAL	CSTN	5
562040	4184600	2.06022	5.36	5.36	1.5 ANNUAL	CSTN	5
562060	4184600	2.19559	5.58	5.58	1.5 ANNUAL	CSTN	5
562080	4184600	2.32252	5.8	5.8	1.5 ANNUAL	CSTN	5
562100	4184600	2.44207	5.76	5.76	1.5 ANNUAL	CSTN	5
562120	4184600	2.55223	5.78	5.78	1.5 ANNUAL	CSTN	5
562140	4184600	2.65455	6.06	6.06	1.5 ANNUAL	CSTN	5
562160	4184600	2.765	6.1	6.1	1.5 ANNUAL	CSTN	5
562180	4184600	2.8811	6.1	6.1	1.5 ANNUAL	CSTN	5
562200	4184600	2.98642	6.17	6.17	1.5 ANNUAL	CSTN	5
562220	4184600	3.08013	5.66	5.66	1.5 ANNUAL	CSTN	5
562240	4184600	3.11433	5.74	5.74	1.5 ANNUAL	CSTN	5
562260	4184600	3.12923	5.58	5.58	1.5 ANNUAL	CSTN	5
562280	4184600	3.12183	5.96	5.96	1.5 ANNUAL	CSTN	5
562300	4184600	3.1334	6.16	6.16	1.5 ANNUAL	CSTN	5
562320	4184600	3.15499	6.32	6.32	1.5 ANNUAL	CSTN	5
562340	4184600	3.16687	6.6	6.6	1.5 ANNUAL	CSTN	5
562360	4184600	3.17239	6.57	6.57	1.5 ANNUAL	CSTN	5
562380	4184600	3.14813	6.76	6.76	1.5 ANNUAL	CSTN	5
562400	4184600	3.10724	6.83	6.83	1.5 ANNUAL	CSTN	5
562420	4184600	3.05341	6.77	6.77	1.5 ANNUAL	CSTN	5
562440	4184600	2.9745	7.09	7.09	1.5 ANNUAL	CSTN	5
562460	4184600	2.89648	7.08	7.08	1.5 ANNUAL	CSTN	5
562480	4184600	2.81019	7.15	7.15	1.5 ANNUAL	CSTN	5
562040	4184620	1.8788	5.62	5.62	1.5 ANNUAL	CSTN	5
562060	4184620	1.98022	5.87	5.87	1.5 ANNUAL	CSTN	5
562080	4184620	2.07601	5.82	5.82	1.5 ANNUAL	CSTN	5
562100	4184620	2.16325	5.84	5.84	1.5 ANNUAL	CSTN	5
562120	4184620	2.2481	5.72	5.72	1.5 ANNUAL	CSTN	5
562140	4184620	2.33004	5.9	5.9	1.5 ANNUAL	CSTN	5
562160	4184620	2.41732	6.06	6.06	1.5 ANNUAL	CSTN	5
562180	4184620	2.51098	6.03	6.03	1.5 ANNUAL	CSTN	5
562200	4184620	2.5934	6.04	6.04	1.5 ANNUAL	CSTN	5
562220	4184620	2.65769	5.72	5.72	1.5 ANNUAL	CSTN	5
562240	4184620	2.67698	5.88	5.88	1.5 ANNUAL	CSTN	5
562260	4184620	2.68695	5.65	5.65	1.5 ANNUAL	CSTN	5
562280	4184620	2.68009	5.98	5.98	1.5 ANNUAL	CSTN	5
562300	4184620	2.69341	6.01	6.01	1.5 ANNUAL	CSTN	5
562320	4184620	2.71151	6.19	6.19	1.5 ANNUAL	CSTN	5
562340	4184620	2.71743	6.75	6.75	1.5 ANNUAL	CSTN	5
562360	4184620	2.73405	6.54	6.54	1.5 ANNUAL	CSTN	5
562380	4184620	2.7174	6.91	6.91	1.5 ANNUAL	CSTN	5
562400	4184620	2.69451	6.9	6.9	1.5 ANNUAL	CSTN	5
562420	4184620	2.65699	6.89	6.89	1.5 ANNUAL	CSTN	5
562440	4184620	2.60372	7.04	7.04	1.5 ANNUAL	CSTN	5
562460	4184620	2.5459	7.02	7.02	1.5 ANNUAL	CSTN	5
562080	4184640	1.85856	5.94	5.94	1.5 ANNUAL	CSTN	5
562100	4184640	1.9248	5.91	5.91	1.5 ANNUAL	CSTN	5

562120	4184640	1.99183	5.76	5.76	1.5 ANNUAL	CSTN	5
562140	4184640	2.06001	5.84	5.84	1.5 ANNUAL	CSTN	5
562160	4184640	2.13473	5.85	5.85	1.5 ANNUAL	CSTN	5
562180	4184640	2.21313	5.7	5.7	1.5 ANNUAL	CSTN	5
562200	4184640	2.27901	5.63	5.63	1.5 ANNUAL	CSTN	5
562220	4184640	2.31953	5.65	5.65	1.5 ANNUAL	CSTN	5
562240	4184640	2.3295	5.87	5.87	1.5 ANNUAL	CSTN	5
562260	4184640	2.32833	5.91	5.91	1.5 ANNUAL	CSTN	5
562280	4184640	2.32923	5.89	5.89	1.5 ANNUAL	CSTN	5
562300	4184640	2.33121	6.25	6.25	1.5 ANNUAL	CSTN	5
562320	4184640	2.34698	6.42	6.42	1.5 ANNUAL	CSTN	5
562340	4184640	2.36232	6.66	6.66	1.5 ANNUAL	CSTN	5
562360	4184640	2.37537	6.69	6.69	1.5 ANNUAL	CSTN	5
562380	4184640	2.37343	6.82	6.82	1.5 ANNUAL	CSTN	5
562400	4184640	2.36012	6.84	6.84	1.5 ANNUAL	CSTN	5
562420	4184640	2.33408	6.87	6.87	1.5 ANNUAL	CSTN	5
562440	4184640	2.30104	6.75	6.75	1.5 ANNUAL	CSTN	5
562100	4184660	1.72315	5.77	5.77	1.5 ANNUAL	CSTN	5
562120	4184660	1.77612	5.81	5.81	1.5 ANNUAL	CSTN	5
562140	4184660	1.83417	5.82	5.82	1.5 ANNUAL	CSTN	5
562160	4184660	1.89652	5.85	5.85	1.5 ANNUAL	CSTN	5
562180	4184660	1.957	5.91	5.91	1.5 ANNUAL	CSTN	5
562200	4184660	2.00569	5.97	5.97	1.5 ANNUAL	CSTN	5
562220	4184660	2.03203	6.13	6.13	1.5 ANNUAL	CSTN	5
562240	4184660	2.04673	5.81	5.81	1.5 ANNUAL	CSTN	5
562260	4184660	2.03587	6.24	6.24	1.5 ANNUAL	CSTN	5
562280	4184660	2.04545	5.7	5.7	1.5 ANNUAL	CSTN	5
562300	4184660	2.04448	6.15	6.15	1.5 ANNUAL	CSTN	5
562320	4184660	2.05775	6.32	6.32	1.5 ANNUAL	CSTN	5
562340	4184660	2.07397	6.48	6.48	1.5 ANNUAL	CSTN	5
562360	4184660	2.08352	6.76	6.76	1.5 ANNUAL	CSTN	5
562380	4184660	2.09184	6.62	6.62	1.5 ANNUAL	CSTN	5
562400	4184660	2.08442	6.71	6.71	1.5 ANNUAL	CSTN	5
562160	4184680	1.69408	6.04	6.04	1.5 ANNUAL	CSTN	5
562180	4184680	1.74508	5.96	5.96	1.5 ANNUAL	CSTN	5
562200	4184680	1.78279	6.02	6.02	1.5 ANNUAL	CSTN	5
562220	4184680	1.80337	6.05	6.05	1.5 ANNUAL	CSTN	5
562240	4184680	1.81256	5.76	5.76	1.5 ANNUAL	CSTN	5
562260	4184680	1.79957	6.32	6.32	1.5 ANNUAL	CSTN	5
562280	4184680	1.80767	5.71	5.71	1.5 ANNUAL	CSTN	5
562300	4184680	1.80725	6.09	6.09	1.5 ANNUAL	CSTN	5
562320	4184680	1.82087	6.11	6.11	1.5 ANNUAL	CSTN	5
562340	4184680	1.83387	6.38	6.38	1.5 ANNUAL	CSTN	5
562240	4184700	1.61462	5.86	5.86	1.5 ANNUAL	CSTN	5
562260	4184700	1.60502	6.22	6.22	1.5 ANNUAL	CSTN	5

** CONCUNIT ug/m^3

** DEPUNIT g/m^2

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* AERMOD (22112) C \Model\53 3/17/2023												
* AERMET (18081) 10 44 40												
* MODELINC OPTIONS USED RegDFAUL CONC ELEV FLGPOL URBAN ADJ_U*												
* PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP HAUL												
* FOR A TOTAL OF 415 RECEPTORS.												
* FORMAT (3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,I8.8,2X,A8)												
X	Y	AVERAGE	CONC	ZELEV	ZHILL	ZFLAG	AVE	GRP	NUM	YRS	NET	ID
562040	4184080	1.49542	3.12	3.12	1.5	ANNUAL	HAUL		5			
561980	4184160	1.75375	2.85	2.85	1.5	ANNUAL	HAUL		5			
562000	4184160	1.85329	2.9	2.9	1.5	ANNUAL	HAUL		5			
562020	4184160	1.9602	3.08	3.08	1.5	ANNUAL	HAUL		5			
562040	4184160	2.07412	3.04	3.04	1.5	ANNUAL	HAUL		5			
561960	4184180	1.79365	3.12	3.12	1.5	ANNUAL	HAUL		5			
561980	4184180	1.90105	3.05	3.05	1.5	ANNUAL	HAUL		5			
562000	4184180	2.01585	2.89	2.89	1.5	ANNUAL	HAUL		5			
562020	4184180	2.14094	3.23	3.23	1.5	ANNUAL	HAUL		5			
562040	4184180	2.27469	3.07	3.07	1.5	ANNUAL	HAUL		5			
561940	4184200	1.82719	3.09	3.09	1.5	ANNUAL	HAUL		5			
561960	4184200	1.94358	3.23	3.23	1.5	ANNUAL	HAUL		5			
561980	4184200	2.06872	3.15	3.15	1.5	ANNUAL	HAUL		5			
562000	4184200	2.20294	2.91	2.91	1.5	ANNUAL	HAUL		5			
562020	4184200	2.35014	3.16	3.16	1.5	ANNUAL	HAUL		5			
562040	4184200	2.50894	3.22	3.22	1.5	ANNUAL	HAUL		5			
561940	4184220	1.9794	3.18	3.18	1.5	ANNUAL	HAUL		5			
561960	4184220	2.11497	3.18	3.18	1.5	ANNUAL	HAUL		5			
561980	4184220	2.26153	3.04	3.04	1.5	ANNUAL	HAUL		5			
562000	4184220	2.42103	3.02	3.02	1.5	ANNUAL	HAUL		5			
562080	4184220	3.21908	3.82	3.82	1.5	ANNUAL	HAUL		5			
562100	4184220	3.46747	3.67	3.67	1.5	ANNUAL	HAUL		5			
561940	4184240	2.15349	3.39	3.39	1.5	ANNUAL	HAUL		5			
561960	4184240	2.31303	3.45	3.45	1.5	ANNUAL	HAUL		5			
561980	4184240	2.48722	3.4	3.4	1.5	ANNUAL	HAUL		5			
562000	4184240	2.67799	3.2	3.2	1.5	ANNUAL	HAUL		5			
562060	4184240	3.37345	3.36	3.36	1.5	ANNUAL	HAUL		5			
562520	4184240	16.32671	4.35	4.35	1.5	ANNUAL	HAUL		5			
561920	4184260	2.18195	3.15	3.15	1.5	ANNUAL	HAUL		5			
561940	4184260	2.35494	3.49	3.49	1.5	ANNUAL	HAUL		5			
561960	4184260	2.54429	3.68	3.68	1.5	ANNUAL	HAUL		5			
561980	4184260	2.7537	3.6	3.6	1.5	ANNUAL	HAUL		5			
562000	4184260	2.9852	3.36	3.36	1.5	ANNUAL	HAUL		5			
562020	4184260	3.24169	3.1	3.1	1.5	ANNUAL	HAUL		5			
562040	4184260	3.52718	3.39	3.39	1.5	ANNUAL	HAUL		5			
562460	4184260	18.04324	4.18	4.18	1.5	ANNUAL	HAUL		5			
562480	4184260	19.27653	4.49	4.49	1.5	ANNUAL	HAUL		5			
562500	4184260	20.59843	4.6	4.6	1.5	ANNUAL	HAUL		5			
562520	4184260	21.96722	4.73	4.73	1.5	ANNUAL	HAUL		5			
561920	4184280	2.38436	3.18	3.18	1.5	ANNUAL	HAUL		5			
561940	4184280	2.59099	3.59	3.59	1.5	ANNUAL	HAUL		5			
561960	4184280	2.81815	3.88	3.88	1.5	ANNUAL	HAUL		5			
561980	4184280	3.07271	3.88	3.88	1.5	ANNUAL	HAUL		5			
562000	4184280	3.35951	3.66	3.66	1.5	ANNUAL	HAUL		5			
562020	4184280	3.68047	3.19	3.19	1.5	ANNUAL	HAUL		5			
562460	4184280	24.36238	4.63	4.63	1.5	ANNUAL	HAUL		5			
562480	4184280	26.53927	4.82	4.82	1.5	ANNUAL	HAUL		5			
561920	4184300	2.62157	3.26	3.26	1.5	ANNUAL	HAUL		5			
561940	4184300	2.87228	3.62	3.62	1.5	ANNUAL	HAUL		5			
561960	4184300	3.15038	3.95	3.95	1.5	ANNUAL	HAUL		5			
561980	4184300	3.46658	3.95	3.95	1.5	ANNUAL	HAUL		5			
562000	4184300	3.82698	3.8	3.8	1.5	ANNUAL	HAUL		5			
562020	4184300	4.23877	3.39	3.39	1.5	ANNUAL	HAUL		5			
561920	4184320	2.9039	3.42	3.42	1.5	ANNUAL	HAUL		5			
561940	4184320	3.21432	3.48	3.48	1.5	ANNUAL	HAUL		5			
561960	4184320	3.56474	3.78	3.78	1.5	ANNUAL	HAUL		5			

561980	4184320	3.96998	3.64	3.64	1.5 ANNUAL HAUL	5
562000	4184320	4.43618	3.47	3.47	1.5 ANNUAL HAUL	5
561920	4184340	3.24643	3.39	3.39	1.5 ANNUAL HAUL	5
561940	4184340	3.63974	3.31	3.31	1.5 ANNUAL HAUL	5
562540	4184340	90.34023	5.86	5.86	1.5 ANNUAL HAUL	5
562560	4184340	72.25576	6.06	6.06	1.5 ANNUAL HAUL	5
562580	4184340	58.49033	6.18	6.18	1.5 ANNUAL HAUL	5
561920	4184360	3.67133	3.53	3.53	1.5 ANNUAL HAUL	5
562500	4184360	66.46598	6.09	6.09	1.5 ANNUAL HAUL	5
562520	4184360	56.89382	5.99	5.99	1.5 ANNUAL HAUL	5
562540	4184360	48.48286	6.3	6.3	1.5 ANNUAL HAUL	5
562560	4184360	41.8423	6.27	6.27	1.5 ANNUAL HAUL	5
562580	4184360	35.93437	6.27	6.27	1.5 ANNUAL HAUL	5
561920	4184380	4.19967	4.29	4.29	1.5 ANNUAL HAUL	5
561940	4184380	4.91228	3.6	3.6	1.5 ANNUAL HAUL	5
562400	4184380	85.3486	5.38	5.38	1.5 ANNUAL HAUL	5
562440	4184380	60.63423	5.71	5.71	1.5 ANNUAL HAUL	5
562460	4184380	52.92398	5.53	5.53	1.5 ANNUAL HAUL	5
562480	4184380	46.10958	5.78	5.78	1.5 ANNUAL HAUL	5
562500	4184380	40.31134	6.19	6.19	1.5 ANNUAL HAUL	5
562520	4184380	35.92156	6.07	6.07	1.5 ANNUAL HAUL	5
562540	4184380	31.89181	6.13	6.13	1.5 ANNUAL HAUL	5
562560	4184380	28.30358	6.16	6.16	1.5 ANNUAL HAUL	5
562580	4184380	24.78062	6.7	6.7	1.5 ANNUAL HAUL	5
561920	4184400	4.89937	4.66	4.66	1.5 ANNUAL HAUL	5
561940	4184400	5.92368	3.98	3.98	1.5 ANNUAL HAUL	5
562320	4184400	91.45078	4.85	4.85	1.5 ANNUAL HAUL	5
562380	4184400	54.48682	5.44	5.44	1.5 ANNUAL HAUL	5
562400	4184400	47.45784	5.79	5.79	1.5 ANNUAL HAUL	5
562420	4184400	42.15285	5.83	5.83	1.5 ANNUAL HAUL	5
562440	4184400	37.88376	5.71	5.71	1.5 ANNUAL HAUL	5
562460	4184400	33.96571	5.9	5.9	1.5 ANNUAL HAUL	5
562480	4184400	30.6783	5.97	5.97	1.5 ANNUAL HAUL	5
562500	4184400	27.75735	6.07	6.07	1.5 ANNUAL HAUL	5
562520	4184400	25.19706	6.07	6.07	1.5 ANNUAL HAUL	5
562540	4184400	22.78778	6.24	6.24	1.5 ANNUAL HAUL	5
562560	4184400	20.62982	6.32	6.32	1.5 ANNUAL HAUL	5
562580	4184400	18.53651	6.71	6.71	1.5 ANNUAL HAUL	5
561920	4184420	5.87046	4.68	4.68	1.5 ANNUAL HAUL	5
561940	4184420	7.44485	4.38	4.38	1.5 ANNUAL HAUL	5
562240	4184420	98.05397	4.57	4.57	1.5 ANNUAL HAUL	5
562260	4184420	79.37002	4.63	4.63	1.5 ANNUAL HAUL	5
562280	4184420	66.46828	4.83	4.83	1.5 ANNUAL HAUL	5
562300	4184420	56.89922	5	5	1.5 ANNUAL HAUL	5
562320	4184420	49.36257	5.24	5.24	1.5 ANNUAL HAUL	5
562380	4184420	34.92773	5.52	5.52	1.5 ANNUAL HAUL	5
562400	4184420	31.57096	5.7	5.7	1.5 ANNUAL HAUL	5
562420	4184420	28.65192	5.97	5.97	1.5 ANNUAL HAUL	5
562440	4184420	26.21106	6.06	6.06	1.5 ANNUAL HAUL	5
562460	4184420	24.02667	6.19	6.19	1.5 ANNUAL HAUL	5
562480	4184420	22.08145	6.29	6.29	1.5 ANNUAL HAUL	5
562500	4184420	20.34989	6.28	6.28	1.5 ANNUAL HAUL	5
562520	4184420	18.55411	6.85	6.85	1.5 ANNUAL HAUL	5
562540	4184420	17.19307	6.51	6.51	1.5 ANNUAL HAUL	5
562560	4184420	15.78275	6.65	6.65	1.5 ANNUAL HAUL	5
562580	4184420	14.3499	7.3	7.3	1.5 ANNUAL HAUL	5
561940	4184440	10.03858	4.45	4.45	1.5 ANNUAL HAUL	5
562180	4184440	83.09314	4.58	4.58	1.5 ANNUAL HAUL	5
562200	4184440	68.85803	4.71	4.71	1.5 ANNUAL HAUL	5
562220	4184440	58.72956	4.77	4.77	1.5 ANNUAL HAUL	5
562240	4184440	51.16271	4.67	4.67	1.5 ANNUAL HAUL	5
562260	4184440	44.78229	4.89	4.89	1.5 ANNUAL HAUL	5
562280	4184440	39.38962	5.35	5.35	1.5 ANNUAL HAUL	5
562300	4184440	35.13772	5.66	5.66	1.5 ANNUAL HAUL	5

562320	4184440	31.69331	5.85	5.85	1.5 ANNUAL HAUL	5
562400	4184440	22.67054	5.79	5.79	1.5 ANNUAL HAUL	5
562420	4184440	20.95066	6.01	6.01	1.5 ANNUAL HAUL	5
562440	4184440	19.33925	6.41	6.41	1.5 ANNUAL HAUL	5
562460	4184440	17.9968	6.45	6.45	1.5 ANNUAL HAUL	5
562480	4184440	16.73724	6.56	6.56	1.5 ANNUAL HAUL	5
562500	4184440	15.6369	6.39	6.39	1.5 ANNUAL HAUL	5
562520	4184440	14.46125	6.83	6.83	1.5 ANNUAL HAUL	5
562540	4184440	13.46729	6.82	6.82	1.5 ANNUAL HAUL	5
562560	4184440	12.52595	6.84	6.84	1.5 ANNUAL HAUL	5
562100	4184460	85.30277	4.46	4.46	1.5 ANNUAL HAUL	5
562120	4184460	69.88493	4.61	4.61	1.5 ANNUAL HAUL	5
562140	4184460	58.82438	4.91	4.91	1.5 ANNUAL HAUL	5
562160	4184460	50.34016	5.29	5.29	1.5 ANNUAL HAUL	5
562180	4184460	44.42222	5.14	5.14	1.5 ANNUAL HAUL	5
562200	4184460	39.69292	4.91	4.91	1.5 ANNUAL HAUL	5
562220	4184460	35.31392	5.22	5.22	1.5 ANNUAL HAUL	5
562240	4184460	31.60942	5.64	5.64	1.5 ANNUAL HAUL	5
562260	4184460	28.90397	5.53	5.53	1.5 ANNUAL HAUL	5
562280	4184460	26.20262	6.02	6.02	1.5 ANNUAL HAUL	5
562300	4184460	24.10298	6.15	6.15	1.5 ANNUAL HAUL	5
562320	4184460	22.32845	6.17	6.17	1.5 ANNUAL HAUL	5
562340	4184460	20.79742	6.11	6.11	1.5 ANNUAL HAUL	5
562400	4184460	17.0053	6.16	6.16	1.5 ANNUAL HAUL	5
562420	4184460	15.97134	6.13	6.13	1.5 ANNUAL HAUL	5
562440	4184460	14.90893	6.53	6.53	1.5 ANNUAL HAUL	5
562460	4184460	14.02143	6.5	6.5	1.5 ANNUAL HAUL	5
562480	4184460	13.18102	6.49	6.49	1.5 ANNUAL HAUL	5
562500	4184460	12.38926	6.47	6.47	1.5 ANNUAL HAUL	5
562520	4184460	11.62065	6.58	6.58	1.5 ANNUAL HAUL	5
562540	4184460	10.87249	6.85	6.85	1.5 ANNUAL HAUL	5
562560	4184460	10.17568	7.05	7.05	1.5 ANNUAL HAUL	5
562020	4184480	80.09053	4.48	4.48	1.5 ANNUAL HAUL	5
562040	4184480	65.62687	4.58	4.58	1.5 ANNUAL HAUL	5
562060	4184480	55.68294	4.75	4.75	1.5 ANNUAL HAUL	5
562080	4184480	48.7569	4.51	4.51	1.5 ANNUAL HAUL	5
562100	4184480	42.51662	4.88	4.88	1.5 ANNUAL HAUL	5
562120	4184480	37.24076	5.47	5.47	1.5 ANNUAL HAUL	5
562140	4184480	33.16764	5.85	5.85	1.5 ANNUAL HAUL	5
562160	4184480	30.04558	5.94	5.94	1.5 ANNUAL HAUL	5
562180	4184480	27.70999	5.62	5.62	1.5 ANNUAL HAUL	5
562200	4184480	25.83879	5.01	5.01	1.5 ANNUAL HAUL	5
562220	4184480	23.78239	5.16	5.16	1.5 ANNUAL HAUL	5
562240	4184480	21.72157	5.89	5.89	1.5 ANNUAL HAUL	5
562260	4184480	20.24222	5.91	5.91	1.5 ANNUAL HAUL	5
562280	4184480	18.84815	6.14	6.14	1.5 ANNUAL HAUL	5
562300	4184480	17.69281	6.12	6.12	1.5 ANNUAL HAUL	5
562320	4184480	16.62706	6.17	6.17	1.5 ANNUAL HAUL	5
562340	4184480	15.66785	6.19	6.19	1.5 ANNUAL HAUL	5
562400	4184480	13.24358	6.18	6.18	1.5 ANNUAL HAUL	5
562420	4184480	12.53693	6.2	6.2	1.5 ANNUAL HAUL	5
562440	4184480	11.86463	6.25	6.25	1.5 ANNUAL HAUL	5
562460	4184480	11.2171	6.37	6.37	1.5 ANNUAL HAUL	5
562480	4184480	10.59997	6.51	6.51	1.5 ANNUAL HAUL	5
562500	4184480	10.03586	6.49	6.49	1.5 ANNUAL HAUL	5
562520	4184480	9.477	6.65	6.65	1.5 ANNUAL HAUL	5
562540	4184480	8.90413	7.18	7.18	1.5 ANNUAL HAUL	5
562560	4184480	8.41065	7.23	7.23	1.5 ANNUAL HAUL	5
561960	4184500	29.65499	4.57	4.57	1.5 ANNUAL HAUL	5
561980	4184500	34.33337	4.45	4.45	1.5 ANNUAL HAUL	5
562000	4184500	34.61728	4.58	4.58	1.5 ANNUAL HAUL	5
562020	4184500	32.93958	4.84	4.84	1.5 ANNUAL HAUL	5
562040	4184500	30.792	5.01	5.01	1.5 ANNUAL HAUL	5
562060	4184500	28.79601	4.92	4.92	1.5 ANNUAL HAUL	5

562080	4184500	26.89286	4.79	4.79	1.5 ANNUAL	HAUL	5
562100	4184500	24.79804	5.14	5.14	1.5 ANNUAL	HAUL	5
562120	4184500	22.84253	5.62	5.62	1.5 ANNUAL	HAUL	5
562140	4184500	21.20866	5.92	5.92	1.5 ANNUAL	HAUL	5
562160	4184500	19.90964	5.89	5.89	1.5 ANNUAL	HAUL	5
562180	4184500	18.86332	5.54	5.54	1.5 ANNUAL	HAUL	5
562200	4184500	17.91846	5.1	5.1	1.5 ANNUAL	HAUL	5
562220	4184500	16.90014	5.11	5.11	1.5 ANNUAL	HAUL	5
562240	4184500	15.78864	5.76	5.76	1.5 ANNUAL	HAUL	5
562260	4184500	14.93804	5.85	5.85	1.5 ANNUAL	HAUL	5
562280	4184500	14.07782	6.26	6.26	1.5 ANNUAL	HAUL	5
562300	4184500	13.39975	6.19	6.19	1.5 ANNUAL	HAUL	5
562320	4184500	12.78182	6.05	6.05	1.5 ANNUAL	HAUL	5
562340	4184500	12.19744	5.93	5.93	1.5 ANNUAL	HAUL	5
562360	4184500	11.62113	5.96	5.96	1.5 ANNUAL	HAUL	5
562380	4184500	11.06034	6.1	6.1	1.5 ANNUAL	HAUL	5
562400	4184500	10.53838	6.18	6.18	1.5 ANNUAL	HAUL	5
562420	4184500	10.0218	6.4	6.4	1.5 ANNUAL	HAUL	5
562440	4184500	9.53419	6.58	6.58	1.5 ANNUAL	HAUL	5
562460	4184500	9.08401	6.62	6.62	1.5 ANNUAL	HAUL	5
562480	4184500	8.66046	6.58	6.58	1.5 ANNUAL	HAUL	5
562500	4184500	8.25549	6.52	6.52	1.5 ANNUAL	HAUL	5
562520	4184500	7.86224	6.5	6.5	1.5 ANNUAL	HAUL	5
562540	4184500	7.4409	6.97	6.97	1.5 ANNUAL	HAUL	5
562560	4184500	7.06331	7.11	7.11	1.5 ANNUAL	HAUL	5
561960	4184520	12.73877	4.94	4.94	1.5 ANNUAL	HAUL	5
561980	4184520	15.10417	4.73	4.73	1.5 ANNUAL	HAUL	5
562000	4184520	16.34482	4.91	4.91	1.5 ANNUAL	HAUL	5
562020	4184520	16.60682	5.53	5.53	1.5 ANNUAL	HAUL	5
562040	4184520	16.78347	5.38	5.38	1.5 ANNUAL	HAUL	5
562060	4184520	16.45966	5.62	5.62	1.5 ANNUAL	HAUL	5
562080	4184520	16.28262	5.11	5.11	1.5 ANNUAL	HAUL	5
562100	4184520	15.70595	5.3	5.3	1.5 ANNUAL	HAUL	5
562120	4184520	15.01187	5.73	5.73	1.5 ANNUAL	HAUL	5
562140	4184520	14.43415	5.8	5.8	1.5 ANNUAL	HAUL	5
562160	4184520	13.88984	5.76	5.76	1.5 ANNUAL	HAUL	5
562180	4184520	13.38033	5.61	5.61	1.5 ANNUAL	HAUL	5
562200	4184520	12.90731	5.34	5.34	1.5 ANNUAL	HAUL	5
562220	4184520	12.39821	5.29	5.29	1.5 ANNUAL	HAUL	5
562240	4184520	11.84971	5.56	5.56	1.5 ANNUAL	HAUL	5
562260	4184520	11.36496	5.64	5.64	1.5 ANNUAL	HAUL	5
562280	4184520	10.8748	5.89	5.89	1.5 ANNUAL	HAUL	5
562300	4184520	10.45636	5.84	5.84	1.5 ANNUAL	HAUL	5
562320	4184520	10.04185	5.88	5.88	1.5 ANNUAL	HAUL	5
562340	4184520	9.62714	6.05	6.05	1.5 ANNUAL	HAUL	5
562360	4184520	9.2297	6.22	6.22	1.5 ANNUAL	HAUL	5
562380	4184520	8.84284	6.43	6.43	1.5 ANNUAL	HAUL	5
562400	4184520	8.50853	6.28	6.28	1.5 ANNUAL	HAUL	5
562420	4184520	8.12923	6.65	6.65	1.5 ANNUAL	HAUL	5
562440	4184520	7.79407	6.7	6.7	1.5 ANNUAL	HAUL	5
562460	4184520	7.47674	6.66	6.66	1.5 ANNUAL	HAUL	5
562480	4184520	7.1563	6.77	6.77	1.5 ANNUAL	HAUL	5
562500	4184520	6.85781	6.74	6.74	1.5 ANNUAL	HAUL	5
562520	4184520	6.58244	6.51	6.51	1.5 ANNUAL	HAUL	5
562540	4184520	6.27802	6.79	6.79	1.5 ANNUAL	HAUL	5
561980	4184540	9.0292	5	5	1.5 ANNUAL	HAUL	5
562000	4184540	9.83006	5.08	5.08	1.5 ANNUAL	HAUL	5
562020	4184540	10.14735	5.9	5.9	1.5 ANNUAL	HAUL	5
562040	4184540	10.42156	6.02	6.02	1.5 ANNUAL	HAUL	5
562060	4184540	10.63308	5.76	5.76	1.5 ANNUAL	HAUL	5
562080	4184540	10.73212	5.43	5.43	1.5 ANNUAL	HAUL	5
562100	4184540	10.6578	5.44	5.44	1.5 ANNUAL	HAUL	5
562120	4184540	10.42327	5.91	5.91	1.5 ANNUAL	HAUL	5
562140	4184540	10.26873	5.79	5.79	1.5 ANNUAL	HAUL	5

562160	4184540	10.09521	5.57	5.57	1.5 ANNUAL HAUL	5
562180	4184540	9.89594	5.34	5.34	1.5 ANNUAL HAUL	5
562200	4184540	9.64709	5.31	5.31	1.5 ANNUAL HAUL	5
562220	4184540	9.37424	5.39	5.39	1.5 ANNUAL HAUL	5
562240	4184540	9.11117	5.38	5.38	1.5 ANNUAL HAUL	5
562260	4184540	8.84041	5.42	5.42	1.5 ANNUAL HAUL	5
562280	4184540	8.55938	5.56	5.56	1.5 ANNUAL HAUL	5
562300	4184540	8.26666	5.84	5.84	1.5 ANNUAL HAUL	5
562320	4184540	7.97032	6.21	6.21	1.5 ANNUAL HAUL	5
562340	4184540	7.72812	6.1	6.1	1.5 ANNUAL HAUL	5
562360	4184540	7.44452	6.45	6.45	1.5 ANNUAL HAUL	5
562380	4184540	7.19485	6.48	6.48	1.5 ANNUAL HAUL	5
562400	4184540	6.95538	6.42	6.42	1.5 ANNUAL HAUL	5
562420	4184540	6.69087	6.71	6.71	1.5 ANNUAL HAUL	5
562440	4184540	6.45797	6.65	6.65	1.5 ANNUAL HAUL	5
562460	4184540	6.2199	6.72	6.72	1.5 ANNUAL HAUL	5
562480	4184540	5.98736	6.79	6.79	1.5 ANNUAL HAUL	5
562500	4184540	5.75793	6.9	6.9	1.5 ANNUAL HAUL	5
562520	4184540	5.55959	6.56	6.56	1.5 ANNUAL HAUL	5
562540	4184540	5.32152	6.97	6.97	1.5 ANNUAL HAUL	5
561980	4184560	6.23378	5.3	5.3	1.5 ANNUAL HAUL	5
562000	4184560	6.79167	5	5	1.5 ANNUAL HAUL	5
562020	4184560	7.08993	5.69	5.69	1.5 ANNUAL HAUL	5
562040	4184560	7.3196	5.97	5.97	1.5 ANNUAL HAUL	5
562060	4184560	7.52822	5.75	5.75	1.5 ANNUAL HAUL	5
562080	4184560	7.65843	5.56	5.56	1.5 ANNUAL HAUL	5
562100	4184560	7.69975	5.59	5.59	1.5 ANNUAL HAUL	5
562120	4184560	7.69623	5.61	5.61	1.5 ANNUAL HAUL	5
562140	4184560	7.6731	5.49	5.49	1.5 ANNUAL HAUL	5
562160	4184560	7.60341	5.5	5.5	1.5 ANNUAL HAUL	5
562180	4184560	7.50999	5.51	5.51	1.5 ANNUAL HAUL	5
562200	4184560	7.39109	5.58	5.58	1.5 ANNUAL HAUL	5
562220	4184560	7.27914	5.44	5.44	1.5 ANNUAL HAUL	5
562240	4184560	7.13578	5.49	5.49	1.5 ANNUAL HAUL	5
562260	4184560	6.98177	5.56	5.56	1.5 ANNUAL HAUL	5
562280	4184560	6.8177	5.67	5.67	1.5 ANNUAL HAUL	5
562300	4184560	6.64313	5.85	5.85	1.5 ANNUAL HAUL	5
562320	4184560	6.449	6.24	6.24	1.5 ANNUAL HAUL	5
562340	4184560	6.28992	6.15	6.15	1.5 ANNUAL HAUL	5
562360	4184560	6.09316	6.54	6.54	1.5 ANNUAL HAUL	5
562380	4184560	5.92185	6.56	6.56	1.5 ANNUAL HAUL	5
562400	4184560	5.74459	6.65	6.65	1.5 ANNUAL HAUL	5
562420	4184560	5.56538	6.77	6.77	1.5 ANNUAL HAUL	5
562440	4184560	5.39419	6.77	6.77	1.5 ANNUAL HAUL	5
562460	4184560	5.21167	7	7	1.5 ANNUAL HAUL	5
562480	4184560	5.03973	7.09	7.09	1.5 ANNUAL HAUL	5
562500	4184560	4.87815	7.02	7.02	1.5 ANNUAL HAUL	5
562520	4184560	4.72962	6.69	6.69	1.5 ANNUAL HAUL	5
562000	4184580	5.06363	5.09	5.09	1.5 ANNUAL HAUL	5
562020	4184580	5.33304	5.32	5.32	1.5 ANNUAL HAUL	5
562040	4184580	5.54579	5.42	5.42	1.5 ANNUAL HAUL	5
562060	4184580	5.70724	5.42	5.42	1.5 ANNUAL HAUL	5
562080	4184580	5.81116	5.51	5.51	1.5 ANNUAL HAUL	5
562100	4184580	5.87349	5.62	5.62	1.5 ANNUAL HAUL	5
562120	4184580	5.90615	5.7	5.7	1.5 ANNUAL HAUL	5
562140	4184580	5.90279	5.89	5.89	1.5 ANNUAL HAUL	5
562160	4184580	5.88953	5.94	5.94	1.5 ANNUAL HAUL	5
562180	4184580	5.8557	6.01	6.01	1.5 ANNUAL HAUL	5
562200	4184580	5.81745	5.93	5.93	1.5 ANNUAL HAUL	5
562220	4184580	5.7925	5.47	5.47	1.5 ANNUAL HAUL	5
562240	4184580	5.7103	5.61	5.61	1.5 ANNUAL HAUL	5
562260	4184580	5.61503	5.8	5.8	1.5 ANNUAL HAUL	5
562280	4184580	5.52019	5.86	5.86	1.5 ANNUAL HAUL	5
562300	4184580	5.41423	5.98	5.98	1.5 ANNUAL HAUL	5

562320	4184580	5.29439	6.23	6.23	1.5 ANNUAL HAUL	5
562340	4184580	5.17857	6.33	6.33	1.5 ANNUAL HAUL	5
562360	4184580	5.04889	6.6	6.6	1.5 ANNUAL HAUL	5
562380	4184580	4.92916	6.63	6.63	1.5 ANNUAL HAUL	5
562400	4184580	4.79776	6.83	6.83	1.5 ANNUAL HAUL	5
562420	4184580	4.67922	6.74	6.74	1.5 ANNUAL HAUL	5
562440	4184580	4.5451	6.95	6.95	1.5 ANNUAL HAUL	5
562460	4184580	4.41607	7.06	7.06	1.5 ANNUAL HAUL	5
562480	4184580	4.29093	7.09	7.09	1.5 ANNUAL HAUL	5
562500	4184580	4.16545	7.13	7.13	1.5 ANNUAL HAUL	5
562020	4184600	4.19517	5.19	5.19	1.5 ANNUAL HAUL	5
562040	4184600	4.36191	5.36	5.36	1.5 ANNUAL HAUL	5
562060	4184600	4.48714	5.58	5.58	1.5 ANNUAL HAUL	5
562080	4184600	4.57753	5.8	5.8	1.5 ANNUAL HAUL	5
562100	4184600	4.65467	5.76	5.76	1.5 ANNUAL HAUL	5
562120	4184600	4.7036	5.78	5.78	1.5 ANNUAL HAUL	5
562140	4184600	4.716	6.06	6.06	1.5 ANNUAL HAUL	5
562160	4184600	4.72609	6.1	6.1	1.5 ANNUAL HAUL	5
562180	4184600	4.72371	6.1	6.1	1.5 ANNUAL HAUL	5
562200	4184600	4.70428	6.17	6.17	1.5 ANNUAL HAUL	5
562220	4184600	4.70563	5.66	5.66	1.5 ANNUAL HAUL	5
562240	4184600	4.66337	5.74	5.74	1.5 ANNUAL HAUL	5
562260	4184600	4.62446	5.58	5.58	1.5 ANNUAL HAUL	5
562280	4184600	4.54982	5.96	5.96	1.5 ANNUAL HAUL	5
562300	4184600	4.47764	6.16	6.16	1.5 ANNUAL HAUL	5
562320	4184600	4.40136	6.32	6.32	1.5 ANNUAL HAUL	5
562340	4184600	4.31419	6.6	6.6	1.5 ANNUAL HAUL	5
562360	4184600	4.23649	6.57	6.57	1.5 ANNUAL HAUL	5
562380	4184600	4.14498	6.76	6.76	1.5 ANNUAL HAUL	5
562400	4184600	4.05558	6.83	6.83	1.5 ANNUAL HAUL	5
562420	4184600	3.96898	6.77	6.77	1.5 ANNUAL HAUL	5
562440	4184600	3.86593	7.09	7.09	1.5 ANNUAL HAUL	5
562460	4184600	3.77479	7.08	7.08	1.5 ANNUAL HAUL	5
562480	4184600	3.67976	7.15	7.15	1.5 ANNUAL HAUL	5
562040	4184620	3.53658	5.62	5.62	1.5 ANNUAL HAUL	5
562060	4184620	3.64044	5.87	5.87	1.5 ANNUAL HAUL	5
562080	4184620	3.73395	5.82	5.82	1.5 ANNUAL HAUL	5
562100	4184620	3.80275	5.84	5.84	1.5 ANNUAL HAUL	5
562120	4184620	3.85893	5.72	5.72	1.5 ANNUAL HAUL	5
562140	4184620	3.88521	5.9	5.9	1.5 ANNUAL HAUL	5
562160	4184620	3.89841	6.06	6.06	1.5 ANNUAL HAUL	5
562180	4184620	3.90806	6.03	6.03	1.5 ANNUAL HAUL	5
562200	4184620	3.90527	6.04	6.04	1.5 ANNUAL HAUL	5
562220	4184620	3.90702	5.72	5.72	1.5 ANNUAL HAUL	5
562240	4184620	3.87985	5.88	5.88	1.5 ANNUAL HAUL	5
562260	4184620	3.86099	5.65	5.65	1.5 ANNUAL HAUL	5
562280	4184620	3.81274	5.98	5.98	1.5 ANNUAL HAUL	5
562300	4184620	3.77025	6.01	6.01	1.5 ANNUAL HAUL	5
562320	4184620	3.71646	6.19	6.19	1.5 ANNUAL HAUL	5
562340	4184620	3.64384	6.75	6.75	1.5 ANNUAL HAUL	5
562360	4184620	3.59538	6.54	6.54	1.5 ANNUAL HAUL	5
562380	4184620	3.52249	6.91	6.91	1.5 ANNUAL HAUL	5
562400	4184620	3.46004	6.9	6.9	1.5 ANNUAL HAUL	5
562420	4184620	3.39514	6.89	6.89	1.5 ANNUAL HAUL	5
562440	4184620	3.32327	7.04	7.04	1.5 ANNUAL HAUL	5
562460	4184620	3.25537	7.02	7.02	1.5 ANNUAL HAUL	5
562080	4184640	3.11422	5.94	5.94	1.5 ANNUAL HAUL	5
562100	4184640	3.17758	5.91	5.91	1.5 ANNUAL HAUL	5
562120	4184640	3.2305	5.76	5.76	1.5 ANNUAL HAUL	5
562140	4184640	3.26252	5.84	5.84	1.5 ANNUAL HAUL	5
562160	4184640	3.28536	5.85	5.85	1.5 ANNUAL HAUL	5
562180	4184640	3.30337	5.7	5.7	1.5 ANNUAL HAUL	5
562200	4184640	3.30961	5.63	5.63	1.5 ANNUAL HAUL	5
562220	4184640	3.30487	5.65	5.65	1.5 ANNUAL HAUL	5

562240	4184640	3.28648	5.87	5.87	1.5 ANNUAL HAUL	5
562260	4184640	3.26764	5.91	5.91	1.5 ANNUAL HAUL	5
562280	4184640	3.24484	5.89	5.89	1.5 ANNUAL HAUL	5
562300	4184640	3.20498	6.25	6.25	1.5 ANNUAL HAUL	5
562320	4184640	3.16652	6.42	6.42	1.5 ANNUAL HAUL	5
562340	4184640	3.12186	6.66	6.66	1.5 ANNUAL HAUL	5
562360	4184640	3.0799	6.69	6.69	1.5 ANNUAL HAUL	5
562380	4184640	3.03195	6.82	6.82	1.5 ANNUAL HAUL	5
562400	4184640	2.98464	6.84	6.84	1.5 ANNUAL HAUL	5
562420	4184640	2.93493	6.87	6.87	1.5 ANNUAL HAUL	5
562440	4184640	2.88743	6.75	6.75	1.5 ANNUAL HAUL	5
562100	4184660	2.70802	5.77	5.77	1.5 ANNUAL HAUL	5
562120	4184660	2.75047	5.81	5.81	1.5 ANNUAL HAUL	5
562140	4184660	2.78328	5.82	5.82	1.5 ANNUAL HAUL	5
562160	4184660	2.80604	5.85	5.85	1.5 ANNUAL HAUL	5
562180	4184660	2.81943	5.91	5.91	1.5 ANNUAL HAUL	5
562200	4184660	2.82516	5.97	5.97	1.5 ANNUAL HAUL	5
562220	4184660	2.82138	6.13	6.13	1.5 ANNUAL HAUL	5
562240	4184660	2.82416	5.81	5.81	1.5 ANNUAL HAUL	5
562260	4184660	2.80171	6.24	6.24	1.5 ANNUAL HAUL	5
562280	4184660	2.79941	5.7	5.7	1.5 ANNUAL HAUL	5
562300	4184660	2.76729	6.15	6.15	1.5 ANNUAL HAUL	5
562320	4184660	2.73838	6.32	6.32	1.5 ANNUAL HAUL	5
562340	4184660	2.70631	6.48	6.48	1.5 ANNUAL HAUL	5
562360	4184660	2.66839	6.76	6.76	1.5 ANNUAL HAUL	5
562380	4184660	2.63813	6.62	6.62	1.5 ANNUAL HAUL	5
562400	4184660	2.60027	6.71	6.71	1.5 ANNUAL HAUL	5
562160	4184680	2.42367	6.04	6.04	1.5 ANNUAL HAUL	5
562180	4184680	2.44094	5.96	5.96	1.5 ANNUAL HAUL	5
562200	4184680	2.44867	6.02	6.02	1.5 ANNUAL HAUL	5
562220	4184680	2.4511	6.05	6.05	1.5 ANNUAL HAUL	5
562240	4184680	2.45498	5.76	5.76	1.5 ANNUAL HAUL	5
562260	4184680	2.43591	6.32	6.32	1.5 ANNUAL HAUL	5
562280	4184680	2.43739	5.71	5.71	1.5 ANNUAL HAUL	5
562300	4184680	2.41405	6.09	6.09	1.5 ANNUAL HAUL	5
562320	4184680	2.39491	6.11	6.11	1.5 ANNUAL HAUL	5
562340	4184680	2.36764	6.38	6.38	1.5 ANNUAL HAUL	5
562240	4184700	2.15235	5.86	5.86	1.5 ANNUAL HAUL	5
562260	4184700	2.14162	6.22	6.22	1.5 ANNUAL HAUL	5

** CONCUNIT ug/m^3

** DEPUNIT g/m^2

Permitted Hours and Noise Levels By Activity

Hour (End Factor)		
1:00	0	
2:00	0	
3:00	0	
4:00	0	
5:00	0	
6:00	0	
7:00	0	
8:00	1.72	1
9:00	1.72	1
10:00	1.72	1
11:00	1.71	1
12:00	1.71	1
13:00	1.71	1
14:00	1.71	1
15:00	1.71	1
16:00	1.71	1
17:00	1.71	1
18:00	1.71	1
19:00	1.72	1
20:00	1.72	1
21:00	1.72	1
22:00	0	
23:00	0	
24:00:00	0	

0.00

Permit (OMC Section)	Weekdays	Saturday	Sunday/Holiday
Grading (15.04.780)	7:00 am - 9:00 pm	8:30 am - 6:00 pm	Prohibited
Building (17.120.050, 8.18.020)	No restrictions on hours. See note below for sound-level restrictions.*	No restrictions on hours. See note below for sound-level restrictions.*	No restrictions on hours. See note below for sound-level restrictions.*
Building Use	For restrictions on hours, refer to Conditions of Approval. See note below for dB sound-level restrictions.*	For restrictions on hours, refer to Conditions of Approval. See note below for dB sound-level restrictions.*	For restrictions on hours, refer to Conditions of Approval. See note below for dB sound-level restrictions.*
As Permitted According to Design Review Requirements	For restrictions on hours, refer to Conditions of Approval. See note below for dB sound-level restrictions.*	For restrictions on hours, refer to Conditions of Approval. See note below for dB sound-level restrictions.*	For restrictions on hours, refer to Conditions of Approval. See note below for dB sound-level restrictions.*

*For all construction activity including grading in a residential area:
7:00 am - 9:00 pm -- 70 dB for five minutes maximum sound level in one hour.



Lil Steppers - Preschool
1415 9th St
Oakland, CA 94607
(510) 467-3221

**533 Kirkham Street
School 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
Haul	0.02	0.06

Modeled Routes

	Haul	
Trip Length	682.5	meters

from AERMOD

Construction Year	Start Date	End Date	Days			Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)		
			Age 0<2	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2024	5/1/2024	12/31/2024	245	0.00	245	4.27E-02	2.10E-04	5.40E-04	2.75E-03	2.10E-04	5.40E-04
2025	1/1/2025	12/31/2025	302.5	62.5	365	5.12E-02	0.00E+00	1.15E-03	3.95E-03	0.00E+00	1.15E-03
2026	1/1/2026	5/1/2026	0	121.00	121	1.81E-02	0.00E+00	3.80E-04	1.41E-03	0.00E+00	3.80E-04

Construction Year	Start Date	End Date	Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
			CSTN	HAUL	CSTN	HAUL
2024	5/1/2024	12/31/2024	1.83E-03	1.54E-06	1.18E-04	1.54E-06
2025	1/1/2025	12/31/2025	1.47E-03	1.92E-06	1.14E-04	1.92E-06
2026	1/1/2026	5/1/2026	1.57E-03	1.92E-06	1.22E-04	1.92E-06

Risk Factors

	Abbreviation	UOM	Age 0<2	Age 2<16
8HR Breathing Rate (95th %ile)	BHR-BR	L/kg-day	1200	520
Modeling Adjustment Factor	MAF	unitless	1.4	1.4
Exposure Frequency	EF	days/year	0.96	0.96
Age Sensitivity Factor	ASF	unitless	10	3
Inhalation Absorption Factor	A	unitless	1	1
Conversion Factor	CF ₁	m ³ /L	0.001	0.001
Conversion Factor	CF ₂	µg/m ³	0.001	0.001
Cancer Potency Factor (diesel exha)	CPF	mg/kg-day ⁻¹	1.1	1.1
Averaging Time (for residential exp)	AT	years	70.00	70.00

Intake Factor for Inhalation, IF (m³/kg-day)

	Year	Equation	Age 0<2	Age 2<16
Construction	2024	DBR*MAF*EF	0.154	0.000
	2025	*ED*ASF*A*	0.191	0.005
	2026	CF/AT	0.000	0.010

Risk Calculation Part 1, R1

Year	Age 0<2	Age 2<16
2024	1.70E-04	0.00E+00
2025	2.10E-04	5.64E-06
2026	0.00E+00	1.09E-05

MAX	Cancer Risk	UTM X	UTM Y
Unmitigated	1.7	562200	4184620
Mitigated	0.1	562200	4184620

Diesel Particulate Matter concentration, C_{DPM} (µg/m³)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026
562200_4184620	562200	4184620	4.76E-03	3.83E-03	4.08E-03	3.12E-04	3.02E-04	3.25E-04

Unmitigated Cancer Risk, Risk Calculation Part 2

3rd Trimester	ΣR1 * C _{DPM}	
	0<2	Total
	1.61E-06	6.61E-08
		1.68

Mitigated Cancer Risk, Risk Calculation Part 2

3rd Trimester	ΣR1 * C _{DPM}	
	0<2	Total
	1.16E-07	5.25E-09
		0.12

Diesel Particulate Matter concentration, C_{DPM} ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated Cancer Risk, Risk Calculation Part 2

$\sum R1^*C_{DPM}$		
3rd Trimester	0<2	Total

Mitigated Cancer Risk, Risk Calculation Part 2

$\sum R1^*C_{DPM}$		
3rd Trimester	0<2	Total

Diesel Particulate Matter concentration, C_{DPM} ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated Cancer Risk, Risk Calculation Part 2

$\sum R1^*C_{DPM}$		
3rd Trimester	0<2	Total

Mitigated Cancer Risk, Risk Calculation Part 2

$\sum R1^*C_{DPM}$		
3rd Trimester	0<2	Total

Diesel Particulate Matter concentration, C_{DPM} ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated Cancer Risk, Risk Calculation Part 2

$\sum R1^*C_{DPM}$		
3rd Trimester	0<2	Total

Mitigated Cancer Risk, Risk Calculation Part 2

$\sum R1^*C_{DPM}$		
3rd Trimester	0<2	Total

533 Kirkham Street

All Receptors - Construction Hazard Index Risk

Haul Truck Trip Lengths		
Haul	Vendor	units
Trip Length	20	7.3 miles
	32187	11748 meters

Haul Truck Adjustment Factor to Model		
Source	Haul	Vendor
Haul	0.02	0.06

Modeled Routes	
Trip Length	units
682.5	meters

from AERMOD

Construction Year	Start Date	End Date	Days			Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)			
			3rd Trimester	Age 0<2	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2024	5/1/2024	12/31/2024	91	154.00	0.00	245	4.27E-02	2.10E-04	5.40E-04	2.75E-03	2.10E-04	5.40E-04
2025	1/1/2025	12/31/2025	0	365.00	0.00	365	5.12E-02	0.00E+00	1.15E-03	3.95E-03	0.00E+00	1.15E-03
2026	1/1/2026	5/1/2026	0	121.00	0.00	121	1.81E-02	0.00E+00	3.80E-04	1.41E-03	0.00E+00	3.80E-04

Construction Year	Start Date	End Date	Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
			CS1N	HAUL	CS1N	HAUL
2024	5/1/2024	12/31/2024	1.83E-03	1.54E-06	1.18E-04	1.54E-06
2025	1/1/2025	12/31/2025	1.47E-03	1.92E-06	1.14E-04	1.92E-06
2026	1/1/2026	5/1/2026	1.57E-03	1.92E-06	1.22E-04	1.92E-06

Risk Factors	Abbreviation	UOM	
Chronic Inhalation	REL	ug/m ³	5

	HI	UTM X	UTM Y
MAX Unmitigated	0.023	562320	4184400
Mitigated	0.002	562320	4184400

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026
			562040_418408C	562040	418408	3.83E-03	3.08E-03	3.28E-03
561980_418416C	561980	418416	4.28E-03	3.44E-03	3.67E-03	2.78E-04	2.69E-04	2.89E-04
562000_418416C	562000	418416	4.67E-03	3.76E-03	4.00E-03	3.03E-04	2.93E-04	3.15E-04
562020_418416C	562020	418416	5.10E-03	4.11E-03	4.38E-03	3.31E-04	3.20E-04	3.44E-04
562040_418416C	562040	418416	5.58E-03	4.49E-03	4.78E-03	3.62E-04	3.50E-04	3.76E-04
561960_418418C	561960	418418	4.11E-03	3.31E-03	3.53E-03	2.67E-04	2.59E-04	2.78E-04
561980_418418C	561980	418418	4.52E-03	3.64E-03	3.88E-03	2.94E-04	2.84E-04	3.06E-04
562000_418418C	562000	418418	4.99E-03	4.01E-03	4.28E-03	3.24E-04	3.13E-04	3.37E-04
562020_418418C	562020	418418	5.50E-03	4.43E-03	4.72E-03	3.57E-04	3.45E-04	3.71E-04
562040_418418C	562040	418418	6.09E-03	4.90E-03	5.22E-03	3.82E-04	3.71E-04	4.11E-04
561940_418420C	561940	418420	3.89E-03	3.13E-03	3.34E-03	2.53E-04	2.45E-04	2.63E-04
561960_418420C	561960	418420	4.29E-03	3.45E-03	3.68E-03	2.79E-04	2.70E-04	2.90E-04
561980_418420C	561980	418420	4.75E-03	3.82E-03	4.07E-03	3.09E-04	2.99E-04	3.21E-04
562000_418420C	562000	418420	5.28E-03	4.25E-03	4.53E-03	3.43E-04	3.32E-04	3.57E-04
562020_418420C	562020	418420	5.89E-03	4.74E-03	5.05E-03	3.82E-04	3.70E-04	3.98E-04
562040_418420C	562040	418420	6.59E-03	5.30E-03	5.65E-03	4.28E-04	4.14E-04	4.45E-04
561940_418422C	561940	418422	4.00E-03	3.22E-03	3.43E-03	2.61E-04	2.52E-04	2.71E-04
561960_418422C	561960	418422	4.44E-03	3.57E-03	3.81E-03	2.89E-04	2.79E-04	3.01E-04
561980_418422C	561980	418422	4.95E-03	3.98E-03	4.25E-03	3.22E-04	3.11E-04	3.35E-04
562000_418422C	562000	418422	5.55E-03	4.46E-03	4.76E-03	3.61E-04	3.49E-04	3.75E-04
562080_418422C	562080	418422	9.18E-03	7.38E-03	7.87E-03	5.95E-04	5.75E-04	6.19E-04
562100_418422C	562100	418422	1.05E-02	8.46E-03	9.02E-03	6.82E-04	6.59E-04	7.09E-04
561940_418424C	561940	418424	4.09E-03	3.29E-03	3.51E-03	2.66E-04	2.58E-04	2.77E-04
561960_418424C	561960	418424	4.56E-03	3.67E-03	3.91E-03	2.97E-04	2.87E-04	3.09E-04
561980_418424C	561980	418424	5.11E-03	4.11E-03	4.38E-03	3.32E-04	3.22E-04	3.46E-04
562000_418424C	562000	418424	5.77E-03	4.64E-03	4.95E-03	3.75E-04	3.63E-04	3.90E-04
562060_418424C	562060	418424	8.65E-03	6.96E-03	7.42E-03	5.62E-04	5.43E-04	5.84E-04
562320_418424C	562320	418424	2.94E-02	2.37E-02	2.52E-02	1.92E-03	1.86E-03	2.00E-03
561920_418426C	561920	418426	3.73E-03	3.00E-03	3.20E-03	2.43E-04	2.36E-04	2.53E-04
561940_418426C	561940	418426	4.15E-03	3.34E-03	3.56E-03	2.70E-04	2.62E-04	2.81E-04
561960_418426C	561960	418426	4.64E-03	3.73E-03	3.98E-03	3.02E-04	2.93E-04	3.15E-04
561980_418426C	561980	418426	5.23E-03	4.21E-03	4.48E-03	3.40E-04	3.29E-04	3.54E-04
562000_418426C	562000	418426	5.94E-03	4.78E-03	5.09E-03	3.86E-04	3.74E-04	4.02E-04
562020_418426C	562020	418426	6.80E-03	5.47E-03	5.83E-03	4.42E-04	4.28E-04	4.60E-04
562040_418426C	562040	418426	7.86E-03	6.32E-03	6.74E-03	5.11E-04	4.94E-04	5.31E-04
562460_418426C	562460	418426	16.62E-03	13.71E-03	14.56E-03	1.11E-03	1.07E-03	1.16E-03
562480_418426C	562480	418426	1.83E-02	1.49E-02	1.60E-02	1.26E-03	1.22E-03	1.31E-03
562500_418426C	562500	418426	2.06E-02	1.67E-02	1.80E-02	1.48E-03	1.44E-03	1.54E-03
562520_418426C	562520	418426	2.31E-02	1.87E-02	2.02E-02	1.70E-03	1.66E-03	1.77E-03
561920_418428C	561920	418428	3.75E-03	3.02E-03	3.22E-03	2.45E-04	2.37E-04	2.55E-04
561940_418428C	561940	418428	4.18E-03	3.36E-03	3.58E-03	2.73E-04	2.64E-04	2.84E-04
561960_418428C	561960	418428	4.68E-03	3.77E-03	4.02E-03	3.05E-04	2.96E-04	3.18E-04
561980_418428C	561980	418428	5.29E-03	4.26E-03	4.54E-03	3.45E-04	3.34E-04	3.59E-04
562000_418428C	562000	418428	6.04E-03	4.86E-03	5.18E-03	3.94E-04	3.81E-04	4.10E-04
562020_418428C	562020	418428	6.92E-03	5.61E-03	5.97E-03	4.45E-04	4.32E-04	4.63E-04
562460_418428C	562460	418428	1.41E-02	1.15E-02	1.24E-02	1.00E-03	9.75E-04	1.04E-03
562480_418428C	562480	418428	1.57E-02	1.28E-02	1.38E-02	1.13E-03	1.10E-03	1.18E-03
562480_418428C	562480	418428	1.72E-02	1.41E-02	1.51E-02	1.26E-03	1.23E-03	1.31E-03
561920_418430C	561920	418430	3.74E-03	3.01E-03	3.21E-03	2.45E-04	2.37E-04	2.55E-04
561940_418430C	561940	418430	4.17E-03	3.36E-03	3.58E-03	2.73E-04	2.64E-04	2.84E-04
561960_418430C	561960	418430	4.69E-03	3.77E-03	4.02E-03	3.06E-04	2.97E-04	3.19E-04
561980_418430C	561980	418430	5.31E-03	4.27E-03	4.56E-03	3.47E-04	3.36E-04	3.61E-04
562000_418430C	562000	418430	6.08E-03	4.89E-03	5.21E-03	3.97E-04	3.84E-04	4.13E-04
562020_418430C	562020	418430	7.04E-03	5.66E-03	6.03E-03	4.59E-04	4.44E-04	4.78E-04
561920_418432C	561920	418432	3.71E-03	2.98E-03	3.18E-03	2.43E-04	2.35E-04	2.53E-04
561940_418432C	561940	418432	4.14E-03	3.33E-03	3.55E-03	2.71E-04	2.63E-04	2.82E-04
561960_418432C	561960	418432	4.65E-03	3.75E-03	3.99E-03	3.05E-04	2.95E-04	3.17E-04
561980_418432C	561980	418432	5.28E-03	4.25E-03	4.53E-03	3.46E-04	3.35E-04	3.60E-04
562000_418432C	562000	418432	6.05E-03	4.87E-03	5.19E-03	3.96E-04	3.84E-04	4.12E-04
561920_418434C	561920	418434	3.65E-03	2.94E-03	3.13E-03	2.40E-04	2.32E-04	2.50E-04
561940_418434C	561940	418434	4.08E-03	3.28E-03	3.50E-03	2.68E-04	2.60E-04	2.79E-04
562540_418434C	562540	418434	3.09E-02	2.49E-02	2.65E-02	2.12E-03	2.08E-03	2.23E-03
562560_418434C	562560	418434	3.42E-02	2.79E-02	2.96E-02	2.38E-03	2.34E-03	2.50E-03
562580_418434C	562580	418434	3.81E-02	3.10E-02	3.29E-02	2.66E-03	2.62E-03	2.79E-03
561920_418436C	561920	418436	3.57E-03	2.87E-03	3.06E-03	2.35E-04	2.28E-04	2.45E-04
562500_418436C	562500	418436	3.91E-02	3.15E-02	3.36E-02	2.61E-03	2.55E-03	2.73E-03
562520_418436C	562520	418436	4.30E-02	3.49E-02	3.72E-02	2.92E-03	2.82E-03	3.03E-03
562540_418436C	562540	418436	4.78E-02	3.90E-02	4.15E-02	3.27E-03	3.16E-03	3.38E-03
562560_418436C	562560	418436	5.36E-02	4.37E-02	4.65E-02	3.68E-03	3.56E-03	3.80E-03
562580_418436C	562580	418436	6.05E-02	4.95E-02	5.27E-02	4.16E-03	4.03E-03	4.29E-03
561920_418438C	561920	418438	3.47E-03	2.79E-03	2.97E-03	2.29E-04	2.23E-04	2.39E-04
561940_418438C	561940	418438	3.87E-03	3.11E-03	3.32E-03	2.56E-04	2.49E-04	2.67E-04
562400_418438C	562400	418438	8.09E-02	6.51E-02	6.94E-02	5.33E-03	5.17E-03	5.56E-03
562440_418438C	562440	418438	9.02E-02	7.26E-02	7.76E-02	5.93E-03	5.75E-03	6.16E-03
562460_418438C	562460	418438	1.00E-01	8.14E-02	8.72E-			

Diesel Particulate Matter concentration, C_{DPM} (ug/m³)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated			Unmitigated HI Risk				Mitigated HI Risk			
			2024	2025	2026	2024	2025	2026	C _{DPM} /REL				C _{DPM} /REL			
			2024	2025	2026	2024	2025	2026	2024	2025	2026	Max	2024	2025	2026	Max
562440_418440C	562440	4184400	4.58E-02	3.69E-02	3.93E-02	3.00E-03	2.91E-03	3.13E-03	9.16E-03	7.37E-03	7.86E-03	0.01	6.01E-04	5.82E-04	6.26E-04	0.00
562460_418440C	562460	4184400	4.00E-02	3.22E-02	3.43E-02	2.62E-03	2.54E-03	2.73E-03	7.99E-03	6.43E-03	6.86E-03	0.01	5.24E-04	5.08E-04	5.46E-04	0.00
562480_418440C	562480	4184400	3.52E-02	2.83E-02	3.02E-02	2.31E-03	2.24E-03	2.40E-03	7.03E-03	5.66E-03	6.03E-03	0.01	4.61E-04	4.47E-04	4.81E-04	0.00
562500_418440C	562500	4184400	3.11E-02	2.50E-02	2.67E-02	2.04E-03	1.98E-03	2.13E-03	6.22E-03	5.01E-03	5.34E-03	0.01	4.08E-04	3.96E-04	4.26E-04	0.00
562520_418440C	562520	4184400	2.77E-02	2.23E-02	2.38E-02	1.82E-03	1.77E-03	1.90E-03	5.54E-03	4.46E-03	4.75E-03	0.01	3.64E-04	3.53E-04	3.79E-04	0.00
562540_418440C	562540	4184400	2.48E-02	1.99E-02	2.12E-02	1.63E-03	1.58E-03	1.70E-03	4.95E-03	3.99E-03	4.25E-03	0.01	3.25E-04	3.16E-04	3.39E-04	0.00
562560_418440C	562560	4184400	2.23E-02	1.79E-02	1.91E-02	1.46E-03	1.42E-03	1.53E-03	4.46E-03	3.59E-03	3.82E-03	0.01	2.93E-04	2.84E-04	3.05E-04	0.00
562580_418440C	562580	4184400	2.01E-02	1.62E-02	1.72E-02	1.32E-03	1.28E-03	1.38E-03	4.02E-03	3.23E-03	3.44E-03	0.01	2.64E-04	2.56E-04	2.75E-04	0.00
561920_418442C	561920	4184420	3.24E-03	2.61E-03	2.78E-03	2.17E-04	2.12E-04	2.27E-04	6.48E-04	5.22E-04	5.56E-04	0.00	4.34E-05	4.24E-05	4.54E-05	0.00
561940_418442C	561940	4184420	3.60E-03	2.90E-03	3.09E-03	2.42E-04	2.37E-04	2.54E-04	7.20E-04	5.80E-04	6.18E-04	0.00	4.85E-05	4.74E-05	5.08E-05	0.00
562240_418442C	562240	4184420	6.29E-02	5.07E-02	5.40E-02	4.19E-03	4.08E-03	4.38E-03	1.26E-02	1.01E-02	1.08E-02	0.01	8.38E-04	8.17E-04	8.77E-04	0.00
562260_418442C	562260	4184420	6.95E-02	5.60E-02	5.96E-02	4.59E-03	4.46E-03	4.79E-03	1.39E-02	1.12E-02	1.19E-02	0.01	9.18E-04	8.92E-04	9.58E-04	0.00
562280_418442C	562280	4184420	7.20E-02	5.80E-02	6.18E-02	4.73E-03	4.59E-03	4.93E-03	1.44E-02	1.16E-02	1.24E-02	0.01	9.46E-04	9.18E-04	9.86E-04	0.00
562300_418442C	562300	4184420	7.07E-02	5.69E-02	6.06E-02	4.63E-03	4.49E-03	4.82E-03	1.41E-02	1.14E-02	1.21E-02	0.01	9.26E-04	8.98E-04	9.65E-04	0.00
562320_418442C	562320	4184420	6.62E-02	5.33E-02	5.68E-02	4.33E-03	4.20E-03	4.51E-03	1.32E-02	1.07E-02	1.14E-02	0.01	8.66E-04	8.39E-04	9.02E-04	0.00
562380_418442C	562380	4184420	4.90E-02	3.94E-02	4.20E-02	3.20E-03	3.10E-03	3.33E-03	9.79E-03	7.88E-03	8.40E-03	0.01	6.40E-04	6.20E-04	6.67E-04	0.00
562400_418442C	562400	4184420	4.38E-02	3.53E-02	3.76E-02	2.87E-03	2.78E-03	2.99E-03	8.77E-03	7.06E-03	7.52E-03	0.01	5.73E-04	5.56E-04	5.97E-04	0.00
562420_418442C	562420	4184420	3.92E-02	3.15E-02	3.36E-02	2.56E-03	2.48E-03	2.67E-03	7.84E-03	6.31E-03	6.72E-03	0.01	5.13E-04	4.97E-04	5.34E-04	0.00
562440_418442C	562440	4184420	3.52E-02	2.83E-02	3.02E-02	2.30E-03	2.23E-03	2.40E-03	7.04E-03	5.67E-03	6.04E-03	0.01	4.61E-04	4.47E-04	4.80E-04	0.00
562460_418442C	562460	4184420	3.17E-02	2.55E-02	2.72E-02	2.07E-03	2.01E-03	2.16E-03	6.33E-03	5.10E-03	5.43E-03	0.01	4.14E-04	4.02E-04	4.32E-04	0.00
562480_418442C	562480	4184420	2.85E-02	2.30E-02	2.45E-02	1.87E-03	1.81E-03	1.95E-03	5.71E-03	4.59E-03	4.90E-03	0.01	3.74E-04	3.62E-04	3.89E-04	0.00
562500_418442C	562500	4184420	2.58E-02	2.08E-02	2.22E-02	1.69E-03	1.64E-03	1.76E-03	5.17E-03	4.16E-03	4.43E-03	0.01	3.38E-04	3.28E-04	3.53E-04	0.00
562520_418442C	562520	4184420	2.33E-02	1.88E-02	2.00E-02	1.53E-03	1.48E-03	1.59E-03	4.66E-03	3.75E-03	4.00E-03	0.01	3.05E-04	2.96E-04	3.18E-04	0.00
562540_418442C	562540	4184420	2.13E-02	1.71E-02	1.83E-02	1.39E-03	1.35E-03	1.45E-03	4.26E-03	3.43E-03	3.65E-03	0.00	2.79E-04	2.70E-04	2.91E-04	0.00
562560_418442C	562560	4184420	1.94E-02	1.56E-02	1.66E-02	1.23E-03	1.19E-03	1.28E-03	3.89E-03	3.12E-03	3.33E-03	0.00	2.54E-04	2.45E-04	2.65E-04	0.00
562580_418442C	562580	4184420	1.77E-02	1.42E-02	1.51E-02	1.16E-03	1.12E-03	1.21E-03	3.53E-03	2.84E-03	3.03E-03	0.00	2.31E-04	2.24E-04	2.41E-04	0.00
561940_418444C	561940	4184440	3.47E-03	2.80E-03	2.98E-03	2.38E-04	2.34E-04	2.50E-04	6.95E-04	5.60E-04	5.97E-04	0.00	4.76E-05	4.68E-05	5.00E-05	0.00
562180_418444C	562180	4184440	2.61E-02	2.11E-02	2.24E-02	1.80E-03	1.77E-03	1.90E-03	5.22E-03	4.21E-03	4.49E-03	0.01	3.60E-04	3.54E-04	3.79E-04	0.00
562200_418444C	562200	4184440	3.15E-02	2.54E-02	2.71E-02	2.13E-03	2.08E-03	2.23E-03	6.31E-03	5.08E-03	5.42E-03	0.01	4.26E-04	4.17E-04	4.46E-04	0.00
562220_418444C	562220	4184440	3.67E-02	2.95E-02	3.15E-02	2.44E-03	2.38E-03	2.56E-03	7.33E-03	5.91E-03	6.29E-03	0.01	4.89E-04	4.77E-04	5.11E-04	0.00
562240_418444C	562240	4184440	4.08E-02	3.28E-02	3.50E-02	2.70E-03	2.62E-03	2.82E-03	8.15E-03	6.56E-03	6.99E-03	0.01	5.39E-04	5.24E-04	5.63E-04	0.00
562260_418444C	562260	4184440	4.32E-02	3.48E-02	3.71E-02	2.85E-03	2.76E-03	2.97E-03	8.65E-03	6.96E-03	7.42E-03	0.01	5.69E-04	5.53E-04	5.94E-04	0.00
562280_418444C	562280	4184440	4.40E-02	3.54E-02	3.77E-02	2.89E-03	2.80E-03	3.01E-03	8.80E-03	7.08E-03	7.55E-03	0.01	5.78E-04	5.60E-04	6.02E-04	0.00
562300_418444C	562300	4184440	4.35E-02	3.50E-02	3.73E-02	2.85E-03	2.76E-03	2.97E-03	8.70E-03	7.00E-03	7.46E-03	0.01	5.70E-04	5.52E-04	5.94E-04	0.00
562320_418444C	562320	4184440	4.18E-02	3.36E-02	3.59E-02	2.74E-03	2.65E-03	2.85E-03	8.36E-03	6.73E-03	7.17E-03	0.01	5.47E-04	5.30E-04	5.70E-04	0.00
562400_418444C	562400	4184440	3.14E-02	2.52E-02	2.69E-02	2.05E-03	1.99E-03	2.14E-03	6.27E-03	5.05E-03	5.38E-03	0.01	4.10E-04	3.97E-04	4.27E-04	0.00
562420_418444C	562420	4184440	2.89E-02	2.32E-02	2.48E-02	1.89E-03	1.83E-03	1.97E-03	5.77E-03	4.65E-03	4.95E-03	0.01	3.77E-04	3.66E-04	3.93E-04	0.00
562440_418444C	562440	4184440	2.65E-02	2.13E-02	2.27E-02	1.73E-03	1.68E-03	1.81E-03	5.30E-03	4.26E-03	4.54E-03	0.01	3.47E-04	3.36E-04	3.61E-04	0.00
562460_418444C	562460	4184440	2.45E-02	1.97E-02	2.10E-02	1.60E-03	1.55E-03	1.67E-03	4.89E-03	3.94E-03	4.20E-03	0.01	3.20E-04	3.10E-04	3.33E-04	0.00
562480_418444C	562480	4184440	2.26E-02	1.82E-02	1.94E-02	1.48E-03	1.43E-03	1.54E-03	4.51E-03	3.63E-03	3.87E-03	0.00	2.95E-04	2.86E-04	3.08E-04	0.00
562500_418444C	562500	4184440	2.09E-02	1.68E-02	1.79E-02	1.37E-03	1.33E-03	1.43E-03	4.18E-03	3.36E-03	3.59E-03	0.00	2.74E-04	2.65E-04	2.85E-04	0.00
562520_418444C	562520	4184440	1.94E-02	1.56E-02	1.66E-02	1.23E-03	1.19E-03	1.28E-03	3.89E-03	3.12E-03	3.33E-03	0.00	2.54E-04	2.45E-04	2.65E-04	0.00
562540_418444C	562540	4184440	1.78E-02	1.43E-02	1.53E-02	1.13E-03	1.09E-03	1.17E-03	3.56E-03	2.87E-03	3.05E-03	0.00	2.35E-04	2.26E-04	2.45E-04	0.00
562560_418444C	562560	4184440	1.65E-02	1.33E-02	1.41E-02	1.08E-03	1.05E-03	1.12E-03	3.30E-03	2.65E-03	2.83E-03	0.00	2.16E-04	2.09E-04	2.25E-04	0.00
562100_418446C	562100	4184460	1.03E-02	8.33E-03	8.86E-03	7.84E-04	7.84E-04	8.41E-04	2.06E-03	1.67E-03	1.77E-03	0.00	1.57E-04	1.59E-04	1.68E-04	0.00
562120_418446C	562120	4184460	1.23E-02	9.91E-03	1.06E-02	8.89E-04	8.88E-04	9.46E-04	2.45E-03	1.98E-03	2.11E-03	0.00	1.78E-04	1.78E-04	1.89E-04	0.00
562140_418446C	562140	4184460	1.46E-02	1.18E-02	1.26E-02	1.03E-03	1.02E-03	1.09E-03	2.93E-03	2.36E-03	2.52E-03	0.00	2.05E-04	2.03E-04	2.17E-04	0.00
562160_418446C	562160	4184460	1.74E-02	1.40E-02	1.49E-02	1.19E-03	1.17E-03	1.25E-03	3.47E-03	2.80E-03	2.98E-03	0.00	2.38E-04	2.34E-04	2.50E-04	0.00
562180_418446C	562180	4184460	2.04E-02	1.64E-02	1.75E-02	1.38E-03	1.35E-03	1.44E-03	4.08E-03	3.28E-03	3.50E-03	0.00	2.75E-04	2.69E-04	2.88E-04	0.00
562200_418446C	562200	4184460	2.34E-02	1.89E-02	2.01E-02	1.56E-03	1.52E-03	1.64E-03	4.68E-03	3.77E-03	4.02E-03	0.00	3.13E-04	3.05E-04	3.27E-04	0.00
562220_418446C	562220	4184460	2.59E-02	2.09E-02	2.22E-02	1.72E-03	1.67E-03	1.80E-03	5.18E-03	4.17E-03	4.45E-03	0.01	3.44E-04	3.35E-04	3.59E-04	0.00
562240_418446C	562240	4184460	2.76E-02	2.22E-02	2.37E-02	1.82E-03	1.77E-03	1.90E-03	5.52E-03	4.44E-03	4.74E-03	0.01	3.64E-04	3.54E-04	3.80E-04	0.00
562260_418446C	562260	4184460	2.89E-02	2.33E-02	2.48E-02	1.90E-03	1.85E-03	1.98E-03	5.78E-03	4.65E-03	4.96E-03	0.01	3.80E-04	3.69E-04	3.97E-04	0.00
562280_418446C	562280	4184460	2.92E-02	2.35E-02	2.51E-02	1.92E-03	1.86E-03	2.00E-03	5.84E-03	4.70E-03	5.01E-03	0.01	3.84E-04			

Diesel Particulate Matter concentration, C_{DPM} ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated			Unmitigated HI Risk				Mitigated HI Risk			
			2024	2025	2026	2024	2025	2026	C_{DPM}/REL				C_{DPM}/REL			
			2024	2025	2026	2024	2025	2026	2024	2025	2026	Max	2024	2025	2026	Max
562480_418450C	562480	4184500	1.15E-02	9.23E-03	9.83E-03	7.50E-04	7.27E-04	7.82E-04	2.29E-03	1.85E-03	1.97E-03	0.00	1.50E-04	1.45E-04	1.56E-04	0.00
562500_418450C	562500	4184500	1.10E-02	8.82E-03	9.40E-03	7.18E-04	6.95E-04	7.48E-04	2.19E-03	1.76E-03	1.88E-03	0.00	1.44E-04	1.39E-04	1.50E-04	0.00
562520_418450C	562520	4184500	1.05E-02	8.44E-03	9.00E-03	6.87E-04	6.65E-04	7.15E-04	2.10E-03	1.69E-03	1.80E-03	0.00	1.37E-04	1.33E-04	1.43E-04	0.00
562540_418450C	562540	4184500	9.99E-03	8.04E-03	8.57E-03	6.54E-04	6.34E-04	6.81E-04	2.00E-03	1.61E-03	1.71E-03	0.00	1.31E-04	1.27E-04	1.36E-04	0.00
562560_418450C	562560	4184500	9.55E-03	7.69E-03	8.19E-03	6.25E-04	6.06E-04	6.51E-04	1.91E-03	1.54E-03	1.64E-03	0.00	1.25E-04	1.21E-04	1.30E-04	0.00
561960_418452C	561960	4184520	3.33E-03	2.69E-03	2.86E-03	2.33E-04	2.30E-04	2.46E-04	6.66E-04	5.38E-04	5.73E-04	0.00	4.66E-05	4.60E-05	4.91E-05	0.00
561980_418452C	561980	4184520	3.71E-03	2.99E-03	3.19E-03	2.60E-04	2.58E-04	2.75E-04	7.42E-04	5.99E-04	6.38E-04	0.00	5.21E-05	5.16E-05	5.51E-05	0.00
562000_418452C	562000	4184520	4.14E-03	3.34E-03	3.56E-03	2.90E-04	2.87E-04	3.06E-04	8.28E-04	6.68E-04	7.12E-04	0.00	5.80E-05	5.74E-05	6.13E-05	0.00
562020_418452C	562020	4184520	4.63E-03	3.73E-03	3.95E-03	3.22E-04	3.18E-04	3.39E-04	9.26E-04	7.47E-04	7.96E-04	0.00	6.44E-05	6.35E-05	6.79E-05	0.00
562040_418452C	562040	4184520	5.21E-03	4.20E-03	4.48E-03	3.60E-04	3.54E-04	3.79E-04	1.04E-03	8.41E-04	8.96E-04	0.00	7.19E-05	7.08E-05	7.57E-05	0.00
562060_418452C	562060	4184520	5.86E-03	4.73E-03	5.03E-03	4.01E-04	3.94E-04	4.22E-04	1.17E-03	9.45E-04	1.01E-03	0.00	8.02E-05	7.88E-05	8.43E-05	0.00
562080_418452C	562080	4184520	6.61E-03	5.33E-03	5.68E-03	4.49E-04	4.40E-04	4.71E-04	1.32E-03	1.07E-03	1.14E-03	0.00	8.98E-05	8.80E-05	9.43E-05	0.00
562100_418452C	562100	4184520	7.39E-03	5.96E-03	6.35E-03	4.98E-04	4.87E-04	5.22E-04	1.48E-03	1.19E-03	1.27E-03	0.00	9.97E-05	9.75E-05	1.04E-04	0.00
562120_418452C	562120	4184520	8.18E-03	6.59E-03	7.02E-03	5.48E-04	5.35E-04	5.74E-04	1.64E-03	1.32E-03	1.40E-03	0.00	1.10E-04	1.07E-04	1.15E-04	0.00
562140_418452C	562140	4184520	8.96E-03	7.21E-03	7.69E-03	5.97E-04	5.82E-04	6.25E-04	1.79E-03	1.44E-03	1.54E-03	0.00	1.19E-04	1.16E-04	1.25E-04	0.00
562160_418452C	562160	4184520	9.70E-03	7.81E-03	8.32E-03	6.44E-04	6.27E-04	6.73E-04	1.94E-03	1.56E-03	1.66E-03	0.00	1.29E-04	1.25E-04	1.35E-04	0.00
562180_418452C	562180	4184520	1.04E-02	8.39E-03	8.94E-03	6.90E-04	6.71E-04	7.21E-04	2.08E-03	1.68E-03	1.79E-03	0.00	1.38E-04	1.34E-04	1.44E-04	0.00
562200_418452C	562200	4184520	1.11E-02	8.98E-03	9.56E-03	7.36E-04	7.15E-04	7.68E-04	2.23E-03	1.80E-03	1.91E-03	0.00	1.47E-04	1.43E-04	1.54E-04	0.00
562220_418452C	562220	4184520	1.18E-02	9.47E-03	1.01E-02	7.75E-04	7.52E-04	8.08E-04	2.35E-03	1.89E-03	2.02E-03	0.00	1.57E-04	1.50E-04	1.62E-04	0.00
562240_418452C	562240	4184520	1.21E-02	9.74E-03	1.04E-02	7.96E-04	7.73E-04	8.30E-04	2.42E-03	1.95E-03	2.08E-03	0.00	1.59E-04	1.55E-04	1.66E-04	0.00
562260_418452C	562260	4184520	1.23E-02	9.89E-03	1.05E-02	8.07E-04	7.83E-04	8.41E-04	2.46E-03	1.98E-03	2.11E-03	0.00	1.61E-04	1.57E-04	1.68E-04	0.00
562280_418452C	562280	4184520	1.23E-02	9.94E-03	1.06E-02	8.10E-04	7.86E-04	8.45E-04	2.47E-03	1.99E-03	2.12E-03	0.00	1.62E-04	1.57E-04	1.69E-04	0.00
562300_418452C	562300	4184520	1.25E-02	1.00E-02	1.07E-02	8.17E-04	7.92E-04	8.51E-04	2.49E-03	2.01E-03	2.14E-03	0.00	1.63E-04	1.58E-04	1.70E-04	0.00
562320_418452C	562320	4184520	1.25E-02	1.01E-02	1.07E-02	8.19E-04	7.94E-04	8.53E-04	2.50E-03	2.01E-03	2.14E-03	0.00	1.64E-04	1.59E-04	1.71E-04	0.00
562340_418452C	562340	4184520	1.24E-02	9.97E-03	1.06E-02	8.11E-04	7.86E-04	8.45E-04	2.48E-03	1.99E-03	2.12E-03	0.00	1.62E-04	1.57E-04	1.69E-04	0.00
562360_418452C	562360	4184520	1.21E-02	9.75E-03	1.04E-02	7.93E-04	7.69E-04	8.25E-04	2.42E-03	1.95E-03	2.08E-03	0.00	1.59E-04	1.54E-04	1.65E-04	0.00
562380_418452C	562380	4184520	1.17E-02	9.44E-03	1.01E-02	7.68E-04	7.44E-04	8.00E-04	2.35E-03	1.89E-03	2.01E-03	0.00	1.54E-04	1.49E-04	1.60E-04	0.00
562400_418452C	562400	4184520	1.13E-02	9.11E-03	9.71E-03	7.41E-04	7.18E-04	7.72E-04	2.26E-03	1.82E-03	1.94E-03	0.00	1.48E-04	1.44E-04	1.54E-04	0.00
562420_418452C	562420	4184520	1.08E-02	8.69E-03	9.26E-03	7.07E-04	6.85E-04	7.36E-04	2.16E-03	1.74E-03	1.85E-03	0.00	1.41E-04	1.37E-04	1.47E-04	0.00
562440_418452C	562440	4184520	1.03E-02	8.31E-03	8.86E-03	6.76E-04	6.55E-04	7.04E-04	2.07E-03	1.66E-03	1.77E-03	0.00	1.35E-04	1.31E-04	1.41E-04	0.00
562460_418452C	562460	4184520	9.89E-03	7.96E-03	8.48E-03	6.47E-04	6.27E-04	6.74E-04	1.98E-03	1.59E-03	1.70E-03	0.00	1.29E-04	1.25E-04	1.35E-04	0.00
562480_418454C	562480	4184540	9.46E-03	7.61E-03	8.11E-03	6.19E-04	6.00E-04	6.45E-04	1.89E-03	1.52E-03	1.62E-03	0.00	1.24E-04	1.20E-04	1.29E-04	0.00
562500_418452C	562500	4184520	9.08E-03	7.30E-03	7.78E-03	5.94E-04	5.76E-04	6.19E-04	1.82E-03	1.46E-03	1.56E-03	0.00	1.19E-04	1.15E-04	1.24E-04	0.00
562520_418452C	562520	4184520	8.74E-03	7.03E-03	7.50E-03	5.72E-04	5.54E-04	5.96E-04	1.75E-03	1.41E-03	1.50E-03	0.00	1.14E-04	1.11E-04	1.19E-04	0.00
562540_418452C	562540	4184520	8.38E-03	6.74E-03	7.18E-03	5.48E-04	5.31E-04	5.71E-04	1.68E-03	1.35E-03	1.44E-03	0.00	1.10E-04	1.06E-04	1.14E-04	0.00
561980_418454C	561980	4184540	3.54E-03	2.85E-03	3.04E-03	2.41E-04	2.36E-04	2.53E-04	7.08E-04	5.71E-04	6.08E-04	0.00	4.81E-05	4.72E-05	5.06E-05	0.00
562000_418454C	562000	4184540	3.93E-03	3.16E-03	3.37E-03	2.67E-04	2.62E-04	2.80E-04	7.85E-04	6.33E-04	6.74E-04	0.00	5.34E-05	5.23E-05	5.60E-05	0.00
562020_418454C	562020	4184540	4.35E-03	3.50E-03	3.73E-03	2.94E-04	2.88E-04	3.09E-04	8.70E-04	7.01E-04	7.47E-04	0.00	5.89E-05	5.77E-05	6.18E-05	0.00
562040_418454C	562040	4184540	4.83E-03	3.89E-03	4.15E-03	3.26E-04	3.19E-04	3.42E-04	9.67E-04	7.79E-04	8.30E-04	0.00	6.52E-05	6.38E-05	6.84E-05	0.00
562060_418454C	562060	4184540	5.38E-03	4.33E-03	4.62E-03	3.61E-04	3.53E-04	3.79E-04	1.08E-03	8.66E-04	9.23E-04	0.00	7.23E-05	7.06E-05	7.57E-05	0.00
562080_418454C	562080	4184540	5.96E-03	4.80E-03	5.11E-03	3.99E-04	3.89E-04	4.17E-04	1.19E-03	9.60E-04	1.02E-03	0.00	7.97E-05	7.78E-05	8.35E-05	0.00
562100_418454C	562100	4184540	6.58E-03	5.26E-03	5.61E-03	4.35E-04	4.25E-04	4.56E-04	1.31E-03	1.05E-03	1.12E-03	0.00	8.72E-05	8.52E-05	9.12E-05	0.00
562120_418454C	562120	4184540	7.08E-03	5.70E-03	6.07E-03	4.71E-04	4.61E-04	4.92E-04	1.44E-03	1.15E-03	1.22E-03	0.00	9.41E-05	9.21E-05	9.84E-05	0.00
562140_418454C	562140	4184540	7.61E-03	6.13E-03	6.53E-03	5.05E-04	4.91E-04	5.27E-04	1.52E-03	1.23E-03	1.31E-03	0.00	1.01E-04	9.82E-05	1.05E-04	0.00
562160_418454C	562160	4184540	8.13E-03	6.54E-03	6.97E-03	5.38E-04	5.23E-04	5.61E-04	1.63E-03	1.31E-03	1.39E-03	0.00	1.08E-04	1.05E-04	1.12E-04	0.00
562180_418454C	562180	4184540	8.64E-03	6.96E-03	7.41E-03	5.70E-04	5.54E-04	5.95E-04	1.73E-03	1.39E-03	1.48E-03	0.00	1.14E-04	1.11E-04	1.19E-04	0.00
562200_418454C	562200	4184540	9.13E-03	7.35E-03	7.84E-03	6.02E-04	5.84E-04	6.28E-04	1.83E-03	1.47E-03	1.57E-03	0.00	1.20E-04	1.17E-04	1.26E-04	0.00
562220_418454C	562220	4184540	9.53E-03	7.67E-03	8.18E-03	6.27E-04	6.09E-04	6.54E-04	1.91E-03	1.53E-03	1.64E-03	0.00	1.25E-04	1.22E-04	1.31E-04	0.00
562240_418454C	562240	4184540	9.78E-03	7.88E-03	8.39E-03	6.43E-04	6.24E-04	6.70E-04	1.96E-03	1.58E-03	1.68E-03	0.00	1.29E-04	1.25E-04	1.34E-04	0.00
562260_418454C	562260	4184540	9.89E-03	7.96E-03	8.48E-03	6.49E-04	6.30E-04	6.77E-04	1.98E-03	1.59E-03	1.70E-03	0.00	1.30E-04	1.26E-04	1.35E-04	0.00
562280_418454C	562280	4184540	9.94E-03	8.00E-03	8.52E-03	6.52E-04	6.32E-04	6.79E-04	1.99E-03	1.60E-03	1.70E-03	0.00	1.30E-04	1.26E-04	1.36E-04	0.00
562300_418454C	562300	4184540	9.98E-03	8.03E-03	8.56E-03	6.54E-04	6.34E-04	6.81E-04	2.00E-03	1.61E-03	1.71E-03	0.00	1.31E-04	1.27E-04	1.36E-04	0.00
562320_418454C	562320	4184540	9.98E-03	8.04E-03	8.56E-03	6.54E-04	6.34E-04	6.82E-04	2.00E-03	1.61E-03	1.71E-03	0.00	1.31E-04	1.27E-04	1.36E-04	0.00
562340_418454C	562340	4184540	9.99E-03	8.04E-03	8.56E-03	6.54E-04	6.34E-04	6.81E-04	2.00E-03	1.61E-03	1.71E-03	0.00	1.31E-04	1		

Diesel Particulate Matter concentration, C_{DPM} (ug/m³)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026
562020_418460C	562020	4184600	3.52E-03	2.84E-03	3.02E-03	2.33E-04	2.26E-04	2.43E-04
562040_418460C	562040	4184600	3.78E-03	3.04E-03	3.24E-03	2.50E-04	2.42E-04	2.60E-04
562060_418460C	562060	4184600	4.03E-03	3.24E-03	3.46E-03	2.66E-04	2.58E-04	2.77E-04
562080_418460C	562080	4184600	4.26E-03	3.43E-03	3.65E-03	2.81E-04	2.73E-04	2.93E-04
562100_418460C	562100	4184600	4.48E-03	3.61E-03	3.84E-03	2.95E-04	2.86E-04	3.08E-04
562120_418460C	562120	4184600	4.68E-03	3.77E-03	4.02E-03	3.08E-04	2.99E-04	3.21E-04
562140_418460C	562140	4184600	4.87E-03	3.92E-03	4.18E-03	3.20E-04	3.11E-04	3.34E-04
562160_418460C	562160	4184600	5.07E-03	4.08E-03	4.35E-03	3.33E-04	3.23E-04	3.47E-04
562180_418460C	562180	4184600	5.28E-03	4.25E-03	4.53E-03	3.47E-04	3.35E-04	3.62E-04
562200_418460C	562200	4184600	5.48E-03	4.41E-03	4.70E-03	3.59E-04	3.48E-04	3.74E-04
562220_418460C	562220	4184600	5.65E-03	4.55E-03	4.84E-03	3.70E-04	3.59E-04	3.85E-04
562240_418460C	562240	4184600	5.71E-03	4.60E-03	4.90E-03	3.74E-04	3.63E-04	3.90E-04
562260_418460C	562260	4184600	5.74E-03	4.62E-03	4.92E-03	3.76E-04	3.64E-04	3.92E-04
562280_418460C	562280	4184600	5.72E-03	4.61E-03	4.91E-03	3.75E-04	3.63E-04	3.91E-04
562300_418460C	562300	4184600	5.74E-03	4.62E-03	4.93E-03	3.76E-04	3.65E-04	3.92E-04
562320_418460C	562320	4184600	5.78E-03	4.66E-03	4.96E-03	3.79E-04	3.67E-04	3.94E-04
562340_418460C	562340	4184600	5.81E-03	4.67E-03	4.98E-03	3.80E-04	3.68E-04	3.96E-04
562360_418460C	562360	4184600	5.82E-03	4.68E-03	4.99E-03	3.80E-04	3.69E-04	3.96E-04
562380_418460C	562380	4184600	5.77E-03	4.64E-03	4.95E-03	3.77E-04	3.66E-04	3.93E-04
562400_418460C	562400	4184600	5.70E-03	4.58E-03	4.89E-03	3.72E-04	3.61E-04	3.88E-04
562420_418460C	562420	4184600	5.60E-03	4.50E-03	4.80E-03	3.66E-04	3.55E-04	3.81E-04
562440_418460C	562440	4184600	5.45E-03	4.39E-03	4.68E-03	3.56E-04	3.45E-04	3.71E-04
562460_418460C	562460	4184600	5.31E-03	4.27E-03	4.55E-03	3.47E-04	3.36E-04	3.62E-04
562480_418460C	562480	4184600	5.15E-03	4.15E-03	4.42E-03	3.37E-04	3.26E-04	3.51E-04
562500_418462C	562500	4184620	3.45E-03	2.77E-03	2.96E-03	2.73E-04	2.70E-04	2.87E-04
562520_418462C	562520	4184620	3.63E-03	2.92E-03	3.12E-03	2.93E-04	2.92E-04	2.99E-04
562540_418462C	562540	4184620	3.81E-03	3.06E-03	3.27E-03	3.12E-04	3.12E-04	3.19E-04
562560_418462C	562560	4184620	3.97E-03	3.19E-03	3.40E-03	3.27E-04	3.27E-04	3.34E-04
562580_418462C	562580	4184620	4.12E-03	3.32E-03	3.54E-03	3.42E-04	3.42E-04	3.49E-04
562600_418462C	562600	4184620	4.27E-03	3.44E-03	3.67E-03	3.57E-04	3.57E-04	3.64E-04
562620_418462C	562620	4184620	4.43E-03	3.57E-03	3.80E-03	3.72E-04	3.72E-04	3.79E-04
562640_418462C	562640	4184620	4.60E-03	3.71E-03	3.95E-03	3.87E-04	3.87E-04	3.94E-04
562660_418462C	562660	4184620	4.76E-03	3.83E-03	4.08E-03	4.02E-04	4.02E-04	4.09E-04
562680_418462C	562680	4184620	4.87E-03	3.92E-03	4.18E-03	4.17E-04	4.17E-04	4.24E-04
562700_418462C	562700	4184620	4.91E-03	3.95E-03	4.21E-03	4.21E-04	4.21E-04	4.28E-04
562720_418462C	562720	4184620	4.93E-03	3.96E-03	4.23E-03	4.23E-04	4.23E-04	4.30E-04
562740_418462C	562740	4184620	4.91E-03	3.95E-03	4.21E-03	4.21E-04	4.21E-04	4.28E-04
562760_418462C	562760	4184620	4.94E-03	3.97E-03	4.24E-03	4.24E-04	4.24E-04	4.31E-04
562780_418462C	562780	4184620	4.97E-03	4.00E-03	4.26E-03	4.26E-04	4.26E-04	4.33E-04
562800_418462C	562800	4184620	4.98E-03	4.01E-03	4.27E-03	4.27E-04	4.27E-04	4.34E-04
562820_418462C	562820	4184620	5.01E-03	4.03E-03	4.30E-03	4.30E-04	4.30E-04	4.37E-04
562840_418462C	562840	4184620	4.98E-03	4.01E-03	4.27E-03	4.27E-04	4.27E-04	4.34E-04
562860_418462C	562860	4184620	4.94E-03	3.98E-03	4.24E-03	4.24E-04	4.24E-04	4.31E-04
562880_418462C	562880	4184620	4.87E-03	3.92E-03	4.18E-03	4.18E-04	4.18E-04	4.25E-04
562900_418462C	562900	4184620	4.77E-03	3.84E-03	4.09E-03	4.09E-04	4.09E-04	4.16E-04
562920_418462C	562920	4184620	4.67E-03	3.76E-03	4.00E-03	3.99E-04	3.99E-04	4.06E-04
562940_418462C	562940	4184620	4.41E-03	3.50E-03	3.74E-03	3.74E-04	3.74E-04	3.81E-04
562960_418462C	562960	4184620	4.26E-03	3.36E-03	3.60E-03	3.60E-04	3.60E-04	3.67E-04
562980_418462C	562980	4184620	4.09E-03	3.20E-03	3.44E-03	3.44E-04	3.44E-04	3.51E-04
563000_418462C	563000	4184620	3.93E-03	3.04E-03	3.28E-03	3.28E-04	3.28E-04	3.35E-04
563020_418462C	563020	4184620	3.78E-03	2.89E-03	3.13E-03	3.13E-04	3.13E-04	3.20E-04
563040_418462C	563040	4184620	3.63E-03	2.74E-03	2.98E-03	2.98E-04	2.98E-04	3.05E-04
563060_418462C	563060	4184620	3.48E-03	2.59E-03	2.83E-03	2.83E-04	2.83E-04	2.90E-04
563080_418462C	563080	4184620	3.33E-03	2.44E-03	2.68E-03	2.68E-04	2.68E-04	2.75E-04
563100_418462C	563100	4184620	3.18E-03	2.29E-03	2.53E-03	2.53E-04	2.53E-04	2.60E-04
563120_418462C	563120	4184620	3.03E-03	2.14E-03	2.38E-03	2.38E-04	2.38E-04	2.45E-04
563140_418462C	563140	4184620	2.88E-03	1.99E-03	2.23E-03	2.23E-04	2.23E-04	2.30E-04
563160_418462C	563160	4184620	2.73E-03	1.84E-03	2.08E-03	2.08E-04	2.08E-04	2.15E-04
563180_418462C	563180	4184620	2.58E-03	1.69E-03	1.93E-03	1.93E-04	1.93E-04	2.00E-04
563200_418462C	563200	4184620	2.43E-03	1.54E-03	1.78E-03	1.78E-04	1.78E-04	1.85E-04
563220_418462C	563220	4184620	2.28E-03	1.39E-03	1.63E-03	1.63E-04	1.63E-04	1.70E-04
563240_418462C	563240	4184620	2.13E-03	1.24E-03	1.48E-03	1.48E-04	1.48E-04	1.55E-04
563260_418462C	563260	4184620	1.98E-03	1.09E-03	1.33E-03	1.33E-04	1.33E-04	1.40E-04
563280_418462C	563280	4184620	1.83E-03	0.94E-03	1.18E-03	1.18E-04	1.18E-04	1.25E-04
563300_418462C	563300	4184620	1.68E-03	0.79E-03	1.03E-03	1.03E-04	1.03E-04	1.10E-04
563320_418462C	563320	4184620	1.53E-03	0.64E-03	0.88E-03	0.88E-04	0.88E-04	0.95E-04
563340_418462C	563340	4184620	1.38E-03	0.49E-03	0.73E-03	0.73E-04	0.73E-04	0.80E-04
563360_418462C	563360	4184620	1.23E-03	0.34E-03	0.58E-03	0.58E-04	0.58E-04	0.65E-04
563380_418462C	563380	4184620	1.08E-03	0.19E-03	0.43E-03	0.43E-04	0.43E-04	0.50E-04
563400_418462C	563400	4184620	9.3E-04	6.4E-04	0.28E-03	0.28E-04	0.28E-04	0.35E-04
563420_418462C	563420	4184620	7.8E-04	4.9E-04	0.13E-03	0.13E-04	0.13E-04	0.20E-04
563440_418462C	563440	4184620	6.3E-04	3.4E-04	0.08E-03	0.08E-04	0.08E-04	0.15E-04
563460_418462C	563460	4184620	4.8E-04	1.9E-04	0.03E-03	0.03E-04	0.03E-04	0.10E-04
563480_418462C	563480	4184620	3.3E-04	9.1E-05	0.02E-03	0.02E-04	0.02E-04	0.09E-04
563500_418462C	563500	4184620	1.8E-04	0.04E-04	0.01E-03	0.01E-04	0.01E-04	0.08E-04
563520_418462C	563520	4184620	0.3E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.07E-04
563540_418462C	563540	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.06E-04
563560_418462C	563560	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.05E-04
563580_418462C	563580	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.04E-04
563600_418462C	563600	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.03E-04
563620_418462C	563620	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.02E-04
563640_418462C	563640	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.01E-04
563660_418462C	563660	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563680_418462C	563680	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563700_418462C	563700	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563720_418462C	563720	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563740_418462C	563740	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563760_418462C	563760	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563780_418462C	563780	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563800_418462C	563800	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563820_418462C	563820	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563840_418462C	563840	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563860_418462C	563860	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563880_418462C	563880	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563900_418462C	563900	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563920_418462C	563920	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0.00E-04
563940_418462C	563940	4184620	0.00E-04	0.00E-04	0.00E-03	0.00E-04	0.00E-04	0

Diesel Particulate Matter concentration, C_{DPM} ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated HI Risk

C_{DPM}/REL			
2024	2025	2026	Max

Mitigated HI Risk

C_{DPM}/REL			
2024	2025	2026	Max

Diesel Particulate Matter concentration, C_{DPM} ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated HI Risk

C_{DPM}/REL			
2024	2025	2026	Max

Mitigated HI Risk

C_{DPM}/REL			
2024	2025	2026	Max

Diesel Particulate Matter concentration, C_{DPM} ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated HI Risk

C_{DPM}/REL			
2024	2025	2026	Max

Mitigated HI Risk

C_{DPM}/REL			
2024	2025	2026	Max

533 Kirkham Street

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
Haul	0.02	0.06

Modeled Routes	
Trip Length	Haul
682.5	meters

from AERMOD

Construction Year	Start Date	End Date	Days			Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)			
			3rd Trimester	Age 0<2	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2024	5/1/2024	12/31/2024	91	154.00	0.00	245	4.27E-02	2.10E-04	5.40E-04	2.75E-03	2.10E-04	5.40E-04
2025	1/1/2025	12/31/2025	0	365.00	0.00	365	5.12E-02	0.00E+00	1.15E-03	3.95E-03	0.00E+00	1.15E-03
2026	1/1/2026	5/1/2026	0	121.00	0.00	121	1.81E-02	0.00E+00	3.80E-04	1.41E-03	0.00E+00	3.80E-04

Construction Year	Start Date	End Date	Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
			CSTN	HAUL	CSTN	HAUL
2024	5/1/2024	12/31/2024	1.83E-03	1.54E-06	1.18E-04	1.54E-06
2025	1/1/2025	12/31/2025	1.47E-03	1.92E-06	1.18E-04	1.92E-06
2026	1/1/2026	5/1/2026	1.57E-03	1.92E-06	1.22E-04	1.92E-06

Risk Factors	Abbreviation	UOM	3rd Trimester	0<2	2<16
Daily Breathing Rate (95th %ile)	DBR	L/kg-day	361	1090	572
Fraction Of Time At Home	FAH	unitless	1	1	0.72
Exposure Frequency	EF	days/year	0.96	0.96	0.96
Age Sensitivity Factor	ASF	unitless	10	10	3
Inhalation Absorption Factor	A	unitless	1	1	1
Conversion Factor	CF ₁	m ³ /L	0.001	0.001	0.001
Conversion Factor	CF ₂	μg/m ³	0.001	0.001	0.001
Cancer Potency Factor (diesel exp)	CPF	mg/kg-day ⁻¹	1.1	1.1	1.1
Averaging Time (for residential exp)	AT	years	70.00	70.00	70.00

Intake Factor for Inhalation, IF (m ³ /kg-day)	Year	Equation	3rd Trimester	0<2	2<16
	2024	DBR*FAH*EF	0.012	0.063	0.000
	2025	*ED*ASF*A*CF/AT	0.000	0.149	0.000
	2026		0.000	0.049	0.000

Risk Calculation Part 1, R1				
Year	IF*CPF*CF	3rd Trimester	0<2	2<16
2025	0.00E+00	1.64E-04	0.00E+00	
2026	0.00E+00	5.44E-05	0.00E+00	

MAX Unmitigated Mitigated	Cancer Risk	UTM X	UTM Y
	29.9	562320	4184400
2.2	562320	4184400	

Diesel Particulate Matter concentration, C_{DPM} (ug/m³)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026
562040_4184080	562040	4184080	3.83E-03	3.08E-03	3.28E-03	2.48E-04	2.40E-04	2.58E-04
561980_4184160	561980	4184160	4.28E-03	3.44E-03	3.67E-03	2.79E-04	2.69E-04	2.89E-04
562000_4184160	562000	4184160	4.67E-03	3.76E-03	4.00E-03	3.03E-04	2.93E-04	3.15E-04
562020_4184160	562020	4184160	5.10E-03	4.11E-03	4.38E-03	3.31E-04	3.20E-04	3.44E-04
562040_4184160	562040	4184160	5.58E-03	4.49E-03	4.78E-03	3.62E-04	3.50E-04	3.75E-04
561960_4184180	561960	4184180	4.11E-03	3.31E-03	3.53E-03	2.67E-04	2.59E-04	2.78E-04
561980_4184180	561980	4184180	4.52E-03	3.64E-03	3.88E-03	2.94E-04	2.84E-04	3.06E-04
562000_4184180	562000	4184180	4.99E-03	4.01E-03	4.28E-03	3.24E-04	3.13E-04	3.37E-04
562020_4184180	562020	4184180	5.50E-03	4.43E-03	4.72E-03	3.57E-04	3.45E-04	3.71E-04
562040_4184180	562040	4184180	6.09E-03	4.90E-03	5.22E-03	3.82E-04	4.11E-04	4.11E-04
561940_4184200	561940	4184200	3.89E-03	3.13E-03	3.34E-03	2.53E-04	2.45E-04	2.63E-04
561960_4184200	561960	4184200	4.29E-03	3.45E-03	3.68E-03	2.79E-04	2.70E-04	2.90E-04
561980_4184200	561980	4184200	4.75E-03	3.82E-03	4.07E-03	3.09E-04	2.99E-04	3.21E-04
562000_4184200	562000	4184200	5.28E-03	4.25E-03	4.53E-03	3.43E-04	3.32E-04	3.57E-04
562020_4184200	562020	4184200	5.89E-03	4.74E-03	5.05E-03	3.82E-04	3.70E-04	3.98E-04
562040_4184200	562040	4184200	6.59E-03	5.30E-03	5.65E-03	4.28E-04	4.14E-04	4.45E-04
561940_4184220	561940	4184220	4.00E-03	3.22E-03	3.43E-03	2.61E-04	2.52E-04	2.71E-04
561960_4184220	561960	4184220	4.44E-03	3.57E-03	3.81E-03	2.89E-04	2.79E-04	3.01E-04
561980_4184220	561980	4184220	4.95E-03	3.98E-03	4.25E-03	3.22E-04	3.11E-04	3.35E-04
562000_4184220	562000	4184220	5.55E-03	4.46E-03	4.76E-03	3.61E-04	3.49E-04	3.75E-04
562080_4184220	562080	4184220	9.18E-03	7.38E-03	7.87E-03	5.95E-04	5.75E-04	6.19E-04
562100_4184220	562100	4184220	1.05E-02	8.46E-03	9.02E-03	6.82E-04	6.59E-04	7.09E-04
561940_4184240	561940	4184240	4.09E-03	3.29E-03	3.51E-03	2.66E-04	2.58E-04	2.77E-04
561960_4184240	561960	4184240	4.56E-03	3.67E-03	3.91E-03	2.97E-04	2.87E-04	3.09E-04
561980_4184240	561980	4184240	5.11E-03	4.11E-03	4.38E-03	3.32E-04	3.24E-04	3.46E-04
562000_4184240	562000	4184240	5.77E-03	4.64E-03	4.95E-03	3.75E-04	3.63E-04	3.90E-04
562040_4184240	562040	4184240	6.65E-03	6.99E-03	7.42E-03	5.43E-04	5.48E-04	5.84E-04
562520_4184240	562520	4184240	2.94E-02	2.37E-02	2.51E-02	1.92E-03	1.86E-03	2.00E-03
561920_4184260	561920	4184260	3.73E-03	3.00E-03	3.20E-03	2.43E-04	2.36E-04	2.53E-04
561940_4184260	561940	4184260	4.15E-03	3.34E-03	3.56E-03	2.70E-04	2.62E-04	2.81E-04
561960_4184260	561960	4184260	4.64E-03	3.73E-03	3.98E-03	3.02E-04	2.93E-04	3.15E-04
561980_4184260	561980	4184260	5.23E-03	4.21E-03	4.48E-03	3.40E-04	3.29E-04	3.54E-04
562000_4184260	562000	4184260	5.94E-03	4.78E-03	5.09E-03	3.86E-04	3.74E-04	4.02E-04
562020_4184260	562020	4184260	6.80E-03	5.47E-03	5.83E-03	4.42E-04	4.28E-04	4.60E-04
562040_4184260	562040	4184260	7.86E-03	6.32E-03	6.74E-03	5.11E-04	4.94E-04	5.31E-04
562460_4184260	562460	4184260	4.62E-02	3.71E-02	3.96E-02	3.00E-03	3.12E-03	3.31E-03
562480_4184260	562480	4184260	4.03E-02	3.24E-02	3.45E-02	2.62E-03	2.53E-03	2.72E-03
562500_4184260	562500	4184260	3.53E-02	2.84E-02	3.03E-02	2.30E-03	2.23E-03	2.40E-03
562520_4184260	562520	4184260	3.11E-02	2.51E-02	2.67E-02	2.04E-03	1.97E-03	2.12E-03
561920_4184280	561920	4184280	3.75E-03	3.02E-03	3.23E-03	2.45E-04	2.37E-04	2.55E-04
561940_4184280	561940	4184280	4.18E-03	3.36E-03	3.58E-03	2.73E-04	2.64E-04	2.84E-04
561960_4184280	561960	4184280	4.68E-03	3.77E-03	4.02E-03	3.05E-04	2.96E-04	3.18E-04
561980_4184280	561980	4184280	5.29E-03	4.26E-03	4.54E-03	3.45E-04	3.35E-04	3.59E-04
562000_4184280	562000	4184280	6.04E-03	4.86E-03	5.18E-03	3.94E-04	3.81E-04	4.10E-04
562020_4184280	562020	4184280	6.97E-03	5.61E-03	5.97E-03	4.54E-04	4.39E-04	4.72E-04
562460_4184280	562460	4184280	5.01E-02	4.03E-02	4.30E-02	3.26E-03	3.15E-03	3.39E-03
562480_4184280	562480	4184280	4.31E-02	3.47E-02	3.69E-02	2.81E-03	2.72E-03	2.93E-03
561920_4184300	561920	4184300	3.74E-03	3.01E-03	3.21E-03	2.45E-04	2.37E-04	2.55E-04
561940_4184300	561940	4184300	4.17E-03	3.36E-03	3.58E-03	2.73E-04	2.64E-04	2.84E-04
561960_4184300	561960	4184300	4.69E-03	3.77E-03	4.02E-03	3.06E-04	2.97E-04	3.19E-04
561980_4184300	561980	4184300	5.31E-03	4.27E-03	4.56E-03	3.47E-04	3.36E-04	3.61E-04
562000_4184300	562000	4184300	6.08E-03	4.89E-03	5.21E-03	3.97E-04	3.84E-04	4.13E-04
562020_4184300	562020	4184300	7.04E-03	5.69E-03	6.03E-03	4.59E-04	4.44E-04	4.78E-04
561920_4184320	561920	4184320	3.71E-03	2.98E-03	3.18E-03	2.43E-04	2.35E-04	2.53E-04
561940_4184320	561940	4184320	4.14E-03	3.33E-03	3.55E-03	2.71E-04	2.63E-04	2.82E-04
561960_4184320	561960	4184320	4.65E-03	3.75E-03	3.99E-03	3.05E-04	2.95E-04	3.17E-04
561980_4184320	561980	4184320	5.28E-03	4.25E-03	4.53E-03	3.46E-04	3.35E-04	3.60E-04
562000_4184320	562000	4184320	6.05E-03	4.87E-03	5.19E-03	3.96E-04	3.84E-04	4.12E-04
561920_4184340	561920	4184340	3.65E-03	2.94E-03	3.13E-03	2.40E-04	2.32E-04	2.50E-04
561940_4184340	561940	4184340	4.08E-03	3.28E-03	3.50E-03	2.68E-04	2.59E-04	2.79E-04
562540_4184340	562540	4184340	3.09E-02	2.49E-02	2.65E-02	2.12E-03	2.08E-03	2.23E-03
562560_4184340	562560	4184340	2.72E-02	2.19E-02	2.34E-02	1.85E-03	1.82E-03	1.95E-03
562580_4184340	562580	4184340	2.41E-02	1.95E-02	2.07E-02	1.64E-03	1.60E-03	1.72E-03
561920_4184360	561920	4184360	3.57E-03	2.87E-03	3.06E-03	2.35E-04	2.28E-04	2.45E-04
562500_4184360	562500	4184360	3.91E-02	3.15E-02	3.36E-02	2.61E-03	2.55E-03	2.73E-03
562520_4184360	562520	4184360	3.40E-02	2.74E-02	2.91E-02	2.27E-03	2.22E-03	2.38E-03
562540_4184360	562540	4184360	2.98E-02	2.40E-02	2.56E-02	1.99E-03	1.94E-03	2.08E-03
562560_4184360	562560	4184360	2.63E-02	2.12E-02	2.26E-02	1.76E-03	1.71E-03	1.84E-03
562580_4184360	562580	4184360	2.35E-02	1.89E-02	2.01E-02	1.56E-03	1.52E-03	1.63E-03

Unmitigated Cancer Risk, Risk Calculation Part 2

3rd Tr

Diesel Particulate Matter concentration, C_{PM10} (ug/m³)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026
561920_4184380	561920	4184380	3.47E-03	2.79E-03	2.97E-03	2.29E-04	2.23E-04	2.39E-04
561940_4184380	561940	4184380	3.87E-03	3.11E-03	3.32E-03	2.56E-04	2.49E-04	2.67E-04
562400_4184380	562400	4184380	8.09E-02	6.51E-02	6.94E-02	5.33E-03	5.17E-03	5.56E-03
562440_4184380	562440	4184380	5.62E-02	4.53E-02	4.82E-02	3.71E-03	3.60E-03	3.87E-03
562460_4184380	562460	4184380	4.80E-02	3.87E-02	4.12E-02	3.17E-03	3.08E-03	3.31E-03
562480_4184380	562480	4184380	4.13E-02	3.33E-02	3.54E-02	2.72E-03	2.64E-03	2.84E-03
562500_4184380	562500	4184380	3.57E-02	2.88E-02	3.07E-02	2.36E-03	2.29E-03	2.46E-03
562520_4184380	562520	4184380	3.14E-02	2.53E-02	2.69E-02	2.07E-03	2.01E-03	2.16E-03
562540_4184380	562540	4184380	2.78E-02	2.23E-02	2.38E-02	1.78E-03	1.73E-03	1.91E-03
562560_4184380	562560	4184380	2.47E-02	1.99E-02	2.12E-02	1.63E-03	1.59E-03	1.70E-03
562580_4184380	562580	4184380	2.20E-02	1.77E-02	1.89E-02	1.45E-03	1.41E-03	1.52E-03
561920_4184400	561920	4184400	3.35E-03	2.70E-03	2.88E-03	2.23E-04	2.17E-04	2.33E-04
561940_4184400	561940	4184400	3.74E-03	3.01E-03	3.21E-03	2.49E-04	2.43E-04	2.60E-04
562320_4184400	562320	4184400	1.14E-01	9.20E-02	9.80E-02	7.48E-03	7.26E-03	7.80E-03
562380_4184400	562380	4184400	7.15E-02	5.75E-02	6.13E-02	4.68E-03	4.53E-03	4.87E-03
562400_4184400	562400	4184400	6.09E-02	4.90E-02	5.23E-02	3.99E-03	3.87E-03	4.16E-03
562420_4184400	562420	4184400	5.26E-02	4.23E-02	4.51E-02	3.45E-03	3.34E-03	3.59E-03
562440_4184400	562440	4184400	4.58E-02	3.69E-02	3.93E-02	3.00E-03	2.91E-03	3.13E-03
562460_4184400	562460	4184400	4.00E-02	3.22E-02	3.43E-02	2.62E-03	2.54E-03	2.73E-03
562480_4184400	562480	4184400	3.52E-02	2.83E-02	3.02E-02	2.31E-03	2.24E-03	2.40E-03
562500_4184400	562500	4184400	3.11E-02	2.50E-02	2.67E-02	2.04E-03	1.98E-03	2.13E-03
562520_4184400	562520	4184400	2.77E-02	2.23E-02	2.38E-02	1.77E-03	1.72E-03	1.90E-03
562540_4184400	562540	4184400	2.48E-02	1.99E-02	2.12E-02	1.63E-03	1.58E-03	1.70E-03
562560_4184400	562560	4184400	2.23E-02	1.79E-02	1.91E-02	1.46E-03	1.42E-03	1.53E-03
562580_4184400	562580	4184400	2.01E-02	1.62E-02	1.72E-02	1.32E-03	1.28E-03	1.38E-03
561920_4184420	561920	4184420	3.24E-03	2.61E-03	2.78E-03	2.17E-04	2.12E-04	2.27E-04
561940_4184420	561940	4184420	3.60E-03	2.90E-03	3.09E-03	2.42E-04	2.37E-04	2.54E-04
562240_4184420	562240	4184420	6.29E-02	5.07E-02	5.40E-02	4.19E-03	4.08E-03	4.38E-03
562260_4184420	562260	4184420	6.95E-02	5.60E-02	5.96E-02	4.46E-03	4.35E-03	4.79E-03
562280_4184420	562280	4184420	7.20E-02	5.80E-02	6.18E-02	4.73E-03	4.59E-03	4.93E-03
562300_4184420	562300	4184420	7.97E-02	6.49E-02	6.90E-02	5.09E-03	4.95E-03	5.30E-03
562320_4184420	562320	4184420	8.62E-02	7.03E-02	7.48E-02	5.43E-03	5.29E-03	5.61E-03
562380_4184420	562380	4184420	4.90E-02	3.94E-02	4.20E-02	3.10E-03	3.03E-03	3.33E-03
562400_4184420	562400	4184420	4.38E-02	3.53E-02	3.76E-02	2.87E-03	2.78E-03	2.99E-03
562420_4184420	562420	4184420	3.92E-02	3.15E-02	3.36E-02	2.56E-03	2.48E-03	2.67E-03
562440_4184420	562440	4184420	3.52E-02	2.83E-02	3.02E-02	2.30E-03	2.23E-03	2.40E-03
562460_4184420	562460	4184420	3.17E-02	2.55E-02	2.72E-02	2.07E-03	2.01E-03	2.16E-03
562480_4184420	562480	4184420	2.85E-02	2.30E-02	2.45E-02	1.87E-03	1.81E-03	1.95E-03
562500_4184420	562500	4184420	2.58E-02	2.08E-02	2.22E-02	1.69E-03	1.64E-03	1.76E-03
562520_4184420	562520	4184420	2.33E-02	1.88E-02	2.00E-02	1.53E-03	1.48E-03	1.59E-03
562540_4184420	562540	4184420	2.13E-02	1.71E-02	1.83E-02	1.39E-03	1.35E-03	1.45E-03
562560_4184420	562560	4184420	1.94E-02	1.56E-02	1.66E-02	1.27E-03	1.23E-03	1.33E-03
562580_4184420	562580	4184420	1.77E-02	1.41E-02	1.51E-02	1.16E-03	1.12E-03	1.21E-03
561940_4184440	561940	4184440	3.47E-03	2.80E-03	2.98E-03	2.38E-04	2.34E-04	2.50E-04
562180_4184440	562180	4184440	2.61E-02	2.11E-02	2.24E-02	1.80E-03	1.77E-03	1.90E-03
562200_4184440	562200	4184440	3.15E-02	2.54E-02	2.71E-02	2.13E-03	2.08E-03	2.23E-03
562220_4184440	562220	4184440	3.67E-02	2.95E-02	3.15E-02	2.44E-03	2.38E-03	2.55E-03
562240_4184440	562240	4184440	4.08E-02	3.28E-02	3.50E-02	2.70E-03	2.62E-03	2.82E-03
562260_4184440	562260	4184440	4.32E-02	3.48E-02	3.71E-02	2.85E-03	2.76E-03	2.97E-03
562280_4184440	562280	4184440	4.40E-02	3.54E-02	3.77E-02	2.89E-03	2.80E-03	3.01E-03
562300_4184440	562300	4184440	4.35E-02	3.50E-02	3.73E-02	2.85E-03	2.76E-03	2.97E-03
562320_4184440	562320	4184440	4.18E-02	3.36E-02	3.59E-02	2.74E-03	2.65E-03	2.85E-03
562400_4184440	562400	4184440	3.14E-02	2.52E-02	2.69E-02	2.05E-03	1.99E-03	2.14E-03
562420_4184440	562420	4184440	2.89E-02	2.32E-02	2.48E-02	1.89E-03	1.83E-03	1.97E-03
562440_4184440	562440	4184440	2.65E-02	2.13E-02	2.27E-02	1.73E-03	1.68E-03	1.81E-03
562460_4184440	562460	4184440	2.45E-02	1.97E-02	2.10E-02	1.59E-03	1.55E-03	1.67E-03
562480_4184440	562480	4184440	2.26E-02	1.82E-02	1.94E-02	1.48E-03	1.43E-03	1.54E-03
562500_4184440	562500	4184440	2.09E-02	1.68E-02	1.79E-02	1.37E-03	1.33E-03	1.43E-03
562520_4184440	562520	4184440	1.92E-02	1.55E-02	1.65E-02	1.26E-03	1.22E-03	1.31E-03
562540_4184440	562540	4184440	1.78E-02	1.43E-02	1.53E-02	1.17E-03	1.13E-03	1.21E-03
562560_4184440	562560	4184440	1.65E-02	1.33E-02	1.41E-02	1.08E-03	1.05E-03	1.12E-03
562100_4184460	562100	4184460	1.03E-02	8.33E-03	8.86E-03	7.84E-04	7.94E-04	8.41E-04
562120_4184460	562120	4184460	1.23E-02	9.91E-03	1.06E-02	8.89E-04	8.88E-04	9.46E-04
562140_4184460	562140	4184460	1.46E-02	1.18E-02	1.26E-02	1.03E-03	1.02E-03	1.09E-03
562160_4184460	562160	4184460	1.74E-02	1.40E-02	1.49E-02	1.19E-03	1.17E-03	1.25E-03
562180_4184460	562180	4184460	2.04E-02	1.64E-02	1.75E-02	1.38E-03	1.35E-03	1.44E-03
562200_4184460	562200	4184460	2.34E-02	1.89E-02	2.01E-02	1.56E-03	1.52E-03	1.64E-03
562220_4184460	562220	4184460	2.65E-02	2.09E-02	2.22E-02	1.72E-03	1.67E-03	1.80E-03
562240_4184460	562240	4184460	2.76E-02	2.22E-02	2.37E-02	1.82E-03	1.77E-03	1.90E-03
562260_4184460	562260	4184460	2.89E-02	2.33E-02	2.48E-02	1.90E-03	1.85E-03	1.98E-03
562280_4184460	562280	4184460	2.92E-02	2.35E-02	2.51E-02	1.92E-03	1.86E-03	2.00E-03
562300_4184460	562300	4184460	2.92E-02	2.35E-02	2.51E-02	1.92E-03	1.86E-03	2.00E-03
562320_4184460	562320	4184460	2.87E-02	2.31E-02	2.46E-02	1.88E-03	1.82E-03	1.96E-03
562340_4184460	562340	4184460	2.76E-02	2.22E-02	2.37E-02	1.81E-03	1.75E-03	1.88E-03
562400_4184460	562400	4184460	2.30E-02	1.85E-02	1.97E-02	1.50E-03	1.46E-03	1.57E-03
562420_4184460	562420	4184460	2.16E-02	1.74E-02	1.85E-02	1.41E-03	1.37E-03	1.47E-03
562440_4184460	562440	4184460	2.02E-02	1.62E-02	1.73E-02	1.32E-03	1.28E-03	1.37E-03
562460_4184460	562460	4184460	1.89E-02	1.52E-02	1.62E-02	1.24E-03	1.20E-03	1.29E-03
562480_4184460	562480	4184460	1.78E-02	1.43E-02	1.53E-02	1.16E-03	1.13E-03	1.21E-03
562500_4184460	562500	4184460	1.67E-02	1.35E-02	1.44E-02	1.09E-03	1.06E-03	1.14E-03
562520_4184460	562520	4184460	1.57E-02	1.26E-02	1.35E-02	1.03E-03	1.00E-03	1.07E-03
562540_4184460	562540	4184460	1.47E-02	1.18E-02	1.26E-02	9.62E-04	9.32E-04	1.00E-03
562560_4184460	562560	4184460	1.38E-02	1.11E-02	1.18E-02	9.01E-04	8.74E-04	9.39E-04
562000_4184480	562000	4184480	5.25E-03	4.28E-03	4.55E-03	4.53E-04	4.72E-04	4.96E-04
562040_4184480	562040	4184480	5.98E-03	4.85E-03	5.16E-03	4.79E-04	4.91E-04	5.18E-04
562080_4184480	562080	4184480	6.87E-03	5.56E-03	5.92E-03	5.22E-04	5.28E-04	5.60E-04
562080_4184480	562080	4184480	7.98E-03	6.45E-03	6.87E-03	5.84E-04	6.22E-04	6.49E-04
562100_4184480	562100	4184480	9.28E-03	7.49E-03	7.98E-03	6.58E-04	6.53E-04	6.97E-04
562120_4184480	562120	4184480	1.08E-02	8.68E-03	9.25E-03	7.46E-04	7.36E-04	7.87E-04
562140_4184480	562140	4184480	1.24E-02	1.00E-02	1.07E-02	8.47E-04	8.32E-04	8.90E-04
562160_4184480	562160	4184480	1.42E-02	1.14E-02	1.22E-02	9.57E-04	9.36E-04	1.00E-03
562180_4184480	562180	4184480	1.60E-02	1.29E-02	1.37E-02	1.07E-03	1.04E-03	1.12E-03
562200_4184480	562200	4184480	1.78E-02	1.44E-02	1.53E-02	1.18E-03	1.15E-03	1.24E-03
562220_4184480	562220	4184480	1.93E-02	1.55E-02	1.65E-02	1.28E-03	1.24E-03	1.33E-03
562240_4184480	562240	4184480	2.01E-02	1.62E-02	1.72E-02	1.32E-03	1.29E-03	1.38E-03
562260_4184480	562260	4184480	2.07E-02	1.67E-02	1.78E-02	1.36E-03	1.32E-03	1.42E-03
562280_4184480	562280	4184480	2.10E-02	1.69E-02	1.80E-02	1.38E-03		

Diesel Particulate Matter concentration, C_{DPM} (ug/m³)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026
562180_4184500	562180	4184500	1.28E-02	1.03E-02	1.10E-02	8.52E-04	8.30E-04	8.91E-04
562200_4184500	562200	4184500	1.39E-02	1.12E-02	1.20E-02	9.23E-04	8.98E-04	9.64E-04
562220_4184500	562220	4184500	1.49E-02	1.20E-02	1.28E-02	9.82E-04	9.54E-04	1.02E-03
562240_4184500	562240	4184500	1.53E-02	1.24E-02	1.32E-02	1.01E-03	9.81E-04	1.05E-03
562260_4184500	562260	4184500	1.57E-02	1.28E-02	1.34E-02	1.03E-03	9.99E-04	1.07E-03
562280_4184500	562280	4184500	1.57E-02	1.27E-02	1.33E-02	1.03E-03	1.00E-03	1.07E-03
562300_4184500	562300	4184500	1.59E-02	1.28E-02	1.36E-02	1.04E-03	1.01E-03	1.09E-03
562320_4184500	562320	4184500	1.59E-02	1.28E-02	1.37E-02	1.04E-03	1.01E-03	1.09E-03
562340_4184500	562340	4184500	1.57E-02	1.27E-02	1.35E-02	1.03E-03	9.99E-04	1.07E-03
562360_4184500	562360	4184500	1.53E-02	1.23E-02	1.31E-02	1.00E-03	9.69E-04	1.04E-03
562380_4184500	562380	4184500	1.46E-02	1.18E-02	1.26E-02	9.59E-04	9.29E-04	9.99E-04
562400_4184500	562400	4184500	1.40E-02	1.12E-02	1.20E-02	9.14E-04	8.86E-04	9.52E-04
562420_4184500	562420	4184500	1.33E-02	1.07E-02	1.14E-02	8.68E-04	8.41E-04	9.04E-04
562440_4184500	562440	4184500	1.26E-02	1.01E-02	1.08E-02	8.24E-04	7.99E-04	8.59E-04
562460_4184500	562460	4184500	1.20E-02	9.66E-03	1.03E-02	7.85E-04	7.61E-04	8.18E-04
562480_4184500	562480	4184500	1.15E-02	9.23E-03	9.83E-03	7.50E-04	7.27E-04	7.82E-04
562500_4184500	562500	4184500	1.10E-02	8.82E-03	9.40E-03	7.18E-04	6.95E-04	7.48E-04
562520_4184500	562520	4184500	1.05E-02	8.44E-03	9.00E-03	6.87E-04	6.65E-04	7.15E-04
562540_4184500	562540	4184500	9.99E-03	8.04E-03	8.57E-03	6.54E-04	6.31E-04	6.78E-04
562560_4184500	562560	4184500	9.55E-03	7.69E-03	8.19E-03	6.25E-04	6.02E-04	6.51E-04
561960_4184520	561960	4184520	3.33E-03	2.69E-03	2.86E-03	2.33E-04	2.30E-04	2.46E-04
561980_4184520	561980	4184520	3.71E-03	2.99E-03	3.19E-03	2.58E-04	2.58E-04	2.75E-04
562000_4184520	562000	4184520	4.14E-03	3.34E-03	3.56E-03	2.90E-04	2.87E-04	3.06E-04
562020_4184520	562020	4184520	4.63E-03	3.73E-03	3.98E-03	3.22E-04	3.18E-04	3.39E-04
562040_4184520	562040	4184520	5.21E-03	4.20E-03	4.48E-03	3.60E-04	3.54E-04	3.79E-04
562060_4184520	562060	4184520	5.86E-03	4.73E-03	5.03E-03	4.01E-04	3.94E-04	4.22E-04
562080_4184520	562080	4184520	6.61E-03	5.33E-03	5.68E-03	4.49E-04	4.40E-04	4.71E-04
562100_4184520	562100	4184520	7.39E-03	5.96E-03	6.35E-03	4.98E-04	4.87E-04	5.22E-04
562120_4184520	562120	4184520	8.18E-03	6.59E-03	7.02E-03	5.48E-04	5.35E-04	5.74E-04
562140_4184520	562140	4184520	8.96E-03	7.21E-03	7.69E-03	5.97E-04	5.82E-04	6.25E-04
562160_4184520	562160	4184520	9.70E-03	7.81E-03	8.33E-03	6.47E-04	6.27E-04	6.73E-04
562180_4184520	562180	4184520	1.04E-02	8.39E-03	8.94E-03	6.90E-04	6.71E-04	7.21E-04
562200_4184520	562200	4184520	1.11E-02	8.98E-03	9.56E-03	7.36E-04	7.15E-04	7.68E-04
562220_4184520	562220	4184520	1.18E-02	9.47E-03	1.01E-02	7.75E-04	7.52E-04	8.08E-04
562240_4184520	562240	4184520	1.21E-02	9.74E-03	1.04E-02	7.96E-04	7.73E-04	8.30E-04
562260_4184520	562260	4184520	1.23E-02	9.89E-03	1.05E-02	8.07E-04	7.83E-04	8.41E-04
562280_4184520	562280	4184520	1.23E-02	9.94E-03	1.06E-02	8.10E-04	7.86E-04	8.45E-04
562300_4184520	562300	4184520	1.25E-02	1.00E-02	1.07E-02	8.17E-04	7.92E-04	8.51E-04
562320_4184520	562320	4184520	1.25E-02	1.01E-02	1.07E-02	8.19E-04	7.94E-04	8.53E-04
562340_4184520	562340	4184520	1.24E-02	9.97E-03	1.06E-02	8.11E-04	7.86E-04	8.45E-04
562360_4184520	562360	4184520	1.21E-02	9.75E-03	1.04E-02	7.93E-04	7.69E-04	8.26E-04
562380_4184520	562380	4184520	1.17E-02	9.44E-03	1.01E-02	7.68E-04	7.44E-04	8.00E-04
562400_4184520	562400	4184520	1.13E-02	9.11E-03	9.71E-03	7.41E-04	7.18E-04	7.75E-04
562420_4184520	562420	4184520	1.08E-02	8.69E-03	9.25E-03	7.07E-04	6.85E-04	7.36E-04
562440_4184520	562440	4184520	1.03E-02	8.31E-03	8.86E-03	6.76E-04	6.55E-04	7.04E-04
562460_4184520	562460	4184520	9.89E-03	7.96E-03	8.48E-03	6.47E-04	6.27E-04	6.74E-04
562480_4184520	562480	4184520	9.46E-03	7.61E-03	8.11E-03	6.19E-04	6.00E-04	6.45E-04
562500_4184520	562500	4184520	9.08E-03	7.30E-03	7.78E-03	5.94E-04	5.76E-04	6.19E-04
562520_4184520	562520	4184520	8.74E-03	7.03E-03	7.50E-03	5.72E-04	5.54E-04	5.96E-04
562540_4184520	562540	4184520	8.38E-03	6.74E-03	7.18E-03	5.48E-04	5.31E-04	5.71E-04
561980_4184540	561980	4184540	3.54E-03	2.85E-03	3.04E-03	2.41E-04	2.36E-04	2.53E-04
562000_4184540	562000	4184540	3.93E-03	3.16E-03	3.37E-03	2.67E-04	2.62E-04	2.80E-04
562020_4184540	562020	4184540	4.35E-03	3.50E-03	3.73E-03	2.94E-04	2.88E-04	3.09E-04
562040_4184540	562040	4184540	4.83E-03	3.89E-03	4.15E-03	3.26E-04	3.19E-04	3.42E-04
562060_4184540	562060	4184540	5.38E-03	4.33E-03	4.62E-03	3.61E-04	3.53E-04	3.79E-04
562080_4184540	562080	4184540	5.96E-03	4.80E-03	5.11E-03	3.99E-04	3.89E-04	4.17E-04
562100_4184540	562100	4184540	6.54E-03	5.26E-03	5.61E-03	4.36E-04	4.25E-04	4.56E-04
562120_4184540	562120	4184540	7.08E-03	5.70E-03	6.07E-03	4.71E-04	4.58E-04	4.92E-04
562140_4184540	562140	4184540	7.61E-03	6.13E-03	6.53E-03	5.05E-04	4.91E-04	5.27E-04
562160_4184540	562160	4184540	8.13E-03	6.54E-03	6.97E-03	5.38E-04	5.23E-04	5.61E-04
562180_4184540	562180	4184540	8.64E-03	6.96E-03	7.41E-03	5.70E-04	5.54E-04	5.95E-04
562200_4184540	562200	4184540	9.13E-03	7.35E-03	7.84E-03	6.02E-04	5.84E-04	6.28E-04
562220_4184540	562220	4184540	9.53E-03	7.67E-03	8.18E-03	6.27E-04	6.09E-04	6.54E-04
562240_4184540	562240	4184540	9.78E-03	7.88E-03	8.39E-03	6.43E-04	6.24E-04	6.70E-04
562260_4184540	562260	4184540	9.89E-03	7.96E-03	8.48E-03	6.49E-04	6.30E-04	6.77E-04
562280_4184540	562280	4184540	9.94E-03	8.00E-03	8.52E-03	6.52E-04	6.32E-04	6.79E-04
562300_4184540	562300	4184540	9.98E-03	8.03E-03	8.56E-03	6.54E-04	6.34E-04	6.81E-04
562320_4184540	562320	4184540	9.98E-03	8.04E-03	8.56E-03	6.54E-04	6.34E-04	6.81E-04
562340_4184540	562340	4184540	9.99E-03	8.04E-03	8.56E-03	6.54E-04	6.34E-04	6.81E-04
562360_4184540	562360	4184540	9.82E-03	7.91E-03	8.43E-03	6.43E-04	6.23E-04	6.70E-04
562380_4184540	562380	4184540	9.61E-03	7.74E-03	8.24E-03	6.29E-04	6.10E-04	6.55E-04
562400_4184540	562400	4184540	9.34E-03	7.52E-03	8.01E-03	6.11E-04	5.92E-04	6.37E-04
562420_4184540	562420	4184540	8.98E-03	7.23E-03	7.71E-03	5.88E-04	5.70E-04	6.12E-04
562440_4184540	562440	4184540	8.65E-03	6.96E-03	7.42E-03	5.66E-04	5.49E-04	5.90E-04
562460_4184540	562460	4184540	8.30E-03	6.68E-03	7.12E-03	5.43E-04	5.27E-04	5.66E-04
562480_4184540	562480	4184540	7.97E-03	6.41E-03	6.83E-03	5.21E-04	5.05E-04	5.43E-04
562500_4184540	562500	4184540	7.65E-03	6.16E-03	6.56E-03	5.01E-04	4.85E-04	5.22E-04
562520_4184540	562520	4184540	7.39E-03	5.95E-03	6.34E-03	4.84E-04	4.69E-04	5.04E-04
562540_4184540	562540	4184540	7.09E-03	5.71E-03	6.08E-03	4.64E-04	4.50E-04	4.84E-04
561980_4184560	561980	4184560	3.37E-03	2.71E-03	2.89E-03	2.26E-04	2.20E-04	2.36E-04
562000_4184560	562000	4184560	3.71E-03	2.99E-03	3.19E-03	2.49E-04	2.49E-04	2.65E-04
562020_4184560	562020	4184560	4.08E-03	3.28E-03	3.50E-03	2.72E-04	2.66E-04	2.85E-04
562040_4184560	562040	4184560	4.47E-03	3.60E-03	3.84E-03	2.98E-04	2.91E-04	3.12E-04
562060_4184560	562060	4184560	4.90E-03	3.95E-03	4.21E-03	3.26E-04	3.18E-04	3.41E-04
562080_4184560	562080	4184560	5.34E-03	4.30E-03	4.58E-03	3.55E-04	3.45E-04	3.71E-04
562100_4184560	562100	4184560	5.76E-03	4.64E-03	4.94E-03	3.82E-04	3.71E-04	3.99E-04
562120_4184560	562120	4184560	6.15E-03	4.95E-03	5.28E-03	4.07E-04	3.96E-04	4.25E-04
562140_4184560	562140	4184560	6.53E-03	5.25E-03	5.60E-03	4.31E-04	4.19E-04	4.50E-04
562160_4184560	562160	4184560	6.88E-03	5.54E-03	5.90E-03	4.54E-04	4.41E-04	4.74E-04
562180_4184560	562180	4184560	7.24E-03	5.83E-03	6.21E-03	4.77E-04	4.63E-04	4.98E-04
562200_4184560	562200	4184560	7.59E-03	6.11E-03	6.51E-03	4.99E-04	4.85E-04	5.21E-04
562220_4184560	562220	4184560	7.89E-03	6.35E-03	6.77E-03	5.18E-04	5.03E-04	5.40E-04
562240_4184560	562240	4184560	8.04E-03	6.47E-03	6.90E-03	5.29E-04	5.12E-04	5.50E-04
562260_4184560	562260	4184560	8.10E-03	6.52E-03	6.95E-03	5.31E-04	5.15E-04	5.54E-04
562280_4184560	562280	4184560	8.12E-03	6.54E-03	6.97E-03	5.33E-04	5.17E-04	5.55E-04
562300_4184560	562300	4184560	8.17E-03	6.57E-03	7.00E-03	5.35E-04	5.19E-04	5.58E-04
562320_4184560	562320	4184560	8.18E-03	6.59E-03	7.02E-03	5.36E-04	5.	

Diesel Particulate Matter concentration, C_{DPM} (ug/m³)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026
562260_4184580	562260	4184580	6.74E-03	5.43E-03	5.79E-03	4.42E-04	4.29E-04	4.61E-04
562280_4184580	562280	4184580	6.76E-03	5.44E-03	5.80E-03	4.43E-04	4.30E-04	4.62E-04
562300_4184580	562300	4184580	6.80E-03	5.47E-03	5.83E-03	4.45E-04	4.32E-04	4.64E-04
562320_4184580	562320	4184580	6.83E-03	5.50E-03	5.86E-03	4.47E-04	4.34E-04	4.66E-04
562340_4184580	562340	4184580	6.86E-03	5.52E-03	5.88E-03	4.49E-04	4.35E-04	4.68E-04
562360_4184580	562360	4184580	6.83E-03	5.49E-03	5.85E-03	4.47E-04	4.33E-04	4.65E-04
562380_4184580	562380	4184580	6.76E-03	5.44E-03	5.80E-03	4.42E-04	4.28E-04	4.60E-04
562400_4184580	562400	4184580	6.63E-03	5.33E-03	5.69E-03	4.34E-04	4.20E-04	4.52E-04
562420_4184580	562420	4184580	6.49E-03	5.22E-03	5.56E-03	4.24E-04	4.11E-04	4.42E-04
562440_4184580	562440	4184580	6.29E-03	5.07E-03	5.40E-03	4.12E-04	3.99E-04	4.29E-04
562460_4184580	562460	4184580	6.09E-03	4.90E-03	5.23E-03	3.99E-04	3.86E-04	4.15E-04
562480_4184580	562480	4184580	5.89E-03	4.74E-03	5.05E-03	3.85E-04	3.73E-04	4.01E-04
562500_4184580	562500	4184580	5.69E-03	4.58E-03	4.88E-03	3.72E-04	3.61E-04	3.88E-04
562020_4184600	562020	4184600	3.52E-03	2.84E-03	3.02E-03	2.33E-04	2.26E-04	2.43E-04
562040_4184600	562040	4184600	3.78E-03	3.04E-03	3.24E-03	2.50E-04	2.42E-04	2.60E-04
562060_4184600	562060	4184600	4.03E-03	3.24E-03	3.46E-03	2.58E-04	2.77E-04	2.94E-04
562080_4184600	562080	4184600	4.26E-03	3.43E-03	3.65E-03	2.81E-04	2.73E-04	2.93E-04
562100_4184600	562100	4184600	4.48E-03	3.61E-03	3.84E-03	2.95E-04	2.86E-04	3.06E-04
562120_4184600	562120	4184600	4.68E-03	3.77E-03	4.01E-03	3.08E-04	3.00E-04	3.21E-04
562140_4184600	562140	4184600	4.87E-03	3.92E-03	4.18E-03	3.20E-04	3.11E-04	3.34E-04
562160_4184600	562160	4184600	5.07E-03	4.08E-03	4.35E-03	3.33E-04	3.23E-04	3.47E-04
562180_4184600	562180	4184600	5.28E-03	4.25E-03	4.53E-03	3.47E-04	3.36E-04	3.62E-04
562200_4184600	562200	4184600	5.48E-03	4.41E-03	4.70E-03	3.59E-04	3.48E-04	3.74E-04
562220_4184600	562220	4184600	5.65E-03	4.55E-03	4.84E-03	3.70E-04	3.59E-04	3.86E-04
562240_4184600	562240	4184600	5.71E-03	4.60E-03	4.90E-03	3.74E-04	3.63E-04	3.90E-04
562260_4184600	562260	4184600	5.74E-03	4.62E-03	4.92E-03	3.76E-04	3.64E-04	3.92E-04
562280_4184600	562280	4184600	5.72E-03	4.61E-03	4.91E-03	3.75E-04	3.63E-04	3.91E-04
562300_4184600	562300	4184600	5.74E-03	4.62E-03	4.93E-03	3.76E-04	3.65E-04	3.92E-04
562320_4184600	562320	4184600	5.78E-03	4.66E-03	4.96E-03	3.79E-04	3.67E-04	3.94E-04
562340_4184600	562340	4184600	5.81E-03	4.67E-03	4.99E-03	3.80E-04	3.68E-04	3.95E-04
562360_4184600	562360	4184600	5.82E-03	4.68E-03	4.99E-03	3.80E-04	3.69E-04	3.95E-04
562380_4184600	562380	4184600	5.77E-03	4.64E-03	4.95E-03	3.77E-04	3.66E-04	3.93E-04
562400_4184600	562400	4184600	5.70E-03	4.58E-03	4.89E-03	3.72E-04	3.61E-04	3.88E-04
562420_4184600	562420	4184600	5.60E-03	4.50E-03	4.80E-03	3.66E-04	3.55E-04	3.81E-04
562440_4184600	562440	4184600	5.45E-03	4.39E-03	4.68E-03	3.56E-04	3.45E-04	3.71E-04
562460_4184600	562460	4184600	5.31E-03	4.27E-03	4.55E-03	3.47E-04	3.36E-04	3.62E-04
562480_4184600	562480	4184600	5.15E-03	4.15E-03	4.42E-03	3.37E-04	3.26E-04	3.51E-04
562040_4184620	562040	4184620	3.45E-03	2.77E-03	2.96E-03	2.27E-04	2.20E-04	2.37E-04
562060_4184620	562060	4184620	3.63E-03	2.92E-03	3.12E-03	2.39E-04	2.32E-04	2.49E-04
562080_4184620	562080	4184620	3.81E-03	3.06E-03	3.27E-03	2.50E-04	2.43E-04	2.61E-04
562100_4184620	562100	4184620	3.97E-03	3.19E-03	3.40E-03	2.61E-04	2.53E-04	2.72E-04
562120_4184620	562120	4184620	4.12E-03	3.32E-03	3.54E-03	2.71E-04	2.63E-04	2.82E-04
562140_4184620	562140	4184620	4.27E-03	3.45E-03	3.67E-03	2.72E-04	2.64E-04	2.83E-04
562160_4184620	562160	4184620	4.43E-03	3.57E-03	3.80E-03	2.91E-04	2.82E-04	3.02E-04
562180_4184620	562180	4184620	4.60E-03	3.71E-03	3.95E-03	3.02E-04	2.93E-04	3.15E-04
562200_4184620	562200	4184620	4.76E-03	3.83E-03	4.08E-03	3.12E-04	3.02E-04	3.25E-04
562220_4184620	562220	4184620	4.87E-03	3.92E-03	4.18E-03	3.19E-04	3.09E-04	3.33E-04
562240_4184620	562240	4184620	4.91E-03	3.95E-03	4.21E-03	3.21E-04	3.12E-04	3.35E-04
562260_4184620	562260	4184620	4.93E-03	3.96E-03	4.23E-03	3.23E-04	3.13E-04	3.36E-04
562280_4184620	562280	4184620	4.91E-03	3.95E-03	4.21E-03	3.22E-04	3.13E-04	3.35E-04
562300_4184620	562300	4184620	4.94E-03	3.97E-03	4.24E-03	3.23E-04	3.13E-04	3.37E-04
562320_4184620	562320	4184620	4.97E-03	4.00E-03	4.26E-03	3.25E-04	3.15E-04	3.39E-04
562340_4184620	562340	4184620	4.98E-03	4.01E-03	4.27E-03	3.26E-04	3.16E-04	3.39E-04
562360_4184620	562360	4184620	5.01E-03	4.03E-03	4.30E-03	3.28E-04	3.18E-04	3.41E-04
562380_4184620	562380	4184620	4.98E-03	4.01E-03	4.27E-03	3.26E-04	3.16E-04	3.39E-04
562400_4184620	562400	4184620	4.94E-03	3.98E-03	4.24E-03	3.23E-04	3.13E-04	3.36E-04
562420_4184620	562420	4184620	4.87E-03	3.92E-03	4.18E-03	3.18E-04	3.08E-04	3.32E-04
562440_4184620	562440	4184620	4.77E-03	3.84E-03	4.09E-03	3.12E-04	3.02E-04	3.25E-04
562460_4184620	562460	4184620	4.67E-03	3.76E-03	4.00E-03	3.05E-04	2.96E-04	3.18E-04
562080_4184640	562080	4184640	3.41E-03	2.74E-03	2.92E-03	2.24E-04	2.17E-04	2.33E-04
562100_4184640	562100	4184640	3.53E-03	2.84E-03	3.03E-03	2.32E-04	2.25E-04	2.42E-04
562120_4184640	562120	4184640	3.65E-03	2.94E-03	3.13E-03	2.40E-04	2.33E-04	2.50E-04
562140_4184640	562140	4184640	3.78E-03	3.04E-03	3.24E-03	2.48E-04	2.40E-04	2.58E-04
562160_4184640	562160	4184640	3.91E-03	3.15E-03	3.36E-03	2.57E-04	2.49E-04	2.67E-04
562180_4184640	562180	4184640	4.06E-03	3.27E-03	3.48E-03	2.66E-04	2.58E-04	2.77E-04
562200_4184640	562200	4184640	4.18E-03	3.36E-03	3.58E-03	2.74E-04	2.65E-04	2.85E-04
562220_4184640	562220	4184640	4.25E-03	3.42E-03	3.65E-03	2.78E-04	2.70E-04	2.90E-04
562240_4184640	562240	4184640	4.27E-03	3.44E-03	3.66E-03	2.79E-04	2.71E-04	2.91E-04
562260_4184640	562260	4184640	4.27E-03	3.44E-03	3.66E-03	2.79E-04	2.71E-04	2.91E-04
562280_4184640	562280	4184640	4.27E-03	3.44E-03	3.66E-03	2.79E-04	2.71E-04	2.91E-04
562300_4184640	562300	4184640	4.27E-03	3.44E-03	3.67E-03	2.80E-04	2.71E-04	2.91E-04
562320_4184640	562320	4184640	4.30E-03	3.46E-03	3.69E-03	2.81E-04	2.73E-04	2.93E-04
562340_4184640	562340	4184640	4.33E-03	3.49E-03	3.71E-03	2.83E-04	2.74E-04	2.95E-04
562360_4184640	562360	4184640	4.35E-03	3.50E-03	3.73E-03	2.85E-04	2.76E-04	2.97E-04
562380_4184640	562380	4184640	4.35E-03	3.50E-03	3.73E-03	2.84E-04	2.76E-04	2.96E-04
562400_4184640	562400	4184640	4.33E-03	3.48E-03	3.71E-03	2.83E-04	2.74E-04	2.94E-04
562420_4184640	562420	4184640	4.28E-03	3.44E-03	3.67E-03	2.80E-04	2.71E-04	2.91E-04
562440_4184640	562440	4184640	4.22E-03	3.39E-03	3.62E-03	2.76E-04	2.67E-04	2.87E-04
562100_4184660	562100	4184660	3.16E-03	2.54E-03	2.71E-03	2.07E-04	2.01E-04	2.16E-04
562120_4184660	562120	4184660	3.26E-03	2.62E-03	2.79E-03	2.14E-04	2.07E-04	2.23E-04
562140_4184660	562140	4184660	3.36E-03	2.70E-03	2.86E-03	2.20E-04	2.13E-04	2.29E-04
562160_4184660	562160	4184660	3.48E-03	2.80E-03	2.98E-03	2.28E-04	2.21E-04	2.37E-04
562180_4184660	562180	4184660	3.59E-03	2.89E-03	3.08E-03	2.35E-04	2.28E-04	2.45E-04
562200_4184660	562200	4184660	3.68E-03	2.96E-03	3.15E-03	2.41E-04	2.33E-04	2.51E-04
562220_4184660	562220	4184660	3.73E-03	3.00E-03	3.20E-03	2.44E-04	2.36E-04	2.54E-04
562240_4184660	562240	4184660	3.75E-03	3.02E-03	3.22E-03	2.46E-04	2.38E-04	2.56E-04
562260_4184660	562260	4184660	3.73E-03	3.00E-03	3.20E-03	2.44E-04	2.37E-04	2.54E-04
562280_4184660	562280	4184660	3.75E-03	3.02E-03	3.22E-03	2.45E-04	2.38E-04	2.56E-04
562300_4184660	562300	4184660	3.75E-03	3.02E-03	3.21E-03	2.45E-04	2.38E-04	2.55E-04
562320_4184660	562320	4184660	3.77E-03	3.04E-03	3.24E-03	2.47E-04	2.39E-04	2.57E-04
562340_4184660	562340	4184660	3.80E-03	3.06E-03	3.26E-03	2.49E-04	2.59E-04	2.59E-04
562360_4184660	562360	4184660	3.82E-03	3.07E-03	3.28E-03	2.50E-04	2.42E-04	2.60E-04
562380_4184660	562380	4184660	3.83E-03	3.09E-03	3.29E-03	2.51E-04	2.43E-04	2.61E-04
562400_4184660	562400	4184660	3.82E-03	3.08E-03	3.28E-03	2.50E-04	2.42E-04	2.60E-04
562160_4184680	562160	4184680	3.11E-03	2.50E-03	2.65E-03	2.03E-04	1.97E-04	2.12E-04
562180_4184680	562180	4184680	3.20E-03	2.57E-03	2.74E-03	2.09E-04	2.03E-04	2.18E-04
562200_4184680	562200	4184680	3.27E-03	2.63E-03	2.80E-03	2.14E-04	2.	

Diesel Particulate Matter concentration, $C_{PM_{10}}$ ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated Cancer Risk, Risk Calculation Part 2

3rd Trimester	$\sum R1 * C_{PM_{10}}$		
	0<2	2<16	Total

Mitigated Cancer Risk, Risk Calculation Part 2

3rd Trimester	$\sum R1 * C_{PM_{10}}$		
	0<2	2<16	Total

Diesel Particulate Matter concentration, $C_{PM_{10}}$ ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated Cancer Risk, Risk Calculation Part 2

3rd Trimester	$\sum R1 * C_{PM_{10}}$		
	0<2	2<16	Total

Mitigated Cancer Risk, Risk Calculation Part 2

3rd Trimester	$\sum R1 * C_{PM_{10}}$		
	0<2	2<16	Total

Diesel Particulate Matter concentration, $C_{PM_{10}}$ ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated Cancer Risk, Risk Calculation Part 2

3rd Trimester	$\sum R1 * C_{PM_{10}}$		
	0<2	2<16	Total

Mitigated Cancer Risk, Risk Calculation Part 2

3rd Trimester	$\sum R1 * C_{PM_{10}}$		
	0<2	2<16	Total

533 Kirkham Street

All Receptors - Construction Annual Average PM_{2.5} Concentration

Haul Truck Trip Lengths

	Haul	Vendor	Worker	
Trip Length	20	7.3	10.8	miles
	32187	11748	17381	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor	Worker
Haul	0.02	0.06	0.04

Modeled Routes

Trip Length	Haul	
	682.5	meters

from AERMOD

Construction Year	Start Date	End Date	Days			Total Unmitigated PM _{2.5} (tons)				Total Mitigated PM _{2.5} (tons)				
			3rd Trimester	Age 0<2	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Worker Trips	Onsite Offroad	Haul Truck	Vendor Trips	Worker Trips
2024	5/1/2024	12/31/2024	91	154.00	0.00	245	4.06E-02	1.09E-03	4.34E-03	2.84E-02	2.75E-03	1.09E-03	4.34E-03	2.84E-02
2025	1/1/2025	12/31/2025	0	365.00	0.00	365	4.94E-02	0.00E+00	9.28E-03	5.95E-02	3.95E-03	0.00E+00	9.28E-03	5.95E-02
2026	1/1/2026	5/1/2026	0	121.00	0.00	121	1.74E-02	0.00E+00	3.09E-03	1.99E-02	1.41E-03	0.00E+00	3.09E-03	1.99E-02

Construction Year	Start Date	End Date	Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
			CSTN	HAUL	CSTN	HAUL
2024	5/1/2024	12/31/2024	1.17E-03	4.00E-05	7.91E-05	4.00E-05
2025	1/1/2025	12/31/2025	1.42E-03	8.27E-05	1.14E-04	8.27E-05
2026	1/1/2026	5/1/2026	5.01E-04	2.77E-05	4.06E-05	2.77E-05

MAX	PM2.5	UTM X	UTM Y	Year
Unmitigated	0.095	562320	4184400	2025
Mitigated	0.015	562320	4184400	2025

Particulate Matter concentration, C_{PM2.5} (ug/m³)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated			Unmitigated PM _{2.5} Concentration		Mitigated PM _{2.5} Concentration	
			2024	2025	2026	2024	2025	2026	Max	Max Year	Max	Max Year
562040_418408C	562040	4184080	2.50E-03	3.09E-03	1.09E-03	2.25E-04	3.61E-04	1.26E-04	3.09E-03	2025	3.61E-04	2025
561980_418416C	561980	4184160	2.79E-03	3.46E-03	1.22E-03	2.55E-04	4.10E-04	1.43E-04	3.46E-03	2025	4.10E-04	2025
562000_418416C	562000	4184160	3.05E-03	3.77E-03	1.33E-03	2.76E-04	4.43E-04	1.55E-04	3.77E-03	2025	4.43E-04	2025
562020_418416C	562020	4184160	3.33E-03	4.12E-03	1.45E-03	2.99E-04	4.78E-04	1.67E-04	4.12E-03	2025	4.78E-04	2025
562040_418416C	562040	4184160	3.63E-03	4.50E-03	1.58E-03	3.24E-04	5.17E-04	1.81E-04	4.50E-03	2025	5.17E-04	2025
561960_418418C	561960	4184180	2.69E-03	3.34E-03	1.17E-03	2.49E-04	4.03E-04	1.41E-04	3.34E-03	2025	4.03E-04	2025
561980_418418C	561980	4184180	2.96E-03	3.66E-03	1.29E-03	2.71E-04	4.38E-04	1.53E-04	3.66E-03	2025	4.38E-04	2025
562000_418418C	562000	4184180	3.26E-03	4.03E-03	1.42E-03	2.96E-04	4.76E-04	1.66E-04	4.03E-03	2025	4.76E-04	2025
562020_418418C	562020	4184180	3.59E-03	4.44E-03	1.56E-03	3.23E-04	5.18E-04	1.81E-04	4.44E-03	2025	5.18E-04	2025
562040_418418C	562040	4184180	3.97E-03	4.91E-03	1.73E-03	3.54E-04	5.65E-04	1.98E-04	4.91E-03	2025	5.65E-04	2025
561940_418420C	561940	4184200	2.55E-03	3.17E-03	1.11E-03	2.41E-04	3.92E-04	1.37E-04	3.17E-03	2025	3.92E-04	2025
561960_418420C	561960	4184200	2.81E-03	3.49E-03	1.23E-03	2.63E-04	4.27E-04	1.49E-04	3.49E-03	2025	4.27E-04	2025
561980_418420C	561980	4184200	3.11E-03	3.86E-03	1.36E-03	2.88E-04	4.66E-04	1.62E-04	3.86E-03	2025	4.66E-04	2025
562000_418420C	562000	4184200	3.45E-03	4.28E-03	1.50E-03	3.16E-04	5.10E-04	1.78E-04	4.28E-03	2025	5.10E-04	2025
562020_418420C	562020	4184200	3.84E-03	4.76E-03	1.67E-03	3.48E-04	5.60E-04	1.95E-04	4.76E-03	2025	5.60E-04	2025
562040_418420C	562040	4184200	4.30E-03	5.32E-03	1.87E-03	3.85E-04	6.16E-04	2.15E-04	5.32E-03	2025	6.16E-04	2025
561940_418422C	561940	4184220	2.63E-03	3.27E-03	1.15E-03	2.52E-04	4.12E-04	1.43E-04	3.27E-03	2025	4.12E-04	2025
561960_418422C	561960	4184220	2.91E-03	3.62E-03	1.27E-03	2.76E-04	4.50E-04	1.57E-04	3.62E-03	2025	4.50E-04	2025
561980_418422C	561980	4184220	3.24E-03	4.03E-03	1.42E-03	3.04E-04	4.94E-04	1.72E-04	4.03E-03	2025	4.94E-04	2025
562000_418422C	562000	4184220	3.63E-03	4.50E-03	1.58E-03	3.36E-04	5.44E-04	1.90E-04	4.50E-03	2025	5.44E-04	2025
562080_418422C	562080	4184220	5.97E-03	7.38E-03	2.60E-03	5.25E-04	8.35E-04	2.92E-04	7.38E-03	2025	8.35E-04	2025
562100_418422C	562100	4184220	6.84E-03	8.44E-03	2.97E-03	5.93E-04	9.39E-04	3.29E-04	8.44E-03	2025	9.39E-04	2025
561940_418424C	561940	4184240	2.69E-03	3.35E-03	1.18E-03	2.63E-04	4.32E-04	1.50E-04	3.35E-03	2025	4.32E-04	2025
561960_418424C	561960	4184240	2.99E-03	3.73E-03	1.31E-03	2.89E-04	4.74E-04	1.65E-04	3.73E-03	2025	4.74E-04	2025
561980_418424C	561980	4184240	3.35E-03	4.17E-03	1.47E-03	3.20E-04	5.22E-04	1.82E-04	4.17E-03	2025	5.22E-04	2025
562000_418424C	562000	4184240	3.78E-03	4.70E-03	1.65E-03	3.56E-04	5.79E-04	2.02E-04	4.70E-03	2025	5.79E-04	2025
562060_418424C	562060	4184240	5.65E-03	6.99E-03	2.46E-03	5.08E-04	8.16E-04	2.85E-04	6.99E-03	2025	8.16E-04	2025
562520_418424C	562520	4184240	1.94E-02	2.42E-02	8.49E-03	1.92E-03	3.17E-03	1.10E-03	2.42E-02	2025	3.17E-03	2025
561920_418426C	561920	4184260	2.46E-03	3.08E-03	1.08E-03	2.48E-04	4.12E-04	1.43E-04	3.08E-03	2025	4.12E-04	2025
561940_418426C	561940	4184260	2.74E-03	3.41E-03	1.20E-03	2.73E-04	4.52E-04	1.57E-04	3.41E-03	2025	4.52E-04	2025
561960_418426C	561960	4184260	3.06E-03	3.81E-03	1.34E-03	3.02E-04	4.98E-04	1.73E-04	3.81E-03	2025	4.98E-04	2025
561980_418426C	561980	4184260	3.44E-03	4.28E-03	1.50E-03	3.36E-04	5.52E-04	1.92E-04	4.28E-03	2025	5.52E-04	2025
562000_418426C	562000	4184260	3.90E-03	4.85E-03	1.71E-03	3.76E-04	6.15E-04	2.14E-04	4.85E-03	2025	6.15E-04	2025
562020_418426C	562020	4184260	4.46E-03	5.54E-03	1.95E-03	4.23E-04	6.90E-04	2.40E-04	5.54E-03	2025	6.90E-04	2025
562040_418426C	562040	4184260	5.14E-03	6.38E-03	2.24E-03	4.80E-04	7.79E-04	2.71E-04	6.38E-03	2025	7.79E-04	2025
562460_418426C	562460	4184260	3.01E-02	3.73E-02	1.31E-02	2.71E-03	4.35E-03	1.52E-03	3.73E-02	2025	4.35E-03	2025
562480_418426C	562480	4184260	2.64E-02	3.28E-02	1.15E-02	2.51E-03	4.09E-03	1.42E-03	3.28E-02	2025	4.09E-03	2025
562500_418426C	562500	4184260	2.33E-02	2.91E-02	1.02E-02	2.35E-03	3.89E-03	1.35E-03	2.91E-02	2025	3.89E-03	2025
562520_418426C	562520	4184260	2.07E-02	2.60E-02	9.12E-03	2.22E-03	3.75E-03	1.30E-03	2.60E-02	2025	3.75E-03	2025
561920_418428C	561920	4184280	2.48E-03	3.11E-03	1.09E-03	2.57E-04	4.30E-04	1.49E-04	3.11E-03	2025	4.30E-04	2025
561940_418428C	561940	4184280	2.76E-03	3.45E-03	1.21E-03	2.84E-04	4.73E-04	1.64E-04	3.45E-03	2025	4.73E-04	2025
561960_418428C	561960	4184280	3.09E-03	3.86E-03	1.36E-03	3.15E-04	5.23E-04	1.82E-04	3.86E-03	2025	5.23E-04	2025
561980_418428C	561980	4184280	3.49E-03	4.36E-03	1.53E-03	3.51E-04	5.82E-04	2.02E-04	4.36E-03	2025	5.82E-04	2025
562000_418428C	562000	4184280	3.98E-03	4.96E-03	1.74E-03	3.95E-04	6.52E-04	2.27E-04	4.96E-03	2025	6.52E-04	2025
562020_418428C	562020	4184280	4.58E-03	5.71E-03	2.01E-03	4.48E-04	7.36E-04	2.56E-04	5.71E-03	2025	7.36E-04	2025
562460_418428C	562460	4184280	3.29E-02	4.09E-02	1.44E-02	3.14E-03	5.12E-03	1.78E-03	4.09E-02	2025	5.12E-03	2025
562480_418428C	562480	4184280	2.85E-02	3.56E-02	1.25E-02	2.92E-03	4.86E-03	1.69E-03	3.56E-02	2025	4.86E-03	2025
561920_418430C	561920	4184300	2.49E-03	3.12E-03	1.09E-03	2.66E-04	4.40E-04	1.55E-04	3.12E-03	2025	4.40E-04	2025
561940_418430C	561940	4184300	2.77E-03	3.47E-03	1.22E-03	2.95E-04	4.96E-04	1.72E-04	3.47E-03	2025	4.96E-04	2025
561960_418430C	561960	4184300	3.11E-03	3.89E-03	1.37E-03	3.28E-04	5.51E-04	1.91E-04	3.89E-03	2025	5.51E-04	2025
561980_418430C	561980	4184300	3.52E-03	4.40E-03	1.55E-03	3.68E-04	6.16E-04	2.13E-04	4.40E-03	2025	6.16E-04	2025
562000_418430C	562000	4184300	4.02E-03	5.03E-03	1.77E-03	4.15E-04	6.93E-04	2.40E-04	5.03E-03	2025	6.93E-04	2025
562020_418430C	562020	4184300	4.65E-03	5.81E-03	2.04E-03	4.73E-04	7.87E-04	2.73E-04	5.81E-03	2025	7.87E-04	2025
561920_418432C	561920	4184320	2.48E-03	3.11E-03	1.09E-03	2.76E-04	4.70E-04	1.62E-04	3.11E-03	2025	4.70E-04	2025
561940_418432C	561940	4184320	2.76E-03	3.47E-03	1.22E-03	3.07E-04	5.22E-04	1.80E-04	3.47E-03	2025	5.22E-04	2025
561960_418432C	561960	4184320	3.10E-03	3.90E-03	1.37E-03	3.43E-04	5.83E-04	2.02E-04	3.90E-03	2025	5.83E-04	2025
561980_418432C	561980	4184320	3.52E-03	4.42E-03	1.55E-03	3.86E-04	6.55E-04	2.27E-04	4.42E-03	2025	6.55E-04	2025
562000_418432C	562000	4184320	4.03E-03	5.06E-03	1.78E-03	4.38E-04	7.42E-04	2.57E-04	5.06E-03	2025		

Particulate Matter concentration, C_{PM2.5} (ug/m³)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated			Unmitigated		Mitigated	
			2024	2025	2026	2024	2025	2026	PM _{2.5} Concentration		PM _{2.5} Concentration	
									Max	Max Year	Max	Max Year
562440_418440C	562440	4184400	3.07E-02	3.86E-02	1.36E-02	3.49E-03	5.97E-03	2.06E-03	3.86E-02	2025	5.97E-03	2025
562460_418440C	562460	4184400	2.68E-02	3.38E-02	1.19E-02	3.08E-03	5.12E-03	1.82E-03	3.38E-02	2025	5.28E-03	2025
562480_418440C	562480	4184400	2.36E-02	2.98E-02	1.04E-02	2.74E-03	4.71E-03	1.63E-03	2.98E-02	2025	4.71E-03	2025
562500_418440C	562500	4184400	2.09E-02	2.64E-02	9.26E-03	2.45E-03	4.22E-03	1.46E-03	2.64E-02	2025	4.22E-03	2025
562520_418440C	562520	4184400	1.86E-02	2.36E-02	8.26E-03	2.20E-03	3.80E-03	1.31E-03	2.36E-02	2025	3.80E-03	2025
562540_418440C	562540	4184400	1.67E-02	2.11E-02	7.40E-03	1.98E-03	3.42E-03	1.18E-03	2.11E-02	2025	3.42E-03	2025
562560_418440C	562560	4184400	1.50E-02	1.90E-02	6.66E-03	1.79E-03	3.09E-03	1.06E-03	1.90E-02	2025	3.09E-03	2025
562580_418440C	562580	4184400	1.35E-02	1.71E-02	6.00E-03	1.61E-03	2.78E-03	9.57E-04	1.71E-02	2025	2.78E-03	2025
561920_418442C	561920	4184420	2.29E-03	2.99E-03	1.05E-03	3.74E-04	6.85E-04	2.34E-04	2.99E-03	2025	6.85E-04	2025
561940_418442C	561940	4184420	2.58E-03	3.40E-03	1.19E-03	4.53E-04	8.38E-04	2.85E-04	3.40E-03	2025	8.38E-04	2025
562240_418442C	562240	4184420	4.39E-02	5.68E-02	1.99E-02	6.63E-03	1.20E-02	4.10E-03	5.68E-02	2025	1.20E-02	2025
562260_418442C	562260	4184420	4.74E-02	6.04E-02	2.12E-02	6.17E-03	1.09E-02	3.73E-03	6.04E-02	2025	1.09E-02	2025
562280_418442C	562280	4184420	4.85E-02	6.13E-02	2.15E-02	5.76E-03	9.96E-03	3.43E-03	6.13E-02	2025	9.96E-03	2025
562300_418442C	562300	4184420	4.72E-02	5.95E-02	2.09E-02	5.32E-03	9.08E-03	3.14E-03	5.95E-02	2025	9.08E-03	2025
562320_418442C	562320	4184420	4.41E-02	5.54E-02	1.94E-02	4.83E-03	8.18E-03	2.83E-03	5.54E-02	2025	8.18E-03	2025
562380_418442C	562380	4184420	3.26E-02	4.08E-02	1.43E-02	3.51E-03	5.92E-03	2.05E-03	4.08E-02	2025	5.92E-03	2025
562400_418442C	562400	4184420	2.92E-02	3.66E-02	1.28E-02	3.15E-03	5.33E-03	1.84E-03	3.66E-02	2025	5.33E-03	2025
562420_418442C	562420	4184420	2.61E-02	3.28E-02	1.15E-02	2.84E-03	4.80E-03	1.66E-03	3.28E-02	2025	4.80E-03	2025
562440_418442C	562440	4184420	2.35E-02	2.95E-02	1.03E-02	2.57E-03	4.35E-03	1.50E-03	2.95E-02	2025	4.35E-03	2025
562460_418442C	562460	4184420	2.11E-02	2.65E-02	9.31E-03	2.33E-03	3.95E-03	1.36E-03	2.65E-02	2025	3.95E-03	2025
562480_418442C	562480	4184420	1.90E-02	2.40E-02	8.41E-03	2.11E-03	3.59E-03	1.24E-03	2.40E-02	2025	3.59E-03	2025
562500_418442C	562500	4184420	1.73E-02	2.17E-02	7.62E-03	1.93E-03	3.28E-03	1.13E-03	2.17E-02	2025	3.28E-03	2025
562520_418442C	562520	4184420	1.56E-02	1.96E-02	6.88E-03	1.75E-03	2.98E-03	1.03E-03	1.96E-02	2025	2.98E-03	2025
562540_418442C	562540	4184420	1.42E-02	1.79E-02	6.29E-03	1.61E-03	2.74E-03	9.46E-04	1.79E-02	2025	2.74E-03	2025
562560_418442C	562560	4184420	1.30E-02	1.63E-02	5.74E-03	1.47E-03	2.51E-03	8.66E-04	1.63E-02	2025	2.51E-03	2025
562580_418442C	562580	4184420	1.18E-02	1.49E-02	5.22E-03	1.33E-03	2.28E-03	7.87E-04	1.49E-02	2025	2.28E-03	2025
561940_418444C	561940	4184440	2.60E-03	3.51E-03	1.22E-03	5.50E-04	1.04E-03	3.54E-04	3.51E-03	2025	1.04E-03	2025
562180_418444C	562180	4184440	1.99E-02	2.70E-02	9.40E-03	4.44E-03	8.48E-03	2.87E-03	2.70E-02	2025	8.48E-03	2025
562200_418444C	562200	4184440	2.28E-02	3.01E-02	1.05E-02	4.11E-03	7.64E-03	2.60E-03	3.01E-02	2025	7.64E-03	2025
562220_418444C	562220	4184440	2.57E-02	3.32E-02	1.16E-02	3.93E-03	7.12E-03	2.43E-03	3.32E-02	2025	7.12E-03	2025
562240_418444C	562240	4184440	2.80E-02	3.58E-02	1.25E-02	3.80E-03	6.75E-03	2.32E-03	3.58E-02	2025	6.75E-03	2025
562260_418444C	562260	4184440	2.93E-02	3.72E-02	1.30E-02	3.65E-03	6.38E-03	2.19E-03	3.72E-02	2025	6.38E-03	2025
562280_418444C	562280	4184440	2.96E-02	3.73E-02	1.31E-02	3.47E-03	5.98E-03	2.06E-03	3.73E-02	2025	5.98E-03	2025
562300_418444C	562300	4184440	2.91E-02	3.66E-02	1.28E-02	3.28E-03	5.60E-03	1.93E-03	3.66E-02	2025	5.60E-03	2025
562320_418444C	562320	4184440	2.79E-02	3.50E-02	1.23E-02	3.07E-03	5.21E-03	1.80E-03	3.50E-02	2025	5.21E-03	2025
562400_418444C	562400	4184440	2.09E-02	2.62E-02	9.19E-03	2.26E-03	3.82E-03	1.32E-03	2.62E-02	2025	3.82E-03	2025
562420_418444C	562420	4184440	1.92E-02	2.41E-02	8.46E-03	2.08E-03	3.52E-03	1.22E-03	2.41E-02	2025	3.52E-03	2025
562440_418444C	562440	4184440	1.76E-02	2.21E-02	7.77E-03	1.92E-03	3.24E-03	1.12E-03	2.21E-02	2025	3.24E-03	2025
562460_418444C	562460	4184440	1.63E-02	2.05E-02	7.18E-03	1.77E-03	3.00E-03	1.04E-03	2.05E-02	2025	3.00E-03	2025
562480_418444C	562480	4184440	1.50E-02	1.89E-02	6.63E-03	1.64E-03	2.78E-03	9.62E-04	1.89E-02	2025	2.78E-03	2025
562500_418444C	562500	4184440	1.39E-02	1.75E-02	6.14E-03	1.53E-03	2.59E-03	8.95E-04	1.75E-02	2025	2.59E-03	2025
562520_418444C	562520	4184440	1.29E-02	1.61E-02	5.65E-03	1.41E-03	2.39E-03	8.25E-04	1.61E-02	2025	2.39E-03	2025
562540_418444C	562540	4184440	1.19E-02	1.49E-02	5.24E-03	1.31E-03	2.22E-03	7.66E-04	1.49E-02	2025	2.22E-03	2025
562560_418444C	562560	4184440	1.10E-02	1.38E-02	4.85E-03	1.21E-03	2.06E-03	7.11E-04	1.38E-02	2025	2.06E-03	2025
562100_418446C	562100	4184460	9.87E-03	1.49E-02	5.13E-03	3.85E-03	7.68E-03	2.58E-03	1.49E-02	2025	7.68E-03	2025
562120_418446C	562120	4184460	1.05E-02	1.52E-02	5.26E-03	3.32E-03	6.53E-03	2.20E-03	1.52E-02	2025	6.53E-03	2025
562140_418446C	562140	4184460	1.16E-02	1.62E-02	5.61E-03	2.98E-03	5.77E-03	1.95E-03	1.62E-02	2025	5.77E-03	2025
562160_418446C	562160	4184460	1.30E-02	1.76E-02	6.12E-03	2.76E-03	5.23E-03	1.78E-03	1.76E-02	2025	5.23E-03	2025
562180_418446C	562180	4184460	1.47E-02	1.94E-02	6.78E-03	2.65E-03	4.93E-03	1.68E-03	1.94E-02	2025	4.93E-03	2025
562200_418446C	562200	4184460	1.65E-02	2.14E-02	7.48E-03	2.59E-03	4.73E-03	1.61E-03	2.14E-02	2025	4.73E-03	2025
562220_418446C	562220	4184460	1.79E-02	2.30E-02	8.05E-03	2.53E-03	4.52E-03	1.55E-03	2.30E-02	2025	4.52E-03	2025
562240_418446C	562240	4184460	1.88E-02	2.40E-02	8.41E-03	2.45E-03	4.32E-03	1.48E-03	2.40E-02	2025	4.32E-03	2025
562260_418446C	562260	4184460	1.95E-02	2.48E-02	8.69E-03	2.40E-03	4.18E-03	1.44E-03	2.48E-02	2025	4.18E-03	2025
562280_418446C	562280	4184460	1.96E-02	2.48E-02	8.70E-03	2.31E-03	3.98E-03	1.37E-03	2.48E-02	2025	3.98E-03	2025
562300_418446C	562300	4184460	1.96E-02	2.47E-02	8.66E-03	2.22E-03	3.81E-03	1.31E-03	2.47E-02	2025	3.81E-03	2025
562320_418446C	562320	4184460	1.92E-02	2.41E-02	8.46E-03	2.13E-03	3.63E-03	1.25E-03	2.41E-02	2025	3.63E-03	2025
562340_418446C	562340	4184460	1.84E-02	2.31E-02	8.12E-03	2.02E-03	3.43E-03	1.19E-03	2.31E-02	2025	3.43E-03	2025
562400_418446C	562400	4184460	1.53E-02	1.92E-02	6.75E-03	1.67E-03	2.83E-03	9.79E-04	1.92E-02	2025	2.83E-03	2025
562420_418446C	562420	4184460	1.42E-02	1.81E-02	6.24E-03	1.57E-03	2.64E-03	9.19E-04	1.81E-02	2025	2.64E-03	2025
562440_418446C	562440	4184460	1.34E-02	1.69E-02	5.92E-03	1.47E-03	2.48E-03	8.58E-04	1.69E-02	2025	2.48E-03	2025
562460_418446C	562460	4184460	1.26E-02	1.58E-02	5.56E-03	1.38E-03	2.33E-03	8.07E-04	1.58E-02	2025	2.33E-03	2025
562480_418446C	562480	4184460	1.19E-02	1.49E-02	5.23E-03	1.29E-03	2.19E-03	7.58E-04	1.49E-02	2025	2.19E-03	2025
562500_418446C	562500	4184460	1.11E-02	1.40E-02	4.91E-03	1.22E-03	2.06E-03	7.13E-04	1.40E-02	2025	2.06E-03	2025
562520_418446C	562520	4184460	1.05E-02	1.31E-02	4.61E-03	1.14E-03	1.93E-03	6.69E-04	1.31E-02	2025	1.93E-03	2025
562540_418446C	562540	4184460	9.79E-03	1.23E-02	4.32E-03	1.07E-03	1.81E-03	6.26E-04	1.23E-02	2025	1.81E-03	2025
562560_418446C	562560	4184460	9.18E-03	1.15E-02	4.05E-03	1.00E-03	1.70E-03	5.86E-04	1.15E-02	2025	1.70E-03	2025
562020_418448C	562020	4184480	6.47E-03	1.06E-02	3.62E-03	3.42E-03	6.94E-03	2.33E-03	1.06E-02	2025	6.94E-03	2025
562040_418448C	562040	4184480	6.37E-03	9.99E-03	3.42E-03	2.88E-03	5.79E-03	1.95E-03	9.99E-03	2025	5.79E-03	2025
562060_418448C	562060	4184480	6.55E-03	9.87E-03	3.40E-03	2.52E-03	5.02E-03	1.69E-03	9.87E-03	2025	5.02E-03	2025
562080_418448C	562080	4184480	6.98E-03	1.02E-02	3.51E-03	2.29E-03	4.52E-03	1.52E-03	1.02E-02	2025	4.52E-03	2025
562100_418448C	562100	4184480	7.57E-03	1.07E-02	3.69E-03	2.10E-03	4.09E-03	1.38E-03	1.07E-02			

Particulate Matter concentration, $PM_{2.5}$ ($\mu g/m^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated			Unmitigated		Mitigated	
			2024	2025	2026	2024	2025	2026	PM _{2.5} Concentration		PM _{2.5} Concentration	
									Max	Max Year	Max	Max Year
562480_418450C	562480	4184500	7.64E-03	9.60E-03	3.37E-03	8.41E-04	1.43E-03	4.93E-04	9.60E-03	2025	1.43E-03	2025
562500_418450C	562500	4184500	7.31E-03	9.18E-03	3.22E-03	8.03E-04	1.36E-03	4.71E-04	9.18E-03	2025	1.36E-03	2025
562520_418450C	562520	4184500	6.99E-03	8.78E-03	3.08E-03	7.67E-04	1.30E-03	4.50E-04	8.78E-03	2025	1.30E-03	2025
562540_418450C	562540	4184500	6.66E-03	8.36E-03	2.93E-03	7.28E-04	1.23E-03	4.27E-04	8.36E-03	2025	1.23E-03	2025
562560_418450C	562560	4184500	6.36E-03	7.99E-03	2.80E-03	6.94E-04	1.18E-03	4.07E-04	7.99E-03	2025	1.18E-03	2025
561960_418452C	561960	4184520	2.62E-03	3.62E-03	1.26E-03	6.52E-04	1.26E-03	4.26E-04	3.62E-03	2025	1.26E-03	2025
561980_418452C	561980	4184520	2.95E-03	4.11E-03	1.43E-03	7.63E-04	1.48E-03	4.99E-04	4.11E-03	2025	1.48E-03	2025
562000_418452C	562000	4184520	3.28E-03	4.55E-03	1.58E-03	8.31E-04	1.61E-03	5.43E-04	4.55E-03	2025	1.61E-03	2025
562020_418452C	562020	4184520	3.60E-03	4.95E-03	1.72E-03	8.63E-04	1.66E-03	5.61E-04	4.95E-03	2025	1.66E-03	2025
562040_418452C	562040	4184520	3.98E-03	5.41E-03	1.88E-03	8.95E-04	1.71E-03	5.79E-04	5.41E-03	2025	1.71E-03	2025
562060_418452C	562060	4184520	4.38E-03	5.89E-03	2.05E-03	9.10E-04	1.72E-03	5.84E-04	5.89E-03	2025	1.72E-03	2025
562080_418452C	562080	4184520	4.85E-03	6.46E-03	2.25E-03	9.35E-04	1.75E-03	5.96E-04	6.46E-03	2025	1.75E-03	2025
562100_418452C	562100	4184520	5.32E-03	7.02E-03	2.45E-03	9.46E-04	1.76E-03	5.98E-04	7.02E-03	2025	1.76E-03	2025
562120_418452C	562120	4184520	5.79E-03	7.57E-03	2.65E-03	9.52E-04	1.75E-03	5.96E-04	7.57E-03	2025	1.75E-03	2025
562140_418452C	562140	4184520	6.27E-03	8.13E-03	2.84E-03	9.63E-04	1.75E-03	5.97E-04	8.13E-03	2025	1.75E-03	2025
562160_418452C	562160	4184520	6.72E-03	8.66E-03	3.03E-03	9.73E-04	1.75E-03	5.98E-04	8.66E-03	2025	1.75E-03	2025
562180_418452C	562180	4184520	7.16E-03	9.18E-03	3.21E-03	9.84E-04	1.75E-03	6.00E-04	9.18E-03	2025	1.75E-03	2025
562200_418452C	562200	4184520	7.61E-03	9.70E-03	3.40E-03	9.96E-04	1.76E-03	6.03E-04	9.70E-03	2025	1.76E-03	2025
562220_418452C	562220	4184520	7.98E-03	1.01E-02	3.55E-03	1.00E-03	1.75E-03	6.03E-04	1.01E-02	2025	1.75E-03	2025
562240_418452C	562240	4184520	8.17E-03	1.04E-02	3.63E-03	9.96E-04	1.73E-03	5.95E-04	1.04E-02	2025	1.73E-03	2025
562260_418452C	562260	4184520	8.27E-03	1.05E-02	3.67E-03	9.84E-04	1.70E-03	5.86E-04	1.05E-02	2025	1.70E-03	2025
562280_418452C	562280	4184520	8.29E-03	1.05E-02	3.67E-03	9.67E-04	1.66E-03	5.74E-04	1.05E-02	2025	1.66E-03	2025
562300_418452C	562300	4184520	8.35E-03	1.05E-02	3.69E-03	9.55E-04	1.64E-03	5.65E-04	1.05E-02	2025	1.64E-03	2025
562320_418452C	562320	4184520	8.35E-03	1.05E-02	3.69E-03	9.40E-04	1.60E-03	5.54E-04	1.05E-02	2025	1.60E-03	2025
562340_418452C	562340	4184520	8.28E-03	1.04E-02	3.65E-03	9.19E-04	1.56E-03	5.40E-04	1.04E-02	2025	1.56E-03	2025
562360_418452C	562360	4184520	8.08E-03	1.02E-02	3.57E-03	8.92E-04	1.51E-03	5.23E-04	1.02E-02	2025	1.51E-03	2025
562380_418452C	562380	4184520	7.82E-03	9.82E-03	3.45E-03	8.59E-04	1.46E-03	5.04E-04	9.82E-03	2025	1.46E-03	2025
562400_418452C	562400	4184520	7.54E-03	9.48E-03	3.33E-03	8.28E-04	1.40E-03	4.86E-04	9.48E-03	2025	1.40E-03	2025
562420_418452C	562420	4184520	7.20E-03	9.04E-03	3.17E-03	7.91E-04	1.34E-03	4.64E-04	9.04E-03	2025	1.34E-03	2025
562440_418452C	562440	4184520	6.88E-03	8.65E-03	3.04E-03	7.57E-04	1.28E-03	4.44E-04	8.65E-03	2025	1.28E-03	2025
562460_418452C	562460	4184520	6.59E-03	8.28E-03	2.91E-03	7.25E-04	1.23E-03	4.25E-04	8.28E-03	2025	1.23E-03	2025
562480_418452C	562480	4184520	6.31E-03	7.92E-03	2.78E-03	6.94E-04	1.18E-03	4.07E-04	7.92E-03	2025	1.18E-03	2025
562500_418452C	562500	4184520	6.05E-03	7.60E-03	2.67E-03	6.66E-04	1.13E-03	3.90E-04	7.60E-03	2025	1.13E-03	2025
562520_418452C	562520	4184520	5.82E-03	7.32E-03	2.57E-03	6.40E-04	1.09E-03	3.75E-04	7.32E-03	2025	1.09E-03	2025
562540_418452C	562540	4184520	5.58E-03	7.01E-03	2.46E-03	6.12E-04	1.04E-03	3.59E-04	7.01E-03	2025	1.04E-03	2025
561980_418454C	561980	4184540	2.61E-03	3.48E-03	1.21E-03	5.13E-04	0.965E-04	3.28E-04	3.48E-03	2025	0.965E-04	2025
562000_418454C	562000	4184540	2.88E-03	3.85E-03	1.34E-03	5.62E-04	1.06E-03	3.58E-04	3.85E-03	2025	1.06E-03	2025
562020_418454C	562020	4184540	3.17E-03	4.20E-03	1.47E-03	5.93E-04	1.11E-03	3.77E-04	4.20E-03	2025	1.11E-03	2025
562040_418454C	562040	4184540	3.49E-03	4.60E-03	1.61E-03	6.24E-04	1.16E-03	3.95E-04	4.60E-03	2025	1.16E-03	2025
562060_418454C	562060	4184540	3.84E-03	5.04E-03	1.76E-03	6.56E-04	1.21E-03	4.13E-04	5.04E-03	2025	1.21E-03	2025
562080_418454C	562080	4184540	4.21E-03	5.50E-03	1.92E-03	6.85E-04	1.26E-03	4.28E-04	5.50E-03	2025	1.26E-03	2025
562100_418454C	562100	4184540	4.58E-03	5.94E-03	2.08E-03	7.07E-04	1.29E-03	4.39E-04	5.94E-03	2025	1.29E-03	2025
562120_418454C	562120	4184540	4.92E-03	6.34E-03	2.22E-03	7.22E-04	1.30E-03	4.45E-04	6.34E-03	2025	1.30E-03	2025
562140_418454C	562140	4184540	5.25E-03	6.75E-03	2.36E-03	7.39E-04	1.32E-03	4.52E-04	6.75E-03	2025	1.32E-03	2025
562160_418454C	562160	4184540	5.57E-03	7.13E-03	2.50E-03	7.54E-04	1.34E-03	4.59E-04	7.13E-03	2025	1.34E-03	2025
562180_418454C	562180	4184540	5.89E-03	7.51E-03	2.63E-03	7.68E-04	1.35E-03	4.65E-04	7.51E-03	2025	1.35E-03	2025
562200_418454C	562200	4184540	6.20E-03	7.87E-03	2.76E-03	7.79E-04	1.36E-03	4.69E-04	7.87E-03	2025	1.36E-03	2025
562220_418454C	562220	4184540	6.44E-03	8.16E-03	2.86E-03	7.86E-04	1.37E-03	4.70E-04	8.16E-03	2025	1.37E-03	2025
562240_418454C	562240	4184540	6.59E-03	8.34E-03	2.92E-03	7.86E-04	1.36E-03	4.68E-04	8.34E-03	2025	1.36E-03	2025
562260_418454C	562260	4184540	6.65E-03	8.39E-03	2.95E-03	7.80E-04	1.34E-03	4.63E-04	8.39E-03	2025	1.34E-03	2025
562280_418454C	562280	4184540	6.66E-03	8.41E-03	2.95E-03	7.71E-04	1.32E-03	4.57E-04	8.41E-03	2025	1.32E-03	2025
562300_418454C	562300	4184540	6.68E-03	8.41E-03	2.95E-03	7.61E-04	1.30E-03	4.49E-04	8.41E-03	2025	1.30E-03	2025
562320_418454C	562320	4184540	6.67E-03	8.40E-03	2.95E-03	7.49E-04	1.28E-03	4.41E-04	8.40E-03	2025	1.28E-03	2025
562340_418454C	562340	4184540	6.66E-03	8.38E-03	2.94E-03	7.40E-04	1.26E-03	4.35E-04	8.38E-03	2025	1.26E-03	2025
562360_418454C	562360	4184540	6.55E-03	8.23E-03	2.89E-03	7.21E-04	1.22E-03	4.23E-04	8.23E-03	2025	1.22E-03	2025
562380_418454C	562380	4184540	6.40E-03	8.05E-03	2.82E-03	7.02E-04	1.19E-03	4.12E-04	8.05E-03	2025	1.19E-03	2025
562400_418454C	562400	4184540	6.22E-03	7.82E-03	2.74E-03	6.81E-04	1.15E-03	3.99E-04	7.82E-03	2025	1.15E-03	2025
562420_418454C	562420	4184540	5.99E-03	7.52E-03	2.64E-03	6.55E-04	1.11E-03	3.84E-04	7.52E-03	2025	1.11E-03	2025
562440_418454C	562440	4184540	5.74E-03	7.24E-03	2.54E-03	6.31E-04	1.07E-03	3.70E-04	7.24E-03	2025	1.07E-03	2025
562460_418454C	562460	4184540	5.53E-03	6.95E-03	2.44E-03	6.07E-04	1.03E-03	3.56E-04	6.95E-03	2025	1.03E-03	2025
562480_418454C	562480	4184540	5.31E-03	6.67E-03	2.34E-03	5.83E-04	9.89E-04	3.42E-04	6.67E-03	2025	9.89E-04	2025
562500_418454C	562500	4184540	5.10E-03	6.41E-03	2.25E-03	5.60E-04	9.50E-04	3.29E-04	6.41E-03	2025	9.50E-04	2025
562520_418454C	562520	4184540	4.93E-03	6.19E-03	2.17E-03	5.41E-04	9.18E-04	3.17E-04	6.19E-03	2025	9.18E-04	2025
562540_418454C	562540	4184540	4.73E-03	5.94E-03	2.09E-03	5.19E-04	8.80E-04	3.04E-04	5.94E-03	2025	8.80E-04	2025
561980_418456C	561980	4184560	2.39E-03	3.12E-03	1.09E-03	3.94E-04	7.24E-04	2.47E-04	3.12E-03	2025	7.24E-04	2025
562000_418456C	562000	4184560	2.63E-03	3.43E-03	1.20E-03	4.31E-04	7.91E-04	2.70E-04	3.43E-03	2025	7.91E-04	2025
562020_418456C	562020	4184560	2.87E-03	3.74E-03	1.31E-03	4.59E-04	8.38E-04	2.86E-04	3.74E-03	2025	8.38E-04	2025
562040_418456C	562040	4184560	3.14E-03	4.07E-03	1.42E-03	4.85E-04	8.82E-04	3.01E-04	4.07E-03	2025	8.82E-04	2025
562060_418456C	562060	4184560	3.42E-03	4.42E-03	1.55E-03	5.12E-04	9.26E-04	3.17E-04	4.42E-03	2025	9.26E-04	2025
562080_418456C	562080	4184560	3.70E-03	4.77E-03	1.67E-03	5.36E-04	9.64E-04	3.30E-04	4.77E-03	2025	9.64E-04	2025
562100_418456C	562100	4184560	3.97E-03	5.10E-03	1.78E-03	5.56E-04	9.93E-04	3.40E-04	5.10E-03	2025	9	

Particulate Matter concentration, $C_{PM_{2.5}}$ ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated			Unmitigated		Mitigated	
			2024	2025	2026	2024	2025	2026	PM _{2.5} Concentration		PM _{2.5} Concentration	
									Max	Max Year	Max	Max Year
562020_418460C	562020	4184600	2.41E-03	3.08E-03	1.08E-03	3.20E-04	5.65E-04	1.94E-04	3.08E-03	2025	5.65E-04	2025
562040_418460C	562040	4184600	2.58E-03	3.29E-03	1.15E-03	3.37E-04	5.95E-04	2.04E-04	3.29E-03	2025	5.95E-04	2025
562060_418460C	562060	4184600	2.74E-03	3.49E-03	1.22E-03	3.53E-04	6.20E-04	2.13E-04	3.49E-03	2025	6.20E-04	2025
562080_418460C	562080	4184600	2.89E-03	3.68E-03	1.29E-03	3.67E-04	6.42E-04	2.21E-04	3.68E-03	2025	6.42E-04	2025
562100_418460C	562100	4184600	3.04E-03	3.86E-03	1.35E-03	3.79E-04	6.62E-04	2.28E-04	3.86E-03	2025	6.62E-04	2025
562120_418460C	562120	4184600	3.17E-03	4.02E-03	1.41E-03	3.90E-04	6.79E-04	2.34E-04	4.02E-03	2025	6.79E-04	2025
562140_418460C	562140	4184600	3.29E-03	4.16E-03	1.46E-03	3.98E-04	6.91E-04	2.38E-04	4.16E-03	2025	6.91E-04	2025
562160_418460C	562160	4184600	3.41E-03	4.32E-03	1.52E-03	4.08E-04	7.05E-04	2.43E-04	4.32E-03	2025	7.05E-04	2025
562180_418460C	562180	4184600	3.55E-03	4.48E-03	1.57E-03	4.17E-04	7.18E-04	2.47E-04	4.48E-03	2025	7.18E-04	2025
562200_418460C	562200	4184600	3.67E-03	4.63E-03	1.63E-03	4.24E-04	7.38E-04	2.51E-04	4.63E-03	2025	7.38E-04	2025
562220_418460C	562220	4184600	3.78E-03	4.77E-03	1.67E-03	4.32E-04	7.39E-04	2.55E-04	4.77E-03	2025	7.39E-04	2025
562240_418460C	562240	4184600	3.82E-03	4.81E-03	1.69E-03	4.33E-04	7.39E-04	2.55E-04	4.81E-03	2025	7.39E-04	2025
562260_418460C	562260	4184600	3.84E-03	4.83E-03	1.70E-03	4.32E-04	7.38E-04	2.55E-04	4.83E-03	2025	7.38E-04	2025
562280_418460C	562280	4184600	3.82E-03	4.81E-03	1.69E-03	4.29E-04	7.31E-04	2.52E-04	4.81E-03	2025	7.31E-04	2025
562300_418460C	562300	4184600	3.83E-03	4.82E-03	1.69E-03	4.27E-04	7.26E-04	2.51E-04	4.82E-03	2025	7.26E-04	2025
562320_418460C	562320	4184600	3.86E-03	4.85E-03	1.70E-03	4.25E-04	7.22E-04	2.50E-04	4.85E-03	2025	7.22E-04	2025
562340_418460C	562340	4184600	3.87E-03	4.86E-03	1.71E-03	4.23E-04	7.16E-04	2.48E-04	4.86E-03	2025	7.16E-04	2025
562360_418460C	562360	4184600	3.87E-03	4.86E-03	1.71E-03	4.20E-04	7.11E-04	2.46E-04	4.86E-03	2025	7.11E-04	2025
562380_418460C	562380	4184600	3.84E-03	4.82E-03	1.69E-03	4.15E-04	7.00E-04	2.42E-04	4.82E-03	2025	7.00E-04	2025
562400_418460C	562400	4184600	3.79E-03	4.75E-03	1.67E-03	4.08E-04	6.88E-04	2.38E-04	4.75E-03	2025	6.88E-04	2025
562420_418460C	562420	4184600	3.72E-03	4.67E-03	1.64E-03	4.00E-04	6.75E-04	2.34E-04	4.67E-03	2025	6.75E-04	2025
562440_418460C	562440	4184600	3.63E-03	4.55E-03	1.60E-03	3.90E-04	6.58E-04	2.28E-04	4.55E-03	2025	6.58E-04	2025
562460_418460C	562460	4184600	3.53E-03	4.43E-03	1.56E-03	3.80E-04	6.41E-04	2.22E-04	4.43E-03	2025	6.41E-04	2025
562480_418460C	562480	4184600	3.43E-03	4.30E-03	1.51E-03	3.69E-04	6.23E-04	2.16E-04	4.30E-03	2025	6.23E-04	2025
562040_418462C	562040	4184620	2.33E-03	2.96E-03	1.04E-03	2.90E-04	5.06E-04	1.74E-04	2.96E-03	2025	5.06E-04	2025
562060_418462C	562060	4184620	2.46E-03	3.11E-03	1.09E-03	3.02E-04	5.35E-04	1.81E-04	3.11E-03	2025	5.26E-04	2025
562080_418462C	562080	4184620	2.57E-03	3.26E-03	1.14E-03	3.13E-04	5.45E-04	1.87E-04	3.26E-03	2025	5.45E-04	2025
562100_418462C	562100	4184620	2.68E-03	3.39E-03	1.19E-03	3.23E-04	5.60E-04	1.93E-04	3.39E-03	2025	5.60E-04	2025
562120_418462C	562120	4184620	2.78E-03	3.51E-03	1.23E-03	3.32E-04	5.74E-04	1.98E-04	3.51E-03	2025	5.74E-04	2025
562140_418462C	562140	4184620	2.87E-03	3.63E-03	1.27E-03	3.40E-04	5.86E-04	2.02E-04	3.63E-03	2025	5.86E-04	2025
562160_418462C	562160	4184620	2.98E-03	3.76E-03	1.32E-03	3.47E-04	5.97E-04	2.06E-04	3.76E-03	2025	5.97E-04	2025
562180_418462C	562180	4184620	3.09E-03	3.89E-03	1.37E-03	3.55E-04	6.08E-04	2.10E-04	3.89E-03	2025	6.08E-04	2025
562200_418462C	562200	4184620	3.18E-03	4.01E-03	1.41E-03	3.61E-04	6.17E-04	2.13E-04	4.01E-03	2025	6.17E-04	2025
562220_418462C	562220	4184620	3.26E-03	4.10E-03	1.44E-03	3.66E-04	6.25E-04	2.16E-04	4.10E-03	2025	6.25E-04	2025
562240_418462C	562240	4184620	3.28E-03	4.12E-03	1.45E-03	3.67E-04	6.25E-04	2.16E-04	4.12E-03	2025	6.25E-04	2025
562260_418462C	562260	4184620	3.29E-03	4.14E-03	1.45E-03	3.67E-04	6.24E-04	2.16E-04	4.14E-03	2025	6.24E-04	2025
562280_418462C	562280	4184620	3.28E-03	4.12E-03	1.45E-03	3.64E-04	6.20E-04	2.14E-04	4.12E-03	2025	6.20E-04	2025
562300_418462C	562300	4184620	3.29E-03	4.14E-03	1.45E-03	3.64E-04	6.18E-04	2.14E-04	4.14E-03	2025	6.18E-04	2025
562320_418462C	562320	4184620	3.31E-03	4.16E-03	1.46E-03	3.63E-04	6.15E-04	2.13E-04	4.16E-03	2025	6.15E-04	2025
562340_418462C	562340	4184620	3.32E-03	4.16E-03	1.46E-03	3.61E-04	6.10E-04	2.11E-04	4.16E-03	2025	6.10E-04	2025
562360_418462C	562360	4184620	3.33E-03	4.18E-03	1.47E-03	3.60E-04	6.08E-04	2.10E-04	4.18E-03	2025	6.08E-04	2025
562380_418462C	562380	4184620	3.31E-03	4.15E-03	1.46E-03	3.56E-04	6.00E-04	2.08E-04	4.15E-03	2025	6.00E-04	2025
562400_418462C	562400	4184620	3.28E-03	4.12E-03	1.45E-03	3.51E-04	5.92E-04	2.05E-04	4.12E-03	2025	5.92E-04	2025
562420_418462C	562420	4184620	3.24E-03	4.06E-03	1.42E-03	3.46E-04	5.83E-04	2.02E-04	4.06E-03	2025	5.83E-04	2025
562440_418462C	562440	4184620	3.17E-03	3.97E-03	1.40E-03	3.39E-04	5.71E-04	1.98E-04	3.97E-03	2025	5.71E-04	2025
562460_418462C	562460	4184620	3.10E-03	3.89E-03	1.37E-03	3.31E-04	5.58E-04	1.93E-04	3.89E-03	2025	5.58E-04	2025
562080_418464C	562080	4184640	2.29E-03	2.90E-03	1.02E-03	2.71E-04	4.69E-04	1.62E-04	2.90E-03	2025	4.69E-04	2025
562100_418464C	562100	4184640	2.37E-03	3.00E-03	1.05E-03	2.79E-04	4.81E-04	1.66E-04	3.00E-03	2025	4.81E-04	2025
562120_418464C	562120	4184640	2.45E-03	3.10E-03	1.09E-03	2.87E-04	4.93E-04	1.70E-04	3.10E-03	2025	4.93E-04	2025
562140_418464C	562140	4184640	2.53E-03	3.20E-03	1.12E-03	2.93E-04	5.04E-04	1.74E-04	3.20E-03	2025	5.04E-04	2025
562160_418464C	562160	4184640	2.62E-03	3.31E-03	1.16E-03	3.00E-04	5.14E-04	1.77E-04	3.31E-03	2025	5.14E-04	2025
562180_418464C	562180	4184640	2.71E-03	3.42E-03	1.20E-03	3.07E-04	5.25E-04	1.81E-04	3.42E-03	2025	5.25E-04	2025
562200_418464C	562200	4184640	2.79E-03	3.51E-03	1.23E-03	3.13E-04	5.33E-04	1.84E-04	3.51E-03	2025	5.33E-04	2025
562220_418464C	562220	4184640	2.84E-03	3.57E-03	1.25E-03	3.16E-04	5.37E-04	1.85E-04	3.57E-03	2025	5.37E-04	2025
562240_418464C	562240	4184640	2.85E-03	3.58E-03	1.26E-03	3.16E-04	5.36E-04	1.85E-04	3.58E-03	2025	5.36E-04	2025
562260_418464C	562260	4184640	2.85E-03	3.58E-03	1.26E-03	3.15E-04	5.35E-04	1.85E-04	3.58E-03	2025	5.35E-04	2025
562280_418464C	562280	4184640	2.85E-03	3.58E-03	1.26E-03	3.14E-04	5.33E-04	1.84E-04	3.58E-03	2025	5.33E-04	2025
562300_418464C	562300	4184640	2.85E-03	3.58E-03	1.26E-03	3.12E-04	5.30E-04	1.83E-04	3.58E-03	2025	5.30E-04	2025
562320_418464C	562320	4184640	2.85E-03	3.58E-03	1.26E-03	3.12E-04	5.30E-04	1.83E-04	3.58E-03	2025	5.30E-04	2025
562340_418464C	562340	4184640	2.88E-03	3.62E-03	1.27E-03	3.12E-04	5.30E-04	1.83E-04	3.62E-03	2025	5.26E-04	2025
562360_418464C	562360	4184640	2.89E-03	3.63E-03	1.27E-03	3.11E-04	5.24E-04	1.82E-04	3.63E-03	2025	5.24E-04	2025
562380_418464C	562380	4184640	2.89E-03	3.62E-03	1.27E-03	3.09E-04	5.20E-04	1.80E-04	3.62E-03	2025	5.20E-04	2025
562400_418464C	562400	4184640	2.87E-03	3.60E-03	1.26E-03	3.06E-04	5.15E-04	1.78E-04	3.60E-03	2025	5.15E-04	2025
562420_418464C	562420	4184640	2.84E-03	3.56E-03	1.25E-03	3.02E-04	5.08E-04	1.76E-04	3.56E-03	2025	5.08E-04	2025
562440_418464C	562440	4184640	2.80E-03	3.51E-03	1.23E-03	2.97E-04	5.00E-04	1.73E-04	3.51E-03	2025	5.00E-04	2025
562100_418466C	562100	4184660	2.12E-03	2.67E-03	9.38E-04	2.45E-04	4.20E-04	1.45E-04	2.67E-03	2025	4.20E-04	2025
562120_418466C	562120	4184660	2.18E-03	2.75E-03	9.66E-04	2.50E-04	4.29E-04	1.48E-04	2.75E-03	2025	4.29E-04	2025
562140_418466C	562140	4184660	2.25E-03	2.84E-03	9.96E-04	2.56E-04	4.38E-04	1.51E-04	2.84E-03	2025	4.38E-04	2025
562160_418466C	562160	4184660	2.32E-03	2.93E-03	1.03E-03	2.62E-04	4.47E-04	1.55E-04	2.93E-03	2025	4.47E-04	2025
562180_418466C	562180	4184660	2.40E-03	3.01E-03	1.06E-03	2.67E-04	4.55E-04	1.57E-04	3.01E-03	2025	4.55E-04	2025
562200_418466C	562200	4184660	2.45E-03	3.08E-03	1.08E-03	2.72E-04	4.61E-04	1.59E-04	3.			

Particulate Matter concentration, $C_{PM2.5}$ ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated

$PM_{2.5}$ Concentration	
Max	Max Year

Mitigated

$PM_{2.5}$ Concentration	
Max	Max Year

Particulate Matter concentration, $C_{PM2.5}$ ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated

PM _{2.5} Concentration	
Max	Max Year

Mitigated

PM _{2.5} Concentration	
Max	Max Year

Particulate Matter concentration, $C_{PM2.5}$ ($\mu\text{g}/\text{m}^3$)

Lookup	X (UTM)	Y (UTM)	Unmitigated			Mitigated		
			2024	2025	2026	2024	2025	2026

Unmitigated

PM _{2.5} Concentration	
Max	Max Year

Mitigated

PM _{2.5} Concentration	
Max	Max Year

MEIR Receptor - Cumulative Risk

MEIR Type	Unmitigated			Mitigated			UTM X	UTM Y
	Cancer Risk (per million)	HI	PM _{2.5} (ug/m ³)	Cancer Risk (per million)	HI	PM _{2.5} (ug/m ³)		
Off-site	29.91	0.02	0.10	2.24	0.00	0.01	562320.00	4184400.00
Onsite	NA	NA	NA	NA	NA	NA	562246.00	4184348.00

<=20 y = 58.873x^{1.246} generator
 <=5 y = 0.9433e^{-0.007x} generic case

BAAQMD Nearby Stationary Sources (report pulled 3/16/2023)

FID	FACID	Name	Address	Type	UTM X	UTM Y	Cancer	Hazard	PM2.5	Distance to MEIR (ft)	
										Off-Site	On-Site
2841	20527	Oakland Unified School District	1011 Union Street	Generator	562510	4184738	16.78	0.0338624	0.0211698	1271.8	1544.7
8550	112534_1	Bart Gas & Food	1395 7th St	Gas Dispensing Facility	562205	4184390	6.27	0.0300513	0	378.6	192.5

Stationary Source Impacts at MEIRs

MEIR	FACID	Distance Multiplier	Cancer	Hazard	PM2.5
Off-site	8550	0.42	2.64	0.01	0.00
On-site	8550	0.63	3.92	0.02	0.00

BAAQMD Nearby Mobile Sources

Mobile Source Impacts at MEIR, Construction

MEIR	Source	Cancer	Hazard	PM2.5
Off-site	Highway	22.4		0.34
	Major Street	6.0		0.11
	Rail	9.7		0.01
On-site	Highway	23.6		0.35
	Major Street	7.4		0.15
	Rail	11.3		0.01

Total Cumulative Impacts at MEIR

Off-site MEIR	Unmitigated			Mitigated		
	Cancer Risk (per million)	HI	PM _{2.5} (ug/m ³)	Cancer Risk (per million)	HI	PM _{2.5} (ug/m ³)
Project Construction	29.91	0.02	0.10	2.24	0.00	0.01
Project Operations	NA	NA	NA	NA	NA	NA
Stationary	2.6	0.01	0.00	2.64	0.01	0.00
Mobile	38.2	0.00	0.47	38.16	0.00	0.47
Total	70.7	0.04	0.56	43.0	0.01	0.48

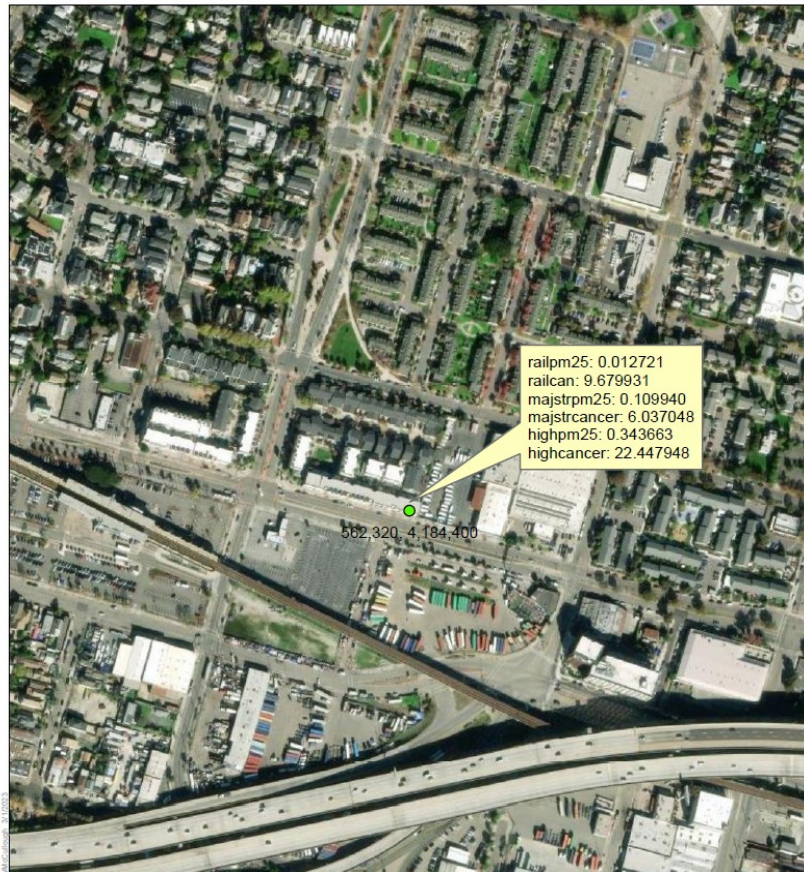
Onsite MEIR	Unmitigated			Mitigated		
	Cancer Risk (per million)	HI	PM _{2.5} (ug/m ³)	Cancer Risk (per million)	HI	PM _{2.5} (ug/m ³)
Project	NA	NA	NA	NA	NA	NA
Stationary	3.92	0.02	0.00	3.92	0.02	0.00
Mobile	42.24	0.00	0.52	42.24	0.00	0.52
Total	46.2	0.02	0.52	46.2	0.02	0.52

FID	Facility ID	Facility Name	Address	City	Street	Zip	County	Latitude	Longitude	Source De	NAICS	NAICS Sec	NAICS Sub	NAICS Indi	Cancer Ris	Chronic H: PM2.5	x	y	Cancer Ris	Chronic H: PM2.5	Zip	NAICS	UTM X	UTM Y		
2841	20527	Oakland U 1011	Unio Oakland	Oakland	CA	#####	Alameda	37.81	-122.29	Generator	#####	Education	Education	Elementar	16.78	0.03386	0.02117	-1.4E+07	4552049	16.776	0.034	0.021	94607	611110	562510	4184738
8550	112534_1	Bart Gas 8 1395	7th S Oakland	Oakland	CA	#####	Alameda	37.8	-122.29	Gas Disper	#####	Retail Trac	Gasoline S	Gasoline S	6.27	0.03005	0	-1.4E+07	4551880	6.275	0.03	No Data	94607	447110	562205	4184390

Cumulative Mobile Source Risk

Off-Site MEIR

railpm25	0.012721 $\mu\text{g}/\text{m}^3$	rail_ug/m3
railcan	9.679931 per million	rail_per mi
majstrpm25	0.10994 $\mu\text{g}/\text{m}^3$	majs_ug/m
majstrcancer	6.037048 per million	majs_per n
highpm25	0.343663 $\mu\text{g}/\text{m}^3$	high_ug/m
highcancer	22.44795 per million	high_per r



On-Site MEIR

railpm25	0.014862 $\mu\text{g}/\text{m}^3$	rail_ug/m3
railcan	11.30608 per million	rail_per milli
majstrpm25	0.151662 $\mu\text{g}/\text{m}^3$	majs_ug/m3
majstrcancer	7.362009 per million	majs_per mil
highpm25	0.353677 $\mu\text{g}/\text{m}^3$	high_ug/m3
highcancer	23.57419 per million	high_per mil





Appendix B

Equitable Climate Action Plan Consistency Review 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: Reuben, Junius & Rose, LLP c/o Justin A. Zucker

Property Address: 533 Kirkham Street

Assessor's Parcel Number: 004-006-90-0201; 004-006-90-0202

Phone Number: 415.567.9000

E-mail: jzucker@reubenlaw.com

Equitable Climate Action Plan (ECAP) Consistency Review Checklist

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		
<p>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.</p> <p>The West Oakland Specific Plan, an element of the General Plan, includes the Property in the 7th Street Opportunity Area of the Plan (Site #23 in Subarea 2A), which is envisioned as providing high-density housing and office around the core of the West Oakland BART Station, with neighborhood-serving retail and custom manufacturing, industrial arts, and artist exhibition space on the ground floor. The West Oakland Specific Plan identifies the Property as an “opportunity site” and part of a “West Oakland BART Transit Village.” It envisions the redevelopment of the Property as mixed-use housing or office.</p>			
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		
<p>Please explain how the proposed project meets this action item.</p> <p>The Project provides less than half the maximum allowable parking, taking advantage of available parking reductions. On-site parking is further reduced via concession utilizing the State Density Bonus law.</p>			
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		
<p>Please explain how the proposed project meets this action item.</p> <p>Parking is provided on a single story at the ground floor with no sloped floors or ramps.</p>			
4. For projects that <i>are</i> subject to a Transportation Demand Management Program, would the project include transit passes for employees and/or residents? (TLU1)	Yes	No	N/A
	X		x
<p>Please explain how the proposed project meets this action item.</p> <p>Project site is not located in the CBD or LM Zones.</p> <div style="border: 1px solid red; padding: 5px; margin-top: 10px;"> <p>The TDM prepared for the Project includes transit fare subsidies as a mandatory measure.</p> </div>			

Equitable Climate Action Plan (ECAP) Consistency Review Checklist

<p>5. For projects that are <i>not</i> 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)</p>	Yes	No	N/A
			X
<p>Please explain how the proposed project meets this action item.</p>			
<p>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)</p>	Yes	No	N/A
	X		
<p>Please explain how the proposed project meets this action item.</p> <p>The Project will provide 10% of the parking spaces in the new building as Full Circuit aka “ready to go” and the other 90% of the parking spaces in the new building with inaccessible conduit installed.</p>			
<p>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)</p>	Yes	No	N/A
	X		
<p>Please explain how the proposed project meets this action item.</p> <p>The project site is an underutilized surface parking lot with no existing structure. No residential dwelling units or essential business would be destroyed/displaced.</p>			

Equitable Climate Action Plan (ECAP) Consistency Review Checklist

<p>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)</p>	<p>Yes</p>	<p>No</p>	<p>N/A</p>
<p>X</p>			
<p>Please explain how the proposed project meets this action item.</p> <p>The Project will add a sidewalk to the Kirkham Street frontage, where no sidewalk currently exists. The garage entrance is off Kirkham Street and not where a planned bike path is.</p>			
<p>Buildings</p>			
<p>9. Does the project not create any new natural gas connections/hook-ups? (B1 & B2)</p>	<p>Yes</p>	<p>No</p>	<p>N/A</p>
<p>X</p>			
<p>Plea</p>	<p>The Project would be required to comply with Oakland Municipal Code Chapter 15.37.</p>		
<p>No new natural gas connections/hook-ups are proposed for the residential portion of the Project. To the extent the retail space may need a natural gas connection/hook-up, Project Sponsor reserves the right to seek a waiver from any development control restricting such.</p>			
<p>10. Does the project comply with the City of Oakland Green Building Ordinance (Chapter 18.02 of the Oakland Municipal Code), if applicable? (B4)</p>	<p>Yes</p>	<p>No</p>	<p>N/A</p>
<p>X</p>			
<p>Please explain how the proposed project meets this action item.</p> <p>The Project will comply with the Greed Building Ordinance and Title 24 of the Building Code.</p>			
<p>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)</p>	<p>Yes</p>	<p>No</p>	<p>N/A</p>
<p>X</p>			
<p>Please explain how the proposed project meets this action item.</p>			

Equitable Climate Action Plan (ECAP) Consistency Review Checklist


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. The Project site is a surface parking lot without any structures.			
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.			
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.			

Equitable Climate Action Plan (ECAP) Consistency Review Checklist

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 three existing street trees on 7th Street are proposed to remain and an additional 12 street trees will be planted as part of the Project.			
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. Please see Stormwater Supplemental Form.			

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.

Justin A. Zucker 
 Name and Signature of Preparer

July 14, 2022
 Date

Appendix C

Construction Noise Management Plan

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Construction Noise Management Plan – 533 Kirkham Street Project

Introduction

This Construction Noise Management Plan (“CNMP”) presents project-specific measures for construction contractors to include in the construction contracts to ensure that construction activities are conducted pursuant to City of Oakland Standard Conditions of Approval (SCA) NOI-69 identified in the 533 Kirkham Street Project CEQA Analysis, to which this CNMP is incorporated as Appendix C. Qualified consultants of ESA prepared this CNMP concurrent with the CEQA Analysis.

Project Overview

As described in the CEQA Checklist for the Project, the Project would involve removal of existing parking lot asphalt at the site and construction of an approximately 222,823 square foot mixed use building containing 289 residential units and 2,999 square feet of retail uses within S-15W Transit Oriented Development Commercial Zone (S-15W) of the WOSP. The Project’s construction period is estimated to begin in second quarter 2024 and last approximately 24 months. Construction activities on the project site would consist of grading and site preparation; foundation and below-grade construction; and construction of the building and interiors. The Project would require the excavation and off haul of approximately 1,000 cubic yards of soil and off-haul of approximately 2,545 tons of asphalt. No soils are anticipated to be imported to the site.

The CEQA analysis for the Project concluded that SCA NOI-67, Construction Days/Hours; SCA NOI-68, Construction Noise; SCA NOI-69, Extreme Construction Noise; SCA NOI-71, Construction Noise Complaints; and SCA NOI-73, Operational Noise would be applicable and would be implemented with the Project to ensure less than significant noise-related impacts.

Project Location and Noise Sensitive Receptors

The Project is located at 533 Kirkham Street, on a 1.2-acre site on the northeast corner of Kirkham and 7th Streets bounded by Kirkham Street, 7th Street, Mandela Parkway, and Bay Area Rapid Transit District (BART) elevated light rail tracks. The Project site also shares the block with a gas station that includes surface parking located to the northwest of the Project site. To the east of the Project site, across from Kirkham Street, there is another parking lot. The south of the Project Site is bordered by a vacant lot as well as elevated BART train tracks. To the north of the

Project site, across 7th Street, is the Mandela Gateway Apartments, which are the nearest noise-sensitive land use to the project site.

Construction Noise Levels

Noise from Off-road construction equipment can generate the noise levels indicated in Table 1, below. The values in the first column represent the reference maximum noise levels at 50 feet. The values in second column represent the acoustical usage factors that applies to each equipment type. The last column provides estimated noise levels taking into account the usage factor and adjusted to an operating distance of 100 feet (the distance of the nearest receptor from the project's northern boundary). This is a conservative assumption as, in reality, off-road equipment is typically mobile and not static and therefore would not be expected to operate continuously at the property line.

TABLE 1
TYPICAL MAXIMUM NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level ^a (dBA, L _{max} at 50 feet)	Acoustical Usage Factor (%)	Noise Level Leq (at 100 feet)
Air Compressor	78	40	68
Backhoe	78	40	68
Compactor	83	20	70
Concrete Mixer Truck	79	40	69
Concrete Pump Truck	81	20	68
Crane	81	16	67
Dozer	82	40	72
Dump Truck	77	40	67
Front End Loader	79	40	69
Grader	85	40	75
Paver	77	50	68
Pumps	81	50	72
Roller	80	20	67
Scraper	84	40	74
Welder	74	40	64

NOTES:

a These are maximum field measured values at 50 feet as reported from multiple samples.

SOURCE: FHWA, 2006.

The project would not require installation of piles and therefore, use of an impact hammer or drilling for cast-in-place piles is not proposed. Operation of multiple pieces of standard construction equipment can generate noise levels of 80 to 85 dBA, hourly L_{max} at a distance of 50 feet without mitigation. Given the presence of residential uses 100 feet to the north across 7th Street, it is reasonable to expect such construction noise levels at the exterior of these receptors during peak excavation and foundation work. The constructed Mandela Gateway Apartments will

have been designed to attain the City’s 45 dBA, L_{dn} interior noise standards which is achieved through noise rated building materials, particularly sound-rated windows. Applying a standard assumption of exterior to interior noise reduction of 25 dBA with windows closed,¹ resultant interior noise levels within these receptors could be expected to be in the range of 45 to 50 dBA, hourly L_{eq} . These noise levels from peak construction activity would be audible to occupants of these adjacent sensitive receptors.

Project-specific Construction Noise Reduction Measures

Although not required because the Project would not include construction activities anticipated to generate noise levels above 90 dBA, pursuant to SCA NOI-69, this Project-specific CNMP has been prepared concurrent with environmental review for the Project. This CNMP is appropriate for the Project’s proposed construction methods and the type and proximity of noise-sensitive receptors to the project site. Although the Project would not include any “extreme noise generating construction activity (e.g., pier drilling, pile driving and other activities generating greater than 90 dBA), certain measures included in this CNMP are “potential attenuation measures” identified in SCA NOI-69 which address extreme construction noise. These measures are included in this CNMP to the extent they may be appropriate to the Project and its context.

The Project shall implement the following site-specific noise attenuation measures to further reduce construction noise impacts. All construction contractors on the Project shall adhere to these measures, which shall be included within their construction contracts. Measures that are already required by other Oakland SCAs are not included, except those measures that are tailored for the Project:

1. Use back-up beepers only when required by law. Spotters or flaggers should be used in lieu of back-up beepers to direct backing operations when allowable.
2. Use electric forklifts.
3. Minimize truck traffic idling along 7th Street.
4. Minimize drop height when loading excavated materials onto trucks. Minimize drop height when unloading or moving materials on-site.
5. Sequence the noisiest activities to coincide with the noisiest ambient hours.
6. Locate noisy equipment within the building structure once the exterior facade is installed.
7. Notify adjacent property owners within 300 feet of the project site, at least 10 days prior to commencement of activities.
8. Impose Project-Specific Complaint Response Mechanisms
9. Monitor the effectiveness of noise attenuation measures by monitoring noise levels.

¹ U.S. E20PA, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March 1974, <http://nepis.epa.gov/Exe/ZyPDF.cgi/2000L3LN.PDF?Dockey=2000L3LN.pdf>, accessed January 23, 2019.

- a. **Designation of Enforcement Manager.** Any complaints received with respect to construction noise shall be forwarded to the Compliance Manager: _____ . Contact Number: _____ .
- b. **Signage.** A large on-site sign shall be placed 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. Example signage provided as Attachment A.
- c. **Complaints.** The noise and Compliance Enforcement Manager for the Project shall ensure response and corrective action to complaints within the same working day if the complaint is received during the noise-related incident and within 48 hours if the complaint is received after working hours. A complaint log shall be maintained by the Compliance Enforcement Manager indicating the date and time of each received noise complaint, the noise source of concern, and how the issue was resolved. Example complaint log provided as Attachment B.

Attachment A: Example Signage for Noise Complaints

SIGN REQUIREMENTS FOR POSTING CONSTRUCTION HOURS

Contractor shall post a sign at all entrances to the construction site upon commencement of construction. Sign(s) shall be posted in a conspicuous place visible from the public right-of-way near the entrance to the job site, at least five feet (5') above ground level, and shall be of a white background, with legible black lettering. Lettering shall be a minimum of one and one-half inches (1 1/2") in height. The sign shall read as follows:

Address: 533 Kirkham Street

CONSTRUCTION HOURS (includes any and all deliveries)

MONDAY--FRIDAY 7:00 a.m. to 7:00 p.m.

SATURDAY 9:00 a.m. to 5:00 p.m.

SUNDAY/HOLIDAYS Prohibited

Responsible Party Contact: "NAME" "Contact Number"

This sign and construction hours posting requirement is for the purpose of informing all contractors and subcontractors, their employees, agents, material, men and all other persons at the construction site. Construction includes: alteration, demolition, maintenance of construction equipment, deliveries of materials or equipment, or repair activities.

NOISE LIMITS

The construction site noise level at any point outside of the construction property line shall not exceed ninety (90) dBA. Violation of the construction hours and/or noise limits may be enforced as either an infraction or a misdemeanor punishable by fines or jail time or both or by an administrative citation with a fine, or by a civil action with a monetary penalty, injunction and/or other remedies.

Appendix D

Transportation and Parking Demand Management Plan

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Draft Memorandum

Date: August 21, 2023
To: Jill Feyk-Miney, ESA
From: Sam Tabibnia and Molly Riddle, Fehr & Peers
Subject: 533 Kirkham Street – Transportation Demand Management Plan

OK22-0460

The proposed 533 Kirkham Street Project (Project) is required to prepare a Transportation and Parking Demand Management (TDM) Plan per the City of Oakland Standard Condition of Approval (SCA) 78 (Department of Planning and Building, Bureau of Planning, Revised December 16, 2021). According to the SCA, the TDM Plan goal is to achieve a 10 percent vehicle trip reduction (VTR) because the Project would generate more than 50 net new peak hour trips.

This memorandum describes the Project and its setting, lists the mandatory TDM strategies that the Project shall implement, and describes the compliance for the TDM Plan.

Project Description

The Project is located in the City of Oakland just east of the West Oakland BART Station. It is located on the west side of Kirkham Street between 7th Street to the north and the BART tracks to the south. The Project would consist of 289 multi-family dwelling units and about 3,000 square feet of ground-level retail on a site currently used as a pay parking lot. The Project would include a 40-space combined garage and surface parking lot with driveway access on Kirkham Street.

Project Location

The Project would be located in West Oakland, near a dense employment area and within walking distance of neighborhood-serving services, retail, and restaurants. The Project is about 0.1 miles



east of the West Oakland BART Station and AC Transit bus stops providing access to frequent bus service (Lines 14, 29, and 62 have 15- to 20-minute peak headways).

The Project is currently served by Class 2 bicycle lanes on Mandela Parkway and on 7th Street east of Mandela Parkway, and Class 3 bicycle route on 7th Street west of Mandela Parkway. Planned bicycle facilities include one-way Class 4 separated bikeways on both sides of Mandela Parkway and raised one-way Class 4 separated bikeways on both sides of 7th Street.

The Project's location is expected to result in a relatively high rate of pedestrian, bicycle, and transit trips. As a result of the availability of various destinations within walking and biking distance of the site and the available walking and biking infrastructure and transit service in the Project area, the Project site has a WalkScore of 84/100 (Very Walkable), BikeScore of 99 (Biker's Paradise), and TransitScore of 68 (Good Transit).¹ These scores indicate the area is served by a range of transportation facilities and services that would enable residents to use non-automobile modes in accessing the Project site.

Based on US Census data, **Table 1** summarizes the commute mode split for residents in Project census tract and **Table 2** summarizes vehicle ownership for renter households with employed residents. Although 81 percent of households have one or more vehicles at home, only 35 percent of employed residents drive to work, while 33 percent take public transit, and nine percent either walk or bike to work.

As documented in the Project Transportation Impact Review Memorandum, the number of automobile trips generated by the Project is estimated to be slightly more than half of trips generated- by a typical suburban residential development, as shown in **Table 3**. The trip generation accounts for the reduction in automobile trips due to the Project location near BART.

¹ For more information about the Project are Walk Score, see <https://www.walkscore.com/score/533-kirkham-st-oakland-ca-94607>, accessed on March 22, 2023.



Table 1: Journey to Work for Workers in Project Census Tract

Transportation Mode	Percent of Workers in Project Census Tract
<i>Automobile</i>	
Drove Alone	29%
Carpooled	6%
<i>Subtotal</i>	35%
<i>Transit</i>	
BART	30%
Bus	3%
<i>Subtotal</i>	33%
Bike	4%
Walk	5%
Other	2%
Work from Home	21%
Total	100%

Source: U.S. Census Bureau, American Community Survey 2017-2021 Five-Year Estimates: Census Tract 4022, Table B08006; Fehr & Peers, 2023.

Table 2: Vehicle Ownership for Renter Households in Project Census Tract

Vehicles Available	Percent of Renter Households
No vehicle available	19%
1 vehicle available	47%
2 vehicles available	23%
3+ vehicles available	11%
Total	100%

Source: U.S. Census Bureau, American Community Survey 2017-2021 Five-Year Estimates: Census Tract 4022, Table B25044; Fehr & Peers, 2023.



Table 3: Project Trip Generation by Travel Mode

Mode	Mode Share Adjustment Factors ¹	Daily	AM Peak Hour	PM Peak Hour
Automobile	0.531	790	68	78
Transit	0.297	440	38	44
Bike	0.051	80	7	7
Walk	0.105	160	13	15
Total Net Trips		1,470	126	144

Notes:

1. Based on *City of Oakland TIRG*, for an urban environment within 0.5 miles of a BART station.
 Source: Fehr & Peers, 2023.

Mandatory TDM Measures

This section describes the mandatory strategies that are part of the City’s TIRG and that shall be directly implemented by the Project Applicant and building management. **Appendix A** lists the mandatory strategies and their applicability to the Project.

Table 4 lists the mandatory TDM strategies, and the effectiveness of each strategy primarily on reducing VTR based on the Alameda County Transportation Commission (CTC) VMT Reduction Calculator Tool,² which is a tool that accounts for the particular location of a development project and quantifies the effects of various strategies in reducing VMT based on research compiled in the California Air Pollution Control Officers Association (CAPCOA) *Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Healthy and Equity* (December 2021). This report is a resource for local agencies to quantify the benefit, in terms of reduced travel demand, of implementing various TDM strategies.

The TDM strategies include both one-time physical infrastructure improvements and on-going operational strategies. Physical improvements will be implemented as part of the Project and thus would have a one-time capital cost. Some level of ongoing maintenance cost may also be required for certain measures. 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.

² See <https://www.alamedactc.org/planning/sb743-vmt/> for more information.



Table 4: Mandatory TDM Plan Components

TDM Strategy	Description	Estimated Vehicle Trip Reduction ¹
A. Infrastructure Improvements	Various improvements	N/A ²
B. Limited Parking Supply	Project would provide about 0.14 parking spaces per unit, less than auto ownership of 1.26 vehicles in the area	11-16% ³
C. Unbundled Parking	Residents are required to pay for a parking space separately from their monthly rent	
D. Residential Parking Management	Restrict on-site parking to a maximum of one parking space per unit, thereby discouraging multiple car ownership	
E. Transit Fare Subsidy	Provide a monthly transit subsidy to Project residents ⁴	2-3%
F. Bicycle Parking Supply and Monitoring	Provide bicycle parking above the minimum requirement and monitor usage of the bicycle parking facilities	<1%
G. Carpool and Ride-Matching Assistance	Assist Project residents and employees in forming carpools	<1%
H. TDM Coordinator	Coordinator responsible for implementing and managing the TDM Plan	1-2%
I. Marketing and Resident Education	Active marketing of carpooling, BART, AC Transit, bikesharing, and other non-auto modes	
Total Estimated Vehicle Trip Generation		14% - 21%

Notes:

1. Based on the results of the Alameda CTC VMT Reduction Calculator Tool. Although the focus of the Tool is reductions to VMT, the research used to generate the reductions also indicates VTR is applicable as well. For the purposes of this analysis the VTR is assumed to equal the VMT reduction.
 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 neither the Alameda CTC VMT Reduction Calculator Tool, nor CAPCOA 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. The Alameda CTC VMT Reduction Calculator Tool suggests that limited parking supply combined with unbundled parking can result in up to 27% VTR. These results assume minimal other parking facilities in the area. The results are adjusted because free unrestricted on-street parking and paid off-street parking that is at or near capacity during the daytime are available in the Project area.
 4. Assuming a monthly subsidy of about \$42 per residential unit (value to transit user and not necessarily the cost).
- Source: Alameda County VMT Tool; Fehr & Peers, 2023.



Operational TDM strategies are most effective for persons that commute to and from a site on a regular basis, especially during weekday peak commute periods when transit service peaks and is most conveniently available. Thus, the mandatory strategies in **Table 4** are primarily targeted at Project residents and employees. Project visitors are not directly targeted because they would generally visit the site 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 as well as residents, employees, and visitors to the larger area surrounding the Project site.

A more detailed description of the TDM measures that comprise the mandatory TDM program is provided below:

- A. *Infrastructure Improvements* – the following infrastructure improvements in the Project vicinity, which were identified in the site plan evaluation completed as part of the Project TIR, would improve the bicycling and walking facilities in the area and further encourage the use of these modes:

Recommendation 1: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, the following shall be considered as part of the Project’s final design:

- Coordinate with the City of Oakland to provide a pullout loading area along the Project’s Kirkham Street frontage just south of 7th Street to accommodate passenger and truck loading through the following:
 - Provide a seven-foot parking lane for about 75 feet by narrowing the proposed sidewalk along the Project frontage from 15 to eight feet. Ensure that at least one accessible passenger loading space is provided.
 - Install red curb and no stopping anytime signage on the west side of Kirkham Street along the remaining frontage to discourage pick-ups and drop offs.

Recommendation 2: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, implement the following:

- Ensure the design of the Project driveway provides adequate sight distance, defined as a clear line-of-sight between a motorist ten feet back from the sidewalk and a pedestrian ten feet away on each side of the driveway. If adequate sight distance cannot be provided, provide an audio/visual warning device to alert pedestrians on the adjacent sidewalk of vehicles exiting the driveway and warning



devices to alert motorists exiting the garage driveway of pedestrians on both sides of the adjacent sidewalk.

Recommendation 3: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, implement one of the following:

- Reconfigure the internal access for the long-term bicycle parking room to provide a clear path of travel and eliminate any need of going through the loading space or other parking spaces.

Recommendation 4: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, the following shall be considered as part of the Project's final design:

- If the 100% PS&E for the 7th Street Connection Project improvements are approved and finalized prior to the start of construction for the Project, construct the approved improvements on the south side of 7th Street along the Project frontage.

Recommendation 5: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, implement one of the following:

- Provide a directional curb ramp with truncated domes at the southwest corner of the 7th Street/Kirkham Street intersection.

- B. *Limited Parking Supply* – The Project would provide 40 off-street automobile parking spaces for Project residents, which corresponds to about 0.14 spaces per unit. This is about 11 percent of the current average auto ownership of 1.26 automobiles per household for renter households in the Project Census Tract.
- C. *Unbundle Parking* – Unbundle parking costs from housing costs (as required by Oakland Municipal Code, Section 17.116.310). This would result in residents paying one price for the residential unit and a separate price for parking, should they opt for a space. The price of a parking space can be adjusted so that resident parking demand matches the building's parking supply.
- D. *Residential Parking Management* – Restrict parking to maximum of one parking space per unit, thereby discouraging multiple car ownership and/or use. Exceptions will only be made for residents with management-approved Reasonable Accommodation Requests. A Reasonable Accommodation Request shall need to demonstrate a hardship wherein a household requires more than one vehicle per unit. Examples could include households



- with multiple disabled residents requiring vehicles or households with multiple residents with places of work inaccessible via transit.
- E. *Transit Fare Subsidy* – Provide a monthly transit benefit to each dwelling unit and extend this offer to all site employees, including tenants of the ground floor retail space. 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 March 2023) that requests one
 - Offer to provide a monthly Clipper Card contribution of \$42.30 to each unit that requests one
- F. *Bicycle Parking Supply and Monitoring* – The Project would include long-term on-site parking in a secure bicycle room and short-term parking in the form of bike racks along the Project frontage. Building management shall monitor the usage of these facilities and provide additional on site bicycle parking, if necessary.
- G. *Carpool and Ride-Matching Assistance Program* – Building management shall offer personalized ride-matching assistance to pair residents interested in forming commute carpools. As an enhancement, the Project could use services such as Scoop, Enterprise RideShare, or the 511.org Bay Area Carpool Program. A similar personalized ride-matching assistance program could also be provided to site employees.
- H. *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, site employees, and visitors are aware of their transportation options and would serve as a point of contact regarding the TDM programs.
- I. *Marketing and Resident Education* – Site management shall provide residents and employees with 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 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* – Consider installing real-time transit information, such as TransitScreen, in a visible location to provide residents 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 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 taxi cab services.
- *Carpooling* – Provide residents and employees with phone numbers and contact information for carpool matching services such as the Metropolitan Transportation Commission’s 511 Bay Area Carpool Program.
- *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 0.1 miles west of the Project site on 7th Street adjacent to the West Oakland BART Station) and dock-less bikeshare/scooters.

Monitoring, Evaluation and Enforcement

According to the City's *Standard Condition of Approval #77*, only 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, it is not required to submit an annual compliance report to the City.

Please contact Sam Tabibnia (stabibnia@fehrnadpeers.com, 510.835.1943) with questions or comments.



Appendix A: Mandatory TDM Program Components

TDM Strategy	Required When	Required for Project?
Bus boarding bulbs or islands	<ul style="list-style-type: none"> 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, no bus stop is currently located along the Project frontage.
Bus Shelter	<ul style="list-style-type: none"> 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, there are no bus stops adjacent the Project frontage or flag stops with 25 or more or more boardings per day located within 0.1 miles of the Project.
Concrete Bus Pad	<ul style="list-style-type: none"> A bus stop is located along the project frontage and a concrete bus pad does not already exist 	No, no bus stop is currently located along the Project frontage.
Curb Extensions or bulb-outs	<ul style="list-style-type: none"> Identified as an improvement within site analysis 	No, the TIR did not identify new curb extensions or bulb-outs.
Implementation of Corridor-Level Bikeway Improvement	<ul style="list-style-type: none"> 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 	Yes, if the 7th Street Connection Project receives 100% PS&E before this Project, then the Project shall construct the Class 4 facilities proposed by the 7th Street Connection Project on the south side of 7th Street along the Project frontage.
Implementation of Corridor-Level Transit Capital Improvement	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> Always required 	Yes, the Project would provide a 16-foot sidewalk along the Project frontage on 7th Street and an eight-to-15-foot sidewalk along the Project frontage on Kirkham Street.



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.)	<ul style="list-style-type: none"> When improvements are identified in the Pedestrian Master Plan along project frontage or at an adjacent intersection 	No, the Pedestrian Master Plan does not identify improvements for the Project frontage or adjacent intersections.
In-street bicycle corral	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Identified as an improvement within site analysis 	No, no the TIR did not identify any intersection improvements.
New sidewalk, curb ramps, curb and gutter meeting current City and ADA standards	<ul style="list-style-type: none"> Always required 	Yes, the Project would provide an eight-to-15-foot sidewalk, along the Project frontage on Kirkham Street and connect to the adjacent intersections and existing sidewalks on 7th and 5th Streets.
No monthly permits and establish minimum price floor for public parking	<ul style="list-style-type: none"> If proposed parking ratio exceeds 1:1000 sf (commercial) 	No, the project would not provide off-street commercial parking.
Parking garage is designed with retrofit capability	<ul style="list-style-type: none"> Optional if proposed parking ratio exceeds 1:1.25 (residential) or 1:1000 sf (commercial) 	No, residential parking ratio is less than 1.25 and no off-street commercial parking is provided.
Parking space reserved for car share	<ul style="list-style-type: none"> A project is located within downtown. One car share space preserved for buildings between 50 – 200 units, then one car share space per 200 units. 	No, the Project is not located in downtown.
Paving, lane striping or restriping (vehicle and bicycle), and signs to midpoint of street section	<ul style="list-style-type: none"> Typically required 	Yes, the Project would update the paving and striping along the Project frontage to the midpoint of the street section.
Pedestrian crossing improvements, pedestrian supportive signal changes	<ul style="list-style-type: none"> Identified as an improvement within site analysis Identified as an improvement within operations analysis 	Yes, the Project would provide directional curb ramp with truncated domes at the southwest corner of the 7th Street/Kirkham Street intersection.
Real-time transit information system	<ul style="list-style-type: none"> 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, there is no transit stop located along the Project frontage.



TDM Strategy	Required When	Required for Project?
Relocating bus stops to far side	<ul style="list-style-type: none"> A project is located within 0.10 mile of any active bus stop that is currently near-side 	No, there are no near-side transit stops located within 0.10 miles of the Project.
Signal upgrades	<ul style="list-style-type: none"> 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 	No, the only signal adjacent to the Project site is at the 7th Street/Mandela Parkway intersection which is not in need of an upgrade.
Transit queue jumps	<ul style="list-style-type: none"> 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, not identified as a needed improvement.
Trenching and placement of conduit for providing traffic signal interconnect	<ul style="list-style-type: none"> 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, not identified as a needed improvement.
Unbundled parking	<ul style="list-style-type: none"> If proposed parking ratio exceeds 1:1.25 (residential) 	Yes, although the Project does not meet land use requirements, all parking spaces would be unbundled.

Sources: City of Oakland Transportation Impact Review Guidelines, 2017; Fehr & Peers, 2023.

Appendix E

Non-CEQA Transportation Analysis

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Draft Memorandum

Date: August 21, 2023
To: Jill Feyk-Miney, ESA
From: Sam Tabibnia and Molly Riddle, Fehr & Peers
Subject: 533 Kirkham Street - Transportation Impact Review (Non-CEQA)

OK22-0460

This memorandum summarizes the non-CEQA transportation assessment that Fehr & Peers completed for the proposed 533 Kirkham Street Project (Project) in Oakland. 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:

1. Project Description (page 1)
2. Trip Generation, Distribution, and Study Intersection Selection (page 2)
3. Site Access and Circulation Analysis (page 5)
4. Collision Analysis (page 14)
5. Conclusion and Summary of Recommendations (page 18)

1. Project Description

The Project is located in the City of Oakland just east of the West Oakland BART Station. It is located on the west side of Kirkham Street between 7th Street to the north and the BART tracks to the south. The Project would consist of 289 multi-family dwelling units and about 3,000 square feet of ground-level retail on a site currently used as a pay parking lot. The Project would include a combined garage and surface parking lot accommodating 40 parking spaces with driveway access on Kirkham Street. **Appendix A** shows the Project site plan.



2. Trip Generation, Distribution, and Study Intersection Selection

Automobile Trip Generation

Trip generation is the process of estimating the number of vehicles that would likely access the Project on any given day. **Table 1** presents the trip generation for the Project. Trip generation data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual (11th Edition)* was used as a starting point to estimate the vehicle trip generation.

Table 1: Project Automobile Trip Generation

Land Use	ITE Code	Size ¹	Daily Trips ²	Weekday AM Peak Hour			Weekday PM Peak Hour		
				In	Out	Total	In	Out	Total
Residential ³	221	289 DU	1,330	27	89	116	69	44	113
Retail ⁴	822	3.0 KSF	160	8	5	13	16	17	33
<i>Subtotal</i>			<i>1,490</i>	<i>35</i>	<i>94</i>	<i>129</i>	<i>85</i>	<i>61</i>	<i>146</i>
Non-Auto Adjustment ⁵			-700	-16	-45	-61	-40	-28	-68
<i>Net New Automobile Trips</i>			790	19	49	68	45	33	78

Notes:

1. DU = Dwelling Units, KSF = 1,000 square feet.
2. Daily trip generation rounded to nearest 10.
3. ITE Trip Generation (11th Edition) land use category 221 (Multifamily Housing (Mid-Rise) in General Urban/Suburban Setting, Not Close to Rail Transit):
 Daily: $T = 4.77(X) - 46.46$
 AM Peak Hour: $T = 0.44(X) - 11.61$ (23% in, 77% out)
 PM Peak Hour: $T = 0.39(X) - 61.00$ (61% in, 39% out)
4. ITE Trip Generation (11th Edition) land use category 822 (Strip Mall Plaza (<40K) in General Urban/Suburban Setting):
 Daily: $T = 54.45(X)$
 AM Peak Hour: $\ln(T) = 0.66 \cdot \ln(X) + 1.84$ (60% in, 40% out)
 PM Peak Hour: $\ln(T) = 0.71 \cdot \ln(X) + 2.72$ (50% in, 50% out)
5. Reduction of 46.9% assumed, based on City of Oakland TIRG using Census data for urban environments within 0.5 miles of a BART Station.

Source: Fehr & Peers, 2023.

The ITE data 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 adjacent to frequent regional and local transit service, where many trips are walk, bike, or transit trips. Since the Project is adjacent to the West Oakland BART Station, this analysis reduces the ITE-based trip generation by about 47 percent to account for the non-automobile trips. This adjustment 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 urban areas within 0.5 miles of a BART Station is about 47 percent.

The Project is estimated to generate about 790 daily, 68 AM peak hour, and 78 PM peak hour automobile trips. This trip generation is somewhat conservative in that it does not account for the current trips generated by the surface parking lot currently at the site that would be eliminated by the Project. The existing parking lot, which provides about 180 parking spaces, is primarily used for BART parking. Based on observations in 2018, the parking lot operated at full occupancy on weekday prior to the Pandemic.¹ Considering that many streets near the Project site and the adjacent BART station have restricted parking, such as residential parking permit (RPP) which limits on-street parking to two-hours by non-local residents and that many streets and other off-street public parking facilities in the vicinity operated at or near capacity during most weekdays prior to the Pandemic, it is likely that many of the BART riders that park at this surface parking lot would either shift to other modes, drive to other stations, or not use BART. Thus, it is likely that the elimination of the existing surface lot would reduce the number motorists who currently drive to and from the site. However, in order to present a conservative analysis, this trip generation does not eliminate any trips associated with the existing parking spaces, and assumes that all motorists who currently drive to the parking lot would continue to drive and park in nearby surface lots or on-street.

Non-Automobile Trip Generation

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

Trip Distribution and Assignment

The trip distribution and assignment process is used to estimate how the trips generated by the Project would be distributed across the roadway network. Based on the existing travel patterns and locations of complementary land uses, we determined directions of approach to and departure from the Project site. **Figure 1** shows the resulting peak hour trip distribution and trip assignment.

¹ For more detail, see the *500 Kirkham Street – Transportation and Parking Demand Management Plan Memorandum* (April 10, 2019) at <https://oaklandca.s3.us-west-1.amazonaws.com/government/o/PBN/OurServices/Application/oak072245.pdf>. (Memorandum starts on page 1,394 of the pdf)



Table 2: Project Trip Generation by Travel Mode

Mode	Mode Share Adjustment Factors ¹	Daily	AM Peak Hour	PM Peak Hour
Automobile	0.531	790	68	78
Transit	0.297	440	38	44
Bike	0.051	80	7	7
Walk	0.105	160	13	15
Total Net Trips		1,470	126	144

Notes:

1. Based on *City of Oakland TIRG*, for an urban environment within 0.5 miles of a BART station.
Source: Fehr & Peers, 2023.

Study Intersection Selection

According to the City of Oakland's TIRG, the criteria for selecting study intersections include:

- All intersection(s) of streets adjacent to Project site;
- All signalized intersection(s), all-way stop-controlled intersection(s) or roundabouts where 100 or more peak hour trips are added by the Project;
- All signalized intersection(s) with 50 or more Project-related peak hour trips and existing LOS D-E-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.

According to the above criteria, the following three intersections should be selected because they are adjacent to the Project site:

1. 7th Street/Mandela Parkway
2. 7th Street/Kirkham Street
3. 5th Street/Kirkham Street

In addition, the Project would add more than 50 PM peak hour trips to the 5th Street/Kirkham Street intersection.



The three intersections were evaluated in recent TIRs. The 7th Street/Mandela Parkway intersection was evaluated in the TIR for the West Oakland BART TOD Project (published January 2019)² and the 7th Street/Kirkham Street and 5th Street/Kirkham Street intersections were evaluated in the TIR for the 500 Kirkham Street Project (published April 2019).³ Thus, this TIR includes an evaluation of the collisions at the study intersections but does not evaluate the effects of the Project on traffic operations at these intersections.

3. Site Access and Circulation Analysis

Fehr & Peers reviewed the Project site plan dated December 2, 2022 and the existing street network adjacent to the Project site to evaluate safety, access, and circulation for all travel modes. This analysis provides recommendations to improve access and circulation, including relevant improvements identified in recent transportation assessments for nearby development projects.

Automobile Access and Circulation

7th Street along the Project frontage is currently a five-lane east-west street with a median separating the three westbound lanes from the two eastbound lanes adjacent the Project. Kirkham Street is a two-lane north-south street. On-street parking is prohibited along the 7th Street frontage and permitted along both sides of Kirkham Street between 5th and 7th Streets.

The Project would provide 40 parking spaces for residents in a combined garage and surface parking lot, accessed through a driveway on Kirkham Street about 190 feet south of 7th Street and 220 feet north of 5th Street. The parking facility would consist of a 23-space parking garage on the ground level of the building and a 17-space parking lot west of the building and accessed through the garage. All parking spaces would be perpendicular parking spaces accessed from a single drive-aisle. The garage would include three accessible parking spaces and three electric vehicle spaces.

The 7th Street/Kirkham Street and 5th Street/Kirkham Street intersections are both side-street stop-controlled with a stop-sign on the Kirkham Street approaches. Kirkham Street is a short, low-volume, one-block street. The approved 500 Kirkham Street Project, located on the east side of Kirkham Street, would not add any driveways on Kirkham Street but would add limited on-street

² For more detail, see the *West Oakland BART TOD – Transportation Assessment (non-CEQA) Memorandum* (January 29, 2019) at <https://oaklandca.s3.us-west-1.amazonaws.com/government/o/PBN/OurServices/Application/oak072017.pdf>

³ For more detail, see the *500 Kirkham Street – Planning-Related Non-CEQA Transportation Impact Review Memorandum* (March 30, 2019) at <https://oaklandca.s3.us-west-1.amazonaws.com/government/o/PBN/OurServices/Application/oak072245.pdf>. (Memorandum starts on page 1,343 of the pdf)



parking on the east side of the street. The approved 1396 5th Street Project, located on the west side of Kirkham Street south of the BART tracks, would provide a driveway on Kirkham Street, about 50 feet north of 5th Street. Considering that minimal through traffic is expected on this block of Kirkham Street and the off-street parking facilitates described above are relatively small (each provides approximately 40 parking spaces), vehicles turning into the Project driveway are not expected to spill back to the 1396 5th Street Project driveway, 5th Street, or 7th Street.

Per the site plan, the Project would not provide parking or passenger loading spaces along its 7th Street or Kirkham Street frontage. Therefore, passenger vehicles or trucks would need to stop in the travel lane on either 7th or Kirkham Streets to load and unload passengers or goods. Thus, it is recommended to provide loading spaces on Kirkham Street near the main entrance and ground floor retail uses on 7th Street.

Recommendation 1: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, the following shall be considered as part of the Project's final design:

- Coordinate with the City of Oakland to provide a pullout loading area along the Project's Kirkham Street frontage just south of 7th Street to accommodate passenger and truck loading through the following:
 - Provide a seven-foot parking lane for about 75 feet by narrowing the proposed sidewalk along the Project frontage from 15 to eight feet. Ensure that at least one accessible passenger loading space is provided.
 - Install red curb and no stopping anytime signage on the west side of Kirkham Street along the remaining frontage to discourage pick-ups and drop offs.

The Project driveway would not provide adequate sight distance⁴ between exiting motorists and pedestrians on the adjacent sidewalk approaching from the south because the sight line would be blocked. The garage driveway would provide adequate sight distance between exiting motorists and pedestrians approaching from the north as well as bicyclists and motor vehicles traveling in both directions of Kirkham Street.

Recommendation 2: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, implement the following:

⁴ 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.



- Ensure the design of the Project driveway provides adequate sight distance, defined as a clear line-of-sight between a motorist ten feet back from the sidewalk and a pedestrian ten feet away on each side of the driveway. If adequate sight distance cannot be provided, provide an audio/visual warning device to alert pedestrians on the adjacent sidewalk of vehicles exiting the driveway and warning devices to alert motorists exiting the garage driveway of pedestrians on both sides of the adjacent sidewalk.

Internal circulation in the parking facility would be provided by a single two-way drive aisle with perpendicular parking spaces on both sides. In the parking lot on the west side of the building, the parking spaces would only be on the north side of the drive aisle. *The City of Oakland Municipal Code*, Section 17.116.210 requires a minimum drive aisle width of 21 feet for residential facilities with perpendicular parking. The drive aisle would be over 22 feet wide adjacent to the parking spaces. The parking lot would provide adequate circulation for passenger vehicles, and vehicles would have adequate space to maneuver into and out of the parking spaces.

Bicycle Parking and Bicycle Access

Bicycle Parking

Chapter 17.117 of the *City of Oakland Municipal Code* requires long-term and short-term bicycle parking for new buildings. Long-term bicycle parking includes lockers or locked enclosures, and short-term bicycle parking includes bicycle racks. Section 17.117.090 requires one long-term space for every four multi-family dwelling units and one short-term space for every 20 multi-family dwelling units. Section 17.117.110 requires one long-term space for every 12,000 square feet of retail, or a minimum of two long-term spaces, and one short-term space for every 5,000 square feet of ground floor retail, or a minimum of two short-term spaces.

Table 3 presents the bicycle parking requirements for the Project. The Project is required to provide 74 long-term parking spaces and 16 short-term spaces. The Project would provide 80 long-term and 16 short-term bicycle parking spaces, which would meet *Code* requirements. Long-term bicycle parking would be provided in a secure bicycle room on the southeast corner of the ground level, accessible via an entrance on Kirkham Street and an internal doorway which connects into the automobile parking area through the loading space. Thus, a truck using the garage loading space could block the internal building access to the long-term bicycle parking room.

The short-term bicycle parking spaces would be in the form of eight bicycle racks positioned along 7th Street, between tree wells, located within 50 feet of the entrances to the residential lobby and retail space.



Table 3: Bicycle Parking Requirements

Land Use	Size ¹	Long-Term		Short-Term	
		Spaces per Unit ²	Spaces	Spaces per Unit ²	Spaces
Residential ²	289 DU	1:4 DU	72	1:20 DU	14
Retail ³	3.0 KSF	1:12 KSF	2	1:5 KSF	2
Total Required Bicycle Spaces			74		16
Total Bicycle Spaces Provided			80		16
Meets Code Requirements?			Yes		Yes

Notes:

1. DU = dwelling unit. KSF = 1,000 square feet.
2. Per *City of Oakland Municipal Code* Section 17.117.090.
3. Per *City of Oakland Municipal Code* Section 17.117.110.

Source: Fehr & Peers, 2023.

Recommendation 3: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, implement the following:

- Reconfigure the internal access for the long-term bicycle parking room to provide a clear path of travel and eliminate any need of going through the loading space or other parking spaces.

Bicycle Access

Currently, the following are provided in the Project vicinity:

- Class 2 bicycle lanes along the Project frontage on Mandela Parkway, which connect to 3rd Street in the south and Horton Street in the north
- Class 2 bicycle lanes on 7th Street between Peralta Street and Mandela Parkway
- Class 3 bike route (sharrows) on 7th Street between Mandela Parkway and Union Street

No bicycle facilities are designated on Kirkham or 5th Streets.

The City of Oakland’s 2019 Bike Plan *Let’s Bike Oakland* proposes the following in the Project vicinity:

- Class 2 buffered bike lanes along the entirety of Mandela Parkway
- Class 2 buffered bike lanes on 7th Street between Peralta Street and Mandela Parkway
- Class 4 separated bikeways on 7th Street between Mandela Parkway and Clay Street.



Consistent with the 2019 Bike Plan, The City's *7th Street Connection Project* proposes to provide mostly Class 4 separated bikeways on 7th Street between Mandela Parkway and Castro Street. Along the Project frontage, the *7th Street Connection Project* proposes to replace the existing Class 3 facility on the south side of 7th Street with a combined eight-foot-wide Class 2 buffered bicycle lane/Class 4 separated bikeway between Mandela Parkway and Kirkham Street by narrowing the street to one through travel lane (see **Appendix B** for details). The *7th Street Connections Project* proposes a Class 4 parking-protected bikeway on the north side of 7th Street by narrowing the street to one through travel lane. The Project would not make any modifications to the frontage along 7th Street that would prevent the implementation of or conflict with the proposed *7th Street Connection Project*.

Recommendation 4: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, the following shall be considered as part of the Project's final design:

- If the 100% PS&E for the 7th Street Connection Project improvements are approved and finalized prior to the start of construction for the Project, construct the approved improvements on the south side of 7th Street along the Project frontage.

In addition, the approved West Oakland BART Station TOD project would improve the bicycle lanes on Mandela Parkway by providing one-way Class 4 separated bikeways on both sides of Mandela Parkway between 5th and 7th Streets.

The nearest Bay Wheels bikeshare station is on 7th Street just east of Center Street within the street right-of-way, about 0.1 miles west of the Project site. The West Oakland BART Station TOD Project would relocate this station, most likely to the east side of the station near the proposed Class 4 facilities on Mandela Parkway and a proposed bike station.

Pedestrian Access and Circulation

Primary pedestrian access for the Project would be through a lobby on 7th Street approximately 130 feet west of Kirkham Street, which would connect to the residential levels via five-foot-wide internal corridors, elevators, and stairwells. The ground-floor retail space would be located at the northeast corner of the building with access on 7th Street between the main lobby and Kirkham Street.

Additional pedestrian access points for the Project would be provided on Kirkham Street, about 190 feet south of 7th Street, and on Mandela Parkway, about 170 feet south of 7th Street, with internal



walkways providing access to residences and building amenities. Existing sidewalks on the adjacent Project frontages on Mandela Parkway and 7th Street are 10-feet wide and 14-feet wide, respectively. Currently, no sidewalks are provided along the Project frontage on Kirkham Street.

Existing pedestrian facilities at the intersections adjacent to the site include:

- The 7th Street/Mandela Parkway intersection is signalized and provides directional curb ramps with truncated domes on all four corners. The intersection provides curb extensions on both sides of the northwest and northeast corners and a median pedestrian refuge on the north intersection approach. The intersection provides colored crosswalks, and pedestrian countdown signal heads and push buttons for all four approaches.
- The 7th Street/Kirkham Street intersection is a side-street stop-controlled T-intersection and provides diagonal curb ramps with truncated domes on the southwest and southeast corners. There is a stop sign on the northbound Kirkham Street approach. The intersection provides a marked crosswalk across the south intersection approach. 7th Street has a median and no marked crossings across 7th Street.
- The 5th Street/Kirkham Street intersection is a side-street stop-controlled T-intersection and provides a diagonal curb ramp on the northeast corner and marked crosswalks across the north and east approaches of the intersection. There is a stop sign on the southbound Kirkham Street approach. The sidewalk on the northwest side of the intersection has deteriorated and is no longer usable. No curb ramps are provided on the south side of the intersection. The curb ramp on the northeast corner of the intersection does not provide truncated domes.

Planned improvements in the Project vicinity include the following:

- In addition to providing one-way Class 4 separated bikeways on both sides of Mandela Parkway described above, the approved West Oakland BART Station TOD Project would add a high-visibility, mid-block pedestrian crossing on Mandela Parkway between 5th and 7th Streets under the BART tracks to align with the east-west pedestrian path within that project site. The mid-block crossing would also allow access between the proposed West Oakland BART Station bike station and the northbound Class 4 separated bikeway on Mandela Parkway. The 533 Kirkham Street Project proposes a pedestrian access on the west side of the site on Mandela Parkway, which combined with the planned high-visibility, mid-block pedestrian crossing would improve pedestrian access between the Project site and the West Oakland BART Station.



- At the 5th Street/Kirkham Street intersection, the 500 Kirkham Street Project, per the project TIR,⁵ would provide directional curb ramps with truncated domes at the northeast corner of the intersection, and the 1396 5th Street Project, per the project TIR,⁶ would provide curb extensions at the northeast corner with a directional curb ramp with truncated domes across the north approach and align the directional curb ramp at the northwest corner with the directional curb ramp at the northeast corner to provide the shortest possible crossing distance of Kirkham Street.

The City of Oakland's 2017 Pedestrian Master Plan Update (*Oakland Walks!*) does not list any planned improvements along the Project frontages.

The Project would provide a 16-foot sidewalk along the Project frontage on 7th Street and a 15-foot sidewalk along the Project frontage on Kirkham Street. Implementation of Recommendation 2 would narrow the sidewalk along Kirkham Street adjacent to the recommended loading spaces to at least eight feet. The Project does not propose any modifications to the sidewalk along Mandela Parkway.

The Project proposes a diagonal curb ramp with truncated domes at the southwest corner of the 7th Street/Kirkham Street intersection.

Recommendation 5: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, implement one of the following:

- Provide a directional curb ramp with truncated domes at the southwest corner of the 7th Street/Kirkham Street intersection.

Transit Access

Transit service providers in the Project vicinity include Bay Area Rapid Transit (BART) and AC Transit. BART provides regional rail service throughout the East Bay and across the Bay, and the Project is located 0.1 miles east of the West Oakland BART Station. AC Transit is the primary bus service provider in the City of Oakland. The nearest bus stops to the Project are at the West Oakland BART Station, which is currently served by Lines 14, 29, 36, 62, and 800 as described in **Table 4**. In addition,

⁵ For more detail, see the *500 Kirkham Street – Planning-Related Non-CEQA Transportation Impact Review Memorandum* (March 30, 2019). Document link in footnote 3.

⁶ For more detail, see the *1396 5th Street - Transportation Impact Review (Non-CEQA) Memorandum* (January 22, 2021) at <https://cao-94612.s3.amazonaws.com/documents/1396-5th-Street-CEQA-Analysis-updated-June-2022.pdf>. (Memorandum starts on page 252 of the pdf.)



eastbound 7th Street west of Mandela Parkway also accommodates bus stops for Lines 29, 62, and 800 as well as intercity buses (Mega Bus and Bolt) and other shuttle services.

Table 4: AC Transit Routes Summary

Line	Description	Weekday Hours of Operation	Weekday Headways ¹	Weekend Hours of Operation	Weekend Headways ¹
14	Fruitvale BART to West Oakland BART via 14th Street	5:00 AM – 11:00 PM	15 min	6:30 AM – 11:15 PM	30 min
29	Emeryville Public Market to Lakeshore via Lakeshore Avenue, Peralta Street, 11th and 12th Streets, and Hollis Street	6:00 AM – 11:00 PM	20 (30) min	6:00 AM – 10:50 PM	30 min
36	UC Berkeley to West Oakland BART via Dwight Way, the Emeryville Public Market, 40th Street, and Adeline Street	5:50 AM – 12:35 AM	30 min	5:50 AM – 12:30 AM	30 min
62	Fruitvale BART to West Oakland BART via Highland Park	6:05 AM – 12:40 AM	20 min	6:20 AM – 12:45 AM	30 min
800	All Nighter – Richmond BART to Salesforce Transit Center via San Pablo Avenue, Telegraph Avenue and West Oakland BART	12:20 AM – 7:35 AM	30 min	12:20 AM – 7:40 AM	30 min

Notes:

1. Headways in parentheses show off-peak headways if different from peak headways.

Source: AC Transit (March 2023) and Fehr & Peers, 2023.

No major changes to the bus routes operating in the Project vicinity are planned, and the Project would not modify access between the Project site and these bus stops. The West Oakland BART TOD Project would relocate the bus stops currently within the station parking lot area to westbound 5th Street just west of Mandela Parkway and eastbound 7th Street just west of Mandela Parkway. These stops would provide adequate sidewalk widths and a high level of amenities.

Automobile Parking Requirements

The City of Oakland Municipal Code sets minimum and maximum parking requirements as shown in **Table 5**. According to Section 17.116.060, the Project’s residential uses have a minimum required parking of 0.5 spaces per dwelling unit and a maximum of 1.25 spaces per dwelling unit. According to Section 17.116.080, the Project’s retail uses have no minimum parking requirement and a maximum of one space per 300 square feet of ground floor retail.



Table 5: Automobile Parking Requirements

Land Use	Size ¹	Required Parking Rates		Required Parking Spaces	
		Min	Max	Min	Max
Residential ²	289 DU	0.5 spaces per DU; Superseded by AB 2097	No maximum	n/a	361
Retail ³	3.0 KSF	No minimum	Ground Floor: 1 space per 300 square feet	n/a	10
<i>Total Parking Required</i>				<i>0 to 371</i>	
<i>Total Parking Supplied</i>				<i>40</i>	
Meets Code Requirements?				Yes	

Notes:

1. DU = Dwelling Unit. KSF = 1,000 square-feet.
2. Residential Land Use: Per *City of Oakland Municipal Code* Section 17.116.060 – Off-Street Parking – Residential Activities, Zone: S-15W.
3. Retail Land Uses: Parking: Per *City of Oakland Municipal Code* Section 17.116.080 – Off-Street Parking – Commercial Activities, Zone: S-15W.

Source: Fehr & Peers, 2023.

Per California Assembly Bill 2097 (adopted in 2022), parking minimums do not apply to development projects located within a half-mile of a major transit stop.⁷ Given that the Project is within 0.1 miles of the West Oakland BART Station which is considered a “major transit stop,” the City of Oakland parking minimums do not apply to the Project. Although the 40 parking spaces proposed by the Project would not meet the City’s minimum parking requirement, they are consistent with AB 2097 requirements. Consistent with Section 17.116.310 of the Oakland Municipal Code, all parking would be unbundled, meaning that they would be leased separately from the rent of the dwelling units.

The Project would provide three accessible parking spaces on the east side of the parking garage, exceeding the required minimum of two accessible parking spaces. The site plan identifies an accessible route between the accessible parking spaces and the nearest doorway providing internal building access.

⁷ For more information about AB 2097, see:
https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB2097.



Plug-In Electric Vehicle (PEV) Charging Infrastructure

Chapter 15.04 of the *City of Oakland Municipal Code* requires the Project to provide PEV-ready and PEV-capable parking spaces. Per *Code* Section 15.04.2.11.130, a minimum of ten percent of the parking spaces are required to be PEV-ready and an additional 10 percent of the spaces are required to be PEV-capable. Since the Project would provide 40 parking spaces, it is required to provide a minimum of four PEV-ready and four PEV-capable parking spaces. The site plan identifies three electric vehicle charging spaces.

Loading Requirements

According to the City of Oakland Municipal Code Section 17.116.120, one off-street loading space with minimum dimensions of 23 feet long, 10 feet wide, and 12 feet high is required for residential uses larger than 50,000 square feet. According to Code Section 17.116.140, no loading spaces are required for the ground floor retail use.

The Project would provide one loading space about 23.5 feet long and 13 feet wide, and at least 12 feet high near the southeast corner of the parking garage, meeting Code requirements. This loading space would be accessed through the driveway on Kirkham Street and accommodate small trucks (i.e., SU-30 vehicles).

4. Collision Analysis

A five-year history (January 1, 2018 to December 31, 2022) of collision data for the three study intersections and roadway segments on 7th Street, Kirkham Street, and Mandela Parkway along the Project frontage was obtained from the Statewide Integrated Traffic Records System (SWITRS) and evaluated for this collision analysis. **Table 6** summarizes the collision data by type and location, and **Table 7** summarizes the collision data by severity and location.

As shown in Table 6, 10 collisions were reported during this five-year timeframe. The most reported collision types were hit object (four collisions), pedestrian-involved (three collisions), broadside (two collisions), and head-on (one collision). These collisions were mostly due to improper turning (seven collisions), pedestrian right-of-way violation (two collisions), and pedestrian violation (one collision). Most collisions (six total) resulted in property damage only while the remaining (four collisions) resulted in complaint of pain. Four pedestrian injuries were reported; no collisions resulted in a visible injury, severe injury, or fatality.



Table 6: Summary of Collision by Type

Location	Head-on	Sideswipe	Rear-End	Broadside	Hit Object	Overtuned	Pedestrian-Involved	Other	Total
Intersections									
7th Street/Mandela Parkway	0	0	0	2	1	0	2	0	5
7th Street/Kirkham Street	1	0	0	0	1	0	0	0	2
5th Street/Kirkham Street	0	0	0	0	0	0	0	0	0
Roadway Segments									
Kirkham Street, between 5th and 7th Streets	0	0	0	0	0	0	0	0	0
7th Street, between Mandela Parkway and Kirkham Street	0	0	0	0	2	0	0	0	2
Mandela Parkway, between 5th and 7th Streets	0	0	0	0	0	0	1	0	1
Total	1	0	0	2	4	0	3	0	10

Source: SWITRS five-year collision data reported from January 1, 2018 to December 31, 2022; Fehr & Peers, 2023.



Table 7: Summary of Collision Severity

Location	Crash Severity					Person-Injuries				
	Property Damage Only (0)	Fatal (1)	Injury (Severe) (2)	Injury (Other Visible) (3)	Complaint of Pain (4)	Total	Bicycle	Pedestrian	Driver / Passenger	Total
Intersections										
7th Street/Mandela Parkway	2	0	0	0	3	5	0	3	0	3
7th Street/Kirkham Street	2	0	0	0	0	2	0	0	0	0
5th Street/Kirkham Street	0	0	0	0	0	0	0	0	0	0
Roadway Segments										
Kirkham Street, between 5th and 7th Streets	0	0	0	0	0	0	0	0	0	0
7th Street, between Mandela Parkway and Kirkham Street	2	0	0	0	0	2	0	0	0	0
Mandela Parkway, between 5th and 7th Streets	0	0	0	0	1	1	0	1	0	1
Total	6	0	0	0	4	10	0	4	0	4

Source: SWITRS five-year collision data reported from January 1, 2018 to December 31, 2022; Fehr & Peers, 2023.



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, on-street parking, and number of driveways. **Table 8** presents the predicted collision frequencies for the three study intersections and three 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 and 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 8**, all study intersections and roadway segments have actual collision frequencies equal to or below predicted collision frequencies. Therefore, no modifications are recommended for these intersections and segments at this time.

Table 8: Predicted and Actual Collision Frequencies

Location	Predicted Collision Frequency (Per year) ¹	Actual Collision Frequency (Per year) ²	Difference (Actual – Predicted)	Higher Than Predicted?
<i>Intersections</i>				
7th Street/Mandela Parkway	2.0	1.0	-1.0	No
7th Street/Kirkham Street	0.6	0.4	-0.2	No
5th Street/Kirkham Street	0.5	0.0	-0.5	No
<i>Roadway Segments</i>				
Kirkham Street, between 5th and 7th Streets	0.2	0.0	-0.2	No
7th Street, between Mandela Parkway and Kirkham Street	0.4	0.4	0.0	No
Mandela Parkway, between 5th and 7th Streets	0.4	0.2	-0.2	No

Notes:

1. Based on the Highway Safety Manual Predictive Method (Volume 2, Part C).
2. Based on SWITRS five-year collision data reported from January 1, 2018 to December 31, 2022.

Source: Fehr & Peers, 2023.



5. Conclusion

Per the site plan review, the Project would have adequate automobile, bicycle, pedestrian, and transit access and circulation with the inclusion of the following recommendations:

Recommendation 1: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, the following shall be considered as part of the Project's final design:

- Coordinate with the City of Oakland to provide a pullout loading area along the Project's Kirkham Street frontage just south of 7th Street to accommodate passenger and truck loading through the following:
 - Provide a seven-foot parking lane for about 75 feet by narrowing the proposed sidewalk along the Project frontage from 15 to eight feet. Ensure that at least one accessible passenger loading space is provided.
 - Install red curb and no stopping anytime signage on the west side of Kirkham Street along the remaining frontage to discourage pick-ups and drop offs.

Recommendation 2: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, implement the following:

- Ensure the design of the Project driveway provides adequate sight distance, defined as a clear line-of-sight between a motorist ten feet back from the sidewalk and a pedestrian ten feet away on each side of the driveway. If adequate sight distance cannot be provided, provide an audio/visual warning device to alert pedestrians on the adjacent sidewalk of vehicles exiting the driveway and warning devices to alert motorists exiting the garage driveway of pedestrians on both sides of the adjacent sidewalk.

Recommendation 3: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, implement one of the following:

- Reconfigure the internal access for the long-term bicycle parking room to provide a clear path of travel and eliminate any need of going through the loading space or other parking spaces.

Recommendation 6: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, the following shall be considered as part of the Project's final design:



- If the 100% PS&E for the 7th Street Connection Project improvements are approved and finalized prior to the start of construction for the Project, construct the approved improvements on the south side of 7th Street along the Project frontage.

Recommendation 7: While not required to address a CEQA impact, and at the discretion of City of Oakland staff, implement one of the following:

- Provide a directional curb ramp with truncated domes at the southwest corner of the 7th Street/Kirkham Street intersection.

Please contact Sam Tabibnia (s.tabibnia@fehrrandpeers.com or 510-835-1943) with questions or comments.

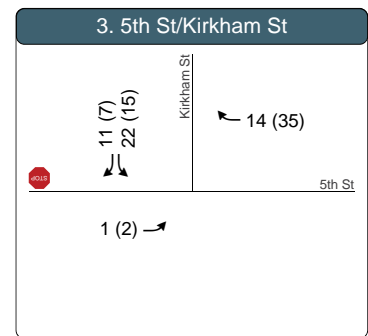
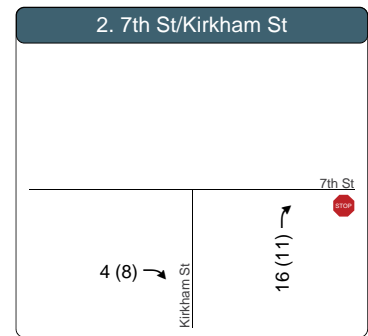
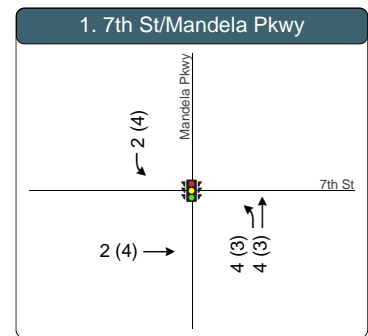
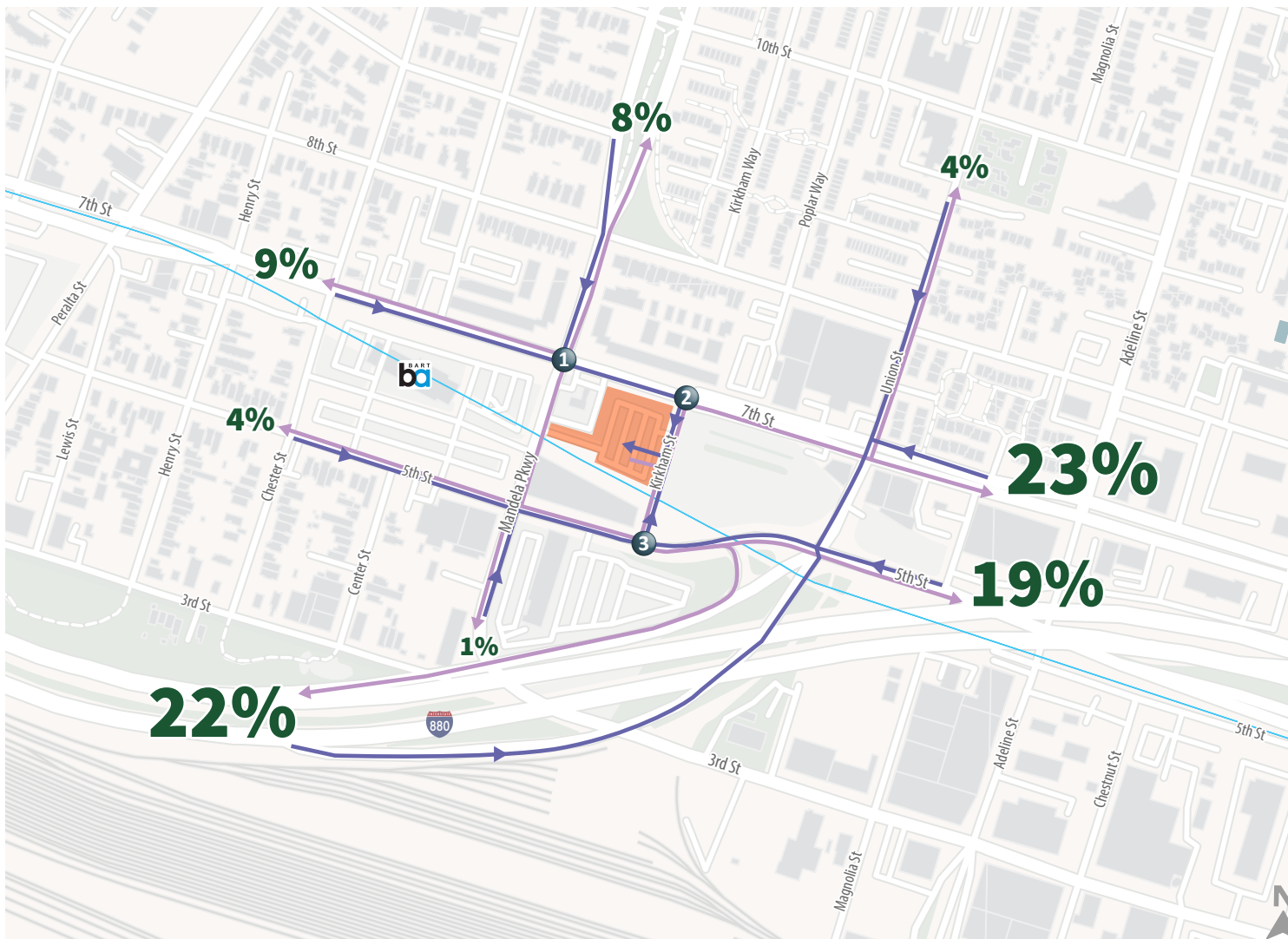
ATTACHMENTS

Figure 1 – Project Trip Distribution and Trip Assignment

Appendix A – Project Site Plan

Appendix B – 7th Street Connections Project Concept Design

Appendix C - Predicted Collision Frequency Analysis Results



- Project Site
- # Study Intersection
- X% Project Trip Distribution
- XX (YY) AM (PM) Peak Hour Traffic Volumes
- Signalized Intersection
- Stop Sign
- Inbound Route
- Outbound Route

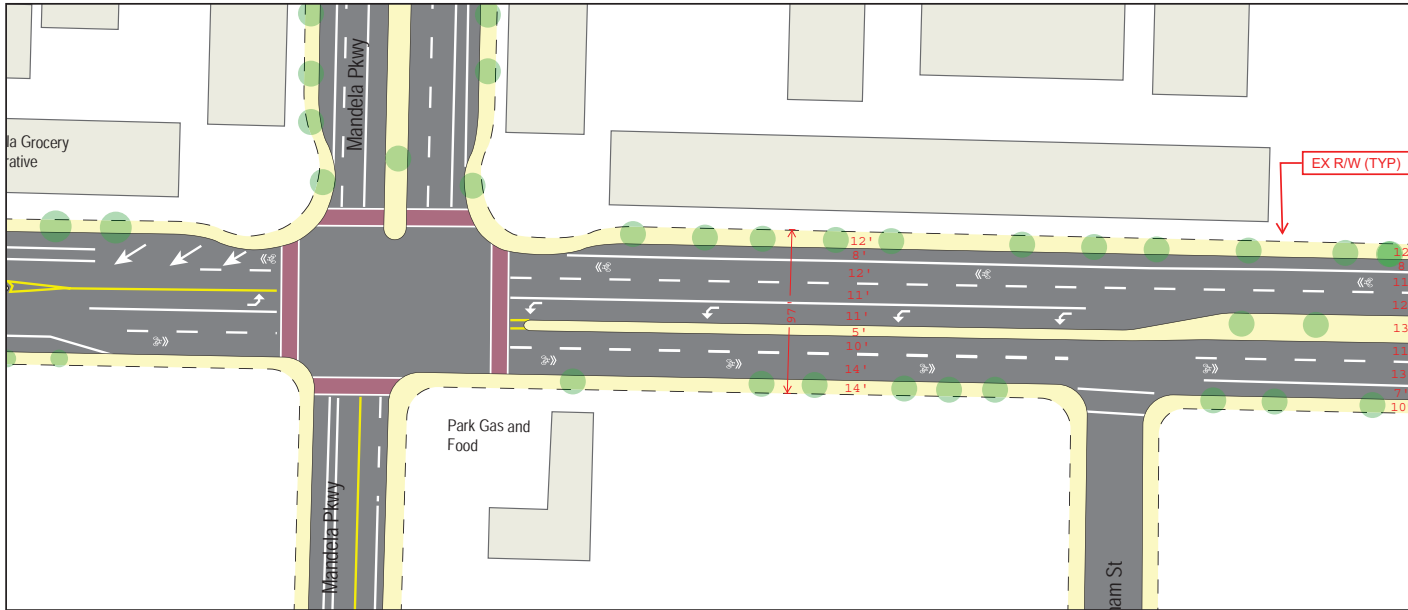


Figure 1

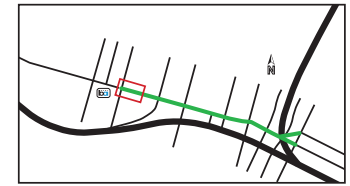
Project Trip Distribution and Assignment

Appendix A: Project Site Plan

Appendix B: 7th Street Connections Project Concept Plan



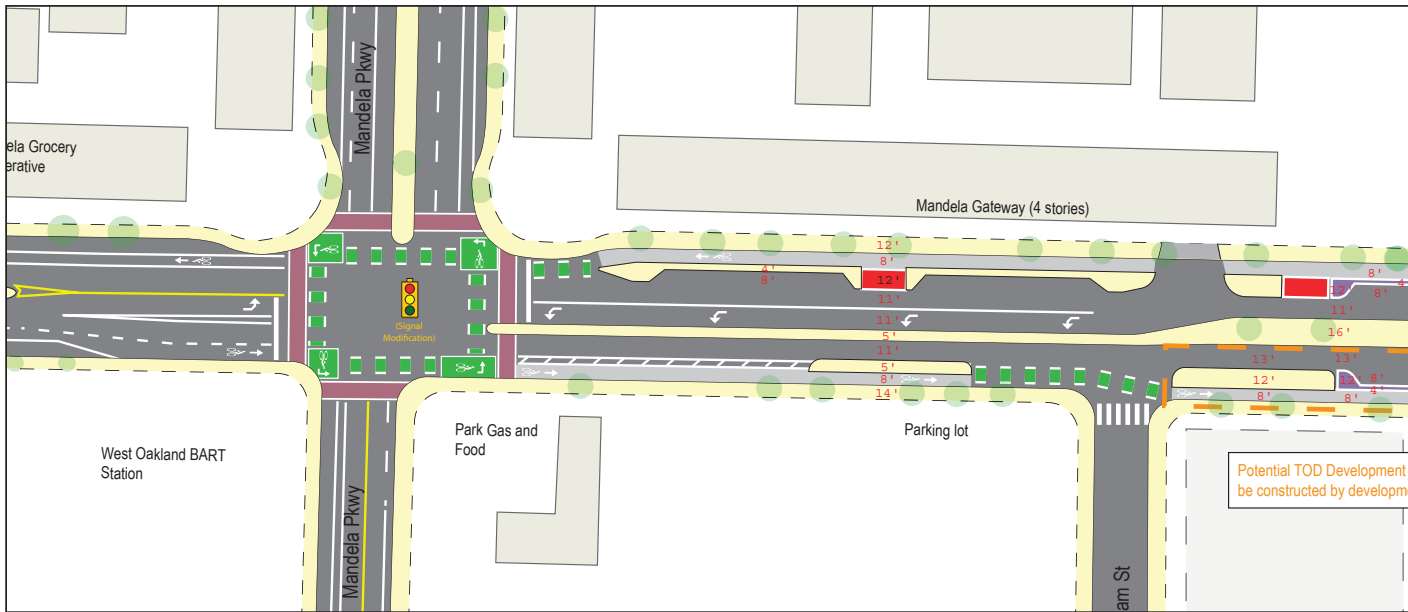
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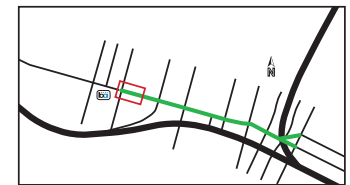
Key Map

Notes

- Sharrows on a two-lane arterial road with large vehicle traffic do not provide adequate protection



Proposed



Key Map

Notes

- Red zones are "keep clear" painted zones for emergency vehicle access
- Purple zones are painted (w/ bollards) parallel parking bays with short-term parking and loading only to facilitate emergency access if needed
- Bike boxes installed at Mandala Parkway

Appendix C: Predicted Collision Frequency Analysis Results

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		Location Information	
Analyst	Molly Riddle	Roadway	7th Street
Agency or Company	Fehr & Peers	Intersection	Mandela Parkway
Date Performed	02/23/23	Jurisdiction	City of Oakland, CA
		Analysis Year	2023
Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT _{major} (veh/day)	AADT _{MAX} = 67,700 (veh/day)	--	8,780
AADT _{minor} (veh/day)	AADT _{MAX} = 33,400 (veh/day)	--	7,530
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	3
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]		--	2
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Permissive
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			1,660
Maximum number of lanes crossed by a pedestrian (n _{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	10
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	3

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
<i>CMF 1i</i>	<i>CMF 2i</i>	<i>CMF 3i</i>	<i>CMF 4i</i>	<i>CMF 5i</i>	<i>CMF 6i</i>	<i>CMF_{COMB}</i>
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)
0.73	0.88	1.00	1.00	0.91	1.00	0.59

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	2.179	1.000	2.179	0.59	1.00	1.280					
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	0.630	$(4)_{FI} / ((4)_{FI} + (4)_{PDO})$ 0.300	0.655	0.59	1.00	0.384					
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	1.468	$(5)_{TOTAL} - (5)_{FI}$ 0.700	1.525	0.59	1.00	0.896					

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	0.384	1.000	0.896	1.280
		$(2) * (3)_{FI}$		$(4) * (5)_{PDO}$	$(3) + (5)$
Rear-end collision	0.450	0.173	0.483	0.433	0.606
Head-on collision	0.049	0.019	0.030	0.027	0.046
Angle collision	0.347	0.133	0.244	0.219	0.352
Sideswipe	0.099	0.038	0.032	0.029	0.067
Other multiple-vehicle collision	0.055	0.021	0.211	0.189	0.210

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_{bisv}	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	0.197	1.000	0.197	0.59	1.00	0.116					
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.063	$(4)_{FI} / ((4)_{FI} + (4)_{PDO})$ 0.325	0.064	0.59	1.00	0.038					
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.132	$(5)_{TOTAL} - (5)_{FI}$ 0.675	0.133	0.59	1.00	0.078					

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	0.038	1.000	0.078	0.116
		(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	0.028	0.870	0.068	0.096
Collision with other object	0.072	0.003	0.070	0.005	0.008
Other single-vehicle collision	0.040	0.002	0.023	0.002	0.003
Single-vehicle noncollision	0.141	0.005	0.034	0.003	0.008

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N _{bimv}	Predicted N _{bisv}	Predicted N _{bi}	f _{pedi}	Predicted N _{pedi}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16	(4)*(5)
Total	--	--	--	--	--
Fatal and injury (FI)	--	--	--	--	--

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-30

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	1.00	1.12	4.65

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} from Equation 12-29	Combined CMF (4) from Worksheet 2H	Calibration factor, C _i	Predicted N _{pedi}
	from Table 12-14									(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.116	4.65	1.00	0.539
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.539

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N_{bimv}	Predicted N_{bisv}	Predicted N_{bi}	f_{bikei}	Predicted N_{bikei}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17	(4)*(5)
Total	1.280	0.116	1.396	0.015	0.021
Fatal and injury (FI)	--	--	--	--	0.021

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-31

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)	0.173	0.433	0.606
Head-on collisions (from Worksheet 2D)	0.019	0.027	0.046
Angle collisions (from Worksheet 2D)	0.133	0.219	0.352
Sideswipe (from Worksheet 2D)	0.038	0.029	0.067
Other multiple-vehicle collision (from Worksheet 2D)	0.021	0.189	0.210
Subtotal	0.384	0.896	1.280
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)	0.028	0.068	0.096
Collision with other object (from Worksheet 2F)	0.003	0.005	0.008
Other single-vehicle collision (from Worksheet 2F)	0.002	0.002	0.003
Single-vehicle noncollision (from Worksheet 2F)	0.005	0.003	0.008
Collision with pedestrian (from Worksheet 2G or 2I)	0.539	0.000	0.539
Collision with bicycle (from Worksheet 2J)	0.021	0.000	0.021
Subtotal	0.598	0.078	0.676
Total	0.982	0.974	1.956

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	2.0
Fatal and injury (FI)	1.0
Property damage only (PDO)	1.0

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		Location Information	
Analyst	Molly Riddle	Roadway	7th Street
Agency or Company	Fehr & Peers	Intersection	Kirkham Street
Date Performed	02/23/23	Jurisdiction	City of Oakland, CA
		Analysis Year	2023
Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	3ST
AADT _{major} (veh/day)	AADT _{MAX} = 45,700 (veh/day)	--	6,660
AADT _{minor} (veh/day)	AADT _{MAX} = 9,300 (veh/day)	--	1,250
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		--	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			0
Maximum number of lanes crossed by a pedestrian (n _{lanesx})		--	2
Number of bus stops within 300 m (1,000 ft) of the intersection		0	10
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	3

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	1.00	1.00	1.00	0.91	1.00	0.91

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	-13.36	1.11	0.41	0.80	0.515	1.000	0.515	0.91	1.00	0.468					
Fatal and Injury (FI)	-14.01	1.16	0.30	0.69	0.190	$(4)_{FI} / ((4)_{FI} + (4)_{PDO})$ 0.382	0.197	0.91	1.00	0.179					
Property Damage Only (PDO)	-15.38	1.20	0.51	0.77	0.308	$(5)_{TOTAL} - (5)_{FI}$ 0.618	0.318	0.91	1.00	0.289					

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	0.179	1.000	0.289	0.468
		$(2) * (3)_{FI}$		$(4) * (5)_{PDO}$	$(3) + (5)$
Rear-end collision	0.421	0.075	0.440	0.127	0.203
Head-on collision	0.045	0.008	0.023	0.007	0.015
Angle collision	0.343	0.061	0.262	0.076	0.137
Sideswipe	0.126	0.023	0.040	0.012	0.034
Other multiple-vehicle collision	0.065	0.012	0.235	0.068	0.080

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_{bisv}	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	-6.81	0.16	0.51	1.14	0.171	1.000	0.171	0.91	1.00	0.156					
Fatal and Injury (FI)	--	--	--	--	0.053	$(4)_{FI} / ((4)_{FI} + (4)_{PDO})$ 0.332	0.057	0.91	1.00	0.052					
Property Damage Only (PDO)	-8.36	0.25	0.55	1.29	0.107	$(5)_{TOTAL} - (5)_{FI}$ 0.668	0.114	0.91	1.00	0.104					

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	0.052	1.000	0.104	0.156
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.003	0.000	0.000
Collision with animal	0.003	0.000	0.018	0.002	0.002
Collision with fixed object	0.762	0.039	0.834	0.087	0.126
Collision with other object	0.090	0.005	0.092	0.010	0.014
Other single-vehicle collision	0.039	0.002	0.023	0.002	0.004
Single-vehicle noncollision	0.105	0.005	0.030	0.003	0.009

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N _{bimv}	Predicted N _{bisv}	Predicted N _{bi}	f _{pedi}	Predicted N _{pedi}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16	(4)*(5)
Total	0.468	0.156	0.624	0.021	0.013
Fatal and injury (FI)	--	--	--	--	0.013

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-30

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)
--	--	--	--

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} from Equation 12-29	Combined CMF (4) from Worksheet 2H	Calibration factor, C _i	Predicted N _{pedi}
	from Table 12-14									(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	1.00	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N_{bimv}	Predicted N_{bisv}	Predicted N_{bi}	f_{bikei}	Predicted N_{bikei}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17	(4)*(5)
Total	0.468	0.156	0.624	0.016	0.010
Fatal and injury (FI)	--	--	--	--	0.010

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-31

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)	0.075	0.127	0.203
Head-on collisions (from Worksheet 2D)	0.008	0.007	0.015
Angle collisions (from Worksheet 2D)	0.061	0.076	0.137
Sideswipe (from Worksheet 2D)	0.023	0.012	0.034
Other multiple-vehicle collision (from Worksheet 2D)	0.012	0.068	0.080
Subtotal	0.179	0.289	0.468
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.002	0.002
Collision with fixed object (from Worksheet 2F)	0.039	0.087	0.126
Collision with other object (from Worksheet 2F)	0.005	0.010	0.014
Other single-vehicle collision (from Worksheet 2F)	0.002	0.002	0.004
Single-vehicle noncollision (from Worksheet 2F)	0.005	0.003	0.009
Collision with pedestrian (from Worksheet 2G or 2I)	0.013	0.000	0.013
Collision with bicycle (from Worksheet 2J)	0.010	0.000	0.010
Subtotal	0.075	0.104	0.179
Total	0.254	0.393	0.647

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	0.6
Fatal and injury (FI)	0.3
Property damage only (PDO)	0.4

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections			
General Information		Location Information	
Analyst	Molly Riddle	Roadway	5th Street
Agency or Company	Fehr & Peers	Intersection	Kirkham Street
Date Performed	02/23/23	Jurisdiction	City of Oakland
		Analysis Year	2023
Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	3ST
AADT _{major} (veh/day)	AADT _{MAX} = 45,700 (veh/day)	--	5,100
AADT _{minor} (veh/day)	AADT _{MAX} = 9,300 (veh/day)	--	1,250
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			0
Maximum number of lanes crossed by a pedestrian (n _{lanesx})		--	4
Number of bus stops within 300 m (1,000 ft) of the intersection		0	10
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	3

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	1.00	1.00	1.00	0.91	1.00	0.91

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 Equation 12-21	$(4)_{TOTAL} * (5)$	(7) from Worksheet 2B	$(6) * (7) * (8)$
	a	b	c											
Total	-13.36	1.11	0.41	0.80	0.383	1.000	0.383	0.91	1.00	0.348				
Fatal and Injury (FI)	-14.01	1.16	0.30	0.69	0.140	$(4)_{FI} / ((4)_{FI} + (4)_{PDO})$ 0.385	0.147	0.91	1.00	0.134				
Property Damage Only (PDO)	-15.38	1.20	0.51	0.77	0.223	$(5)_{TOTAL} - (5)_{FI}$ 0.615	0.235	0.91	1.00	0.214				

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	0.134	1.000	0.214	0.348
		$(2) * (3)_{FI}$		$(4) * (5)_{PDO}$	$(3) + (5)$
Rear-end collision	0.421	0.056	0.440	0.094	0.151
Head-on collision	0.045	0.006	0.023	0.005	0.011
Angle collision	0.343	0.046	0.262	0.056	0.102
Sideswipe	0.126	0.017	0.040	0.009	0.025
Other multiple-vehicle collision	0.065	0.009	0.235	0.050	0.059

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_{bisv}	Combined CMFs	Calibration Factor, C_i	Predicted N_{bisv}				
	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	-6.81	0.16	0.51	1.14	0.164	1.000	0.164	0.91	1.00	0.149				
Fatal and Injury (FI)	--	--	--	--	0.051	$(4)_{FI} / ((4)_{FI} + (4)_{PDO})$ 0.337	0.055	0.91	1.00	0.050				
Property Damage Only (PDO)	-8.36	0.25	0.55	1.29	0.100	$(5)_{TOTAL} - (5)_{FI}$ 0.663	0.109	0.91	1.00	0.099				

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	0.050	1.000	0.099	0.149
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.003	0.000	0.000
Collision with animal	0.003	0.000	0.018	0.002	0.002
Collision with fixed object	0.762	0.038	0.834	0.082	0.121
Collision with other object	0.090	0.005	0.092	0.009	0.014
Other single-vehicle collision	0.039	0.002	0.023	0.002	0.004
Single-vehicle noncollision	0.105	0.005	0.030	0.003	0.008

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N _{bimv}	Predicted N _{bisv}	Predicted N _{bi}	f _{pedi}	Predicted N _{pedi}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16	(4)*(5)
Total	0.348	0.149	0.497	0.021	0.010
Fatal and injury (FI)	--	--	--	--	0.010

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-30

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)
--	--	--	--

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} from Equation 12-29	Combined CMF (4) from Worksheet 2H	Calibration factor, C _i	Predicted N _{pedi}
	from Table 12-14									(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	1.00	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections					
(1)	(2)	(3)	(4)	(5)	(7)*
Crash Severity Level	Predicted N_{bimv}	Predicted N_{bisv}	Predicted N_{bi}	f_{bikei}	Predicted N_{bikei}
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17	(4)*(5)
Total	0.348	0.149	0.497	0.016	0.008
Fatal and injury (FI)	--	--	--	--	0.008

* Column 6 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-31

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)	0.056	0.094	0.151
Head-on collisions (from Worksheet 2D)	0.006	0.005	0.011
Angle collisions (from Worksheet 2D)	0.046	0.056	0.102
Sideswipe (from Worksheet 2D)	0.017	0.009	0.025
Other multiple-vehicle collision (from Worksheet 2D)	0.009	0.050	0.059
Subtotal	0.134	0.214	0.348
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.002	0.002
Collision with fixed object (from Worksheet 2F)	0.038	0.082	0.121
Collision with other object (from Worksheet 2F)	0.005	0.009	0.014
Other single-vehicle collision (from Worksheet 2F)	0.002	0.002	0.004
Single-vehicle noncollision (from Worksheet 2F)	0.005	0.003	0.008
Collision with pedestrian (from Worksheet 2G or 2I)	0.010	0.000	0.010
Collision with bicycle (from Worksheet 2J)	0.008	0.000	0.008
Subtotal	0.069	0.099	0.168
Total	0.203	0.313	0.516

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	0.5
Fatal and injury (FI)	0.2
Property damage only (PDO)	0.3

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments					
General Information			Location Information		
Analyst	Molly Riddle		Roadway	Mandela Parkway	
Agency or Company	Fehr & Peers		Roadway Section	5th Street to 7th Street	
Date Performed	02/23/23		Jurisdiction	City of Oakland, CA	
			Analysis Year	2023	
Input Data		Base Conditions		Site Conditions	
Roadway type (2U, 3T, 4U, 4D, ST)		--		2U	
Length of segment, L (mi)		--		0.09	
AADT (veh/day)		AADT _{MAX} = 32,600 (veh/day)		6,175	
Type of on-street parking (none/parallel/angle)		None		Parallel (Comm/Ind)	
Proportion of curb length with on-street parking		--		0.36	
Median width (ft) - for divided only		15		Not Present	
Lighting (present / not present)		Not Present		Present	
Auto speed enforcement (present / not present)		Not Present		Not Present	
Major commercial driveways (number)		--		1	
Minor commercial driveways (number)		--		2	
Major industrial / institutional driveways (number)		--		1	
Minor industrial / institutional driveways (number)		--		0	
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		79	
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30		25	
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
<i>CMF 1r</i>	<i>CMF 2r</i>	<i>CMF 3r</i>	<i>CMF 4r</i>	<i>CMF 5r</i>	<i>CMF comb</i>
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)
1.39	1.17	1.00	0.93	1.00	1.51

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}
	a	b							
Total	-15.22	1.68	0.84	0.052	1.000	0.052	1.51	1.00	0.078
Fatal and Injury (FI)	-16.22	1.66	0.65	0.016	(4) _{FI} /((4) _{FI} +(4) _{PDO}) 0.297	0.015	1.51	1.00	0.023
Property Damage Only (PDO)	-15.62	1.69	0.87	0.038	(5) _{TOTAL} -(5) _{FI} 0.703	0.036	1.51	1.00	0.055

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	0.023	1.000	0.055	0.078
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Rear-end collision	0.730	0.017	0.778	0.043	0.060
Head-on collision	0.068	0.002	0.004	0.000	0.002
Angle collision	0.085	0.002	0.079	0.004	0.006
Sideswipe, same direction	0.015	0.000	0.031	0.002	0.002
Sideswipe, opposite direction	0.073	0.002	0.055	0.003	0.005
Other multiple-vehicle collision	0.029	0.001	0.053	0.003	0.004

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 (6) from Worksheet 1B	Calibration Factor, Cr	Predicted N _{brsv}
	from Table 12-5								from Table 12-5
	a	b							
Total	-5.47	0.56	0.81	0.050	1.000	0.050	1.51	1.00	0.076
Fatal and Injury (FI)	-3.96	0.23	0.50	0.013	(4) _{FI} /((4) _{FI} +(4) _{PDO}) 0.263	0.013	1.51	1.00	0.020
Property Damage Only (PDO)	-6.51	0.64	0.87	0.036	(5) _{TOTAL} -(5) _{FI} 0.737	0.037	1.51	1.00	0.056

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	0.020	1.000	0.056	0.076
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Collision with animal	0.026	0.001	0.066	0.004	0.004
Collision with fixed object	0.723	0.014	0.759	0.043	0.057
Collision with other object	0.010	0.000	0.013	0.001	0.001
Other single-vehicle collision	0.241	0.005	0.162	0.009	0.014

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_i	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	1	0.158	1.000	0.065	--
Minor commercial	2	0.050	1.000	0.041	
Major industrial/institutional	1	0.172	1.000	0.071	
Minor industrial/institutional	0	0.023	1.000	0.000	
Major residential	0	0.083	1.000	0.000	
Minor residential	0	0.016	1.000	0.000	
Other	0	0.025	1.000	0.000	
Total	--	--	--	0.177	

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	0.177	1.000	0.177	1.51	1.00	0.268
Fatal and injury (FI)	--	0.323	0.057	1.51	1.00	0.087
Property damage only (PDO)	--	0.677	0.120	1.51	1.00	0.181

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(8)*
Crash Severity Level	Predicted N_{brmv}	Predicted N_{brsv}	Predicted N_{brdwy}	Predicted N_{br}	f_{pedr}	Predicted N_{pedr}
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8	(5)*(6)
Total	0.078	0.076	0.268	0.422	0.036	0.015
Fatal and injury (FI)	--	--	--	--	--	0.015

* Column 7 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-19

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(8)*
Crash Severity Level	Predicted N_{brmv}	Predicted N_{brsv}	Predicted N_{brdwy}	Predicted N_{br}	f_{biker}	Predicted N_{biker}
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9	(5)*(6)
Total	0.078	0.076	0.268	0.422	0.018	0.008
Fatal and injury (FI)	--	--	--	--	--	0.008

* Column 7 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-20

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)	0.017	0.043	0.060
Head-on collisions (from Worksheet 1D)	0.002	0.000	0.002
Angle collisions (from Worksheet 1D)	0.002	0.004	0.006
Sideswipe, same direction (from Worksheet 1D)	0.000	0.002	0.002
Sideswipe, opposite direction (from Worksheet 1D)	0.002	0.003	0.005
Driveway-related collisions (from Worksheet 1H)	0.087	0.181	0.268
Other multiple-vehicle collision (from Worksheet 1D)	0.001	0.003	0.004
Subtotal	0.110	0.236	0.346
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.001	0.004	0.004
Collision with fixed object (from Worksheet 1F)	0.014	0.043	0.057
Collision with other object (from Worksheet 1F)	0.000	0.001	0.001
Other single-vehicle collision (from Worksheet 1F)	0.005	0.009	0.014
Collision with pedestrian (from Worksheet 1I)	0.015	0.000	0.015
Collision with bicycle (from Worksheet 1J)	0.008	0.000	0.008
Subtotal	0.043	0.056	0.099
Total	0.153	0.292	0.445

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	Predicted average crash frequency, $N_{\text{predicted rs}}$ (crashes/year)	Roadway segment length, L (mi)	Crash rate (crashes/mi/year)
	(Total) from Worksheet 1K		(2) / (3)
Total	0.4	0.09	4.9
Fatal and injury (FI)	0.2	0.09	1.7
Property damage only (PDO)	0.3	0.09	3.2

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments					
General Information			Location Information		
Analyst	Molly Riddle		Roadway	7th Street	
Agency or Company	Fehr & Peers		Roadway Section	Mandela Parkway to Kirkham Street	
Date Performed	02/23/23		Jurisdiction	City of Oakland, CA	
			Analysis Year	2023	
Input Data		Base Conditions	Site Conditions		
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D		
Length of segment, L (mi)		--	0.09		
AADT (veh/day)		AADT _{MAX} = 66,000 (veh/day)	11,200		
Type of on-street parking (none/parallel/angle)		None	Parallel (Comm/Ind)		
Proportion of curb length with on-street parking		--	0.5		
Median width (ft) - for divided only		15	10		
Lighting (present / not present)		Not Present	Present		
Auto speed enforcement (present / not present)		Not Present	Not Present		
Major commercial driveways (number)		--	1		
Minor commercial driveways (number)		--	0		
Major industrial / institutional driveways (number)		--	0		
Minor industrial / institutional driveways (number)		--	0		
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	75		
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	5		
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
<i>CMF 1r</i>	<i>CMF 2r</i>	<i>CMF 3r</i>	<i>CMF 4r</i>	<i>CMF 5r</i>	<i>CMF comb</i>
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)
1.35	1.32	1.01	0.91	1.00	1.65

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	0.126	1.000	0.126	1.65	1.00	0.209
Fatal and Injury (FI)	-12.76	1.28	1.31	0.039	(4) _{FI} /((4) _{FI} +(4) _{PDO}) 0.293	0.037	1.65	1.00	0.061
Property Damage Only (PDO)	-12.81	1.38	1.34	0.095	(5) _{TOTAL} -(5) _{FI} 0.707	0.089	1.65	1.00	0.148

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	0.061	1.000	0.148	0.209
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Rear-end collision	0.832	0.051	0.662	0.098	0.149
Head-on collision	0.020	0.001	0.007	0.001	0.002
Angle collision	0.040	0.002	0.036	0.005	0.008
Sideswipe, same direction	0.050	0.003	0.223	0.033	0.036
Sideswipe, opposite direction	0.010	0.001	0.001	0.000	0.001
Other multiple-vehicle collision	0.048	0.003	0.071	0.011	0.013

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 (6) from Worksheet 1B	Calibration Factor, Cr	Predicted N _{brsv}
	from Table 12-5								from Table 12-5
	a	b							
Total	-5.05	0.47	0.86	0.046	1.000	0.046	1.65	1.00	0.076
Fatal and Injury (FI)	-8.71	0.66	0.28	0.007	(4) _{FI} /((4) _{FI} +(4) _{PDO}) 0.153	0.007	1.65	1.00	0.012
Property Damage Only (PDO)	-5.04	0.45	1.06	0.039	(5) _{TOTAL} -(5) _{FI} 0.847	0.039	1.65	1.00	0.065

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	0.012	1.000	0.065	0.076
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Collision with animal	0.001	0.000	0.063	0.004	0.004
Collision with fixed object	0.500	0.006	0.813	0.053	0.058
Collision with other object	0.028	0.000	0.016	0.001	0.001
Other single-vehicle collision	0.471	0.005	0.108	0.007	0.012

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_i	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	1	0.033	1.106	0.024	--
Minor commercial	0	0.011	1.106	0.000	
Major industrial/institutional	0	0.036	1.106	0.000	
Minor industrial/institutional	0	0.005	1.106	0.000	
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	--	--	--	0.024	

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	0.024	1.000	0.024	1.65	1.00	0.039
Fatal and injury (FI)	--	0.284	0.007	1.65	1.00	0.011
Property damage only (PDO)	--	0.716	0.017	1.65	1.00	0.028

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(8)*
Crash Severity Level	Predicted N_{brmv}	Predicted N_{brsv}	Predicted N_{brdwy}	Predicted N_{br}	f_{pedr} from Table 12-8	Predicted N_{pedr}
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)		(5)*(6)
Total	0.209	0.076	0.039	0.325	0.067	0.022
Fatal and injury (FI)	--	--	--	--	--	0.022

* Column 7 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-19

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(8)*
Crash Severity Level	Predicted N_{brmv}	Predicted N_{brsv}	Predicted N_{brdwy}	Predicted N_{br}	f_{biker} from Table 12-9	Predicted N_{biker}
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)		(5)*(6)
Total	0.209	0.076	0.039	0.325	0.013	0.004
Fatal and injury (FI)	--	--	--	--	--	0.004

* Column 7 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-20

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)	0.051	0.098	0.149
Head-on collisions (from Worksheet 1D)	0.001	0.001	0.002
Angle collisions (from Worksheet 1D)	0.002	0.005	0.008
Sideswipe, same direction (from Worksheet 1D)	0.003	0.033	0.036
Sideswipe, opposite direction (from Worksheet 1D)	0.001	0.000	0.001
Driveway-related collisions (from Worksheet 1H)	0.011	0.028	0.039
Other multiple-vehicle collision (from Worksheet 1D)	0.003	0.011	0.013
Subtotal	0.072	0.176	0.249
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.000	0.004	0.004
Collision with fixed object (from Worksheet 1F)	0.006	0.053	0.058
Collision with other object (from Worksheet 1F)	0.000	0.001	0.001
Other single-vehicle collision (from Worksheet 1F)	0.005	0.007	0.012
Collision with pedestrian (from Worksheet 1I)	0.022	0.000	0.022
Collision with bicycle (from Worksheet 1J)	0.004	0.000	0.004
Subtotal	0.038	0.065	0.102
Total	0.110	0.241	0.351

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	Predicted average crash frequency, $N_{\text{predicted rs}}$ (crashes/year)	Roadway segment length, L (mi)	Crash rate (crashes/mi/year)
	(Total) from Worksheet 1K		(2) / (3)
Total	0.4	0.09	3.9
Fatal and injury (FI)	0.1	0.09	1.2
Property damage only (PDO)	0.2	0.09	2.7

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	Molly Riddle	Roadway	Kirkham Street
Agency or Company	Fehr & Peers	Roadway Section	5th Street to 7th Street
Date Performed	02/23/23	Jurisdiction	City of Oakland, CA
		Analysis Year	2023
Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	0.08
AADT (veh/day)	AADT _{MAX} = 32,600 (veh/day)	--	1,250
Type of on-street parking (none/parallel/angle)		None	Angle (Comm/Ind)
Proportion of curb length with on-street parking		--	0.97
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not 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)		--	0
Minor industrial / institutional driveways (number)		--	0
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	2
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
<i>CMF 1r</i>	<i>CMF 2r</i>	<i>CMF 3r</i>	<i>CMF 4r</i>	<i>CMF 5r</i>	<i>CMF comb</i>
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)
4.74	1.63	1.00	1.00	1.00	7.71

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								
	a	b							
Total	-15.22	1.68	0.84	0.003	1.000	0.003	7.71	1.00	0.024
Fatal and Injury (FI)	-16.22	1.66	0.65	0.001	$(4)_{FI} / ((4)_{FI} + (4)_{PDO})$ 0.307	0.001	7.71	1.00	0.007
Property Damage Only (PDO)	-15.62	1.69	0.87	0.002	$(5)_{TOTAL} - (5)_{FI}$ 0.693	0.002	7.71	1.00	0.017

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	0.007	1.000	0.017	0.024
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Rear-end collision	0.730	0.005	0.778	0.013	0.018
Head-on collision	0.068	0.001	0.004	0.000	0.001
Angle collision	0.085	0.001	0.079	0.001	0.002
Sideswipe, same direction	0.015	0.000	0.031	0.001	0.001
Sideswipe, opposite direction	0.073	0.001	0.055	0.001	0.001
Other multiple-vehicle collision	0.029	0.000	0.053	0.001	0.001

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								
	a	b							
Total	-5.47	0.56	0.81	0.018	1.000	0.018	7.71	1.00	0.141
Fatal and Injury (FI)	-3.96	0.23	0.50	0.008	(4) _{FI} /((4) _{FI} +(4) _{PDO}) 0.408	0.007	7.71	1.00	0.057
Property Damage Only (PDO)	-6.51	0.64	0.87	0.011	(5) _{TOTAL} -(5) _{FI} 0.592	0.011	7.71	1.00	0.083

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	0.057	1.000	0.083	0.141
		(2)*(3) _{FI}		(4)*(5) _{PDO}	(3)+(5)
Collision with animal	0.026	0.001	0.066	0.006	0.007
Collision with fixed object	0.723	0.042	0.759	0.063	0.105
Collision with other object	0.010	0.001	0.013	0.001	0.002
Other single-vehicle collision	0.241	0.014	0.162	0.014	0.027

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_i	Coefficient for traffic adjustment, t	Initial N_{brdwy}	Overdispersion parameter, k
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_i * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	--
Minor commercial	1	0.050	1.000	0.004	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	
Major residential	0	0.083	1.000	0.000	
Minor residential	0	0.016	1.000	0.000	
Other	0	0.025	1.000	0.000	
Total	--	--	--	0.004	

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	0.004	1.000	0.004	7.71	1.00	0.032
Fatal and injury (FI)	--	0.323	0.001	7.71	1.00	0.010
Property damage only (PDO)	--	0.677	0.003	7.71	1.00	0.022

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(8)*
Crash Severity Level	Predicted N_{brmv}	Predicted N_{brsv}	Predicted N_{brdwy}	Predicted N_{br}	f_{pedr}	Predicted N_{pedr}
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8	(5)*(6)
Total	0.024	0.141	0.032	0.197	0.036	0.007
Fatal and injury (FI)	--	--	--	--	--	0.007

* Column 7 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-19

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(8)*
Crash Severity Level	Predicted N_{brmv}	Predicted N_{brsv}	Predicted N_{brdwy}	Predicted N_{br}	f_{biker}	Predicted N_{biker}
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9	(5)*(6)
Total	0.024	0.141	0.032	0.197	0.018	0.004
Fatal and injury (FI)	--	--	--	--	--	0.004

* Column 7 has been removed due to redundant application of calibration factors and inconsistency with HSM Equation 12-20

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)	0.005	0.013	0.018
Head-on collisions (from Worksheet 1D)	0.001	0.000	0.001
Angle collisions (from Worksheet 1D)	0.001	0.001	0.002
Sideswipe, same direction (from Worksheet 1D)	0.000	0.001	0.001
Sideswipe, opposite direction (from Worksheet 1D)	0.001	0.001	0.001
Driveway-related collisions (from Worksheet 1H)	0.010	0.022	0.032
Other multiple-vehicle collision (from Worksheet 1D)	0.000	0.001	0.001
Subtotal	0.018	0.039	0.056
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.001	0.006	0.007
Collision with fixed object (from Worksheet 1F)	0.042	0.063	0.105
Collision with other object (from Worksheet 1F)	0.001	0.001	0.002
Other single-vehicle collision (from Worksheet 1F)	0.014	0.014	0.027
Collision with pedestrian (from Worksheet 1I)	0.007	0.000	0.007
Collision with bicycle (from Worksheet 1J)	0.004	0.000	0.004
Subtotal	0.068	0.083	0.152
Total	0.086	0.122	0.208

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	Predicted average crash frequency, $N_{\text{predicted rs}}$ (crashes/year)	Roadway segment length, L (mi)	Crash rate (crashes/mi/year)
	(Total) from Worksheet 1K		(2) / (3)
Total	0.2	0.08	2.6
Fatal and injury (FI)	0.1	0.08	1.1
Property damage only (PDO)	0.1	0.08	1.5