# 2424 WEBSTER OFFICE PROJECT

## CEQA Checklist

Prepared for
City of Oakland

January 2021

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City of Oakland

January 2021

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# 2424 WEBSTER STREET OFFICE PROJECT

CEQA Checklist

## 1. General Project Information

### 1.1 Project Title

2424 Webster Street Office 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

PLN19-148

### 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

2424 Webster Street (parcel addresses 2428, 2410, and 2408 Webster Street)
Assessor's Parcel Nos. 008-0672-01900, 0080672-1800, and 008-0672-01401

### 1.6 Project Applicant's Name and Address

Signature Development Group
2335 Broadway STE. 200
Oakland, CA 94612

### 1.7 Existing General Plan Designations

Central Business District (CBD)

## 1.8 Existing Zoning

D-BV-1, Retail Priority Sites Zone (Priority Site 3C)
D-BV-2, Retail Zone

## 1.9 Requested Permits

Regular Design Review, CEQA determination, Tentative Parcel Map, demolition, grading and other onsite and offsite work permits, minor encroachment permits, Minor Variance for off-street loading berths.

# 2. Executive Summary

The 2424 Webster Office project site (project site) is comprised of 0.56 acres at 2424 Webster Street, consisting of three parcels (Assessor's Parcel Numbers: 008-0672-01900, 0080672-1800, and 008-0672-01401). The proposed 2424 Webster Street Office Project (Project) would construct a 5- to 12-story commercial building with a floor area of approximately 161,572 square feet, including approximately 11,332-square feet of retail space on the ground floor and mezzanine, and approximately 150,240 square feet of office uses on levels 2 through 12, above the retail space. The proposed building would have a base height of 85 feet across the project site with a tower on the northern part of the site reaching a maximum height of 178 feet (elevator/roof stair/mechanical equipment will be screened from view and add another 14 feet to the overall height). The proposed height meets the permitted 85 feet in the D-BV-2 (Retail Zone) and exceeds the 45*-foot base height limit for D-BV-1 (Retail Priority Site Zone - Priority Site 3C). However, by the Project complying with the minimum retail square footage for the Priorty Site 3C, the height limit is increased to 200-feet within the portion zoned D-BV-1. Through the Design Review process, the 200-foot height limit within the D-BV-1 Zone may extend 30 feet into the adjacent D-BV-2 zoned portion of the site.

The project site is located within the Broadway Valdez District Specific Plan (BVDSP or Plan). The City certified an Environmental Impact Report (EIR) for the BVDSP in May 2014 (BVDSP EIR), pursuant to the California Environmental Quality Act (CEQA).[1] The BVDSP EIR analyzed the environmental impacts of the adoption and implementation of the BVDSP.[2] The Project is within the impact envelope of the reasonably foreseeable maximum development program analyzed by the BVDSP EIR, providing the basis for use of an Addendum. Public Resources Code Section 21166 and 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 for preparation of a subsequent EIR or negative declaration, per Section 15162, have occurred.

In addition to, but separately and independently from the foregoing determination, this analysis uses CEQA streamlining and/or tiering provisions afforded under CEQA Guidelines Section 15183 and 15168 by tiering from the program-level analyses completed in the BVDSP EIR, Oakland's 1998 General Plan Land Use and Transportation Element EIR (1998 LUTE EIR), and the 2011 Central District Urban Renewal Plan Amendments EIR (2011 Renewal Plan Amendments EIR). These are referred to collectively, throughout this document as the "Previous CEQA Documents" or "Prior EIRs."

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

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1 City of Oakland. 2013. *Broadway Valdez District Specific Plan, Draft Environmental Impact Report*. SCH No. 2012052008. September. City of Oakland. 2014. *Broadway Valdez District Specific Plan, Responses to Comments and Final*. May. (These documents can be obtained at the Bureau of Planning at 250 Frank Ogawa Plaza, #3115, or online at http://www2.oaklandnet.com/Government/o/PBN/OurServices/Plans/OWD008194.)

2 Throughout this document, except where necessary for clarity, "2014 BVDSP EIR" encompasses the Draft EIR and Final EIR for the Broadway Valdez District Specific Plan.

The BVDSP EIR relied on assumptions about land use development and generation of new automobile trips associated with the Broadway Valdez District Development Program (Development Program) within five subdistricts of the Plan area (see BVDSP EIR Table 4.13-7).

The Development Program is conceptual only and illustrates one of many possible development scenarios under the BVDSP; a plan that specifically did not prescribe or assume exact land uses on a site-by-site basis. As the Plan area develops, the City will track (1) the total number of residential units, hotel rooms, and non-residential square footage for which entitlements have been granted and building permits issued, (2) the total number of residential units, hotel rooms, and non-residential square footage removed due to building demolition, and (3) the estimated net trip generation from entitled development under the BVDSP per subdistrict and for the Plan area relative to the amounts estimated and analyzed in this EIR. Thus, as long as the trip generation for the overall Plan area remain below the levels estimated in the EIR, the traffic impact analysis presented in the EIR continues to remain valid and the Project is considered within the parameters of the Development Program and BVDSP EIR.

The Project is within Subdistrict 3 of the Valdez Triangle subarea of the Plan. As shown in **Table 1**, the Project's 11,332 square feet of retail use would be well below the 251,398 square feet contemplated in the Development Program for Subdistrict 3. The Project's 150,240 square feet of general office use would slightly exceed the 116,085 square feet identified in the Development Program for Subdistrict 3 but would be within the 336,000 square feet of general office use identified for the Plan area as a whole.

**TABLE 1**
**COMPARISON OF BVDSP DEVELOPMENT PROGRAM,**
**SUBDISTRICT 3 DEVELOPMENT PROGRAM, AND THE PROJECT**

| Development Characteristics | Total BVDSP Development Program | Total BVDSP Constructed, Approved, Proposed, or Under Construction | Subdistrict 3 Development Program | Subdistrict 3 Constructed, Approved, Proposed, or Under Construction | Project |
|---|---|---|---|---|---|
| General Office Square Footage (net) | 695,000 | 182,400 | 140,740 | 133,300 | 150,240 |
| Retail Square Footage (net) | 1,114,000 | 135,400 | 251,398 | 26,000 | 11,332 |

NOTE:
a Information from City of Oakland, October 2020. Accounts for existing active uses that would be eliminated.
b Based on Table 4.13-7 on page 4.13-37 of BVDSP Draft EIR.

SOURCE: Fehr & Peers, 2020; City of Oakland. 2014. *Broadway Valdez District Specific Plan*. Adopted June.

The Project is estimated to generate 76 AM and 78 PM net new peak-hour vehicle trips. Together with trips generated by other projects that are currently under construction, approved, or proposed for development in the Plan area (see Table TRA-2 in Section 7.14, *Transportation and Circulation*), this would represent approximately 60 percent of the AM and 53 percent of the PM peak-hour trips anticipated in the BVDSP EIR for the Plan area, 107 percent of the AM and

79 percent of the PM peak-hour trips anticipated in the BVDSP EIR for the Valdez Triangle subarea, and 102 percent of the AM and 67 percent of the PM peak-hour trips anticipated in the BVDSP EIR for Subdistrict 3. Although the AM peak hour trip generation for the Valdez Triangle and Subdistrict 3 are above the trip generation estimated in the BVDSP, because the overall AM and PM peak hour trip generations for the Plan Area are below the BVDSP EIR, none of the BVDSP EIR impacts are triggered during the AM peak hour.

In summary, the amount of residential development in the Plan area is currently more than what was assumed under the Development Program Buildout in the BVDSP EIR, but the amount of retail and office uses currently proposed are well below the BVDSP EIR assumptions for the Plan area and thus the trip generation estimated and analyzed in the BVDSP EIR. In addition, the BVDSP EIR traffic impact analysis, which the BVDSP EIR determined was the key environmental factor constraining development, remains valid for the Project. Therefore, the Project meets the requirements for preparation of an addendum, as evidenced in **Attachment B** to this document.

Based on the foregoing and the detailed analyses and conclusions set forth on the following pages; the analysis, findings, and conclusions of the BVDSP EIR and the Prior EIRs included the potential environmental effects associated with this Project and none of the criteria under Sections 15162 is present. Therefore, this CEQA Checklist makes findings of consistency with Sections 15164, 15183, and 15168. Accordingly, no additional environmental documentation or analysis, under CEQA, is required.

# 3. Background

## 3.1 Planning Context

The project site is located within the Broadway Valdez District Specific Plan (BVDSP, or Plan), for which the City of Oakland certified an Environmental Impact Report (EIR) in May 2014, pursuant to the California Environmental Quality Act (CEQA).

The BVDSP provides a framework for future growth and development in an approximately 95.5-acre area along Oakland's Broadway corridor between Grand Avenue and I-580. Although it does not propose specific private developments, the BVDSP establishes a Development Program to project the maximum level of feasible development that can reasonably be expected during the 25 year planning period (i.e., approximately 3.7 million square feet, including approximately 695,000 square feet of office space, 1,114,000 square feet of restaurant/retail space, 1,800 residential units, a new 180 room hotel, approximately 6,500 parking spaces, and approximately 4,500 new jobs). As described below, the BVDSP EIR analyzed the environmental impacts of adoption and implementation of the BVDSP, and where the level of detail available was adequate for analyzing potential environmental effects, the BVDSP EIR provided project-level CEQA review for foreseeable and anticipated development.

The project site is included in the BVDSP Development Program and the level of development currently proposed for the site is within the broader development assumptions and thus within the impact envelope of the reasonably foreseeable maximum Development Program analyzed in the EIR. The BVDSP EIR allows for flexibility in location, amount, and type of future development in terms of the precise mix of newly developed land uses and their location within the Planning Area. This development is tracked by the cumulative trip generation of development projects as they are approved under the Plan. Thus, as long as the trip generation for the overall Plan area remains below the levels estimated in the EIR, the impact analysis presented in the BVDSP continues to remain valid. Further, as long as the actual Plan area buildout stays within the impact envelope analyzed in the BVDSP EIR, individual development projects need not adhere to the specific site-by-site assumptions in the Development Program.

## 3.2 CEQA Context

The following describes the program EIRs that constitute the previous CEQA documents considered in this CEQA Checklist. Each of the following documents is hereby incorporated by reference and can be obtained from the City of Oakland Bureau of Planning at 250 Frank H. Ogawa Plaza, Suite 2114, Oakland, California 94612, and on the City of Oakland Planning and Building Department website at https://www.oaklandca.gov/resources/current-environmental-review-ceqa-eir-documents-2011-2020.

### 3.2.1 BVDSP EIR

The BVDSP EIR anticipated that the environmental review of specific development projects assumed as part of the BVDSP would be streamlined in accordance with CEQA. This CEQA Checklist is an addendum to the BVDSP EIR which provides the planning level analysis evaluating the potential significant environmental impacts that could result from the reasonably foreseeable maximum development under the BVDSP. Specifically, it evaluates the physical and land use changes from potential development that could occur with adoption and implementation of the BVDSP. As specified in CEQA Guidelines Section 15183 and 15168, the BVDSP EIR is appropriate for a specific plan since the degree of specificity in an EIR corresponds to the degree of specificity in the underlying activity described in the EIR. Preparation of a planning-level document in the Plan area simplifies the task of preparing subsequent project-level environmental documents for future projects under the BVDSP 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 BVDSP EIR provides a project-level analysis to eliminate or minimize the need for subsequent CEQA review of projects that could occur under the BVDSP.

### *Environmental Effects Summary –BVDSP EIR*

The BVDSP EIR determined that development consistent with the BVDSP 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 3.2.4 through 3.2.6): aesthetics (new light or glare); air quality (conflicts with the Bay Area Clean Air Plan (CAP), exposure of sensitive receptors to Toxic Air Contaminants (TACs) and other TAC impacts); biological resources (riparian habitat, wetlands, trees, creeks); cultural resources (archaeological, human remains, paleontological); geology and soils; greenhouse gases and climate change (conflict with an applicable plan); hazards and hazardous materials (transport, use, storage, and release of hazardous materials, exposure to hazardous materials); hydrology and water quality (runoff in excess of existing capacity, flooding hazards, sea level rise); noise (violation of noise ordinance, in excess of applicable standards, interior noise levels); transportation/circulation (intersection operations); and utilities and service systems (stormwater, solid waste, wastewater, energy).

**Less-than-significant impacts** were identified for the following resources in the BVDSP EIR: aesthetics (degradation of existing visual character, adversely affect scenic vistas), air quality (carbon monoxide CO concentrations exceeding the California Ambient Air Quality Standards, odors); biological resources (fish or wildlife species); greenhouse gases and climate change (generation of greenhouse gas emissions); hazards and hazardous materials (emergency access routes); hydrology and water quality (flooding hazard related to dam or reservoir failure, groundwater supplies, mudflow-, seiche- or tsunami-related hazards); land use (adjacent land uses, land use policy, habitat conservation plan); population and housing; public services; parks and recreation; utilities and service systems (water supplies). **No impacts** were identified for agricultural or forestry resources, and mineral resources.

**Significant unavoidable impacts** were identified for the following environmental resources in the BVDSP EIR: aesthetics (shadow, wind); air quality (emissions of criteria air pollutants during construction and operation, generation of substantial levels of TACs); cultural resources (changes to historic resources); noise (noise from traffic, noise from rooftop mechanical equipment in combination with traffic noise); transportation/circulation (intersection operations, roadway segment operations). Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's certification of the BVDSP EIR.

## 3.2.2 Land Use and Transportation Element EIR

The City certified the EIR for its General Plan Land Use and Transportation Element (LUTE) in 1998. The LUTE identifies policies for utilizing Oakland's land as change takes place and sets forth an action program to implement the land use policy through development controls and other strategies. The LUTE identifies five "Showcase Districts" targeted for continued growth; the project site is located within the "Downtown Showcase District" (Downtown), which is intended to promote a mixture of vibrant and unique districts with around-the-clock activity, continued expansion of job opportunities, and growing residential population. The 1998 LUTE EIR is designated a "Program EIR" under CEQA Guidelines Section 15183 and 15168. As such, subsequent activities under the LUTE are subject to requirements under CEQA Guidelines Section 15183 and 15168, which are described further in Section 6.

Applicable mitigation measures identified in the 1998 LUTE EIR are largely the same as those identified in the other EIRs prepared *after* the 1998 LUTE EIR, either as mitigation measures or newer standard conditions of approval, the latter of which are described below in Sections 3.2.4 through 3.2.6.

### *Environmental Effects Summary – 1998 LUTE EIR*

The 1998 LUTE EIR (including its Initial Study) determined that development consistent with the LUTE would result in the following impacts that would be **reduced to a less-than-significant level with the implementation of mitigation measures**: aesthetics (views, architectural compatibility and shadow only); air quality (construction dust [including PM10] and emissions Downtown, odors); cultural resources (except as noted below as less than significant); hazards and hazardous materials; land use (use and density incompatibilities); noise (use and density incompatibilities, including from transit/transportation improvements); population and housing (induced growth, policy consistency/clean air plan); public services (except as noted below as significant)[3]; and transportation/circulation (intersection operations Downtown).

**Less-than-significant impacts** were identified for the following resources in the 1998 LUTE EIR (including Initial Study): aesthetics (scenic resources, light and glare); air quality (clean air plan consistency, roadway emissions in Downtown, energy use emissions, local/regional climate change); biological resources; cultural resources (historic context/settings, architectural compatibility); energy; geology and seismicity; hydrology and water quality; land use (conflicts in mixed use projects and near transit); noise (roadway noise Downtown and citywide, multifamily near transportation/transit improvements); population and housing (exceeding household projections, housing displacement from industrial encroachment); public services (water demand, wastewater flows, stormwater quality, parks services); and transportation/circulation (transit demand).

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

**No impacts** were identified for agricultural or forestry resources, and mineral resources.

**Significant unavoidable impacts** were identified for the following environmental resources in the 1998 LUTE EIR: air quality (regional emissions, roadway emissions Downtown); noise (construction noise and vibration in Downtown); public services (fire safety); transportation/circulation (roadway segment operations); wind hazards, and policy consistency (clean air plan). Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's certification of the 1998 LUTE EIR.

### 3.2.3 Central District Urban Renewal Plan Amendments EIR (2011 Renewal Plan Amendments EIR)

The project site is located within the Central District Urban Renewal Plan area, which generally encompasses the entire Downtown: approximately 250 city blocks (828 acres) in an area generally bounded by Interstate 980 (I-980), Lake Merritt, 27th Street and Embarcadero West. The City Council adopted the Central District Urban Renewal Plan (Renewal Plan) for the Project Area in June 1969. The City prepared and certified an EIR for proposed amendments to the Renewal Plan in 2011, and amended or supplemented the Plan up to April 3, 2012.[4] The 2011 Renewal Plan Amendments EIR was designated a "Program EIR" under CEQA Guidelines Section 15180; as such, subsequent activities are subject to requirements set forth in CEQA Section 15168.

Applicable mitigation measures and standard conditions of approval (described in Sections 3.2.4 through 3.2.6) identified in the 2011 Renewal Plan Amendments EIR are considered in the analysis in this document and are also largely the same as those identified in the other EIRs described in this Section 3.2.

#### *Environmental Effects Summary – 2011 Renewal Plan Amendments EIR*

The 2011 Renewal Plan Amendments EIR determined that development facilitated by the Proposed Amendments would result in the following impacts **that would be reduced to a less-than-significant level with the implementation of identified mitigation measures and/or standard conditions of approval** (described in Sections 3.2.4 through 3.2.6): aesthetics (light/glare only); air quality (except as noted below as less than significant and significant); biological resources (except no impacts regarding wetlands or conservation plans); cultural resources (except as noted below as significant); geology and soils; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality (stormwater and 100-year flooding only); noise (exceeding standards – construction and operations only); traffic/circulation (safety and transit only); utilities and service systems (stormwater and solid waste only).

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

**Less-than-significant impacts** were identified for the following resources in the 2011 Renewal Plan Amendments EIR: aesthetics (except as noted above as less than significant with standard conditions of approval); air quality (clean air plan consistency); hydrology and water quality (except as noted above as less than significant with standard conditions of approval); land use and planning; population and housing; noise (roadway noise only); public services and recreation; traffic/circulation (air traffic and emergency access); and utilities and service systems (except as noted above as less than significant with standard conditions of approval).

**No impacts** were identified for agricultural or forestry resources, and mineral resources.

The 2011 Renewal Plan Amendments EIR determined that the Proposed Amendments combined with cumulative development would have **significant unavoidable impacts** on the following environmental resources: air quality (toxic air contaminant exposure and odors); cultural resources (historic); and traffic/circulation (roadway segment operations).[5] Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's certification of the 2011 Renewal Plan Amendments EIR.

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

The CEQA Checklist provided in Section 7 of this document evaluates the potential project-specific environmental effects of the Project, and evaluates whether such impacts were adequately covered by the BVDSP EIR (as well as the Prior EIRs described above) to allow the provisions afforded by Guidelines Sections 15183, 15162, 15164, and 15168 to apply. The analysis conducted incorporates by reference the information contained in each of the Previous CEQA Documents. The Project is legally required to incorporate and/or comply with the applicable requirements of the mitigation measures identified in the BVDSP 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.

### 3.2.5 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.[6] The City's SCAs are incorporated into new and changed projects as conditions of approval regardless of a project's environmental determination. The SCAs incorporate policies and standards from various adopted plans, policies, and ordinances (such as the Oakland Planning and Municipal Codes, Oakland Creek Protection Ordinance, Stormwater Water Management and Discharge Control Ordinance, Oakland Protected Trees Ordinance, Oakland Grading Regulations, National Pollutant Discharge Elimination System (NPDES) permit requirements, California Building Code and Uniform Fire Code, among others), which have been found to substantially mitigate

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

[6] A revised set of SCAs was recently published by the City of Oakland on November 5, 2018.

environmental effects. When a project is approved by the City, all 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.

### 3.2.6 SCA Application in this CEQA Checklist

Mitigation measures identified in the BVDSP EIR that would apply to the Project are listed in Attachment A to this document, which is incorporated by reference into this CEQA Checklist. In addition, SCAs identified in the BVDSP EIR, as updated, that would apply to the Project are listed in Attachment A to this document (see Section 3.2.5 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 BVDSP EIR, and the 2011 Renewal Plan Amendments EIR; the 1998 LUTE EIR was developed prior to the City's application of SCAs. As discussed specifically in Attachment A to this document, since certification of the BVDSP 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 BVDSP EIR that would apply to the Project are also identified in Attachment A to this document.

# 4. Purpose and Determination

## 4.1 Purpose

This environmental review document is intended to assist the City to determine the appropriate CEQA documentation for the Project—either a CEQA addendum / exemption or an EIR.[7] It does not address every applicable CEQA topic or significance threshold but focuses on those most pertinent to the City's assessment of whether an addendum and/or exemption (in particular, Community Plan Consistency and Program EIR exemptions) is suitable for the Project.

The analysis in this environmental review document supports determinations that the Project, as separate and independent bases, qualifies for (1) CEQA Guidelines Section 15164 (Addendum to an EIR or Negative Declaration), (2) CEQA Guidelines Section 15183 (Projects Consistent with a Community Plan or Zoning); and (3) streamlining and/or tiering provisions under CEQA Guidelines Section 15168 (Program EIRs) and 15180 (Redevelopment Projects), which provide that the 2011 Renewal Plan Amendments EIR can be used as a Program EIR.

## 4.2 Determination

The information presented in this environmental review document supports that the Project meets all requirements under CEQA Guidelines Section 15164, Section 15183, and 15168. As a result, no supplemental environmental review is required in accordance with Public Resources Code Section 21083.3 and Section 21166, and CEQA Guidelines Sections 15162 through 15164, as well as 15168.

[7] City staff considered and applied its discretion to dismiss the suitability of a Negative Declaration or Mitigated Negative Declaration for the Project.

# 5. Project Description

## 5.1 2424 Webster Project Site

### 5.1.1 Project Location

The 2424 Webster Office project site (project site) is at Webster Street, just east of Broadway on the block bounded by Webster, 26th, Valdez, and 24th Streets (see **Figure 1**). The project site is comprised of 0.56 acres at 2424 Webster Street. The site consists of three parcels with the following Assessor's Parcel Numbers: 008-0672-01900, 0080672-1800, and 008-0672-01401.

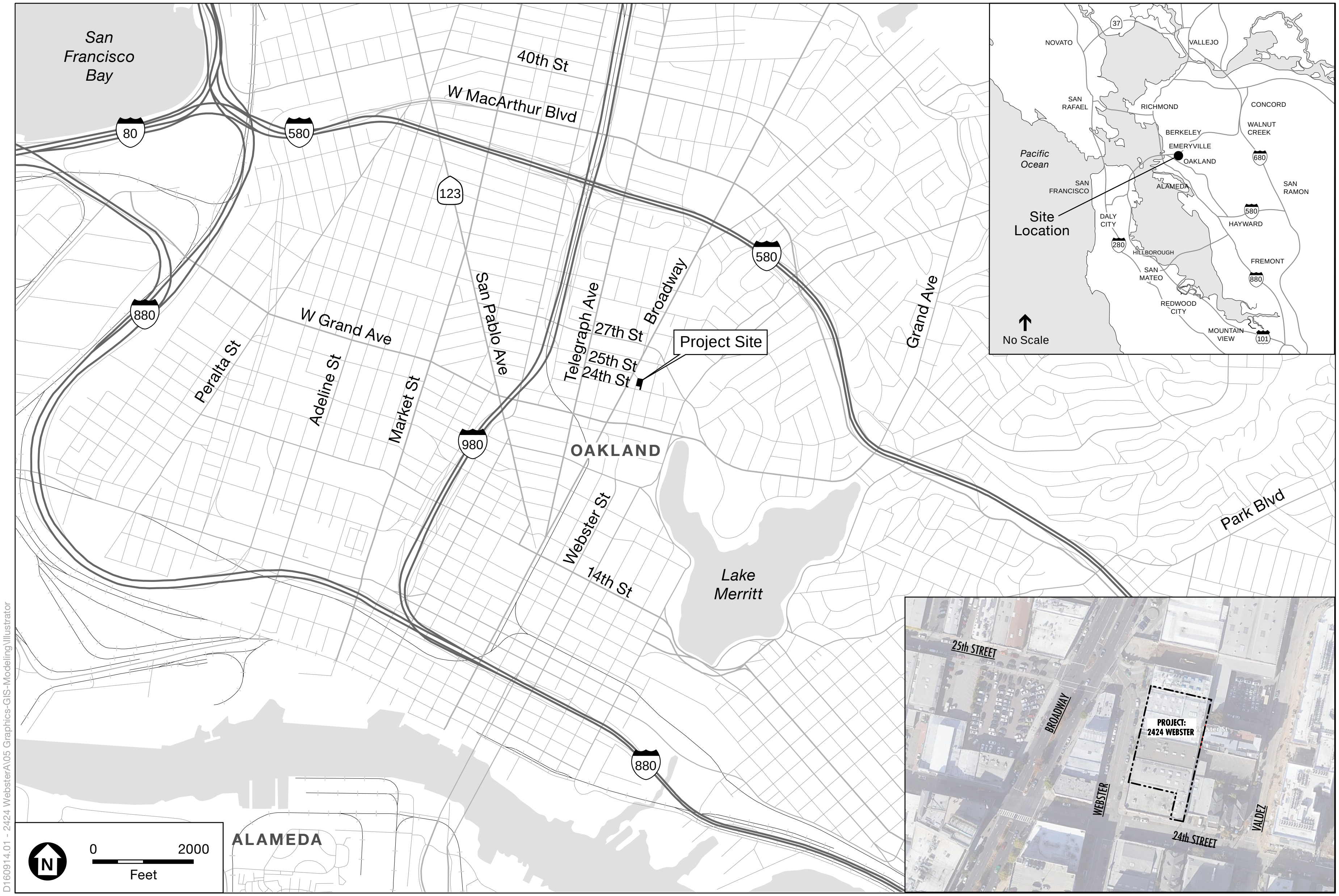
Immediately north of the project site is MUA Oakland Bar and Restaurant, and to the south is a Hertz Car Rental store. Webster Street is located on the western side of the project site, and the adjoining properties to the east contain surface parking, multi-family residential, and single-family residential land uses as well as some commercial land uses fronting 24th Street. The project's location with respect to adjacent properties is shown in **Figure 1** and **Figure 2**. The project site is located in Subdistrict 3 of the Valdez Triangle Subarea of the BVDSP Plan area, Retail Zone, Retail Priority Site 3C, and is northeast of Uptown Oakland and northwest of Lake Merritt.

The project site is accessible from Interstate 580, approximately 0.7-mile to the north, and Interstate 980/State Route 24, approximately 0.5 mile to the west. Multiple transit routes serve the project site, including Alameda-Contra Costa County Transit District (AC Transit) Routes 6, 51A, 651, 800, 851, and the Broadway Shuttle. The 19th Street Bay Area Rapid Transit District (BART) station is approximately 0.5-mile south of the site, and the MacArthur BART station is approximately 1.3 miles northwest of the site.

### 5.1.2 Existing Site Conditions and Surrounding Context

The 0.56-acre site is predominantly flat. The northern parcel is occupied by an approximately 12,500-square-foot single-story building, which is known by two addresses. Oakland Kia occupies the southwestern portion of the building at 2424 Webster Street, and a branch of Avis/Budget Car Rentals occupies the northern and eastern portion of the building at 2428 Webster Street. The middle parcel, 2410 Webster Street, is occupied by a 9,500-square-foot building formerly used by an electrical business and currently used as a construction management office. The southern parcel, 2406 Webster Street, is occupied by a 7,715-square-foot building containing a retail printing business and electrician. A wide curb cut located adjacent to the project site serves all businesses north of 25th Street and on the east side of Broadway, including the project site. There are two small street trees in front of the 2410 Webster Street parcel.

The project site is not located within an identified historic district nor does it contain an identified historic resource. Nearby local historic resources include the Pacific Kissel Kar Salesroom and Garage (one block south); the Packard Lofts and the Newsome Apartments (two blocks south); the First Presbyterian Church (one block north); and the Pacific Nash Co. Auto Sales and Garage and the Howard Automobile-Dahl Chevrolet Showroom (two blocks north).

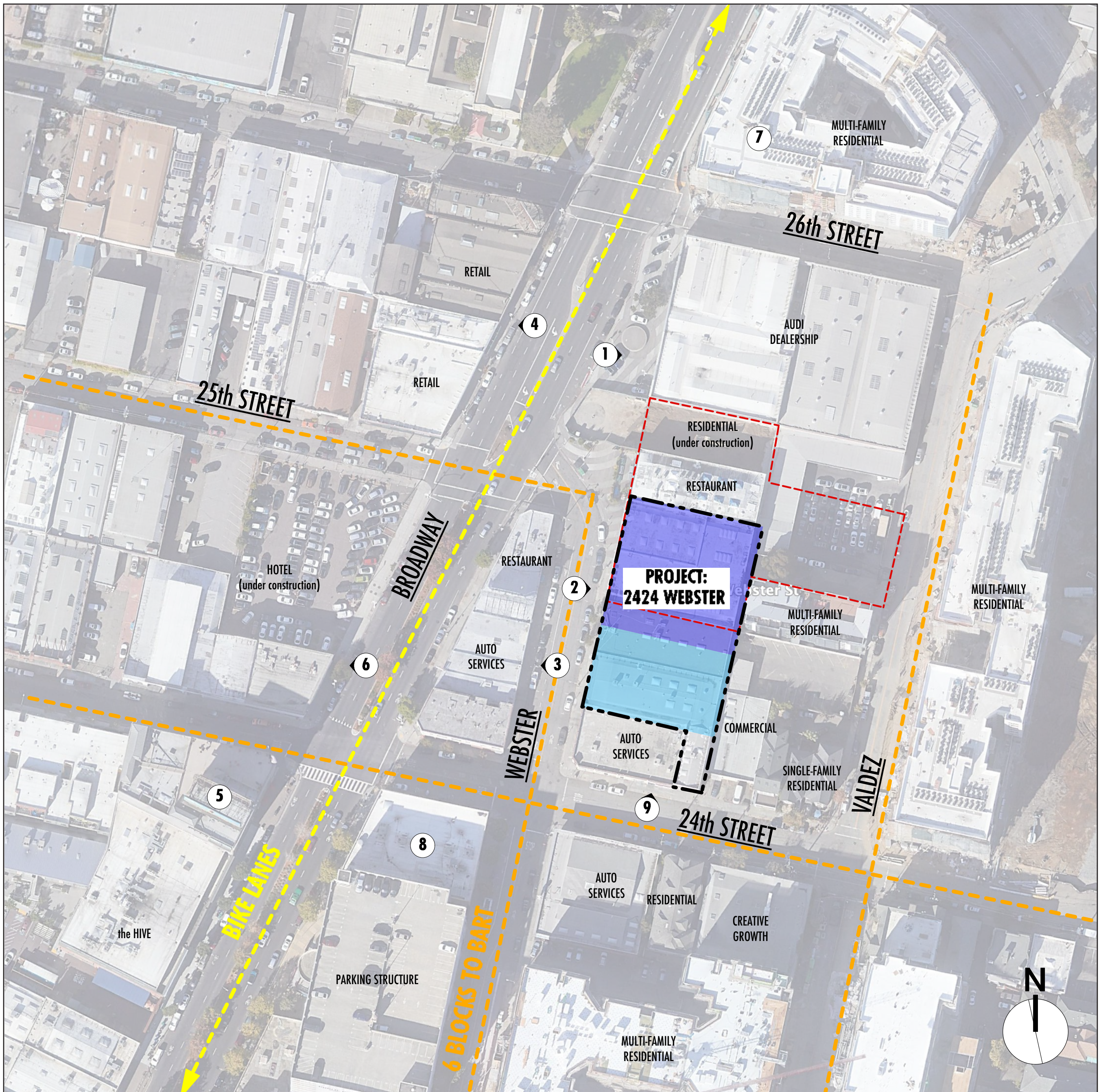



SOURCE: ESA, 2020

2424 Webster Street Project

**Figure 1**
Project Location

ESA




LEGEND

PROPOSED 85' HEIGHT

PROPOSED 191' HEIGHT

RETAIL PRIORITY SITE '3C' BOUNDARY

PROJECT PROPERTY LINE

PEDESTRIAN-ORIENTED CIRCULATION

BIKE LANES



SOURCE: Flynn Architecture, 2020; ESA, 2020



**Figure 2**
Site Context Plan

Existing uses in the project vicinity are primarily commercial (including auto dealerships/service centers, retail, restaurants, and entertainment) and multi-family residential. Existing uses to the north include a restaurant (MUA), auto dealerships, and a new multi-family residential building at 2500 Webster Street. Existing uses to the west include a nightclub (Au) at the intersection of Webster, Broadway and 25th Streets. Across Broadway, a three- to six-story multifamily residential and hotel building with ground floor commercial/retail uses is currently under construction. Along Broadway near the project site and along 25th Street to the west is a mix of small businesses that include God’s Gym, reastuarants, a coffee shop, and a pet hotel. Existing uses south along Webster Street include an auto rental business, with the rear of the Downtown Oakland YMCA (which fronts Broadway) one block south at 24th Street. To the east is a mix of residences, auto repair businesses and outdoor auto storage lots. As evidenced by the surrounding land uses, the area is transitioning from its auto-oriented service centers to a vibrant mixed-use community consisting of residential, office, and commercial uses.

The General Plan land use designation for the project site is Central Business District (CBD), within the BVDSP. The CBD classification is intended to encourage, support, and enhance the downtown area as a high-density, mixed-use urban center of regional importance, and a primary hub for business, communications, office, government, high technology, retail, entertainment, and transportation.

The project site is located within the boundaries of the Plan area, D-BV-1 (Retail Priority Sites Commercial Zone 1) and D-BV-2 (Retail Zone). The intent of the D-BV-1 zone is to ensure that larger sites and opportunity areas are reserved primarily for new, larger retail development to accommodate consumer goods retail, at least on the ground floor. Residential uses are conditionally permitted if retail is proposed. Retail Priority Sites are also well served by transit, have excellent vehicular access, and are in areas of good visibility. The intent of the D-BV-2 zone is to create, maintain, and enhance areas of the Plan area with ground-level retail, restaurants, entertainment, and art activities with pedestrian-oriented active storefront uses. Upper stories are intended to be available for office and residential uses.

## 5.2 Project Characteristics

The Project would demolish the existing buildings on the project site and would construct a 5-story and 12-story commercial building with a total floor area of approximately 161,572 square feet. The proposed building would have base height of 85 feet across the project site with a tower on the northern part of the site reaching a maximum height of 178 feet (elevator/roof stair/mechanical equipment will be screened from view and add another 14 feet to the overall height). This proposed height meets the permitted 85 feet in the D-BV-2 (Retail Zone) and exceeds the 45*-foot base height limit for D-BV-1 (Retail Priority Site Zone - Priority Site 3C). However, by the Project complying with the minimum retail square footage for the Priorty Site 3C, the height limit is increased to 200-feet within the portion zoned D-BV-1. Through the Design Review process, the 200-foot height limit within the D-BV-1 Zone may extend 30 feet into the adjacent D-BV-2 zoned portion of the site.

### 5.2.1 Project Components

The Project would include approximately 11,332-square feet of retail space on the ground floor and mezzanine that would be accessed at ground-level on Webster Street. Approximately 150,240 square feet of office uses would be constructed on levels 2 through 12, above the retail space. The office space would also be accessed on Webster Street though an approximately 2,665 square feet of lobby/service space on the ground floor.

The Project would provide 172 vehicle parking spaces (including six accessible parking spaces) on the ground floor and in a single basement level with access via a ramp on Webster Street. Access to 84 secure bicycle parking spaces on the first floor would be provided through the office lobby. Bicycle racks along the Webster Street frontage would accommodate 16 short-term bike stalls. The project characteristics are shown below in **Table 2**. The project site plan, typical floor plans, typical building section, and building renderings are shown in **Figures 3 through 7**.

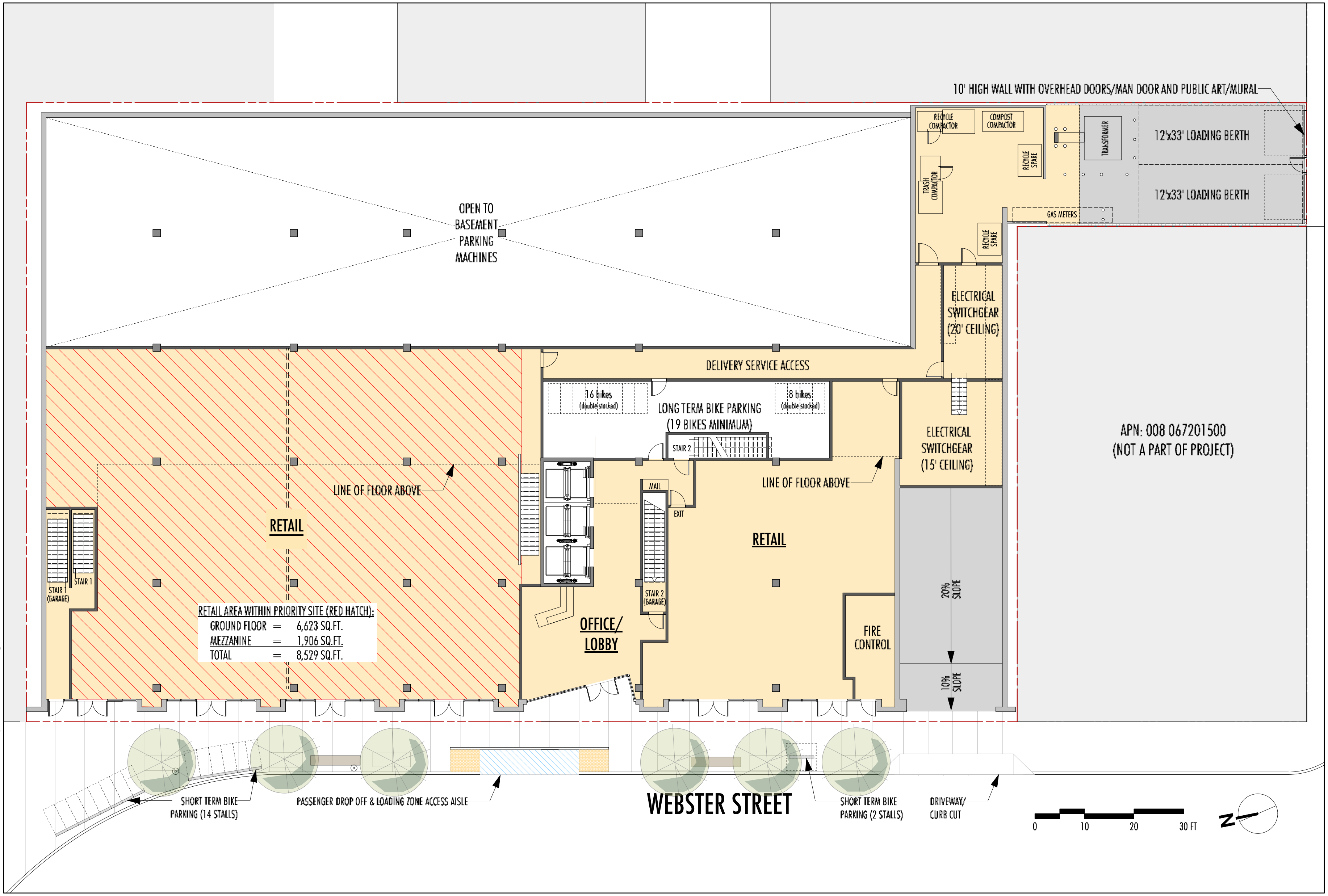
**TABLE 2**
**PROJECT CHARACTERISTICS**

| Lot | Dimensions |
|---|---|
| Size | 24,465 square feet (0.56 acres) |
| **Proposed Uses** | **Area (gsf)** |
| Commercial (Office) (incl. amenities, support, lobby) | 150,240 |
| Commercial (Retail) | 11,332 |
| | |
| **Total Uses** | **161,572** |
| **Proposed Parking** | **Number of Spaces** |
| Vehicle Parking Spaces | 172 |
| Bicycle Parking Spaces | 84 |
| **Open Space** | **Area (sf)** |
| Third Floor Roof Deck | 1,618 |
| Sixth Floor Roof Deck | 1,610 |
| Seventh Floor Roof Deck | 8,761 |
| **Total Open Space** | **11,989** |

SOURCE: Flynn Architecture, 2020.

### 5.2.2 Open Space

While not required by the Planning Code, the Project would provide approximately 11,989 square feet of private and shared open space on third- and seventh-floor roof decks; amenities would include paved roof decks with planters, furniture, and sunshades including unenclosed meeting and event spaces.



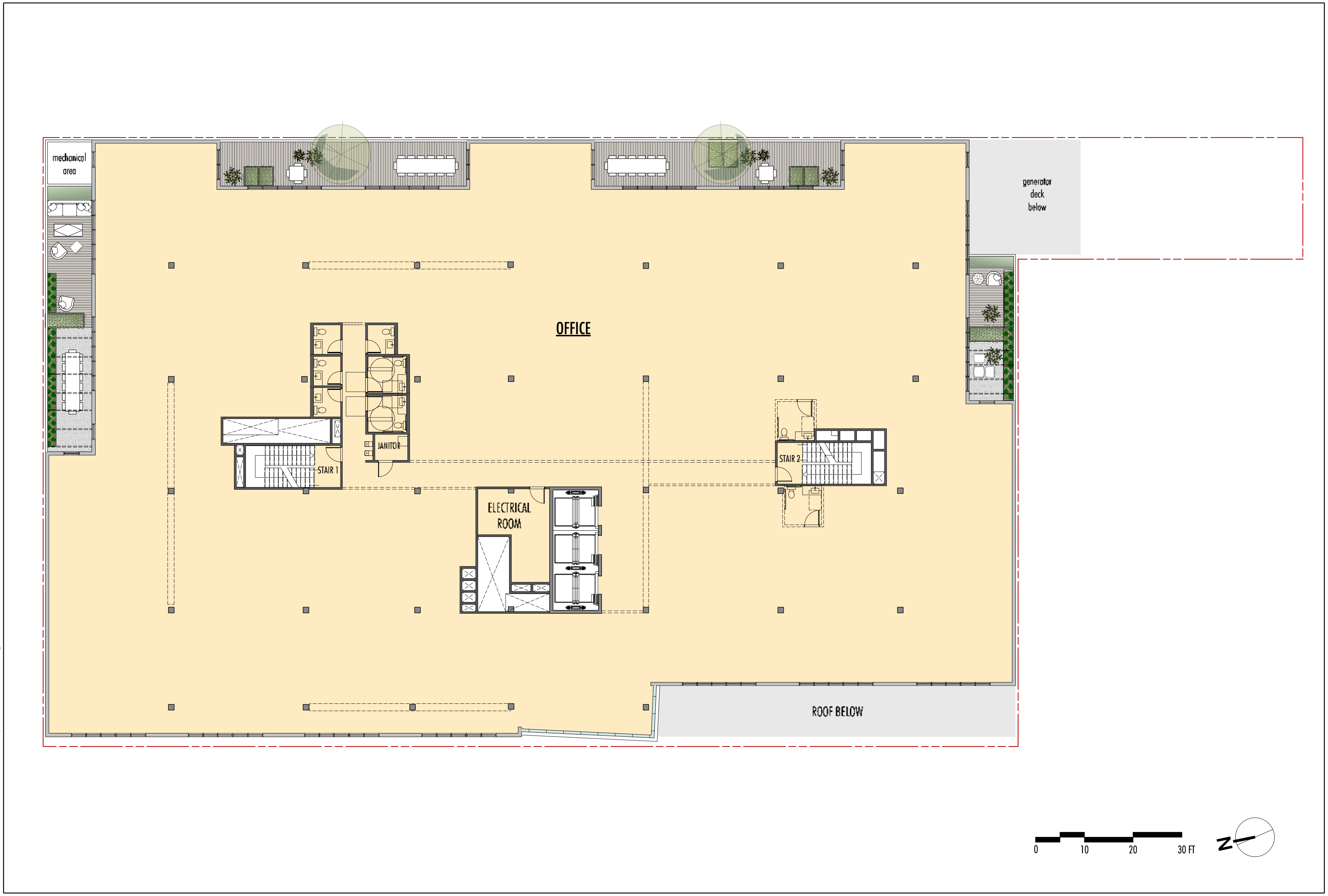

D160914.01 - 2424 Webster\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Flynn Architecture, 2020

2424 Webster Street Project

**Figure 3**
First Floor Plan

ESA



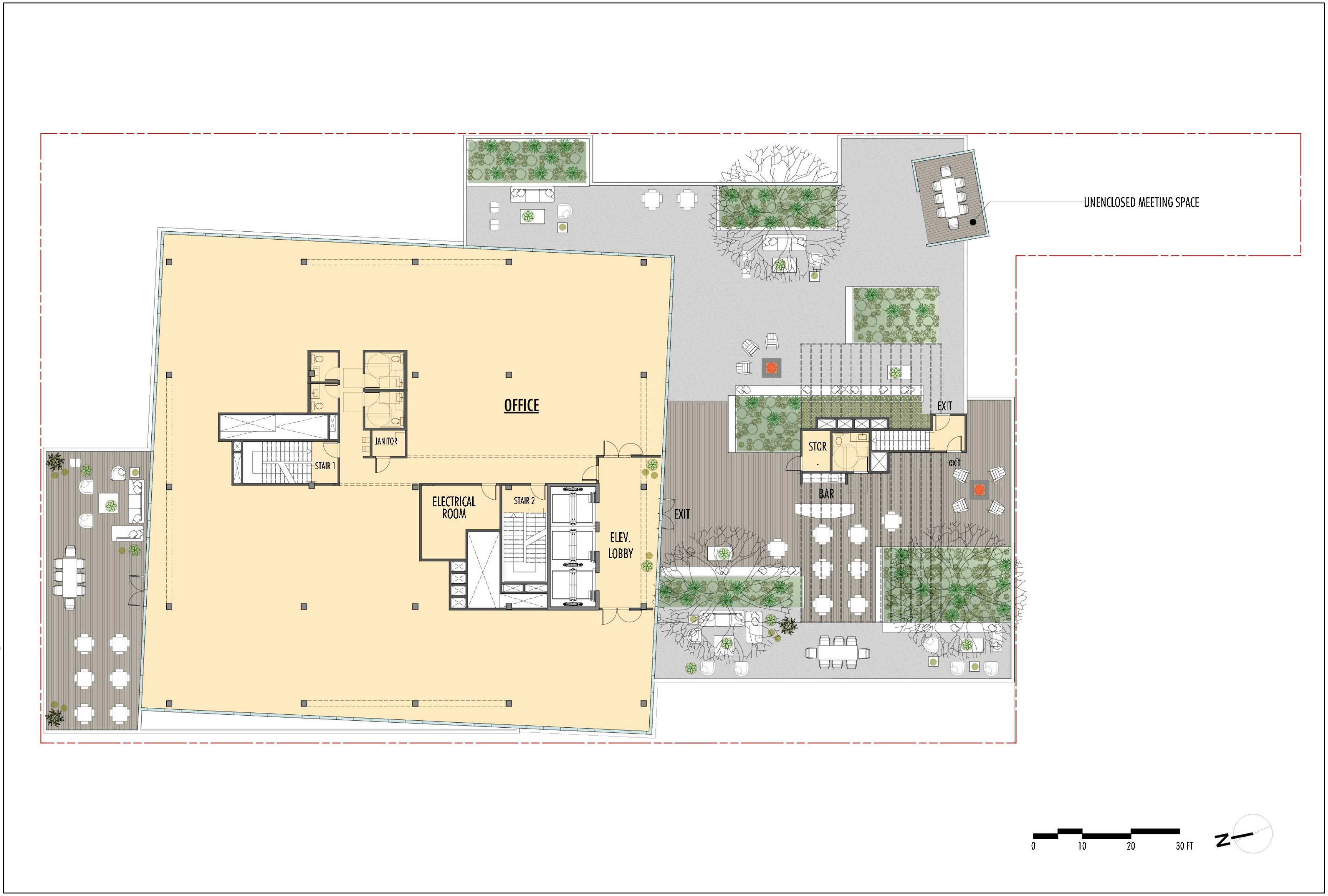

D160914.01 - 2424 WebsterA\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Flynn Architecture, 2020

2424 Webster Street Project

**Figure 4**
Second Floor Plan

ESA

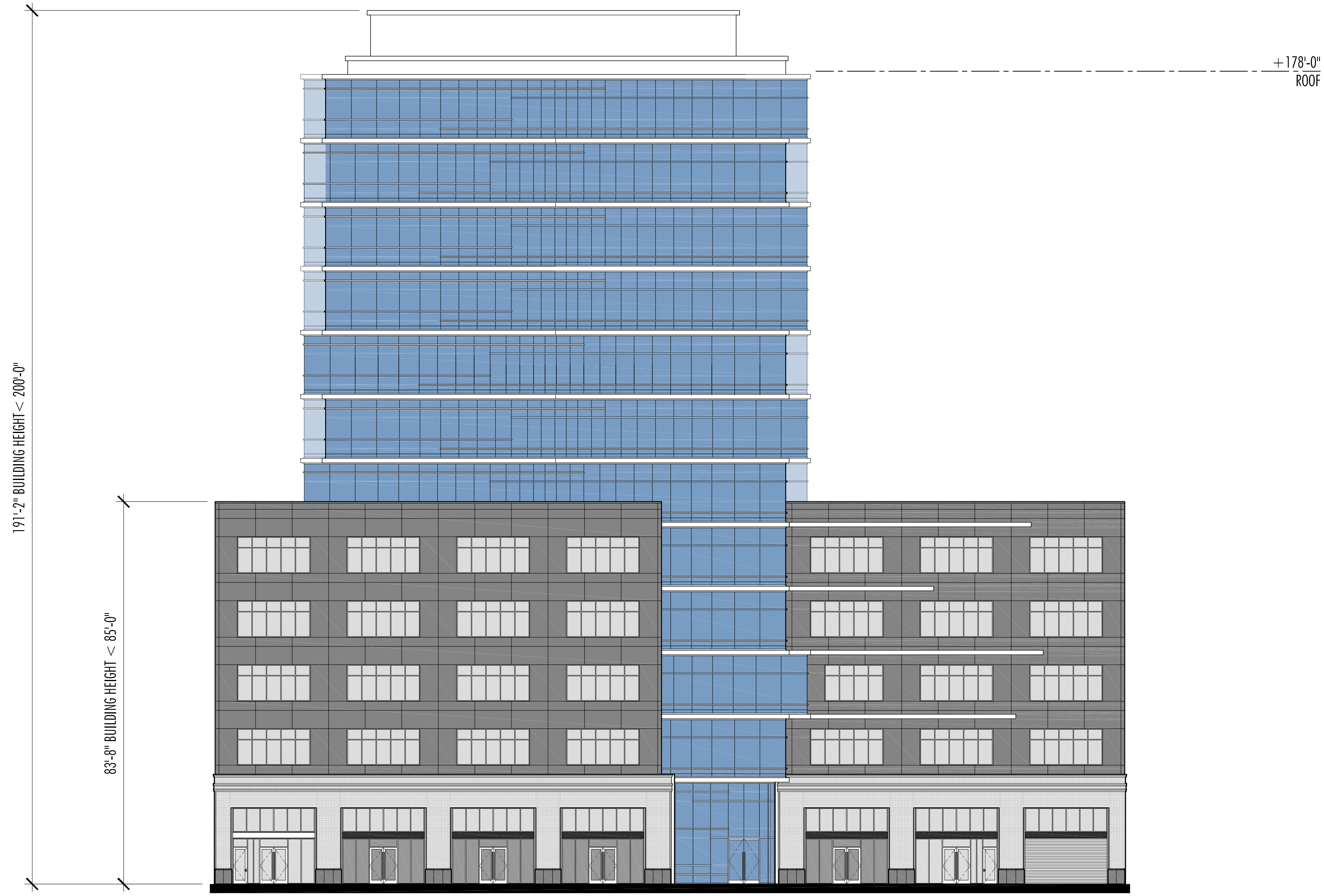





SOURCE: Flynn Architecture, 2020

2424 Webster Street Project

**Figure 5**
Sixth Floor Plan



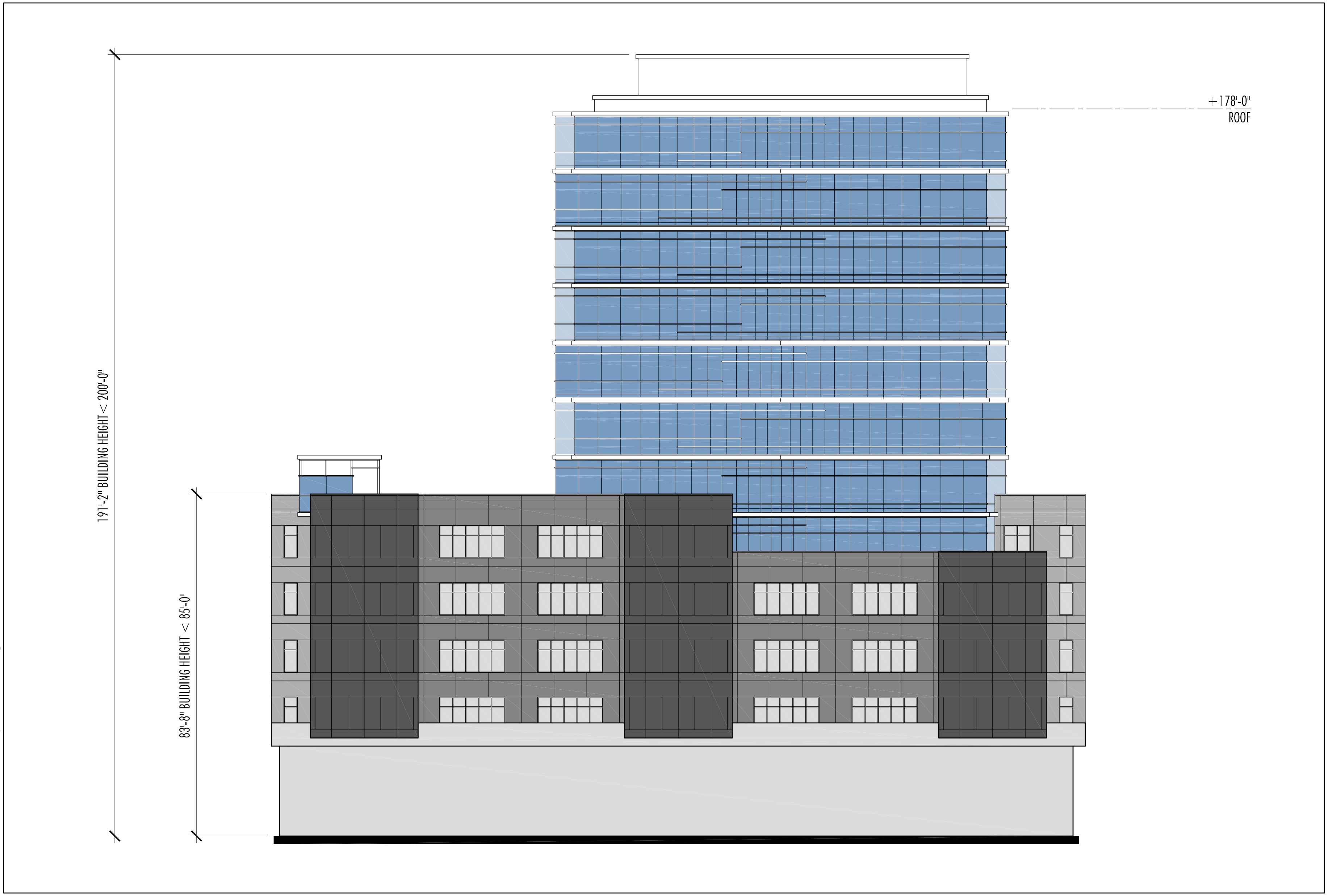



SOURCE: Flynn Architecture, 2020

2424 Webster Street Project

**Figure 6**
West Elevation

ESA






SOURCE: Flynn Architecture, 2020

2424 Webster Street Project

**Figure 7**
East Elevation

### 5.2.3 Streetscape Improvements

Because the proposed building fronts along the expanded sidewalk along Webster Street and is immediately adjacent to the auto plaza (a wide sidewalk and outdoor car display area), no streetscape improvements are proposed as a part of the project at this time. Bicycle racks would be provided along the Webster Street frontage to accommodate 16 bike stalls for short-term visitors and an additional six street trees would be installed.

### 5.2.4 Project Construction

Construction activities would consist of demolition of the existing buildings, excavation and shoring, foundation and below-grade construction, and construction of the building and finishing interiors. Project construction is expected to occur over approximately 22 months, with construction scheduled to commence in third quarter 2021, and be completed by early 2024.

The Project would excavate approximately 5,185 cubic yards of soil. The soil would be off-hauled from the site and no soils are anticipated to be imported to the site. Groundwater in the vicinity of the project site has been encountered between ten to 19 feet below ground surface (bgs) flowing to the east.[8] Grading activities are anticipated to potentially reach a depth of 22 feet; therefore, dewatering during construction may be required. The Project is anticipated to include reinforced concrete mat slab foundations approximately 40 inches deep (48 inches at the elevator core.

### 5.2.5 Sustainability and Efficiency

The Project classifies as a Large Non-Residential Project on the City's *Green Building Compliance Standards Table Beginning July 1, 2014*. The Project Applicant would comply with the Green Building ordinance and requirements, such as reduction in indoor and outdoor water use. The Project would optimize the efficiency of its building envelope and, through the use of efficient lighting and HVAC systems, it would reduce domestic energy use. The Project would meet or exceed the implemented Building Energy Efficiency Standards (LEED Silver for new office uses). The Project also would be required to comply with the City of Oakland Building Electrification Ordinance adopted December 1, 2020.

## 5.3 Project Approvals

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

### 5.3.1 Actions by the City of Oakland

- Bureau of Planning—Regular Design Review, CEQA determination, Tentative Parcel Map, Minor Variance for off-street loading berths.

[8] EKI, Inc., 2017. *Phase I Environmental Site Assessment and Results of Phase II Subsurface Investigation, 2424 Webster Street, Oakland, California*, February 22, 2017.

- Building Department—demolition permit, grading permit, on- and off-site work permits (e.g., public right-of-way improvements, and tie backs) as well as encroachment permits.

- Building Services Division—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).

### 5.3.2 Actions by Other Agencies

- Bay Area Air Quality Management District (BAAQMD) – Issuance of permits for asbestos abatement activities, if any.

- Regional Water Quality Control Board (RWQCB) – Acceptance of a Notice of Intent to obtain coverage under the General Construction Activity Storm Water Permit, and Notice of Termination after construction is complete.

- 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.

# 6. Summary of Findings

An evaluation of the Project is provided in the CEQA Checklist in Section 7 that follows. This evaluation concludes that the Project qualifies for an addendum as well as an exemption from additional environmental review. It is consistent with the development density and land use characteristics established by the City of Oakland General Plan, and any potential environmental impacts associated with its development were adequately analyzed and covered by the analysis in the BVDSP EIR, and in the Prior EIRs.

The Project would be required to comply with the applicable mitigation measures and City of Oakland SCAs identified in the BVDSP EIR and presented in Attachment A to this document. With implementation of the applicable mitigation measures and SCAs, the Project would not result in a substantial increase in the severity of previously identified significant impacts in the BVDSP EIR, the applicable Prior EIRs, or result in any new significant impacts that were not previously identified in any of those Prior EIRs.

In accordance with California Public Resources Code Sections 21083.3, and 21166; and CEQA Guidelines Sections 15162, 15164, 15168, and 15183, and as set forth in the CEQA Checklist below, the Project qualifies for an addendum and one or more exemptions because the following findings can be made:

- **Addendum.** The BVDSP EIR analyzed the impacts of development within the BVDSP. The Project would not result in substantial changes or involve new information not already analyzed in the BVDSP EIR because the level of development now proposed for the site is within the broader development assumptions analyzed in the BVDSP EIR. The Project would not cause new significant impacts not previously identified in the BVDSP EIR, or result in a substantial increase in the severity of previously identified significant impacts. No new mitigation measures would be necessary to reduce significant impacts. No changes have occurred with respect to circumstances surrounding the BVDSP that would cause significant environmental impacts to which the Project would contribute considerably, and no new information has been put forward that shows that the Project would cause significant environmental impacts. Therefore, no supplemental environmental review is required in accordance with Public Resources Code Section 21166, and CEQA Guidelines Sections 15162 through 15164.

- **Community Plan Exemption.** The Project would not result in significant impacts that (1) are peculiar to the Project or project site; (2) were not previously identified as significant Project-level, cumulative, or offsite effects in the BVDSP EIR, or in the applicable Prior EIRs; or (3) were previously identified as significant effects, but—as a result of substantial new information not known at the time the BVDSP EIR was prepared, or when the Prior EIRs were certified—would increase in severity beyond that described in those EIRs. Therefore, the Project would meet the criteria to be exempt from further environmental review in accordance with Public Resources Code Section 21083.3 and CEQA Guidelines Section 15183.

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

Overall, based on an examination of the analysis, findings, and conclusions of the BVDSP EIR, as well as those of the 1998 LUTE EIR, and the 2011 Renewal Plan Amendments EIR—all of which are summarized in the CEQA Checklist in Section 7 of this document—the potential environmental impacts associated with the Project have been adequately analyzed and covered in the BVDSP EIR and other Previous CEQA Documents. Therefore, no further review or analysis under CEQA is required.

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

______________________________________ ______________

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

# 7. CEQA Checklist

## 7.1 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 BVDSP EIR, as well as the Prior EIRs that covered the environmental effects of various projects encompassing the project site and that are still applicable for the Project. The Prior EIRs are referred collectively throughout this CEQA Checklist as the “Previous CEQA Documents” or “Prior EIRs” and include the 1998 LUTE EIR and the 2011 Renewal Plan Amendments EIR. Given the timespan between the preparations of these EIRs, 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 each are largely the same; any significant differences are noted.

Several SCAs would apply to the Project because of the Project’s characteristics. All SCAs identified in the BVDSP EIR that would apply to the Project are listed in Attachment A to this document, which is incorporated by reference into this CEQA Checklist. Because the SCAs are mandatory City requirements, the impact analysis for the Project assumes that they will be imposed and implemented, which the Project Applicant has agreed to do or ensure as part of the Project. If this CEQA Checklist or its attachments inaccurately identifies or fails to list a mitigation measure or SCA, the applicability of that mitigation measure or SCA to the Project is not affected.

Most of the SCAs that are identified for the Project were also identified in the BVDSP EIR and the 2011 Renewal Plan Amendments EIR; the 1998 LUTE EIR was developed prior to the City’s application of SCAs. As discussed specifically in Attachment A to this document, since certification of the BVDSP 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 BVDSP 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 BVDSP EIR and the Previous CEQA Documents. This CEQA Checklist provides a determination of whether the Project would result in:

- Equal or Less Severity of Impact Previously Identified in the Previous CEQA Documents or BVDSP EIR;
- Substantial Increase in Severity of Previously Identified Significant Impact in the Previous CEQA Documents or BVDSP 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 BVDSP EIR and the Previous CEQA Documents, the checkbox for “Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents” is checked.

Were the checkbox for “Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents” 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 previous 1998 LUTE EIR, 2011 Renewal Plan Amendments EIR, or BVDSP EIR (per CEQA Guidelines Section 15183), including offsite and cumulative impacts (per CEQA Guidelines Section 15183);
- Due to substantial changes in the Project (per CEQA Guidelines Section 15162 and 15168);
- Due to substantial changes in circumstances under which the Project will be undertaken (per CEQA Guidelines Sections 15162 and 15168); and/or
- Due to substantial new information not known at the time the Previous CEQA Documents were 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 D) that specifically describe how the Project meets the criteria and standards specified in the CEQA Guidelines Sections 15162 through 15164, and 15168.

# 7.2 Aesthetics, Shadow, and Wind

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

Since certification of the Previous CEQA Documents and BVDSP EIR, 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."[9] 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:

9 CEQA Section 21099(d)(1).

- The project is in a transit priority area.[10]
- The project is on an infill site.[11]
- The project is residential, mixed-use residential, or an employment center.[12]

The Project meets all three of the above criteria because the Project (1) is in a transit priority area, and is situated approximately 0.45-mile north of the 19th Street BART Station; (2) is on an infill site that has been previously developed within an urban area of Oakland; and (3) is an employment center project that includes office and retail uses to be developed in a commercial building. Thus, this document does not consider aesthetics, including the aesthetic impacts of light and glare, in determining the significance of Project impacts under CEQA.[13] Nevertheless, the City recognizes that the public and decision makers may be interested in information about the aesthetic effects of a proposed project; therefore, the information contained in this section related to aesthetics, light, and glare is provided solely for informational purposes, and is not used to determine the significance of environmental impacts pursuant to CEQA.

## 7.2.1 Previous CEQA Documents Findings

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

## 7.2.2 BVDSP EIR Findings

### *Scenic Vistas, Scenic Resources, and Visual Character (Criterion 7.2a)*

The BVDSP EIR determined that potential impacts to scenic vistas and resources, visual character, and lighting and glare from development under the BVDSP would be less than significant with implementation of SCAs, and that no mitigation measures were necessary. The Physical Height Model analyzed in the BVDSP EIR represents the conceptual massing for projects to be developed under the BVDSP, and served as the basis for massing, view corridor, shadow, and wind analysis

[10] 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.

[11] 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.

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

[13] 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.

performed in the BVDSP EIR.[14] The BVDSP EIR found that new structures would partially obstruct views of the sky, but that such changes would not represent a substantial adverse effect on views, because no views considered scenic or unique (as defined by CEQA) and no visual access to protected scenic resources (as defined by the General Plan) would be obstructed. Changes anticipated under the BVDSP would generally create a more pedestrian-oriented aesthetic in the Plan area, and the Design Guidelines would ensure that development under the BVDSP would be compatible with the existing built form and architectural character of the Plan area as a whole, and compatible with the distinctive visual character of individual areas. Development in the Plan area will be required to comply with SCAs related to landscaping, street frontages, landscape maintenance, utility undergrounding, public right-of-way improvements, and lighting plans.

### *Shadow (Criteria 7.2b through 7.2d)*

The BVDSP EIR determined that development under the BVDSP would result in less-than-significant impacts from shading, with the exception of potential shading on Temple Sinai, which is considered a historical resource. Temple Sinai is at 356 28th Street near the intersection with Webster Street. Under the BVDSP EIR, Mitigation Measure AES-4: Shadow Analysis, applies to the area bounded by Webster Street, 29th Street, Broadway, and 28th Street to reduce shadow impacts. Even with implementation of Mitigation Measure AES-4, the BVDSP EIR conservatively determined that impacts may remain significant and unavoidable. Development outside this area under the BVDSP was determined to result in less-than-significant shadow impacts. To address potential cumulative impacts, under the BVDSP EIR, Mitigation Measure AES-6, which requires implementation of Mitigation Measures AES-4 and AES-5, applies to projects bounded by the streets listed above to address significant cumulative aesthetics and wind impacts. The BVDSP EIR conservatively concluded that, even with implementation of Mitigation Measure AES-6, cumulative shadow impacts may remain significant and unavoidable for some projects.

### *Wind (Criterion 7.2e)*

The BVDSP EIR determined that development under the BVDSP that has a height of 100 feet or greater, and is in the portion of the Plan area designated as Central Business District (which extends north from downtown to 27th Street), could result in adverse wind conditions. Under the BVDSP EIR, Mitigation Measure AES-5: Wind Analysis, applies to those projects in the Central Business District that are over 100 feet in height. Even with implementation of Mitigation Measure AES-5, the BVDSP EIR conservatively determined that impacts may remain significant and unavoidable. To address potential cumulative impacts, under the BVDSP EIR, Mitigation Measure AES-6, which requires implementation of Mitigation Measures AES-4 and AES-5, applies to those same projects and addresses significant cumulative wind and aesthetics impacts.

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[14] The Broadway Valdez Development Program represents the maximum feasible development that the City has projected can reasonably be expected to occur in the Plan area over the next 25 years, and is therefore the level of development envisioned by the BVDSP and analyzed in the BVDSP EIR. The Broadway Valdez Development Program, together with the BVDSP height limits, maximum base heights, and step-back requirements inform the Physical Height Model, which provides the basis for analysis in the BVDSP EIR.

## 7.2.3 Project Analysis

### *Scenic Vistas, Scenic Resources, and Visual Character (Criterion 7.2a)*

Consistent with the findings of the BVDSP EIR, the Project's potential impacts to scenic vistas, scenic resources, visual character, and light and glare would be less than significant with implementation of the SCAs, as the Project is consistent with the BVDSP EIR.

Pursuant to the Design Guidelines, development within the Plan area should contribute to the creation of a coherent, well-defined and active public realm that supports pedestrian activity and social interaction, and to the creation of a well-organized and functional private realm that supports the needs of tenant businesses. The Project requires design review approval, pursuant to Section 17.101C.020 of the City's Planning Code. The design review process will ensure the Project is consistent with the BVDSP standards and guidelines related to aesthetics, compatible with the existing built form and architectural character of the Plan area as a whole, and compatible with the distinctive visual character of individual areas.

Development of the Project also would be required to comply with 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 Plans, 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 and SCA AES-4, Lighting, would ensure new exterior lighting is properly shielded. SCA AES-5, Public Art for Private Development, would require a public art contribution of one percent of the building development costs in accordance with City of Oakland Ordinance No. 13275 C.M.S. Together, these SCAs would protect the visual character of the project site and BVDSP Area. Therefore, the visual impacts of the Project would be less than significant.

### *Shadow (Criteria 7.2b through 7.2d)*

The project site is outside of the area identified in the BVDSP EIR as having potential shading impacts on Temple Sinai and therefore, BVDSP EIR Mitigation Measure AES-4 would not apply. While the height of the Project (a maximum height of up to 191 feet including mechanical equipment screen) would be above the 45-foot height analyzed in the Physical Height Model for portions of this site, a close review of the BVDSP EIR shadow diagrams (BVDSP EIR figures 4.1-5 through 4.1-16) shows the shadow modeled from the project site would not approach public open spaces, solar collectors, or historic resources. Parcels south of the project site at 23$^{rd}$ and Webster were modeled at 200-feet tall in the BVDSP EIR shadow analysis (see BVDSP EIR Figure 3-11). Using modeled shadow from these parcels as a guide, it is clear Project shadow would not extend to the solar facilities identified in the City's inventory within the Plan area vicinity including solar collectors closest to the project site at 411 28th Street. Further, Project shadow would not approach Mosswood Park, Glen Oak Park, Lake Merritt, or the public plaza on the northwest side of 27th and Broadway.

In terms of Historic Resources, the First Presbyterian Church is the closest shade sensitive resource. Conservatively assuming a 200-foot-tall structure on the project site, a close review of shadow extent and angle indicate shadows between 9 a.m. and noon on December 21st, when shadows are the longest, would fall short of this resource. Although the available information in the BVDSP EIR indicates the proposed 191-foot tall project building would not cast new shadow on the First Presbyterian Church, the BVDSP EIR concluded that potential the new shadow on this resource from Plan development would occur primarily in the winter months, with parcels casting new shadow on the eastern façade of the church building during the early morning hours and on the southern façade of the church building during late morning through afternoon hours. The church's stained glass windows are located along the northern façade and would not incur new shadow as a result of the adoption and development under the BVDSP. For this reason, the BVDSP EIR concluded no significant impact with respect to shading this historic resource would occur.

Overall, the extension of the Project shadow through an increase in height would not approach public open space, solar collectors, or historic resources. Therefore, the Project would not result in a project-specific impact nor contribute to a potential cumulative shading impact.

#### *Wind (Criterion 7.2e)*

A wind study is required for the Project because it would be greater than 100 feet in height, is located in Downtown, and is subject to BVDSP EIR Mitigation Measure AES-5. Wind engineering experts, RWDI, conducted a wind study for the Project to assess the wind environment around the project site under existing, existing plus project, and cumulative plus project conditions (see **Appendix A**). The analysis measured changes to the wind environment in terms of the criterion for wind hazards, as described in criterion 7.2e. The wind study prepared for the Project included 44 test locations in public areas surrounding the project site and the results are described below.

Wind speeds at all 44 locations would not exceed the significance threshold under existing, existing plus Project, and cumulative plus Project conditions. Compared with the existing conditions, the average wind speed is anticipated to increase slightly (from 20 mph to 24 mph) under the existing plus Project conditions, and decrease again with the addition of cumulative projects (to 23 mph). The Project would not contribute to any existing exceedances of the wind hazard criterion or result in new exceedances. As such, the Project would have a less than significant wind hazard impact and would not result in a new or more severe significant impact with respect to wind.

### 7.2.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and the Previous CEQA Documents, implementation of the Project would not substantially increase the severity of significant impacts identified in the BVDSP EIR or the Previous CEQA Documents, nor would it result in new significant impacts related to aesthetics, shadow, or wind that were not identified in the BVDSP EIR or the Previous CEQA Documents. **SCAs AES-1**, **Trash and Blight Removal**; **AES-2**, **Graffiti Control**; **AES-3**, **Landscape Plan**; **AES-4 Lighting**; **AES-5**, **Public Art for Private Development**; and **SCA UTIL-2**, **Underground Utilities** (see Attachment A) would be applicable to and would be implemented by the Project and would further ensure that aesthetics-related impacts would be less than significant. No mitigation measures are required.

# 7.3 Air Quality

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

## 7.3.1 Previous CEQA Documents Findings

### *Construction and Operational Emissions and Odors*

The 1998 LUTE EIR identified mitigation measures that would reduce operational emissions effects to less-than-significant levels, and it found significant and unavoidable cumulative effects regarding increased criteria pollutants from increased traffic regionally. The 2011 Renewal Plan Amendments EIR found that emissions associated with construction and operations resulting from increased criteria pollutants would result in less-than-significant effects with implementation of SCAs. The 2011 Renewal Plan Amendments EIR also identified effective SCAs to address potentially significant effects regarding dust/particulate matter, odors, and consistency with the applicable regional clean air plan.

### *Toxic Air Contaminants*

Quantitative analysis of Toxic Air Contaminants (TACs) was not prepared for the 1998 LUTE EIR, thus the EIR did not quantify or address cumulative health risks. The 2011 Renewal Plan Amendments EIR identified significant and unavoidable impacts regarding cumulative health risks after the consideration of SCAs.

## 7.3.2 BVDSP EIR Findings

### *Construction and Operational Emissions (Criterion 7.3a)*

The BVDSP EIR determined that construction activities associated with development of projects under the BVDSP would generate air emissions from the use of heavy construction equipment, vehicle trips hauling materials, construction workers traveling to and from the project sites, and application of architectural coatings, such as paints; and would result in significant impacts. Implementation of SCA related to construction air pollution controls (hereafter referred to as SCA AIR-1, Construction-Related Air Pollution Controls [Dust and Equipment Emissions]), along with BVDSP Recommended Mitigation Measure AIR-1, would reduce emissions from construction equipment, control fugitive dust, and reduce emissions from architectural coatings. However, even with implementation of the SCA AIR-1 and BVDSP Recommended Measure AIR-1, the EIR conservatively estimated construction emissions would exceed the Bay Area Air Quality Management District's (BAAQMD) daily significance thresholds for reactive organic gases (ROG), resulting in a significant and unavoidable impact.

The BVDSP EIR also determined operational activities associated with development in the Plan area would result in an increase in criteria air pollutant and precursor emissions from mobile on-road sources and on-site area sources, such as natural gas combustion for space and water heating and landscape maintenance, which would have a significant impact. Operational emissions of ROG, oxides of nitrogen (NOX), and particulate matter less than or equal to 10 microns in diameter ($PM_{10}$) would exceed significance thresholds. An SCA (hereafter referred to as SCA TRA-4, Transportation and Parking Demand Management Plan) that requires the implementation of Parking and Transportation Demand Management (TDM) would reduce vehicular trips and operational emissions. BVDSP Recommended Measure AIR-2 includes additional measures that should be considered for larger projects that would also reduce emissions of criteria air pollutants. Even with implementation of the SCA and BVDSP Recommended Measure AIR-2, the EIR concluded this impact would conservatively remain significant and unavoidable for emissions of ROG, $NO_X$, and $PM_{10}$.

### *Toxic Air Contaminants (Criterion 7.3b)*

The BVDSP EIR determined that development under the BVDSP could generate substantial levels of TACs, resulting in significant impacts from construction activities and project operations. Implementation of the City's SCA for construction-related air pollution controls would reduce health risks to sensitive receptors from temporary construction emissions of diesel particulate matter in accordance with recommendations from the BAAQMD's *CEQA Air Quality Guidelines*.[15] As described under SCA AIR-1, Construction-Related Air Pollution Controls [Dust and Equipment Emissions]), basic controls for construction emissions would be implemented for all projects, and enhanced controls would be implemented for projects that involve 114 or more single-family dwelling units, 240 or more multi-family units, nonresidential uses that exceed the applicable screening size listed in the BAAQMD's CEQA Guidelines, a demolition permit, simultaneous occurrence of more than two construction phases, extensive site preparation, or

[15] BAAQMD, 2012. *CEQA Air Quality Guidelines*. Updated May.

extensive soil transport. Even with implementation of the SCA for construction-related air pollution controls, the BVDSP EIR conservatively determined that impacts from TAC emissions during construction would remain significant and unavoidable.

The BVDSP EIR determined that new operational sources, such as backup diesel generators, could result in significant impacts on new and existing receptors. SCAs would reduce potential air quality impacts related to TACs by reducing operational source impacts on new and existing receptors, and requiring a Health Risk Assessment of surrounding off-site sources on new on-site sensitive receptors. The EIR also identified BVDSP Mitigation Measure AIR-4: *Risk Reduction Plan*, which would reduce the impacts associated with new operational sources on existing sensitive receptors. Even with the SCA and Mitigation Measure AIR-4, the EIR conservatively determined that these impacts would remain significant and unavoidable.

## 7.3.3 Project Analysis

The Project would result in the construction of 150,240 square feet of office space and 11,332 square feet of retail uses within Subdistrict 3 of the Valdez Triangle subarea of the BVDSP. As detailed in Section 5, *Project Description*, the Project's retail use would be well below the planned retail development envisioned for Valdez Triangle Subdistrict 3 in the BVDSP. The Project's office use would exceed the square footage identified in the Development Program for Subdistrict 3 but would be within the general office use square footage identified for the Plan area as a whole.

The BVDSP EIR allows for the distribution of density and development type between categories and sub-areas as long as such development conforms to the general traffic generation parameters established by the Plan. The Project conforms to the traffic generation parameters analyzed in the BVDSP EIR, as described below in Section 13, *Transportation and Circulation*; therefore, the BVDSP 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 parking and transportation demand and construction and operation source emissions. The Project's construction and operational impacts are detailed below.

### *Construction and Operational Emissions (Criterion 7.3a)*

#### 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 2016.3.2);
  - Construction is assumed to begin in third quarter 2021, and last for approximately 22 months. The durations of the various construction phases (e.g., demolition, grading, building construction) were provided by the Project Applicant;

  - The number and types of construction equipment used for each phase, their activity level as well as the number of on-road vehicle trips (worker, vendor and hauling trips) during each phase were also provided by the Project Applicant;

- Demolition of 25,000 square feet of existing structures on the Project site;
- Off-haul of 5,185 cubic yards of material; and
- All other inputs in CalEEMod were based on model defaults.

#### Analysis

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, $NO_X$, $PM_{10}$, or $PM_{2.5}$. These thresholds were developed to represent a cumulatively considerable contribution to regional air quality, and, as such, represent not only a project level threshold, but a cumulative threshold as well. As shown in Table AIR-1, the Project would have less-than-significant project-level impacts with respect to construction emissions. While the City does not have quantitative standards for fugitive dust emissions during construction, the Project would be required to implement SCA AIR-1, Basic Dust Controls – Construction-Related; SCA AIR-2, Criteria Air Pollutant Controls – Construction Related; and SCA AIR-3, Diesel Particulate Matter Controls – Construction Related, which would further reduce emissions from criteria air pollutants. Therefore, the Project would not result in a new or more severe significant impact compared with those identified in the BVDSP EIR.

**TABLE AIR-1**
**PROJECT CONSTRUCTION EMISSIONS (AVERAGE LBS PER DAY)[a]**

| Construction Year (phase) | ROG | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|
| **Project** | | | | |
| Average Daily Construction Exhaust Emissions | 4.0 | 6.4 | 0.3 | 0.3 |
| 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 2016.3.2. 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 B.

### Operational Air Emissions

#### Methodology and Assumptions

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

- The vehicle trip generation rates for existing conditions and the Project were obtained from the traffic analysis prepared for the Project and include a reduction of 46.9 percent based on the City of Oakland's *Transportation Impact Review Guidelines* for development in an urban environment within 0.5 miles of a BART station.[16]

- Default energy consumption rates in CalEEMod reflecting the 2016 update to Title 24, which became effective on January 1, 2017. The most recent 2019 update to the Title 24 standards went into effect on January 1, 2020, and would reduce energy consumption and associated Project emissions beyond those estimated by CalEEMod.
- All wastewater generated were assumed to be aerobically processed at the EBMUD plant. Septic and lagoons contributions were set to a zero percentage.
- One backup diesel generator was assumed pursuant to California Building Code Requirements for buildings in excess of 70 feet. Based on input from the Project Applicant, the generator was assumed to have a rating of 500 kW and was assumed to be operated for testing and maintenance purposes for 1 hour per test day and a maximum of 50 hours per year consistent with permitting requirements of the BAAQMD.
- All other inputs in CalEEMod were based on model defaults.

#### Analysis

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, NOx, $PM_{10}$, or $PM_{2.5}$. As with the construction thresholds, these thresholds were developed to represent a cumulatively considerable contribution to regional air quality and, as such, represent not only a project-level threshold, but a cumulative threshold as well. As shown in Table 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 BVDSP EIR.

## *Toxic Air Contaminants (Criterion 7.3b)*

### Assumptions and Methodology

Toxic Air Contaminants (TACs) are types of air pollutants that can cause health risks. TACs do not have ambient air quality standards, but are regulated using a risk-based approach. This approach uses a health risk assessment to determine what sources and pollutants to control as well as the degree of control. Such an assessment evaluates chronic, long-term effects, calculating the increased risk of cancer as a result of exposure to one or more TACs. TACs generated during Project construction and operation are evaluated below. The City's CEQA significance thresholds require that new projects containing sensitive receptors (such as residences, schools, etc.) also be evaluated to determine whether those receptors would be exposed to health risks from nearby sources of TACs. However, the Project does not propose uses that include sensitive receptors.

16 The Project's daily operational emissions were calculated based on an earlier version of the Project with slightly different retail and office square footages. The earlier version of the Project would result in approximately 560 net new daily trips rather than the 580 net new daily trips associated with the Project as described in this CEQA Addendum. The approximate four percent increase in daily trips would result in a negligible change to estimated operational emissions and would not change the less-than-significant impact.

**TABLE AIR-2**
**PROJECT EMISSIONS FROM OPERATION[a]**

| | ROG | $NO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|
| Area Source Emissions (lbs/day) | 3.8 | <0.01 | <0.01 | <0.01 |
| Energy Emissions (lbs/day) | 0.1 | 0.8 | 0.1 | 0.1 |
| Project Mobile Source Emissions[b] (lbs/day) | 1.4 | 2.6 | 2.5 | 0.7 |
| Backup Diesel Generator (lbs/day) | <0.1 | 0.4 | <0.1 | <0.1 |
| Average Daily Project Emissions (lbs/day) | 5.4 | 3.8 | 2.8 | 0.8 |
| Existing Emissions | 1.5 | 1.5 | 0.9 | 0.3 |
| **Net Increase in Average Daily Emissions (lbs/day)** | **3.9** | **2.3** | **1.6** | **0.5** |
| City of Oakland Thresholds | 54 | 54 | 82 | 54 |
| **Significant (Yes or No)?** | **No** | **No** | **No** | **No** |
| **Annual Emissions (tons/year)** | **0.7** | **0.4** | **0.3** | **0.1** |
| City of Oakland Thresholds | 10 | 10 | 15 | 10 |
| **Significant (Yes or No)?** | **No** | **No** | **No** | **No** |

NOTE: Totals may not add up due to rounding.

a Project operational emissions estimates were made using CalEEMod, version 2016.3.2.
b The vehicle trip rates used to calculate the emissions accounts for mode split and internal capture as recommended by the City of Oakland for projects located in dense, urban environments such as the Project site.

SOURCE: Appendix B.

## Analysis

### Construction TAC Emissions

Project construction activities would produce TACs primarily as 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 nearby receptors. Exposure of receptors in the vicinity of the project site to these elevated concentrations could lead to an increase in cancer risk or other health impacts.

The Project's construction-related activities over the 22-month construction period would result in the generation of DPM from on-road heavy-duty trucks and off-road equipment. Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations.

Regarding construction TACs emissions, BAAQMD recommends that a Health Risk Assessment (HRA) be conducted when sensitive receptors are located within 1,000 feet of project construction activities.[17] Closest sensitive receptors to the Project site are the receptors at the Nook at Valdez Apartments located adjacent to the eastern boundary of the Project site. Scattered single-family residences are also located along 24th Street to the southeast of the project site. Several multi-family

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

residential uses exist in the vicinity of the Project site including 2500 Webster north of the Project site, a three- to six-story multifamily residential and hotel building across Broadway (anticipated to be completed in 2021), and along Valdez Street to the east and southeast of the Project site. The Westlake Middle School and the Smalltrans Depot Daycare Center are the closest school and daycare center to the Project site and are located approximately 650 and 800 feet to the northeast and south, respectively. Consequently, an HRA was conducted to determine the level of risk generated by construction-related TACs at nearby residential, school and daycare 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 B**.

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,*[18] 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 Nook on Valdez Apartments located adjacent to the eastern boundary 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. Risks were also assessed at the nearest school and daycare receptors.

**Table AIR-3** shows that the cancer risk, chronic Hazard Index (HI), and $PM_{2.5}$ concentrations at the MEIR from Project-related construction activities as well as at the nearest school and daycare receptors. As shown in Table AIR-3, uncontrolled risks would exceed the City's threshold for cancer risk at the nearest residential receptor. 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, and are expected to reduce emissions by approximately 85 percent.[19] As required by SCA AIR-3b, a Construction Emissions Minimization Plan including this DPM reduction measure would be submitted to the City for review and approval prior to the issuance of building permits. The Construction Emissions Minimization Plan would also include a detailed equipment inventory of the types of off-road equipment required for each phase of construction and 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.

Table AIR-3 shows that with the use of Tier 4 Final controls, health risk at the MEIRs would be less than the City's significance thresholds. Therefore, with the implementation of SCA AIR-3a(i) and AIR-3b, health risks from Project construction to nearby residential, school, and daycare receptors would not exceed the City's CEQA significance thresholds. The potential impact of the

[18] OEHHA, 2015. Air Toxics Hotspots Program – Risk Assessment Guidelines, February 2015.
[19] http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm

Project regarding exposure of existing receptors to construction related health risks would be less than significant and no additional reduction measures would be required.

**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** | | | |
| Residential Receptor - Infant | **85.3** | 0.09 | 0.18 |
| School Receptor - Child | 0.05 | <0.01 | <0.01 |
| Daycare Receptor - Child | 0.1 | <0.01 | <0.01 |
| **Project-level Threshold** | 10 | 1.0 | 0.3 |
| **With Tier 4 Final Construction Equipment** | | | |
| Residential Receptor - Infant | 5.5 | 0.005 | 0.01 |
| School Receptor - Child | <0.01 | <0.01 | <0.01 |
| Daycare Receptor - Child | 0.01 | <0.01 | <0.01 |
| **Project-level Threshold** | 10 | 1.0 | 0.3 |
| **Significant?** | No | No | No |

SOURCE: Appendix B.

The Project would include demolition of existing structures on the site totaling an area of approximately 25,000 square feet. The existing structures may contain Asbestos Containing Materials (ACM) which could pose a health risk to workers and nearby receptors during demolition. Consistent with SCA AIR-5, the Project would comply with all applicable laws and regulations regarding demolition and renovation of ACM.

### Operational TAC Emissions

A 500 kW backup diesel emergency generator is proposed as part of the Project to comply with the California Building Code requirement for elevator safety in all buildings in excess of 70 feet in height. Installation and operation of the back-up diesel generator would require a permit and an Authority to Construct from the BAAQMD, which would involve an evaluation of emissions based on size and require Best Available Control Technology, if warranted. A site-specific HRA would be conducted as part of the BAAQMD's permitting process and the BAAQMD would deny an Authority to Construct or a Permit to Operate for any new or modified source of TACs that exceeds a cancer risk of 10 in one million or a chronic or acute hazard index of 1.0. This would be consistent with the requirements of SCA AIR-4, Stationary Sources of Air Pollution (Toxic Air Contaminants) and therefore, operation of the emergency generator would result in a less than significant impact.

### Cumulative TAC Impact

In addition to a Project's individual TAC impacts during construction and operation, the BAAQMD recommends evaluating the potential cumulative health risks to sensitive receptors from existing and reasonably foreseeable future sources of TACs. The BAAQMD's CEQA Air Quality

Guidelines include standards and methods for determining the significance of cumulative health risk impacts. The method for determining cumulative health risk requires the tallying of health risk from permitted stationary sources, major roadways, and any other identified substantial sources of TACs in the vicinity of a project site (i.e., within a 1,000-foot radius) and then adding the individual sources to determine whether the BAAQMD's cumulative health risk thresholds are exceeded. As the Project does not include sensitive receptors, a cumulative screening analysis was conducted for the residential MEIR identified under the operational analysis above. Health risks from permitted stationary sources within 1,000 feet of the MEIR were obtained from BAAQMD's Stationary Sources Risk and Hazards web tool supplemented with details from the BAAQMD in response to the Stationary Source Inquiry Form submitted for the Project. Health risks from major roadways within 1,000 feet of the MEIR were also included. Further, future sources, primarily emergency generators, proposed as part of projects within 1,000 feet of the MEIR were also considered. **Table AIR-4** shows the cumulative health risks to the residential MEIR from the various sources. The screening analysis shows that health risks to the receptors in the Project vicinity would be less than the City's cumulative thresholds and hence, less than significant.

#### Impact to Project Receptors

The Project would not include sensitive receptors and thus the cumulative TAC impact on Project receptors would be less than significant.

### 7.3.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and the Previous CEQA Documents considered throughout this analysis, implementation of the Project would not substantially increase the severity of significant impacts identified in the BVDSP EIR or the Previous CEQA Documents, nor would it result in new significant impacts related to air quality that were not identified in the BVDSP EIR or the Previous CEQA Documents**.** Based on the analysis, with implementation of the applicable SCAs, the Project would not exceed any of the City's applicable significance thresholds related to air quality. Therefore, Project construction and operation would result in less-than-significant impacts relating to air quality, including health risk. **SCA AIR-1**, **Dust Controls – Construction-Related**; **SCA AIR-2**, **Criteria Air Pollutant Controls - Construction Related**; **SCA AIR-3**, **Diesel Particulate Matter Controls-Construction Related**; **SCA AIR-4**, **Stationary Sources of Air Pollution (Toxic Air Contaminants)**; and **SCA AIR-5**, **Asbestos in Structures** (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.

**TABLE AIR-4**
**CUMULATIVE HEALTH IMPACTS TO NEARBY RECEPTORS**

| Source | Source Type | Distance to MEIR (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** | | | | | |
| Saint Pauls Tower (13705) | Generator | 900 | 0.02 | 0.0 | 0.0 |
| Mach II 180 Grand LLC (16640) | Generator | 886 | 0.52 | <0.01 | <0.01 |
| Whole Foods Market California (18861) | Generator | 915 | 0.0 | 0.0 | 0.0 |
| West Lake Christian Terrace (19269) | Generator | 973 | 0.04 | 0.0 | 0.0 |
| VIP Auto Collision Repair (19344) | Coating Operation | 436 | 0.0 | 0.0 | 0.0 |
| Lake Merritt Management, LLC (19467) | Generator, Boiler | 1,000 | 0.39 | <0.01 | <0.01 |
| Mpower Communications/Telepacific (20013) | Generator | 964 | 0.1 | <0.01 | <0.01 |
| Verizon Wireless (22279) | Natural Gas Generator | 810 | 0.0 | 0.0 | <0.01 |
| Royal Coffee Company (23098) | Coffee Roaster | 560 | 0.11 | <0.01 | 0.18 |
| Uptown Body and Fender (200538) | Coating Operation | 870 | 0.0 | <0.01 | 0.0 |
| **Backup Generators at Proposed Projects within 1,000 feet** | | | | | |
| 2270 Broadway[a] | Generator | 825 | 0.6 | <0.01 | <0.01 |
| 2305 Webster[a] | Generator | 670 | 0.8 | <0.01 | <0.01 |
| 2302 Valdez[a] | Generator | 600 | 0.9 | <0.01 | <0.01 |
| 2315 Valdez Street[a] | Generator | 535 | 1.0 | <0.01 | <0.01 |
| 2425 Valdez Street[a] | Generator | 0 | 10.0 | <0.01 | 0.01 |
| 88 Grand Avenue[a] | Generator | 900 | 0.5 | <0.01 | <0.01 |
| 325 27th Street/2640 Broadway[a,b] | Generator | 550 | 1.0 | <0.01 | <0.01 |
| 2400 Valdez/2500 Valdez[a,b] | Generator | 130 | 5.8 | <0.01 | 0.02 |
| 277 27th Street[a,b] | Generator | 475 | 1.4 | <0.01 | <0.01 |
| 460 24th Street[a,b] | Generator | 855 | 0.5 | <0.01 | <0.01 |
| **Mobile Sources** | | | | | |
| | | Highways | 16.6 | -- | 0.37 |
| | | Major Roadways | 5.5 | -- | 0.03 |
| **Project Sources** | | | | | |
| | | Project Construction | 4.0 | <0.01 | <0.01 |
| | | Project Generator | 10.0 | <0.01 | 0.01 |
| | | **Cumulative Impacts[c]** | **49.9** | **0.03** | **0.65** |
| | | City of Oakland Cumulative Significance Criteria | 100 | 10 | 0.8 |
| | | Potentially Significant Impact? | No | No | No |

NOTES:

a Risks posed by the generators are conservatively assumed to be at the maximum permitted value but will likely be less.
b The analysis presented here conservatively assumes that these projects include a backup generator.
c Cumulative totals may not add up due to rounding.

SOURCE: Appendix B.

# 7.4 Biological Resources

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

## 7.4.1 Previous CEQA Documents Findings

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

## 7.4.2 BVDSP EIR Findings

### *Special-Status Species, Wildlife Corridors, Riparian and Sensitive Habitat, Wetlands, Tree and Creek Protection (Criteria 7.4a and 7.4b)*

As described in the BVDSP EIR, the Plan area is in and is surrounded by a fully developed urban environment, and impacts of development on biological resources under the BVDSP would be less than significant. Few special-status animals are present in the Plan area, and no aquatic habitats that could support migratory fish or birds are present. In addition, very little natural vegetation exists; and because this vegetation is not connected to other nearby natural habitats, it would not constitute a wildlife corridor. There are no natural sensitive communities in the Plan area. The nearest riparian habitat is Glen Echo Creek near Adams Park, where the stream daylights for a short distance before flowing under Grand Avenue and into Lake Merritt. Potential increases in transmittal of hazardous materials from construction activities via runoff from the impermeable surfaces of the site could result in adverse impacts to Glen Echo Creek. The BVDSP EIR identified landscape trees in the Plan area as potential nursery sites for nesting birds. In addition, projects developed under the BVDSP could cause harm to birds by increasing bird collisions with buildings.

Development in the Plan area will be required to comply with SCAs related to removal and replacement of trees, including trees on creekside properties; tree protection during construction; and protection of nesting birds during the breeding season, which would protect natural resources from potential degradation that could result from construction of development projects under the Plan area. Additionally, certain development in the Plan area will be required to comply with an SCA pertaining to reducing bird collisions with buildings, which will reduce potential impacts to birds by constructing features in compliance with Best Management Practice strategies to limit bird strikes. SCAs pertaining to landscaping and vegetation management on creekside properties; protection of creeks from construction vibration and dewatering; hazardous materials management; stormwater and erosion control, and construction measures to reduce bird collisions will ensure that development under the BVDSP is in compliance with all aspects of the Creek Protection Ordinance and reduce the potential impacts on water quality, reduce the potential for bird collisions, and minimize potential indirect impacts from pollution in Glen Echo Creek.

## 7.4.3 Project Analysis

### *Special-Status Species, Wildlife Corridors, Riparian and Sensitive Habitat, Wetlands, Tree and Creek Protection (Criteria 7.4a and 7.4b)*

The approximately 0.56-acre project site is located in an urban setting on a site that is fully developed with existing buildings; the project site is covered entirely by impervious surfaces. Aside from two street trees in front of the middle parcel at 2410 Webster Street, there is no vegetation on the project site. Small shrubs and trees used for landscaping are located to the west of the project site in the wide sidewalk and landscaped area between the project site and Broadway, and would not be removed or disturbed during construction of the Project. The project site is not located adjacent to a creek. Implementation of the Project would not change the amount of impervious surfaces on the project site.

The project site preparation would require removal and replacement of two existing street trees that are considered protected trees. Therefore, the Project would be required to implement SCA BIO-1, Tree Removal During Breeding Season, and SCA BIO-2, Tree Permit SCA BIO-1, Tree Removal During Breeding Season, and SCA BIO-2, Tree Permit. The Project would add new street trees for a total of six trees along Webster Street.

Although glass is a part of the Project’s exterior, the Project is not located immediately adjacent to a substantially vegetated park larger than one acre or a substantial body or water. The Project would include a rooftop garden with vegetation in containers which would not be considered a substantial vegetated green roof or substantial vegetated area. Therefore, the SCA related to bird collision reduction measures would not be required for the Project.

The Project would comply with SCAs relating to stormwater runoff from construction and operation including SCA HYD-1, Erosion and Sedimentation Control Measures for Construction and SCA HYD-2, NPDES C.3 Stormwater Requirements for Regulated Projects (see Section 7.9, *Hydrology and Water Quality* below). Additionally, the Project would comply with SCA UTIL-7, Water Efficient Landscape Ordinance (WELO), in order to reduce landscape water usage, which would further reduce stormwater runoff. Each of these measures contributes to protection and health of creeks and waterways downstream of the project site.

### 7.4.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and the Previous CEQA Documents, implementation of the Project would not substantially increase the severity of significant impacts identified in the BVDSP EIR or the Previous CEQA Documents, nor would it result in new significant impacts related to biological resources that were not identified in the BVDSP EIR or the Previous CEQA Documents. The BVDSP 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 or protected vegetation, certain SCAs identified in the BVDSP EIR would not pertain to the Project, such as those pertaining to creek protection or the Creek Protection Ordinance, or Alameda whipsnake protection measures. **SCA BIO-1, Tree Removal During Breeding Season; SCA BIO-2, Tree Permit; SCA HYD-1, Erosion and Sedimentation Control Measures for Construction**; **SCA HYD-2**, **NPDES C.3 Stormwater Requirements for Regulated Projects**; and **SCA UTIL-7**, **Water Efficient Landscape Ordinance (WELO)** (see Attachment A) would be applicable to and would be implemented by the Project, and would further ensure that impacts related to biological resources would be less than significant. No mitigation measures are required.

# 7.5 Cultural Resources

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

## 7.5.1 Previous CEQA Documents Findings

The 1998 LUTE EIR identified potentially significant impacts to historic resources, and identified mitigation measures to reduce those impacts. Both direct impacts as a result of development pressures to increase density along the identified transit corridors, and indirect impacts from new developments adjacent to historic resources were analyzed (Impacts G.3 and G.4). Historic Preservation Policies 1.3, 2.1, 2.4, 2.5, 2.5, 2.6, 3.4, and 3.5 from the 1994 Historic Preservation Element all support the preservation of historic buildings through listing of eligible resources, providing incentives for preservation, and guiding projects involving Landmarks and Preservation Districts to use the Secretary of the Interior’s Standards for the Treatment of Historic Properties (SOI Standards). The analysis concluded that implementation of the prescribed mitigation measures in conjunction with existing Historic Preservation Element policies would reduce the impacts of the 1998 LUTE on historic resources to less than significant.

The 2011 Renewal Plan was designed to facilitate redevelopment and the EIR analysis concluded that activities resulting from this Plan could result in the future demolition, destruction, relocation, or alteration of historical resources. It was noted that SCA 56, Property Relocation Rather than Demolition, and SCA 57, Vibrations Adjacent to Historic Structures would offer some level of protection. Mitigation Measure CUL-1, which implements Historic Preservation Element policy 3.8, describes various methods for protecting historical resources including avoidance, reuse or relocation; site-specific surveys; recordation and interpretation; and financial contribution. This measure was included to reduce significant impacts to historic resources. Nonetheless, the EIR conservatively identified significant and unavoidable Plan and Cumulative impacts to historic resources, even with the implementation of mitigation measures.

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

## 7.5.2 BVDSP EIR Findings

### *Historical Resources (Criterion 7.5a)*

The BVDSP EIR found that development under the BVDSP could result in the physical demolition, destruction, relocation, or alteration of historical resources that are listed in or may be eligible for listing in the federal, state, or local registers of historical resources, which would be considered a significant impact. The Plan area contains 20 individual properties, including two in an Area of Primary Importance (API), that are considered historical resources for CEQA purposes.[20] There are also many older buildings that possess architectural merit, either in Areas of Secondary Importance (ASIs) or standing alone, that contribute to the variety and texture of the Plan area.[21]

The BVDSP EIR identified Mitigation Measure CUL-1 to reduce the impacts to historical resources throughout the Plan area, as well as the site-specific impacts associated with the demolition of individual historical resources. In addition, the BVDSP EIR concluded that incompatible new construction immediately adjacent to historical resources, as well as inappropriate reuse of such resources, could result in significant impacts in the Plan area. Specifically, development on parcels across Webster Street to the northeast of Temple Sinai could extend shadows far enough south to shade the temple's stained-glass windows during the early morning hours, resulting in significant impacts. Even with implementation of Mitigation Measure AES-4, *Shadow Analysis*, described in Section 2 above, *Aesthetics, Shadow and Wind*, the BVDSP EIR conservatively determined shadow impacts may remain significant and unavoidable.

The BVDSP EIR determined that significant cumulative impacts to historical resources could result from development of projects under the BVDSP, and identified Mitigation Measure CUL-5, which would require implementation of Mitigation Measure CUL-1. However, even with implementation of Mitigation Measure CUL-5, the BVDSP EIR determined that cumulative impacts would remain significant and unavoidable.

In addition to the mitigation measures described above, the BVDSP EIR identified Oakland Municipal Code Section 17.136.075, Regulations for Demolition or Removal of Designated Historic Properties and Potentially Designated Historic Properties, as well as SCAs related to

[20] 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.

[21] Area of Secondary Importance is an area or district that is of local interest, but is not eligible for the National Register of Historic Places and is not considered a historical resource under CEQA.

property relocation instead of demolition, and protection of historic structures from vibration impacts during adjacent construction projects, which will also address impacts to historical resources.

Even with the above mitigation measures and SCAs, impacts to historical resources would remain significant and unavoidable.

### *Archaeological and Paleontological Resources (Criteria 7.5b and 7.5c)*

No known archaeological resources have been recorded in the Plan area; however, the BVDSP EIR revealed that the Plan area is potentially sensitive for archaeological and buried sites that are not visible due to urban development. The BVDSP EIR determined that implementation of an SCA, which would ensure that resources are recovered and that appropriate procedures are followed in the event of accidental discovery, would minimize potential risk of impact to archaeological resources to a less-than-significant level.

The Plan area was also identified as having low to moderate paleontological sensitivity, and it is possible that fossils would be discovered during excavation in the Plan area. Implementation of an SCA, which would require a qualified paleontologist to document a discovery, and monitor that appropriate procedures be followed in the event of a discovery, would ensure that the potential impact to fossils discovered in the rock units would be less than significant.

### *Human Remains (Criterion 7.5d)*

Although the BVDSP EIR did not identify any locations of buried human remains in the Plan area, the inadvertent discovery of human remains during ground-disturbing activities cannot be entirely discounted. In the event that human remains are discovered during excavation, implementation of an 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.

## 7.5.3 Project Analysis

### *Historic Architectural Resources*

The project site is not located within an identified historic district nor does it contain an identified historic resource. The existing building at 2424/2428 Webster Street was constructed in 1917 and has been rated by the Oakland Cultural Heritage Survey (OCHS) as Ec-3 which indicated a building of no particular interest and is not within a historic district. This building's "C" contingency rating classifies the building as a Potential Designated Historic Property (PDHP). The existing building at 2410 Webster Street was constructed in 1956 and is not considered a historic resource or PDHP. The existing building at 2406 Webster Street was constructed between 1929 and 1930, and has been rated by the OCHS as C-3. This rating indicates that the building is of secondary historic importance and also classifies the building as a PDHP. With these ratings, the existing buildings on the project site are not considered historic resources under CEQA. Nonetheless SCA CUL-4, Property Relocation, would be required for the Project. Additional consideration of these structures for their contribution to the Oakland environment would be evaluated during the City's Regular Design Review process and in light of the "replacement project."

Nearby local historic resources include the Pacific Kissel Kar Salesroom and Garage (one block south); the Packard Lofts and the Newsome Apartments (two blocks south); the First Presbyterian Church (one block north); and the Pacific Nash Co. Auto Sales and Garage and the Howard Automobile-Dahl Chevrolet Showroom (two blocks north). Based on the City's historic resource rating for the existing building, demolition would not result in a significant impact and Mitigation Measures CUL-1 and CUL-5, as outlined in the BVDSP EIR would not apply.

### *Archaeological and Paleontological Resources and Human Remains*

The Project would excavate approximately 5,185 cubic yards of soil with a maximum depth of 22 feet below ground surface (bgs). The project site is underlain by Pleistocene marine terrace deposits of sandy clay to depths of 4 feet bgs, at which point groundwater is present.[22] As shown in Figure 4.4-1 of the BVDSP EIR, the geology at the project site is primarily Artificial Fill over Bay Mud, as well as some Pleistocene bay terrace deposits and Pleistocene alluvium. SCA CUL-1, SCA CUL-2, and SCA CUL-3, which are related to archaeological and paleontological resources and human remains, would be required for the Project and, as outlined in the BVDSP EIR, would reduce any potential impacts to a less-than-significant level.

## 7.5.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and the Previous CEQA Documents considered throughout this analysis, the Project would not result in any more severe significant impacts than those identified in the BVDSP EIR or the Previous CEQA Documents, nor would it result in new significant impacts related to cultural resources that were not identified in the BVDSP EIR or the Previous CEQA Documents. **Implementation of SCAs CUL-1**, **Archaeological and Paleontological Resources – Discovery During Construction**; **CUL-2**, **Archaeologically Sensitive Areas – Pre-Construction Measures**; **CUL-3**, **Human Remains – Discovery During Construction**; and **CUL-4, Property Relocation** (see Attachment A) would further ensure that potential impacts associated with cultural resources would be less than significant. No mitigation measures are required.

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22 EKI, Inc., 2020. *Phase I Environmental Site Assessment, 2424 Webster Street, Oakland, California,* February 12.

# 7.6 Geology, Soils, and Geohazards

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

## 7.6.1 Previous CEQA Documents Findings

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

## 7.6.2 BVDSP EIR Findings

### *Seismic Hazards, Expansive Soils, and Soil Erosion (Criteria 7.6a and 7.6b)*

The BVDSP EIR determined that very strong ground shaking and associated liquefaction in certain soils could expose people to injury or harm during earthquakes. In addition, the soils in the Plan area are largely composed of artificial fill material overlying natural deposits of Bay Mud. The northern half of the Plan area is primarily underlain by streambed deposits. The BVDSP identified the artificial fills and expansive soils underlying the Plan area as presenting a potential hazard, due to the possibility of shrink-swell behavior and soil compression.

Development proposed under the BVDSP would avoid and minimize potential geologic impacts through compliance with local and state regulations governing design and construction practices, such as the Seismic Hazards Mapping Act (in liquefaction hazard zones) and the California Building Code. Implementation of SCA GEO-1, which requires the preparation of soils and geotechnical reports specifying generally accepted and appropriate engineering techniques, would reduce potential impacts to less-than-significant levels.

The BVDSP EIR identified no impacts related to substantial soil erosion or loss of topsoil, because the Plan area is in a developed urban area that is paved or landscaped, and served by a storm drain system. In addition, SCA GEO-2 would minimize erosion and sedimentation.

### 7.6.3 Project Analysis

The Project would excavate approximately 5,185 cubic yards of soil with a maximum depth of 22 feet bgs for site grading. Projects within the City that propose to excavate more than 500 cubic yards of soil are required to obtain a grading permit. Therefore, the Project would be required to obtain a grading permit.

The site is not within a hazard zone for earthquake-induced landslides, nor is it within a liquefaction hazard zone, as designated on a map prepared by the California Geological Survey.[23] According to the geotechnical investigations prepared for the Project (Geotechnical Exploration Report), the main geotechnical concerns include expansive soil, seismic hazards (ground rupture, ground shaking, liquefaction, settlement ground lurching), shallow groundwater, soil and groundwater contamination, expansive soil, and the potential for soil corrosion.[24] These concerns make the following design issues vital: the presence of buried structures including abandoned utilities; shallow groundwater and its influence on below-grade construction; the need for pad stabilization; the need for temporary and permanent shoring systems to protect the excavation walls, adjacent buildings, streets, facilities and other improvements, and to limit the potential flow of groundwater into the site; and the selection of appropriate foundation system. The Geotechnical Exploration Report includes specific recommendations for use during project design. The recommendations address demolition, dewatering, shoring, site grading, pad stabilization, fill placement, and project foundation and basement wall and concludes that the Project is feasible from a geotechnical standpoint. The report includes recommendation for final grading, shoring, and foundation plan review and construction monitoring to ensure the recommendations are implemented and to make modifications as needed. The Project would be required to comply with the requirements of California Building Code and the Seismic Hazards Mapping Act, which would prevent exposure of people or structures to substantial risk of loss, injury, or death during a large regional earthquake.

### 7.6.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and the Previous CEQA Documents considered in this analysis, the Project would not result in any new or more significant impacts related to geology and soils than those identified in the BVDSP EIR or the Previous CEQA Documents. Furthermore, implementation of **SCA GEO-1**, **Construction-Related Permit(s)**; **SCA GEO-2**, **Seismic Hazard Zone (Landslide/Liquefaction)**; and **SCA HYD-1**, **Erosion and Sedimentation Control Plan for Construction** (see Section 7.9, *Hydrology and Water Quality*) (see Attachment A), would ensure that potential impacts associated with hazardous geologic and soils conditions would be less than significant. No mitigation measures are required.

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[23] California Geologic Survey, 2003. *State of California Seismic Hazard Zones, Oakland West Quadrangle Official Map*. Released February 14.

[24] ENGEO Incorporated, 2020. *Geotechnical Exploration Report, 2424 Webster Street, Oakland, California*. February 13.

# 7.7 Greenhouse Gas and Climate Change

| Would the project: | Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents | Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents | New Significant Impact |
|---|---|---|---|
| a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, specifically:<br>• For a project involving a land use development, produce total emissions of more than 1,100 metric tons of $CO_2e$ annually AND more than 4.64 metric tons of $CO_2e$ per service population annually. The service population includes both the residents and the employees of the project. The project's impact would be considered significant if the emissions exceed BOTH the 1,100 metric tons threshold and the 4.6 metric tons threshold. Accordingly, the impact would be considered less than significant if the project's emissions are below EITHER of these thresholds. | ☒ | ☐ | ☐ |
| b. Fundamentally conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing greenhouse gas emissions. | ☒ | ☐ | ☐ |

## 7.7.1 Previous CEQA Documents Findings

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

## 7.7.2 BVDSP EIR Findings

### *Greenhouse Gas Emissions (Criterion 7.7a)*

The BVDSP EIR evaluated impacts related to GHG emissions from construction and operation anticipated under the Development Program. The EIR identified motor vehicle use, water, gas, electricity use, loss of vegetation, and construction activities as contributing to generation of GHG emissions. Future projects and development implemented under the BVDSP would be required to be consistent with the City of Oakland Energy and Climate Action Plan, and with SCAs that would reduce GHG emissions during construction and operation of projects. Even with implementation of SCAs, the BVDSP EIR conservatively determined that GHG impacts would remain significant and unavoidable.

### *Consistency with Applicable GHG Plans (Criterion 7.7b)*

The BVDSP EIR determined that development under the Broadway Valdez Development Program would not conflict with any applicable plan, policy or regulation adopted with the intent to reduce GHG emissions. Therefore, the BVDSP EIR determined that the impact related to consistency with applicable plans, policies or regulations to reduce GHG emissions would be less than significant.

### 7.7.3 Project Analysis

#### *Greenhouse Gas Emissions (Criterion 7.7a)*

Both project construction and operation would generate GHG emissions. The BAAQMD's thresholds of significance for GHG emissions, which are defined in terms of carbon dioxide equivalents ($CO_2e$), are designed to ensure compliance with the State's AB 32 and SB 32 GHG reduction goals.

An analysis of the Project using the May 2017 BAAQMD CEQA Guidelines and Thresholds was conducted and found that the Project would not result in a significant effect (cumulative) relating to GHG emissions, as shown below. Both BAAQMD and the California Air Pollution Control Officers Association (CAPCOA) consider GHG impacts to be exclusively cumulative impacts, in that no single project could, by itself, result in a substantial change in climate. Therefore, the evaluation of GHG emissions impacts evaluates whether the Project would make a considerable contribution to cumulative climate change effects.

#### Construction GHG Emissions

The total GHG emissions (construction and operation) for the Project are presented in **Table GHG-1**. The table presents GHG emissions from all sources associated with the Project and assesses the impact relative to City thresholds. The CalEEMod model runs for the Project (see Section 7.3, *Air Quality*, above) also calculated the GHG emissions that would be generated by construction activities associated with the Project. Construction-related emissions would total approximately 326 metric tons of $CO_2e$ during the entirety of the 22-month construction period. These emissions are annualized over an assumed project life of 40 years and factored with the Project's operational GHG emissions to determine significance.

#### Operational GHG Emissions

The Project would generate GHG emissions from many of the same sources discussed in Section 7.3, *Air Quality*, above. Additionally, GHGs would be generated indirectly by increased electrical and water demand, and increased wastewater and solid waste generation. Though the Project site is located within 0.5 mile of the 19th Street BART station, as it does not propose residential uses, the Project would not qualify as a transit priority project under Section 21155 of the *California Public Resources Code.* Therefore, GHG emissions from mobile sources have been included in the emissions inventory. Operational emissions are presented in Table GHG-1 to determine significance. GHG emissions associated with existing uses at the Project site were subtracted to get the net increase in emissions due to the Project. The average annual $CO_2e$ emissions per service population was determined based on the forecasted population of employees at the Project's retail and commercial uses.

As shown in the table, Project GHG emissions would not exceed the City's threshold of 1,100 metric tons of $CO_2e$ per year or the 4.6 metric tons of $CO_2e$ per service population threshold.

**TABLE GHG-1**
**PROJECT GHG EMISSIONS (METRIC TONS PER YEAR)[a]**

| Project Component | $CO_2e$ |
|---|---|
| Area Source Emissions | <0.1 |
| Energy Emissions[b] | 422 |
| Mobile Emissions[c] | 468 |
| Solid Waste | 75 |
| Water and Wastewater | 72 |
| Total Operational Emissions | 1,036 |
| Annualized Construction Emissions (Over 40 Years) | 8 |
| Existing GHG Emissions | -297 |
| Net Increase in GHG Emissions | 747 |
| City of Oakland Screening Threshold | 1,100 |
| Service Population (number of employees) | 519 |
| Total Emissions per Service Population | 1.44 |
| City Emissions per Service Population Threshold | 4.6 |
| **Significant?** | No |

NOTES:
a Project operational emissions estimates were made using CalEEMod, version 2016.3.2.
b Project operational energy emissions estimates included in this analysis are conservatively high as they did not consider the City's Building Electrification Ordinance passed in December 2020.
c GHG emissions from mobile sources relied on inputs from the Transportation Analysis by Fehr & Peers. The Project's GHG emissions from mobile sources were calculated based on an earlier version of the Project with slightly different retail and office square footages. The earlier version of the Project would result in approximately 560 net new daily trips rather than the 580 net new daily trips associated with the Project as described in this CEQA Addendum. The approximate four percent increase in daily trips would result in a negligible change to estimated operational emissions and would not change the less-than-significant impact.

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

The Project includes a 500 kW diesel emergency generator for the elevator system, which must comply with the BAAQMD's permit requirements for a stationary source. It was assumed that the generator would be operated for non-emergency purposes of testing and maintenance for a maximum of 50 hours per year consistent with BAAQMD permitting requirements for emergency generators. As shown in **Table GHG-2**, GHG emissions from the routine testing and maintenance of the emergency diesel generator would be below the City's threshold of 10,000 metric tons of $CO_2e$ for stationary sources and would constitute a less than significant impact.

**TABLE GHG-2**
**STATIONARY SOURCE GHG EMISSIONS (METRIC TONS PER YEAR)[a]**

| Source | $CO_2e$ |
|---|---|
| Emergency Generator | 18 |
| City of Oakland Stationary Source Threshold | 10,000 |
| **Significant?** | No |

SOURCE: ESA, 2020.

Project impact with respect to GHG emissions would be less than significant as the Project's emissions are below both of the City's thresholds. Overall, GHG emissions from Project construction and operation would not substantially increase the severity of significance impacts nor result in new significant impacts related to the generation of GHG emissions that were not identified in the BVDSP EIR.

The GHG emissions measurements in this Chapter are conservative because the GHG threshold applicable to the Project is the one in existence at the time of the certification of the BDVSP EIR. Nevertheless, the Project Applicant will be still required to be consistent with the City's ECAP, which was recently adopted in July, 2020. The City has subsequently adopted an ECAP Checklist for inclusion in its Standard Conditions of Approval (SCAs) that the Project Applicant must fill out to ensure consistency with the ECAP's goals, policies, and mandates. As discussed above, the Project Applicant is also required, pursuant to City Ordinance, to construct the building so that it is all electric, without gas infrastructure. Thus, these GHG measurements represent a conservative estimate that should be further reduced by the later enacted ECAP, ECAP Checklist, and Building Electrification Ordinance.

In addition, numerous SCAs pertaining to landscaping plans and maintenance (SCA AES-3, Landscape Plan), alternative transportation modes and facilities (bicycles) (SCA TRA-2, Bicycle Parking; SCA TRA-4, Transportation and Parking Demand Management; TRA-6, Plug-In Electric Vehicle (PEV) Charging Infrastructure), construction equipment emissions (SCA AIR-2, Criteria Air Pollutant Controls – Construction Related; SCA AIR-3, Diesel Particulate Matter Controls-Construction Related), construction waste reduction and recycling (SCA UTIL-1, Construction and Demolition Waste Reduction and Recycling), as well as California Green Building Standards (SCA-UTIL-4, Green Building Requirements) would also contribute to minimizing potential GHG emissions from construction and operations of the Project.

### *Consistency with GHG Emissions Plans and Policies (Criterion 7.7b)*

The Project would comply with the most recent Oakland Energy and Climate Action Plan (recently passed in July 2020), 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.

The Project is required to determine if a GHG Reduction Plan is required in accordance with the City's SCA 42 – GHG Reduction Plan. The goal of the GHG Reduction Plan is to ensure the project's GHG emissions are at least 36 percent below the project's 2005 business-as-usual baseline GHG emissions and below at least one of the BAAQMD's CEQA thresholds of significance. If required, the GHG Reduction Plan would include a detailed GHG emissions inventory and a comprehensive set of quantified GHG emissions reduction measures.

**Table GHG-3** compares the Project to the criteria associated with each of the City's three GHG emissions scenarios under SCA 42 – GHG Reduction Plan. For a project to be subject to SCA-42 (and be required to prepare a GHG Reduction Plan), the project must meet all the criteria under one or more of the scenarios.

**TABLE GHG-3**
**COMPARISON OF PROPOSED PROJECT WITH SCENARIOS FOR SCA 42**

| Scenario | Criterion (a) | Criterion (b) | Criterion (c) | Criterion (d) | Applies to Project? |
|---|---|---|---|---|---|
| Scenario A | Involve land use development? | Exceeds BAAQMD's screening criteria?[a] | Exceeds both of the City's applicable thresholds?[b] | ------ | No |
| 2424 Webster | Yes (retail and office) | Yes (150,240 square feet of office and 11,332 square feet retail) | No (see Table GHG-1) | ------ | |
| Scenario B | Involve land use development? | Exceeds BAAQMD's screening criteria?[a] | Exceeds one of the City's applicable thresholds?[b] | Very Large Project?[c] | No |
| 2424 Webster | Yes (retail and office) | Yes (150,240 square feet of office and 11,332 square feet retail) | No (see Table GHG-1) | No (519 employees) | |
| Scenario C | Involve a stationary source? | Exceeds the City's applicable thresholds[d] | ------ | ------ | No |
| 2424 Webster | Yes (emergency generator) | No (See Table GHG-2) | ------ | ------ | |

NOTES:

a Based on Table 3-1 of the BAAQMD's 2017 *CEQA Air Quality Guidelines*, an office building with 53,000 square feet or less OR a strip mall/regional shopping center with 19,000 or less square feet of area would have GHG emission levels below the City's applicable thresholds.

b For land use developments, the City's threshold of significance are 1,100 metric tons of $CO_2e$ annually and 4.6 metric tons of CO2e per service population annually.

c Commercial office building employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space OR shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space would be considered a Very Large Project by the City.

d For stationary sources, the City's threshold of significance are 10,000 metric tons of $CO_2e$ annually.

As shown in Table GHG-3, the Project would not trigger the need for a GHG Reduction Plan because none of the three scenarios of SCA 42 are fully satisfied.

In addition, the Project would be consistent with the State's Updated Climate Change Scoping Plan and the City of Oakland's Energy and Climate Action Plan and will include a number of sustainability design features including a green roof over the 5-story portion of the building. The

Project classifies as a Large Non-Residential Project on the City's *Green Building Compliance Standards Table Beginning July 1, 2014*. The Project Applicant would comply with the Green Building ordinance and requirements, such as reduction in indoor and outdoor water use.[25] As noted in Section 5, *Project Description*, the Project would optimize the efficiency of its building envelope and, through the use of efficient lighting and HVAC systems, it would reduce domestic energy use. The Project would meet or exceed the implemented Building Energy Efficiency Standards (LEED Silver for new office uses). Additionally, the Project would be located in area with diverse land uses and in proximity to transit services, which would reduce the number of vehicle trips and the associated GHG emissions generated.

Therefore, the Project would be consistent with all applicable goals, policies and regulations adopted to reduce GHG emissions. This impact would be less than significant, which is consistent with the findings of the BVDSP EIR.

### 7.7.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and the Previous CEQA Documents considered throughout this analysis, implementation of the Project would not substantially increase the severity of significant impacts identified in the BVDSP EIR or the Previous CEQA Documents, nor would it result in new significant impacts related to GHG emissions that were not identified in the BVDSP EIR or the Previous CEQA Documents. In addition, implementation of **SCA AES-3**, **Landscape Plan**; **SCA AIR-2**, **Criteria Air Pollutant Controls – Construction Related**; **SCA AIR-3**, **Diesel Particulate Matter Controls-Construction Related**; **SCA TRA-2**, **Bicycle Parking**; **SCA TRA-4**, **Transportation and Parking Demand Management**; **SCA TRA-6**, **Plug-In Electric Vehicle (PEV) Charging Infrastructure**; **SCA UTIL-1**, **Construction and Demolition Waste Reduction and Recycling**; and **SCA UTIL-4**, **Green Building Requirements** (see Attachment A), would further reduce the impacts associated with GHG emissions. No mitigation measures are required.

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[25] The Project may also be required to comply with the City of Oakland Building Elecrification Ordinance adopted December 1, 2020.

# 7.8 Hazards and Hazardous Materials

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

## 7.8.1 Previous CEQA Documents Findings

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

## 7.8.2 BVDSP EIR Findings

### *Hazardous Materials Use, Storage and Disposal and Hazardous Building Materials (Criterion 7.8a)*

The BVDSP EIR determined that development under the BVDSP could result in construction activities that use hazardous materials, as well as ongoing commercial activities that involve the use of chemicals that are considered hazardous materials. Adoption and development under the BVDSP could therefore require the transportation, use, and storage of additional quantities of hazardous materials to new businesses and entities. In addition, the BVDSP EIR determined that demolition under the BVDSP could result in disturbance of hazardous building materials, such as lead-based paint, asbestos, and polychlorinated biphenyls (PCBs). The transportation, use, and storage of all hazardous materials would be required to follow the applicable laws and regulations adopted to safeguard workers and the general public. In addition, development under the BVDSP would be subject to the City of Oakland's SCAs pertaining to best management practices for hazardous materials and removal of asbestos and lead-based paint.

#### *Exposure to Hazardous Materials in the Subsurface (Criterion 7.8a)*

The BVDSP EIR determined that development under the BVDSP could require excavation for installation of building foundations and underground utilities and that some of the development sites could have had past documented releases of hazardous materials that have contaminated subsurface soils and groundwater or previously unknown releases that may be discovered during excavation activities. Disturbed contaminated soils could expose construction workers and the public to contaminants potentially causing significant adverse health effects. Development under the BVDSP would be subject to the City of Oakland's SCAs pertaining to hazardous materials in the subsurface, including conducting a Phase I Environmental Site Assessment (ESA) and a Phase II ESA, if warranted based on the results of the Phase I ESA; procedures for managing suspected contamination that is encountered unexpectedly during construction activities; preparation of a construction worker health and safety plan; and implementation of best management practices related to hazardous materials management. The BVDSP EIR determined that compliance with these SCAs would reduce the potential impacts related to hazardous materials in the subsurface to a less-than-significant level.

#### *Hazardous Materials within a Quarter Mile of a School (Criterion 7.8b)*

There are no schools in the Plan area; however, there are five schools or daycare facilities within 0.25 mile of the Plan area. Development under the BVDSP would be required to comply with the City of Oakland's Ordinances and General Plan Policies, which require hazardous material handlers within 1,000 feet of a school or other sensitive receptor to prepare a Hazardous Materials Assessment Report and Remediation Plan. Additionally, those handling or storing hazardous materials would be required to prepare a Hazardous Materials Management Plan and Hazardous Materials Business Plan, as required by Alameda County and a City of Oakland SCA; preparation of these plans would reduce impacts to less-than-significant levels.

#### *Emergency Access Routes (Criteria 7.8c)*

The BVDSP EIR determined that construction under the BVDSP that would result in temporary road closures, which would require traffic control plans to ensure at least two emergency access routes are available for streets exceeding 600 feet in length, per City of Oakland's Ordinances and General Plan Policies. Compliance with all applicable requirements would reduce potential impacts to a less-than-significant level.

### 7.8.3 Project Analysis

The Project is not on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (i.e., the "Cortese List"). In compliance with the

City's SCA HAZ-2: *Site Contamination*, a Phase I Environmental Site Assessment (ESA) was completed for the each of the properties composing the project site as described below.[26,27,28]

### 2406 Webster Street Phase I ESA

The Phase I prepared for the parcel at 2406 Webster Street summarized the history of land uses on the parcel that included residential followed by commercial/light industrial uses, including an office and automobile parts warehouse, and electrical services. As part of an automobile parts operation in all three of the buildings on the project site, automotive fluids were stored and packaged for distribution, including motor oil, lubricants, cleaning solvents and surfactants, antifreeze and refrigerant, and batteries. However, the building at the 2406 Webster Street parcel was mainly used for offices and warehouse space. The Phase I ESA found no evidence that any known releases surrounding the parcel have impacted groundwater beneath the parcel.

The Phase I ESA for the parcel at 2406 Webster Street did not reveal any recognized environmental conditions (RECs).[29] Given the age of site structure, asbestos and/or lead paint may be present in or on the site structure and a survey may be required as part of future site demolition.

### 2410 Webster Street Phase I ESA

The Phase I prepared for the parcel at 2410 Webster Street identified the history of land uses on the parcel that included residential followed by commercial/light industrial uses, including automobile delivery, garage, and repair, an office and autoparts warehouse, and electrical services. As part of an automobile parts operation in all three of the buildings on the project site, automotive fluids were stored and packaged for distribution including motor oil, lubricants, cleaning solvents and surfactants, antifreeze and refrigerant, and batteries. However, the building at the 2410 Webster Street parcel was primarily used for offices and warehouse space. The Phase I ESA found no evidence that any known releases surrounding the parcel have impacted groundwater beneath the parcel.

The Phase I ESA for the parcel at 2410 Webster Street did not reveal any recognized environmental conditions (RECs).[30] Given the age of site structure, asbestos and/or lead paint may be present in or on the site structure and a survey may be required as part of future site demolition.

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26 EKI, Inc., 2017. *Phase I Environmental Site Assessment, 2410 Webster Street, Oakland, California*, May 17.

27 EKI, Inc., 2020. *Phase I Environmental Site Assessment, 2406 Webster Street, Oakland, California,* February 12.

28 EKI, Inc., 2020. *Phase I Environmental Site Assessment, 2424 Webster Street, Oakland, California,* February 12.

29 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.

30 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.

### *2424 Webster Street Phase I ESA*

The Phase I ESA prepared for the 2424 Webster Street parcel summarized the history of land uses on the parcel including residential followed by commercial/light industrial uses, including various operations associated with automobile storage, body shop, and fabric warehouse, automobile spray painting, ball bearing warehouse, automobile air conditioning service, office and automobile parts warehouse, and dance center, and bicycle sales. These operations handled common hazardous materials such as petroleum hydrocarbons, including gasoline, oil, waste oil, and degreasers and solvents.

In 2017, a subsurface investigation including soil and groundwater sampling was performed onsite at the parcel located at 2424 Webster Street, and approximately 3.5 feet of predominantly sand with gravel fill material was encountered just below the concrete slab. Concrete fragments were also observed in the fill material. At approximately 3.5 feet bgs, shallow sandy clay native soil was encountered.

The fill material was screened for the presence of metals, petroleum hydrocarbons, volatile organic compounds (“VOCs”), and asbestos. Petroleum hydrocarbons and VOCs were detected at concentrations well below their respective Environmental Screening Levels (ESLs) for commercial land use and gross contamination in the fill material. Samples contained lead at concentrations below the ESL for commercial land use and typical of soils at sites with long-term human occupation and industrial use. Detected concentrations of other metals also were consistent with typical background levels for the area. Therefore, the Phase I ESA concluded the materials are not likely to pose a significant risk to current occupants or construction workers and the condition is not considered an REC for the 2424 Webster Street parcel.

From 1938 to 2006, the 2424 Webster Street parcel was used for various operations associated with automobile painting, service, and repair. During this time, a spray booth and storage of paint, lacquer, and thinner existed at the parcel. Although no reports of releases were identified in available records, given the historical chemical use at the parcel, it is possible that chemicals may have been released to the subsurface in the past. The parcel is currently capped with a building with a concrete floor and exterior paved surfaces. In the grab groundwater sample collected at the 2424 Wester Street parcel, petroleum hydrocarbons and VOCs, except for toluene, were not detected above laboratory reporting limits. Toluene was detected at a very low concentration and well below the ESL for commercial land use. The detected concentrations of cobalt and nickel were below California drinking water standards. All of the detected metals concentrations; including dissolved cobalt, copper, molybdenum, nickel, vanadium, and zinc; are generally consistent with background levels for the region and are not indicative of a chemical release of these metals at the 2424 Webster Street parcel.

The parcel is located in a historically industrial area of Oakland. Historical industrial activities in this area likely included significant chemical uses that may result in groundwater impacts that could migrate beneath the parcel. Based on the results of subsurface fill, soil, and groundwater sampling, the 2424 Webster Street parcel does not appear to be impacted by off-site chemical releases and the condition is not a REC for the parcel.

The Phase I ESA did not reveal any RECs. Given the age of the site structure, asbestos and/or lead paint may be present in or on the site structure and a survey may be required as part of future site demolition.

### *Exposure to Hazards, Hazardous Materials Use, Storage and Disposal (Criterion 7.8a)*

Within the project vicinity, there are 14 listed leaking underground storage tank (LUST) Cleanup sites, none of which are active or undergoing remediation. Additionally, eight Cleanup Program sites are located within the project vicinity. Three of the Cleanup Program sites have cases that are closed, with cleanup activities completed, and one is eligible for closure. Four Cleanup Program sites are listed as active with site assessment and/or remediation activities occurring within the past four years. No cleanup sites were identified on the project site.[31,32]

As discussed above, a Phase I ESA was prepared for each of the properties composing the project site. Using records searches (standard, historical, and regulatory agency files) and site reconnaissance, the site assessments found no evidence of RECs at the project site and no further action was recommended. The Phase I ESAs also studied the potential for off-site properties with reported chemical use to impact conditions on the project site, and found no evidence that any known releases surrounding the project site have impacted shallow fill, soil, or groundwater beneath the project site.[33,34,35] The Project Applicant would be required to implement SCA HAZ-2, Hazardous Building Material and Site Contamination, which is partially fulfilled by the Phase I ESAs prepared for the project site (*b. Environmental Site Assessment Required*). In compliance with SCA HAZ-2, the Project Applicant would also submit a comprehensive and qualified assessment report to the City's Bureau of Building for review and approval prior to approval of demolition, grading, or building permits (*a. Hazardous Building Material Assessment*, see Attachment A).

SCA HAZ-2 would require the Project Applicant to prepare and implement a Health and Safety Plan to protect project construction workers from risks associated with exposure to hazardous materials if encountered. The Health and Safety Plan would include, but is not limited to, measures related to personal protective equipment, exposure monitoring, emergency response plan, and a training program. In addition, SCA HAZ-2 would require the implementation of best management practices for the handling of contaminated soil and groundwater discovered during construction activities to ensure their proper storage, treatment, transport, and disposal. Specifically, SCA HAZ-2 would require that all suspect soil be stockpiled on-site in a secure and safe manner and adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility.

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31 State Water Resources Control Board (SWRCB), 2020. GeoTracker database. Available at: geotracker.waterboards.ca.gov/. Accessed April 21, 2020.

32 California Department of Toxic Substances Control (DTSC), 2020. Envirostor database. Available at: http://www.envirostor.dtsc.ca.gov/public/. Accessed April 21, 2020.

33 EKI, Inc., 2017. *Phase I Environmental Site Assessment, 2410 Webster Street, Oakland, California*, May 17.

34 EKI, Inc., 2020. *Phase I Environmental Site Assessment, 2406 Webster Street, Oakland, California,* February 12.

35 EKI, Inc., 2020. *Phase I Environmental Site Assessment, 2424 Webster Street, Oakland, California,* February 12.

SCA HAZ-2 would also require implementation of specific sampling and handling and transport procedures for reuse or disposal in accordance with applicable local, state, and federal requirements. The exact method employed or plan to be implemented would be identified in a Site Management Plan, which would be prepared by the Project Applicant and would require compliance with identified federal, state or local regulations or requirements and specific performance criteria. Implementation of SCA HAZ-2 will be reviewed, approved, and overseen by the City, and any applicable regulatory agency, as required by law.

Developments under the BVDSP including the Project, would be required to follow the applicable laws and regulations related to transportation, use, and storage of all hazardous materials and to safeguard workers and the general public. Development under the BVDSP would be subject to the City of Oakland's SCA AIR-5 Asbestos in Structures and SCA HAZ-1, Hazardous Materials Related to Construction, pertaining to the removal of asbestos-containing materials from structures and implementation of best management practices for hazardous materials during construction, respectively.

The Project uses include general building management, which could involve the transportation, use, and storage of a limited 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, including preparation of a Hazardous Materials Management Plan and Hazardous Materials Business Plan, as required by Alameda County and the City of Oakland SCAs (SCA HAZ-3, Hazardous Materials Business Plan). Further, the Project Applicant would be required to implement SCA HAZ-1, Hazardous Material Related to Construction, to ensure best management practices are followed during construction activities. Since development of the Project would be subject to the SCAs pertaining to the handling of hazardous materials related to construction activities and project operation, and the remedial actions required when site contamination is encountered, consistent with the findings and conclusions of the BVDSP EIR, the potential impacts would be reduced to less-than-significant levels.

### *Hazardous Materials within a Quarter Mile of a School (Criterion 7.8b)*

The project site is located within 0.25 mile of Westlake Middle School; however, the Project would be required to comply with existing local regulations that require hazardous material handlers within 1,000 feet of a school or other sensitive receptor to prepare a Hazardous Materials Assessment Report and Remediation Plan. Additionally, those handling or storing hazardous materials would be required to prepare a Hazardous Materials Management Plan and Hazardous Materials Business Plan, as required by SCA HAZ-3. The BVDSP 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 BVDSP EIR.

### *Emergency Access Routes (Criterion 7.8c)*

The Project would not change the surrounding streets or roadways, or limit emergency access or plans. 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. 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 BVDSP EIR, the potential impacts would be reduced to less-than-significant levels.

## 7.8.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and the Previous CEQA Documents, the Project would not result in any new or more severe significant impacts related to hazards and hazardous materials than those identified in the BVDSP EIR or the Previous CEQA Documents. Implementation of **SCA HAZ-1**, **Hazards Materials Related to Construction**; **SCA HAZ-2**, **Hazardous Building Materials and Site Contamination**; **SCA HAZ-3**, **Hazardous Materials Business Plan**; **SCA AIR-5**, **Asbestos in Structures**; and **SCA TRA-1**, **Construction Activity in the Public Right-of-Way** (see Attachment A) would further ensure that potential impacts associated with hazardous conditions would be less than significant.

# 7.9 Hydrology and Water Quality

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

## 7.9.1 Previous CEQA Documents Findings

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

## 7.9.2 BVDSP EIR Findings

### *Water Quality, Stormwater, and Drainages and Drainage Patterns (Criteria 7.9a and 7.9c)*

The BVDSP EIR determined that development in the Plan area would result in construction activities that would require ground disturbance, resulting in impacts to hydrology and water quality. The BVDSP 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 (Criterion 7.9b)*

Potable water is supplied to the Plan area through imported surface water by EBMUD, and groundwater is generally not used in the Plan area. The Plan 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 BVDSP. 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 (Criterion 7.9d)*

The BVDSP EIR identified the easternmost part of the Plan area along Glen Echo Creek as being situated in the 100-year flood zone, with the rest of the Plan area lying outside of the 100-year flood zone. SCAs that require regulatory permits prior to construction in a floodway or floodplain, along with preparation of hydrological calculations that ensure that structures will not interfere with the flow of water or increase flooding, would reduce impacts to less-than-significant levels.

## 7.9.3 Project Analysis

### *Water Quality, Stormwater, and Drainages and Drainage Patterns (Criteria 7.9a and 7.9c)*

The project site is currently developed with buildings and paved surface parking lots; impervious surfaces generally cover the entire site, totaling 26,456 square feet (approximately 0.56 acres). The Project would not result in any change to the amount of impervious surface area on the project site. Implementation of SCA HYD-1, which requires the preparation of an erosion and sedimentation control plan for construction activities, would reduce potential erosion and sedimentation impacts to less-than-significant levels. Implementation of SCA GEO-1, Construction-Related Permit(s); and SCA UTIL-6, Storm Drain System would further reduce potential sediment and erosion.

The project site is relatively flat and the amount of impervious surface area would not increase as a result of the Project. Therefore, the potential for the Project to substantially alter drainage patterns or increase the flow of runoff is less than significant. The project site is also located outside of the 100-year flood hazard zone.[36]

Approximately 50 percent of the roof stormwater runoff would be collected and directed to an on-site mechanical treatment device prior to discharge into the existing storm drain system. The remaining 50 percent of impervious area would be directed to planters on the third- and seventh-floor roof decks for treatment prior to connecting to the existing storm drain system. Similar to existing site conditions, runoff from sidewalks and walkways would be directed to the storm drain system. Implementation of SCA HYD-2, which requires the Project's Stormwater Control Plan to comply with Provision C.3 of the Municipal Regional Stormwater Permit issued under the National Pollutant Discharge Elimination System (NPDES), would reduce the potential impact of polluted runoff to a less-than significant level.

### *Use of Groundwater (Criterion 7.9b)*

The project site is underlain by Pleistocene marine terrace deposits of sandy clay to depths of four feet bgs, at which point groundwater is present.[37] Grading activities are anticipated to potentially reach a depth of 22 feet, which may encounter groundwater thereby dewatering during construction. However, dewatering during construction would be temporary and have only a localized and short-term effect on groundwater levels. Post-construction dewatering would not be required because the foundation and wall systems below the groundwater table would be waterproofed to prevent infiltration.

As described in the BVDSP EIR, any groundwater dewatering would be limited in duration and would be subject to permits from EBMUD or the RWQCB, depending if the discharge were to the sanitary or storm sewer system. If the water is not suitable for discharge to the storm drain (receiving water), dewatering effluent may be discharged to EBMUD's sanitary sewer system if special discharge criteria are met. These include, but are not limited to, application of treatment technologies or Best Management Practices (BMPs) which result in achieving compliance with the wastewater discharge limits. Discharges to EBMUD's facilities must occur under a Special Discharge Permit. In addition, per the EBMUD Wastewater Ordinance, "all dischargers, other than residential, whose wastewater requires special regulation or contains industrial wastes requiring source control shall secure a wastewater discharge permit" (Title IV, Section 1). EBMUD also operates its wastewater treatment facilities in accordance with Waste Discharge Requirements issued by the RWQCB, which require rigorous monitoring of effluent to ensure discharges do not adversely impact receiving water quality. Since proper management of dewatering effluent is covered by existing State and local regulations, and implementation of these regulations would protect receiving water quality, the Project would be consistent with the BVDSP EIR.

[36] Federal Emergency Management Agency, 2009. Flood Insurance Rate Map, Alameda County, California and Incorporated Areas, Panel 59 of 725, Map Number 06001C0059G. Effective August 3.

[37] EKI, Inc., 2020. *Phase I Environmental Site Assessment, 2424 Webster Street, Oakland, California,* February 12.

### *Flooding and Substantial Risks from Flooding (Criterion 7.9d)*

The project site is outside of the 100-year flood zone and therefore would not result in substantial flooding on- or off-site.

## 7.9.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and the Previous CEQA Documents, implementation of the Project would not result in any new or more severe significant impacts related to hydrology and water quality, groundwater, or flooding than those identified in the BVDSP EIR or the Previous CEQA Documents. The BVDSP EIR identified no mitigation measures related to hydrology and water quality, and none would be required for the Project. Implementation of **SCA HYD-1**, **Erosion and Sedimentation Control Plan for Construction**; **SCA HYD-2**, **NPDES C.3 Stormwater Requirements for Regulated Projects**; **SCA GEO-1**, **Construction-Related Permit(s)**; and **SCA UTIL-6**, **Storm Drain System** (see Attachment A) would ensure that potential impacts to hydrology and water quality would be less than significant. No mitigation measures are required.

# 7.10 Land Use, Plans, and Policies

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

## 7.10.1 Previous CEQA Documents Findings

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

## 7.10.2 BVDSP EIR Findings

### *Division of Existing Community, Conflict with Land Uses, or Land Use Plans (Criteria 7.10a through 7.10c)*

The BVDSP EIR determined that adoption and implementation of the BVDSP would have less than significant land use impacts related to the division of an established community, potential conflicts with nearby land uses, or applicable land use plans, policies, and regulations. The Plan area is in Oakland's Central Business District, an area intended to promote a mixture of vibrant and unique uses with around-the-clock activity, continued expansion of job opportunities, and growing residential population.

## 7.10.3 Project Analysis

The Project's General Plan land use classification is Central Business District which is intended to encourage, support, and enhance the downtown area as a high-density, mixed-use urban center of regional importance, and a primary hub for business, communications, office, government, high technology, retail, entertainment, and transportation. The Project is consistent with the General Plan land use designation because it will provide a commercial development providing office and retail uses.

The northern parcel of project site is located within the boundaries of the Plan area, D-BV-1 (Retail Priority Sites Commercial Zone 1). The intent of the D-BV-1 zone is to ensure that larger sites and opportunity areas are reserved primarily for new, larger retail development to accommodate consumer goods retail, at least on the ground floor. Retail Priority Sites are also well served by transit, have excellent vehicular access, and are in areas of good visibility. This parcel site is also within the 45-foot height area, which also limits height and density by the amount of retail square footage being provided. Specifically, to exceed 45-foot height limit, the entire Retail Priority Site must provide a minimum retail square footage of 50 percent of the entire Retail Priority Site area.

The project site includes one parcel out of five that comprise Retail Priority Site 3(c). **Table LAN-1** below shows the square footages of each of the parcels contained within this Retail Priority Site. As shown in the table, the total amount of proposed/existing ground-floor retail is approximately 17,740 square feet, which is approximately equal to  50 percent of the total lot square footage. Therefore, the Project meets the Retail Priority Site requirements allowing a building height of up to 200 feet.

**TABLE LAN-1**
**RETAIL PRIORITY SITE CALCULATIONS**

| Address | APN | Lot SF (approx.) | Proposed/Existing Retail SF (approx.) |
|---|---|---|---|
| 2424 Webster Street (project site) | 8-672-19 | 12,500 | 7,174 |
| 2442 Webster Street (Mua) | 8-672-20 | 6,250 | 6,250 |
| 2500 Webster Street (Apartments/Retail) | 8-672-21 | 6,250 | 4,316 |
| 2433-2441 Valdez Street (Audi) | 8-672-4; 8-672-5 | 10,500 | 0 |
| | **Total** | **35,500** | **17,740** |

The remaining two parcels are within the boundaries of the Plan area, D-BV-2 (Retail Zone). The intent of the D-BV-2 zone is to create, maintain, and enhance areas of the Plan area with ground-level retail, restaurants, entertainment, and art activities with pedestrian-oriented active storefront uses. Upper stories are intended to be available for office and residential uses. These parcels are within the 85-foot height area. Based on the above, the Project would be consistent with the land use regulations in the General Plan and BVDSP.

## 7.10.4 Conclusion

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

# 7.11 Noise

| Would the project: | Equal or Less Severity of Impact Previously Identified in Previous CEQA Documents | Substantial Increase in Severity of Previously Identified Significant Impact in Previous CEQA Documents | New Significant Impact |
|---|---|---|---|
| a. Generate noise in violation of the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding construction noise, except if an acoustical analysis is performed that identifies recommend measures to reduce potential impacts. During the hours of 7 p.m. to 7 a.m. on weekdays and 8 p.m. to 9 a.m. on weekends and federal holidays, noise levels received by any land use from construction or demolition shall not exceed the applicable nighttime operational noise level standard; | ☒ | ☐ | ☐ |
| b. Generate noise in violation of the City of Oakland nuisance standards (Oakland Municipal Code Section 8.18.020) regarding persistent construction-related noise; | | | |
| c. Generate noise in violation of the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding operational noise; | ☒ | ☐ | ☐ |
| d. Generate noise resulting in a 5 dBA permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or, if under a cumulative scenario where the cumulative increase results in a 5 dBA permanent increase in ambient noise levels in the project vicinity without the project (i.e., the cumulative condition including the project compared to the existing conditions) and a 3-dBA permanent increase is attributable to the project (i.e., the cumulative condition including the project compared to the cumulative baseline condition without the project); | ☒ | ☐ | ☐ |
| e. Expose persons to interior $L_{dn}$ or CNEL greater than 45 dBA for multi-family dwellings, hotels, motels, dormitories and long-term care facilities (and may be extended by local legislative action to include single-family dwellings) per California Noise Insulation Standards (CCR Part 2, Title 24); | ☐ | ☐ | ☐ |
| Expose the project to community noise in conflict with the land use compatibility guidelines of the Oakland General Plan after incorporation of all applicable Standard Conditions of Approval (see Figure 1); | | | |
| Expose persons to or generate noise levels in excess of applicable standards established by a regulatory agency (e.g., occupational noise standards of the Occupational Safety and Health Administration [OSHA]); or | | | |
| f. During either project construction or project operation expose persons to or generate groundborne vibration that exceeds the criteria established by the Federal Transit Administration (FTA). | ☒ | ☐ | ☐ |

## 7.11.1 Previous CEQA Documents Findings

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

## 7.11.2 BVDSP EIR Findings

### *Construction and Operational Noise and Vibration, Exposure of Receptors to Noise (Criteria 7.11a, 7.11b, 7.11d, and 7.11e)*

Overall, the BVDSP EIR determined that impacts related to construction and operations of development under the BVDSP would be less than significant. Construction-related activities associated with development under the BVDSP would temporarily increase ambient noise levels and vibration in the vicinity of construction sites. Implementation of City SCAs would minimize construction noise impacts by limiting hours of construction activities; require best available noise control technology on construction equipment; require vibration monitoring when construction activities take place adjacent to historic structures; and require 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.

During operation, mechanical equipment used in projects developed under the BVDSP 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.

As described in the BVDSP EIR, noise measurements taken at various locations in the Plan area indicate that the ambient noise environment in the Plan area would be in the conditionally acceptable category for residential uses, and in the normally acceptable category for commercial uses—except for 24th Street, 25th Street, and Brooks Street in the Plan area. At these three locations, the noise environment would be in the normally acceptable category for residential uses. The BVDSP EIR identified an SCA that would ensure that project components are appropriately sound-rated to meet land use compatibility requirements throughout the Plan area.

### *Traffic Noise (Criterion 7.11c)*

The BVDSP EIR determined that development under the BVDSP would increase noise levels adjacent to nearby roads due to additional vehicles traveling throughout the Plan 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, with the exception of 24th Street east of Broadway and 26th Street east of Broadway, where the increase in roadside noise would be 6.4 and 5.1 dBA, respectively.

In addition, the increase in traffic noise between the Cumulative No Project (2035) and Cumulative Plus Project (2035) scenarios would be 5.3 dBA along 24th Street east of Broadway, and 4.9 dBA along 26th Street east of Broadway. The cumulative increases in traffic-generated noise could also combine with stationary noise sources, such as rooftop mechanical equipment and back-up generators, to result in significant cumulative impacts. The EIR determined that no feasible mitigation measures are available, and that these impacts would remain significant and unavoidable.

## 7.11.3 Project Analysis

The Project would result in the construction of 150,240 square feet of office space and 11,332 square feet of retail uses within Subdistrict 3 of the Valdez Triangle subarea of the BVDSP. While the Project's retail use would be well below the planned retail development envisioned for the area in the BVDSP, the Project's office use would exceed the square footage identified in the Development Program for Subdistrict 3 but would be within the general office use square footage identified for the Plan area as a whole. The BVDSP EIR allows for the distribution of density and development type between categories and sub-areas as long as such development conforms to the general traffic generation parameters established by the Plan. Therefore, the Project was accounted for in the BVDSP EIR and is within the impact envelope of the reasonably foreseeable maximum development program analyzed by the BVDSP EIR.

### *Construction Noise and Vibration (Criteria 7.11a, 7.11b, and 7.11f)*

#### Construction Noise

Construction activities for the Project would be expected to occur over approximately 22 months and would entail demolition of the existing structures at the site, site preparation and grading, building construction, paving and finishing interiors and exteriors. Required implementation of applicable City of Oakland 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 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 SCA NOI-4, Construction Noise Complaints which sets a protocol for receiving and addressing construction noise complaints from the public. Consistent with SCA NOI-3, a Construction Noise Management Plan has been prepared for the Project and is included as **Appendix C**.

#### Construction Vibration

The Project does not include new residential uses nor is it located adjacent to an active rail line. The project site is not located within an identified historic district nor does it contain an identified historic resource. None of the historic structures in the area are located adjacent to the project site. However, the Nook at Valdez Apartments are located at 2425 Valdez Street and adjacent to the eastern boundary of the Project site. Therefore, the SCA NOI-6, Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities, requiring a Vibration Analysis, would be required for the Project.

## *Operational Noise Construction Noise and Vibration (Criteria 7.11c and 7.11d)*

### Noise from Project Stationary Sources

Once operational, the Project would include stationary sources such as heating, ventilating, and air conditioning (HVAC) mechanical equipment. Such 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-5, Operational Noise, which ensures compliance with operational noise limits in the City's Noise Ordinance and would result in a less-than-significant impact with respect to noise from stationary sources on the project site. This would be consistent with the findings of the BVDSP EIR.

### Traffic Noise

For operational noise impacts from Project-related traffic increase, the analysis relies on consistency of the Project's vehicle trip generation with what was assumed for the Plan area in the BVDSP EIR. Based on the traffic analysis prepared by Fehr & Peers, the Project conforms to the traffic generation parameters for the Plan area analyzed in the BVDSP EIR, as described below in Section 7.14, *Transportation and Circulation*. Therefore, the BVDSP EIR accounted for traffic generated by development proposed on the Project site within its analysis.

In the BVDSP EIR, modeled Existing Plus Project traffic noise levels and Cumulative Plus Project noise levels were compared with modeled Existing traffic noise levels (2012) as the baseline. This method of analysis is conservative because the actual noise environment includes other, non-vehicle sources that may result in a higher ambient noise levels. Using this conservative methodology, the impact from increased traffic noise and cumulative traffic noise in the Plan area along 24th Street *east* of Broadway was identified as significant and unavoidable in the BVDSP EIR.

As noted above, the Project would be within the general office use square footage identified for the Plan area as a whole and thus would conform to the general traffic generation parameters for the Plan area analyzed in the BVDSP EIR, as described below in Section 7.14, *Transportation and Circulation*. Therefore, the proposed project would not be anticipated to substantially increase the severity of significant impacts identified in the BVDSP EIR or result in new significant impacts since the proposed project is consistent with the anticipated Plan area development and trip generation estimates.

## *Exposure to Project receptors (Criterion 7.11e)*

The Project would not include any land 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. Based on noise monitoring conducted for the BVDSP EIR, the noise environment was found to be normally acceptable for office and commercial uses. Therefore, additional SCAs related to exposure to community noise would not be required and the impact would be considered less than significant and consistent with the findings of the BVDSP EIR.

### 7.11.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and Previous CEQA Documents considered throughout this analysis, implementation of the Project would not substantially increase the severity of impacts identified in the BVDSP EIR or Previous CEQA Documents, nor would it result in new significant impacts related to noise that were not identified in the BVDSP EIR and Previous CEQA Documents. 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**; and **SCA NOI-6, Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities** (see Attachment 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.

# 7.12 Population and Housing

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

## 7.12.1 Previous CEQA Documents Findings

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

## 7.12.2 BVDSP EIR Findings

### *Population Growth and Displacement of Housing and People (Criteria 7.12a and 7.12b)*

The BVDSP EIR determined that impacts related to population growth and displacement of housing and people would be less than significant. Development under the BVDSP would add up to 1,800 housing units and 3,230 residents to the Plan area.[38] This would represent approximately two percent of the total population growth projected for Oakland through 2035, and would not be considered substantial. The Development Program also includes approximately 1.9 million square feet of commercial space. Businesses and other activities in the developments would support employment of approximately 4,500 jobs at full occupancy. This increase in employment would contribute to employment growth expected in Oakland in the future. The amount of employment growth anticipated from development of the BVDSP would account for about five percent of total employment growth projected for Oakland between 2010 and 2035 and nearly 2 percent to the total employment anticipated for Oakland in 2035. Employment growth resulting from development under the BVDSP would support the growth of households and population to

38 As shown in Table TRA-4, there are 2805 net new housing units, approximately 342,600 gross square feet of net new commercial uses, and 167 net new hotel rooms constructed and/or proposed for development under the BVDSP to date. The BVDSP EIR allows for the distribution of density and development type between categories and sub-areas as long as such development conforms to the general traffic generation parameters established by the Plan.

provide the additional workers. Although adoption and development under the BVDSP could require the demolition of existing housing units, existing regulations such as Housing Element policies, the Ellis Act (Government Code Sections 7060 through 7060.7), and the City of Oakland's Ellis Act Ordinance (Oakland Municipal Code Sections 8.22.400 through 8.22.480) would prevent significant impacts.

### 7.12.3 Project Analysis

The Project would demolish the existing buildings on the project site and would construct a 12-story commercial building with approximately 11,332 square feet of retail space and 150,240 square feet of office space. The Project would not demolish or displace any existing housing units.

The Project would result in a net increase of approximately 23 new retail jobs and 496 new office jobs, for a total of approximately 519 new jobs.[39] As discussed in Section 7.10, *Land Use, Plans, and Policies* above, the Project would be consistent with the land use designations and regulations in the General Plan and BVDSP. Therefore, the Project would not result in substantial population growth in a manner not contemplated in the General Plan or BVDSP due to the proposed new businesses.

### 7.12.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and the Previous CEQA Documents, the Project would not result in any new or more severe significant impacts related to population and housing than those identified in the BVDSP EIR or the Previous CEQA Documents. The BVDSP did not identify any mitigation measures related to population and housing, and none would be required for the Project. Nonetheless, the City's required **SCA POP-1**, **Jobs/Housing Impact Fee** (see Attachment A) applies to all projects involving construction of 25,000 square feet or more of new office space, including the Project, and would further reduce less-than-significant effects. Overall, the Project's potential impacts to population and housing would be less than significant. No mitigation measures are required.

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[39] 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 (11,332 retail square feet ÷ 500 square feet per employee = approximately 23 new retail employees). Per BVDSP Table 4.11-6, the general office employee generation rate is 3.3 new employees per 1,000 square feet (150,240 office square feet ÷ 1,000 square feet x 3.3 general office employee generation rate = approximately 496 new office employees).

# 7.13 Public Services, Parks and Recreation Facilities

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

## 7.13.1 Previous CEQA Documents Findings

The 2011 Renewal Plan Amendments EIR found less-than-significant impacts related to public services and recreational facilities; no mitigation measures were warranted nor City of Oakland SCAs identified. The 1998 LUTE EIR identified a significant and unavoidable impact for fire safety, with mitigation measures pertaining to the North Oakland Hills area; the 1998 LUTE EIR also identified a significant and unavoidable impact regarding increased student enrollment, particularly in Downtown (and the Waterfront), and identified mitigation measures that would not reduce the effect to a less-than-significant level. Thus, the impact was significant and unavoidable.[40]

## 7.13.2 BVDSP EIR Findings

### *Public Services and Parks and Recreation (Criteria 7.13a and 7.13b)*

The BVDSP EIR determined that impacts related to fire and police protection, schools, and other public facilities would be less than significant. Although development under the BVDSP would increase density and population in the Plan area, any corresponding increase in crime and need for police protection would likely be counteracted by the revitalization of the area, as envisioned by the BVDSP. The BVDSP EIR identified SCAs that would reduce the potential impacts related

[40] The 1998 LUTE EIR addressed effects on solid waste demand and infrastructure facilities for water, sanitary sewer and stormwater drainage under *Public Services*. These topics are addressed in this document under Section 7.15, *Utilities and Service Systems*, consistent with current City approach.

to the increased need for fire protection by requiring all projects to implement safety features, and to comply with all applicable codes and regulations. Adherence to the General Plan's Open Space, Conservation and Recreation Element policies 3.1, 3.3, and 3.10 would reduce potential impacts to recreational facilities. In addition, any increases in need for police protection, fire protection, schools, or other public facilities would be mitigated by adherence to General Plan policies N.12.1, N.12.2, N.12.5, FI-1, and FI-2. No additions or expansions of parks or recreational facilities are proposed under the BVDSP, and no new parks or recreational facilities, or expansion of existing parks or recreational facilities, were determined to be required under the BVDSP.

## 7.13.3 Project Analysis

The Project would develop approximately 11,332 square feet of retail space and approximately 150,240 square feet of office space. The Project is consistent with the BVDSP, which did not prescribe or assume exact land uses on a site-by-site basis and instead established a maximum density based on trip generation and traffic capacity. The Project is within that trip generation and traffic capacity (see Section 7.14, *Transportation and Circulation*, below) and the Project uses and intensity were analyzed in the BVDSP EIR. Therefore, the Project's increase in demand for public services is consistent with the BVDSP EIR analysis.

The Project would not include residential units. Therefore, any increase in student enrollment at local schools would be considered incremental and could be offset through the payment of the appropriate development impact fees, including SCA PUB-1 Capital Improvement Fee. The Project could also cause a minor increase in demand for police and fire protection services; however, as described in the BVDSP EIR, adherence to General Plan policies N.12.1, N.12.2, N.12.5, FI-1, and FI-2 would mitigate potential impacts.

As described above, no new parks or recreational facilities, nor expansion of existing parks or recreational facilities, would be required as a result of adoption and development under the BVDSP. The Project would provide approximately 11,117 square feet of private and shared open space on third- and seventh-floor roof decks; amenities would include paved roof decks with planters, furniture, and sunshades including unenclosed meeting and event spaces.

## 7.13.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and the Previous CEQA Documents, the Project would not result in any new or more severe significant impacts related to public services and parks and recreation than those identified in the BVDSP EIR and the Previous CEQA Documents. The BVDSP did not identify any mitigation measures related to public services and parks and recreation, and none would be required for the Project. Nonetheless, the City's required **SCA PUB-1**, **Capital Improvements Impact Fee** (see Attachment A) applies the Project, and would further reduce less-than-significant effects. No mitigation measures are required.

# 7.14 Transportation and Circulation

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

## 7.14.1 Previous CEQA Documents Findings

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

The 1998 LUTE EIR identified significant and unavoidable impacts regarding degradation of the level of service (LOS) for several roadway segments citywide. A mitigation measure was identified for one Downtown intersection to reduce the intersection operations impacts to less than significant. All other topics were found to be less than significant. The 1998 LUTE EIR did not identify an impact at the intersections that are affected by the Project.

The 2011 Renewal Plan Amendments EIR identified significant and unavoidable impacts to roadway segment operations as well as railroad crossing safety, after the implementation of identified mitigation measures. The 2011 Renewal Plan Amendments EIR did not identify an impact in the area affected by the Project.

## 7.14.2 BVDSP EIR Findings

The BVDSP EIR analyzed transportation and circulation conditions in and around the Plan area under six different scenarios, which represent three time periods (existing conditions, Year 2020, and Year 2035) with and without the BVDSP Development Program and associated transportation improvements. For the purposes of this analysis, these scenarios are referred to as: 1) existing conditions; 2) existing conditions plus full Development Program (full buildout of the Broadway Valdez Development Program); 3) Year 2020 no Project; 4) Year 2020 plus Phase 1 of Development Program (partial buildout of the Development Program); 5) Year 2035 no Project; and 6) Year 2035 plus full Development Program (full buildout of the Development Program).

The BVDSP EIR determined that no significant impacts to transit, pedestrian, bicycle, and other related topics would occur under any of the scenarios; therefore, these topics are not further discussed herein.

The EIR identified 28 significant impacts on level of service (LOS) at intersections serving the Plan area. For each impact and associated mitigation measure(s), the EIR identified specific triggers based on the level of development in the entire Plan area or specific subdistrict(s). Several of these impacts and mitigation measures would be triggered by the Project combined with other planned developments. These impacts and mitigation measures are further described below.

The BVDSP EIR identified SCAs that require city review and approval of all improvements in the public right-of-way, reduction of vehicle traffic and parking demand generated by development projects, and construction traffic and parking management, which will also address transportation and circulation impacts.

## 7.14.3 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 level of service (LOS) or similar measures of vehicular capacity or traffic congestion, as a significant impact on the environment pursuant to CEQA. The Planning Commission direction aligns with 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 polices 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 BVDSP, this Section also evaluates the consistency of the Project with the approved BVDSP EIR and identifies the BVDSP EIR mitigation measures that the Project, combined with the other developments currently approved, proposed, or under construction in the Plan area, would trigger.[41]

### *Conflicts with Plans, Ordinances, or Policies Relating to Safety, or Performance of the Circulation System (Criteria 13.a and 13.b)*

While the City now relies on VMT as its CEQA Thresholds of Significance; the threshold for determining consistency with the BVDSP EIR is based on conformity with transportation and circulation assumptions. For this reason, this section of the CEQA Checklist summarizes the findings of the transportation analysis completed for the Project. The analysis is provided in two parts below, as follows: the first part describes the BVDSP EIR analysis related to transportation and circulation impacts; the second part compares the Project's impacts to those analyzed in the EIR and identifies

[41] 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.

EIR impacts and mitigation measures that would be triggered by the Project combined with other planned developments.

### Vehicle Miles Traveled (VMT)

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

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

### Estimating VMT

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

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

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

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

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

Based on the MTC Travel Model, the regional average daily VMT per worker is 21.8 under 2020 conditions and 20.3 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 Area or within a one-half mile of a Major Transit Corridor or Stop and satisfies the following:[42]
    - 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 Near Transit Station (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-1** shows the 2020 and 2040 VMT for TAZ 972, the TAZ in which the Project is located as well as applicable VMT thresholds of 15 percent below the regional average.

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42 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.

Considering that the Project would provide less than 80,000 square feet of retail space, the retail is considered to be local serving and is presumed to not generate substantial additional VMT.

**TABLE TRA-1**
**DAILY VEHICLE MILES TRAVELED SUMMARY**

| | Bay Area | | | | TAZ 972 | |
|---|---|---|---|---|---|---|
| | 2020 | | 2040 | | | |
| **Land Use** | **Regional Average** | **Regional Average minus 15%** | **Regional Average** | **Regional Average minus 15%** | **2020** | **2040** |
| Commercial (VMT per Worker) [a] | 21.8 | 18.5 | 20.3 | 17.3 | 21.7 | 19.7 |

NOTE:
a MTC Model results at analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerWorker and accessed in April 2020.

SOURCE: Fehr & Peers, 2020

As shown in Table TRA-4, the 2020 and 2040 average daily VMT per worker in the Project TAZ is not more than 15 percent below the regional averages. Therefore, the Project does not meet criterion number 2.

### Criterion Number 3: Near Transit Stations

The Project would be located about 0.4 miles from the 19th Street BART Station and is served by several frequent bus routes. The Project is less than 0.1 miles from Broadway (Route 51A with 10-minute peak headways), about 0.2 miles from Telegraph Avenue (Route 6 with 10 minute peak headways), and about 0.5 miles from 20th Street (Routes 72, 72M, and 72R, with 10 to 12 minute peak headways). The Project would satisfy Criterion number 3 because it would also meet the following three conditions for this criterion:

- The Project has an FAR of 6.2, which is greater than 0.75
- The Project would provide 172 parking spaces. Since the Project is located in a D-BV zone, the City of Oakland Municipal Code Section 17.116.080 requires a minimum of 0.6 parking spaces per 1,000 square feet of ground-level retail uses and 1.0 space per 1,000 square feet of non-ground level office uses. Thus, the Project is required to provide a minimum of 160 parking spaces, which the Project would exceed. It is estimated that the Project would have a peak parking demand of about 210 parking spaces.[43] Although the parking supply provided by the Project would exceed the minimum required by the City Code, it would be less than the estimated parking demand for the Project. Thus, the provided parking supply would be less than the parking demand for typical nearby uses and the Project satisfies this condition.
- The Project is located within the Downtown Priority Development Area (PDA) as defined by Plan Bay Area, and is therefore consistent with the region's Sustainable Communities Strategy

[43] According to Urban Land Institute (ULI), *Shared Parking* (Second Edition, 2005), parking rate for a typical suburban office development of the project size is about 2.7 parking spaces per 1,000 square feet. As shown in Table TRA-2, about 46.9 percent of the trips generated by the Project are estimated to be non-automobile trips which corresponds to an adjusted parking demand rate of 1.4 parking spaces per 1,000 square feet. (150.2 KSF * 1.4 spaces/KSF = 210 spaces)

### VMT Screening Conclusion

The Project would satisfy the Near Transit Stations (number 3) Criterion 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 Transportation and Parking Demand Management (TDM) Plan, would further reduce the VMT effects of the Project.

### Project Analysis

**Table TRA-2** summarizes the trip generation for the Project. The trip generation accounts for the trips generated by the existing uses at the site that would be eliminated. The Project is estimated to generate approximately 76 net new vehicle trips during the weekday AM peak hour (67 inbound and 9 outbound) and approximately 78 net new vehicle trips during the weekday PM peak hour (11 inbound and 67 outbound).

**TABLE TRA-2**
**2424 WEBSTER AUTO MOBILE TRIP GENERATION**

| Land Use | Units [a] | ITE Code | Daily | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | In | Out | Total | In | Out | Total |
| **Project** | | | | | | | | | |
| Office | 150.2 KSF | 710 [b] | 1,460 | 150 | 24 | 174 | 28 | 145 | 173 |
| Retail | 11.3 KSF | 820 [c] | 430 | 7 | 4 | 11 | 21 | 22 | 43 |
| Subtotal | | | 1,890 | 157 | 28 | 185 | 49 | 167 | 216 |
| Non-Auto Reduction (-47%) [d] | | | -890 | -74 | -13 | -87 | -23 | -78 | -101 |
| *Total New Project Trips* | | | *1,000* | *83* | *15* | *98* | *26* | *89* | *115* |
| **Existing Uses** | | | | | | | | | |
| Auto Dealership | 12.5 KSF | 840 [e] | 350 | 17 | 6 | 23 | 12 | 18 | 30 |
| Retail | 7.7 KSF | 820 [c] | 290 | 4 | 3 | 7 | 14 | 15 | 29 |
| Office | 9.5 KSF | 710 [b] | 90 | 9 | 2 | 11 | 2 | 9 | 11 |
| Subtotal | | | 730 | 30 | 11 | 41 | 28 | 42 | 70 |
| Non-Auto Reduction (-47%) [d] | | | -340 | -14 | -5 | -19 | -13 | -20 | -33 |
| *Total Existing Trips* | | | *390* | *16* | *6* | *22* | *15* | *22* | *37* |
| **Net New Project Trips** | | | **610** | **67** | **9** | **76** | **11** | **67** | **78** |

NOTES:

a KSF = 1,000 square feet.
b ITE *Trip Generation* (10th Edition) land use category 710 (General Office Building):
  Daily: T = 9.74*(X)
  AM Peak Hour: T = 1.16*(X) (86% in, 14% out)
  PM Peak Hour: T = 1.15*(X) (16% in, 84% out)
c ITE *Trip Generation* (10th Edition) land use category 820 (Shopping Center):
  Daily: T = 37.75*(X)
  AM Peak Hour: T = 0.94*(X) (62% in, 38% out)
  PM Peak Hour: T = 3.81*(X) (48% in, 52% out)
d The 46.9% reduction is based on the City of Oakland's *Transportation Impact Review Guidelines* for development in an urban environment than 0.5 miles from a BART Station.
e ITE *Trip Generation* (10th Edition) land use category 840 (Automobile Sales):
  Daily: T = 27.84*(X)
  AM Peak Hour: T = 1.87*(X) (73% in, 27% out)
  PM Peak Hour: T = 2.43*(X) (40% in, 60% out)

SOURCE: Fehr & Peers, 2020.

### Project and Development Program Analyzed in the BVDSP EIR

**TRA-Table 3** lists the development projects within BVDSP Plan area that have been constructed, are currently under construction, approved, and/or proposed, including the Project. TRA-Table 3 also accounts for existing uses on each site that would be demolished.

**TABLE TRA-3**
**DEVELOPMENTS IN THE BROADWAY VALDEZ DISTRICT SPECIFIC PLAN**

| Development | BVDSP Subdistrict | Status | Proposed Development [a] | | | | Active Existing Uses [b] | Net Development [a,c] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Residential (DU) | Retail (KSF) | Office (KSF) | Hotel (Room) | | Residential (DU) | Retail (KSF) | Office (KSF) | Hotel (Room) | Other (KSF) |
| 3001 Broadway (Sprouts) | 5 | Constructed | 0 | 36.0 | 0 | 0 | Parking Lot | 0 | 36.0 | 0 | 0 | 0 |
| 2345 Broadway (HIVE) | 1 | Constructed | 105 | 30.3 | 64.0 | 0 | 11.4 KSF Auto Repair and 30.2 KSF Warehouse | 105 | 30.3 | 64.0 | 0 | -41.6 |
| 2425 Valdez St. | 3 | Constructed | 71 | 1.5 | 0 | 0 | Parking Lot | 71 | 1.5 | 0 | 0 | 0 |
| 3093 Broadway | 5 | Constructed | 423 | 20.0 | 0 | 0 | 40.2 KSF Auto Dealership | 423 | -20.2 | 0 | 0 | 0 |
| 2302 Valdez St. | 2 | Constructed | 196 | 31.5 | 0 | 0 | 3.6 KSF Auto Repair | 196 | 31.5 | 0 | 0 | -3.6 |
| 2315 Valdez/2330 Webster St. | 1 | Constructed | 235 | 16.0 | 0 | 0 | Parking Lot | 235 | 16.0 | 0 | 0 | 0 |
| 2630 Broadway | 3 | Constructed | 255 | 37.5 | 0 | 0 | Parking Lot/ Vacant | 255 | 37.5 | 0 | 0 | 0 |
| 3416 Piedmont Ave. | 5 | Under Construction | 9 | 1.5 | 0 | 0 | Vacant Lot | 9 | 1.5 | 0 | 0 | 0 |
| 2400 Valdez St. | 2 | Constructed | 224 | 23.5 | 0 | 0 | Parking Lot | 224 | 23.5 | 0 | 0 | 0 |
| 3000 Broadway | 5 | Under Construction | 127 | 8.0 | 0 | 0 | 3 Dwelling Units, 8.8 KSF Restaurant, and 10.2 KSF Auto Repair | 124 | -0.8 | 0 | 0 | -10.2 |
| 2820 Broadway | 4 | Under Construction | 218 | 18.0 | 0 | 0 | 42.2 KSF Auto Dealership | 218 | -24.2 | 0 | 0 | 0 |
| 24th and Harrison | 2 | Under Construction | 437 | 65.0 | 0 | 0 | 55.2 KSF Auto Dealership, 5.3 KSF Auto Repair, and 3.25 KSF Fitness Center | 437 | 6.6 | 0 | 0 | -5.3 |
| 2401 Broadway | 3 | Under Construction | 72 | 17.5 | 0 | 159 | 15.5 KSF Auto Dealership, and 7.1 KSF Retail | 72 | 5.1 | 0 | 159 | 0 |
| 2500 Webster | 3 | Under Construction | 30 | 6.4 | 0 | 0 | 6.3 KSF Auto Dealership | 30 | 0.1 | 0 | 0 | 0 |
| 3300 Broadway | 5 | Approved | 45 | 3.0 | 0 | 0 | 5.5 KSF Retail | 45 | -2.5 | 0 | 0 | 0 |
| 2305 Webster St | 1 | Approved | 130 | 3.0 | 0 | 0 | Parking Lot | 130 | 3.0 | 0 | 0 | 0 |

**TABLE TRA-3 (CONTINUED)**
**DEVELOPMENTS IN THE BROADWAY VALDEZ DISTRICT SPECIFIC PLAN**

| Development | BVDSP Subdistrict | Status | Proposed Development [a] | | | | Active Existing Uses [b] | Net Development [a,c] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Residential (DU) | Retail (KSF) | Office (KSF) | Hotel (Room) | | Residential (DU) | Residen tial (DU) | Retail (KSF) | Office (KSF) | Other (KSF) |
| 295 29th St | 4 | Under Construction | 91 | 0 | 0 | 0 | 13.9 KSF Auto Repair | 91 | 0 | 0 | 0 | -13.9 |
| 2415 Valdez | 3 | Under Construction | 89 | 0.9 | 0 | 0 | Parking Lot | 89 | 0.9 | 0 | 0 | 0 |
| 88 Grand Av | 1 | Proposed | 275 | 1 | 0 | 0 | Parking Lot | 275 | 1 | 0 | 0 | 0 |
| 290 27th Street | 2 | Proposed | 198 | 3.7 | 0 | 0 | 1.0 KSF Retail, and 22.3 KSF Office | 198 | -7.3 | -22.3 | 0 | 0 |
| 24th & Waverly | 2 | Proposed | 343 | 15.0 | 0 | 0 | 15 DU and 11.1 KSF Auto Repair | 328 | 15.0 | 0 | 0 | -11.1 |
| 2424 Webster St | 3 | Proposed | 0 | 11.3 | 150.2 | 0 | 12.5 KSF Auto Dealership, 7.7 KSF Retail, and 9.5 KSF Office | 0 | -8.9 | 140.7 | 0 | 0 |
| **Total** | | | **3,573** | **350.4** | **214.2** | **159** | | **3,555** | **135.4** | **182.4** | **159** | **-85.7** |

NOTES:

a DU = dwelling units, ksf = 1,000 square feet, RM = room
b Consists of active uses at the time the BVDSP EIR was prepared.
c Retail and non-retail uses (such as auto repair and warehouses) are presented separately because the non-retail uses generate fewer trips than typical retail uses.

SOURCE: City of Oakland, October 2020.

**Table TRA-4** compares the total amount of development constructed, currently under construction, approved, and/or proposed with the Development Program Buildout assumptions used in the BVDSP EIR for the Plan area (Subdistricts 1 through 5), the Valdez Triangle subarea (Subdistricts 1 through 3) and Subdistrict 3, where the Project is located.

**TABLE TRA-4**
**DEVELOPMENT COMPARISON WITHIN THE PLAN AREA, VALDEZ TRIANGLE, AND SUBDISTRICT 3**

| | Residential (DU) | Retail (KSF) | Office (KSF) | Hotel (Rooms) |
|---|---|---|---|---|
| **Plan Area (Subdistricts 1 through 5)** | | | | |
| Constructed, Under Construction, Approved, and Proposed Development Projects [a] | 3,555 | 135.2 | 182.4 | 159 |
| Development Program Buildout [b] | 1,797 | 1,114.1 | 694.9 | 180 |
| Percent Completed | 198% | 12% | 26% | 88% |
| **Valdez Triangle (Subdistricts 1 through 3)** | | | | |
| Constructed, Under Construction, Approved, and Proposed Development Projects [c] | 2,645 | 145.4 | 182.4 | 159 |
| Development Program Buildout [c] | 965 | 793.5 | 116.1 | 180 |
| Percent Completed | 274% | 18% | 157% | 88% |
| **Subdistrict 3** | | | | |
| Constructed, Under Construction, Approved, and Proposed Development Projects [a] | 517 | 26.0 | 140.7 | 159 |
| Development Program Buildout [b] | 40 | 251.4 | 116.1 | 0 |
| Percent Completed | 1,293% | 10% | 121% | NA |

NOTES: DU = dwelling units, KSF = 1,000 square feet.

a Information from City of Oakland, October 2020. Accounts for existing active uses that would be eliminated.
b Based on Table 4.13-7 on page 4.13-37 of BVDSP Draft EIR.

SOURCE: Fehr & Peers, 2020.

**Table TRA-5** compares the trip generation associated with the total amount of development constructed, currently under construction, approved, and/or proposed with the Development Program Buildout assumptions used in the BVDSP EIR for the Plan area (Subdistricts 1 through 5), the Valdez Triangle subarea (Subdistricts 1 through 3), and Subdistrict 3.

Trips generated by the Project, together with trips generated by other projects that are constructed, currently under construction, approved, or proposed for development in the Plan area, would represent approximately 60 percent of the AM and 53 percent of the PM peak-hour trips anticipated in the BVDSP EIR for the Plan area, 107 percent of the AM and 79 percent of the PM peak-hour trips anticipated in the BVDSP EIR for the Valdez Triangle subarea, and 102 percent of the AM and 67 percent of the PM peak-hour trips anticipated in the BVDSP EIR for Subdistrict 3.

**TABLE TRA-5**
**TRIP GENERATION COMPARISON**

| | AM Peak Hour | PM Peak Hour |
|---|---|---|
| **Plan Area (Subdistricts 1 through 5)** | | |
| Constructed, Development Projects Approved, Proposed, or Under Construction [a] | 1,181 | 1,977 |
| Development Program Buildout [b] | 1,981 | 3,709 |
| Percent Completed | 60% | 53% |
| **Valdez Triangle (Subdistricts 1 through 3)** | | |
| Constructed, Development Projects Approved, Proposed, or Under Construction [a] | 963 | 1,579 |
| Development Program Buildout [b] | 899 | 2,006 |
| Percent Completed | 107% | 79% |
| **Subdistrict 3** | | |
| Constructed, Development Projects Under Construction, Approved, or Proposed | 260 | 395 |
| Development Program Buildout [b] | 255 | 590 |
| Percent Completed | 102% | 67% |

NOTES:
a Based on application of the BVDSP trip generation model with the developments shown in Table 6, and accounting for the trips generated by existing uses that would be eliminated.
b Based on Table 4.13-10 on page 4.13-43 of the BVDSP EIR.

SOURCE: Fehr & Peers, 2020.

In general, the amount of residential development in the Plan area, Valdez Triangle, and Subdistrict 3 and the amount of office development in the Valdez Triangle and Subdistrict 3 are currently more than what was assumed under the Development Program Buildout in the BVDSP EIR. As a result, the AM peak hour trip generation for the Valdez Triangle and Subdistrict 3 are above the trip generation estimated in the BVDSP. However, the PM peak hour trip generation for the Valdez Triangle and Subdistrict 3, as well as the AM and PM peak hour trip generation for the Plan area are below the trip generation estimated in the BVDSP EIR assumptions. Because the overall AM and PM peak hour trip generations for the Plan area are below the BVDSP EIR, none of the BVDSP EIR impacts are triggered during the AM peak hour.

Even though the amount of residential development in the Plan area, Valdez Triangle, and Subdistrict 3 and the amount of office development in the Valdez Triangle and Subdistrict 3 are currently more than what was assumed under the Development Program Buildout in the BVDSP EIR, this would not affect intersection operations beyond the ones identified as having a significant impact and discussed in the next section. Furthermore, considering that the BVDSP EIR analyzed the impacts of the Development Program at signalized intersections in the immediate vicinity of the Project site, the Project would not cause additional impacts beyond those analyzed in the BVDSP EIR, nor would it increase the magnitude of the impacts identified in the BVDSP EIR.

### Traffic Impacts at BVDSP EIR Intersections

The BVDSP EIR identifies 28 significant impacts at intersections that serve the Plan area. It also identifies the specific level of development in the Plan area and/or each Subdistrict that would trigger each impact and its associated mitigation measure(s). According to the BVDSP EIR, the Project sponsor would fund the cost of preparing and funding mitigation measures identified in the BVDSP EIR. However, because the City of Oakland adopted the citywide Transportation Impact Fee (TIF) program, the applicant would pay the applicable TIF, as required by SCA TRA-5, to mitigate Project impacts. Payment to the TIF would be deemed full and complete mitigation.

### Additional Study Intersections

The current City of Oakland Transportation Impact Review Guidelines (dated April 14, 2017) require analysis of project impacts at intersections adjacent to the project site, signalized and all-way stop-controlled intersections where the project would add 50 or more peak hour trips, and side-street stop-controlled intersections where the project would add ten or more trips to the stop-controlled approach. According to the Guidelines, this traffic impact analysis would be completed as a non-CEQA analysis because intersection LOS, or other metrics based on vehicular delay or congestion, cannot be used to identify impacts in CEQA documents.

Based on the City's current criteria, the following three intersections would need to be evaluated:

1. Broadway/Webster Street/25th Street (adjacent to the Project site)
2. Broadway/24th Street (Project would add more than 10 peak hour trips to the stop-controlled approach of a side-street stop-controlled intersection)
3. Webster Street/24th Street (adjacent to the Project site)

The BVDSP EIR analyzed two of the above three intersections (Broadway/Webster Street/25th Street and Broadway/24th Street). The Transportation Impact Review (Non-CEQA) Memorandum provided as **Appendix D**, evaluates the effects of the Project on the three intersections listed above. As described in the memorandum, the Project would not affect traffic operations at the two intersections that were previously evaluated beyond the levels identified in the BVDSP EIR.

Furthermore, the Project would not add 50 or more peak hour trips to any additional signalized or all-way stop-controlled intersections; the Project would also not add ten or more peak hour trips to the stop-controlled approach of side-street stop-controlled intersections in the vicinity that were not analyzed in BVDSP EIR or the Transportation Impact Review (Non-CEQA) Memorandum. Therefore, analysis of additional intersections beyond the ones analyzed in the BVDSP EIR or the Transportation Impact Review (Non-CEQA) Memorandum is not needed. Overall, the Project would not result in impacts on traffic operations at the intersections beyond the ones identified in the BVDSP EIR. In addition, the Project also would not increase the magnitude of the impacts identified in the BVDSP EIR.

In addition, the Project is required to implement SCA TRA-1 which addresses construction activity by the Project in the public right-of-way, SCA TRA-2 which requires the Project to provide adequate bicycle parking, SCA TRA-3, which addresses off-site Transportation Improvements required by the Project, and SCA TRA-6 which requires the Project to provide adequate Plug-In Electric Vehicle (PEV) Charging Infrastructure. The implementation of these SCAs would ensure the Project's consistency with the City's plans, ordinances, and policies addressing the safety and performance of the circulation system and would further reduce the less-than-significant 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 (Criterion 13.c)*

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.

### 7.14.4 Conclusion

The combined trip generation for projects that are currently approved, proposed, or under construction in the Plan area including the Project, and the PM peak hour in the Valdez Triangle and subdistricts, remains lower than the estimated trip generation in the BVDSP EIR under the Development Program for the Plan area. Although the overall trips generated by the Valdez Triangle and Subdistrict 3 during the AM peak hour would exceed the estimate for the Development Program in the BVDSP EIR, the exceedance is not expected to cause additional significant impacts beyond the ones identified in the BVDSP EIR.

Additionally, the Project would not result in significant impacts to the intersections not analyzed in the BVDSP EIR (see Appendix D). Therefore, the Project would not cause additional impacts beyond the locations analyzed in the EIR; nor would the Project increase the magnitude of the impacts identified in the EIR. In addition, the transportation analysis presented in Appendix D determined that the Project would not result in any significant impacts to vehicle access and circulation, bicycle access and bicycle parking, pedestrian access and circulation, and transit access, consistent with the findings of the BVDSP EIR.

Consistent with the findings of the BVDSP EIR, implementation of the Project would not substantially increase the severity of significant impacts identified in the BVDSP EIR, nor would it result in new significant impacts related to transportation and circulation that were not identified in the BVDSP EIR. The Project, combined with other projects under construction, approved, and proposed for development in the Plan area, would trigger Mitigation Measures TRANS-2, TRANS-4, TRANS-5, TRANS-10, and TRANS-22. The Project would pay the applicable TIF (SCA TRA-5) to mitigate project impacts based on its fair-share contribution to those impacts. **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;** 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.

# 7.15 Utilities and Service Systems

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

## 7.15.1 Previous CEQA Documents Findings

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

## 7.15.2 BVDSP EIR Findings

### *Water, Wastewater, and Stormwater (Criteria 7.15a and 7.15b)*

As described in the BVDSP EIR, EBMUD has accounted for the water demand projections associated with development under the BVDSP; and the BVDSP EIR determined that development under the BVDSP would not require new water supply entitlements, resources, facilities, or expansion of existing facilities beyond those already planned, and that impacts related to water supplies would be less than significant.

The BVDSP EIR also determined that development under the BVDSP would have less-than-significant impacts related to stormwater and wastewater facilities. Much of the Plan area is composed of impervious surfaces, and new development would likely decrease storm-drain runoff, because proposed projects would be required to incorporate additional pervious areas through landscaping, in compliance with City of Oakland requirements.

On the other hand, development projects may increase sewer capacity demand. Implementation of SCA UTIL-5 and SCA UTIL-6, which require stormwater control during and after construction, would address potential impacts on stormwater treatment and sanitary sewer infrastructure.

### *Solid Waste Services (Criterion 7.15c)*

As described in the BVDSP EIR, impacts associated with solid waste would be less than significant. Nonhazardous solid waste in the Plan area is ultimately hauled to the Altamont Landfill and Resource Facility. The Altamont Landfill would have sufficient capacity to accept waste generated by development under the BVDSP. In addition, implementation of SCA UTIL-1 and SCA UTIL-3, which pertain to waste reduction, recycling, storage, and collection, would reduce waste through compliance with the City of Oakland’s Recycling Space Allocation Ordinance (Oakland Municipal Code, Chapter 17.118).

### *Energy (Criterion 7.15d)*

Development under the BVDSP would result in less-than-significant impacts related to energy standards and use. Developments would be required to comply with the standards of Title 24 of the California Code of Regulations. SCA UTIL-4, which pertains to compliance with the green building ordinance, would require construction projects to incorporate energy-conserving design measures.

## 7.15.3 Project Analysis

The BVDSP 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 Plan. The Development Program is not intended to be a cap that restricts development. As shown in Table 1, the Project would provide less retail (11,332 square foot) than the 251,398 square feet of retail space contemplated in the Development Program for Valdez Triangle Subdistrict 3.[44] The Project’s 150,240 square feet of general office use

[44] Subdistrict 3 is defined in the BVDSP as the area north of 24th Street, west of Valdez Street, and south of 27th Street.

would slightly exceed the 116,085 square feet identified in the Development Program for Subdistrict 3 but would be within the 336,000 square feet of general office use identified for the Plan area as a whole. Further, the Project conforms to the traffic generation parameters analyzed in the BVDSP EIR, as described in Section 7.14, *Transportation and Circulation*, above. As such, the Project is within the envelope of the Development Program analyzed in the BVDSP EIR. Therefore, water and sanitary sewer demand and stormwater facilities, as well as solid waste and energy associated with the Project, are consistent with the Development Program analyzed in the BVDSP EIR. All on-site utilities would be designed in accordance with applicable codes and current engineering practices including 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; and SCA HYD-2, NPDES C.3 Stormwater Requirements for Regulated Projects. These SCAs would further reduce potential impacts to utilities and service systems. The Project would pay a sewer mitigation fee, which would either contribute to the cost of replacing pipes for the local collection system to increase capacity or be used to perform inflow and infiltration rehabilitation projects outside of the Plan area, as described in the BVDSP EIR. Additionally, the Project would comply with SCA-UTIL-7, Water Efficient Landscape Ordinance (WELO), in order to reduce landscape water usage, which would further reduce impacts to stormwater facilities. Although it would not reduce any impacts related to utilities, the City's required SCA UTIL-2, Underground Utilities (see Attachment A) also applies to the Project.

## 7.15.4 Conclusion

Based on an examination of the analysis, findings, and conclusions of the BVDSP EIR and the Previous CEQA Documents, implementation of the Project would not substantially increase the severity of significant impacts identified in the BVDSP EIR or Previous CEQA Documents, nor would it result in new significant impacts related to utilities and service systems that were not identified in the BVDSP EIR or the Previous CEQA Documents. The BVDSP 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**; and **SCA HYD-2**, **NPDES C.3 Stormwater Requirements for Regulated Projects** (see Attachment A), as well as compliance with Title 24 and CALGreen requirements, would ensure that impacts to sewer capacity, stormwater drainage facilities, solid waste services, and energy would be less than significant.

# 8. References

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

## 8.1 Broadway Valdez District Specific Plan EIR

City of Oakland, Draft EIR, 2014.

City of Oakland, Final EIR, 2014.

## 8.2 Central District Urban Renewal Plan Amendment (Renewal Plan)

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

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

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

## 8.3 General Plan Land Use and Transportation Element

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

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

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

## 8.4 Oakland Planning Code

City of Oakland, 2014. City of Oakland Planning Code. CEDA: Planning and Zoning. https://cao-94612.s3.amazonaws.com/documents/Planning-Code-after-12-4-2018_Residential-Hotel-Regulations-Update.pdf, accessed January 8, 2019.

## Attachments

A. Standard Conditions of Approval and Mitigation Monitoring and Reporting Program
B. Criteria for Use of Addendum, per CEQA Guidelines Section 15164
C. Project Consistency with Community Plan or Zoning, per CEQA Guidelines Section 15183
D. Criteria for Use of Other Applicable Previous CEQA Documents, per CEQA Guidelines Section 15168

## Appendices

A. Wind Study
B. Air Quality Tables
C. Construction Noise Management Plan
D. Non-CEQA Transportation Analysis/Transportation Tables
E. Transportation and Parking Demand Management Plan

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# ATTACHMENT A

# Standard Conditions of Approval and Mitigation Monitoring and Reporting Program

This Standard Conditions of Approval (SCAs) and Mitigation Monitoring and Reporting Program (SCAMMRP) is based on the CEQA Checklist prepared for the 2424 Webster Office Project.

This SCAMMRP 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 SCAMMRP lists mitigation measures and SCAs from the BVDSP EIR that apply to the Project. The SCAMMRP also lists other SCAs that apply to the Project that have been updated or otherwise modified by the City since publication of the BVDSP EIR. Specifically, on November 5, 2018, 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 SCAMMRP reflect the current SCAs only. Although the SCA numbers listed below may not correspond to the SCA numbers in the BVDSP EIR, all of the environmental topics and potential effects addressed by the SCAs in the BVDSP EIR are included in this SCAMMRP (as applicable to the Project). This SCAMMRP also identifies the mitigation monitoring requirements for each mitigation measure and SCA.

This CEQA Checklist is also based on the analysis in the following Prior EIRs that apply to the Project: Oakland's 1998 General Plan Land Use and Transportation Element EIR (1998 LUTE EIR) and the 2011 Central District Urban Renewal Plan Amendments EIR (2011 Renewal Plan Amendments EIR). None of the mitigation measures or SCAs from these EIRs are included in this SCAMMRP because they, or an updated or equally effective mitigation measure or SCA, are identified in the BVDSP EIR, its addenda, or in this CEQA Checklist for the Project.

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

- The first column of the SCAMMRP table identifies the mitigation measure or SCA applicable to that topic in the CEQA Checklist. While a mitigation measure or SCA can apply to more than one topic, it is listed in its entirety only under its primary topic (as indicated in the mitigation or SCA designator). The SCAs are numbered to specifically apply to the Project and this CEQA Checklist; however, the SCAs as presented in the City's *Standard Conditions of Approval and Uniformly Applied Development Standards* document are included in parenthesis for cross-reference purposes.[45]
- The second column identifies the monitoring schedule or timing applicable to the Project.
- The third column names the party responsible for monitoring the required action for the Project.

The Project Applicant is responsible for compliance with any recommendations identified in City-approved technical reports, all applicable mitigation measures adopted, and with all SCAs set forth herein at its sole cost and expense, unless otherwise expressly provided in a specific mitigation measure or condition of approval, and subject to the review and approval of the City of Oakland. Overall monitoring and compliance with the mitigation measures will be the responsibility of the Bureau 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.

[45] Dated November 5, 2018, as amended.

| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | **Schedule** | **Responsibility** |
| **General** | | |
| **SCA GEN-1 (Standard Condition Approval 15)** *Regulatory Permits and Authorizations from Other Agencies*<br><br><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. | Prior to activity requiring permit/ authorization from regulatory agency. | City of Oakland Bureau of Planning and applicable regulatory agency with jurisdiction |
| **Aesthetics, Shadow, and Wind** | | |
| **SCA AES-1 (Standard Condition of Approval 16)** Trash and Blight Removal<br><br>The project applicant and his/her successors shall maintain the property free of blight, as defined in chapter 8.24 of the Oakland Municipal Code. For nonresidential and multi-family residential projects, the project applicant shall install and maintain trash receptacles near public entryways as needed to provide sufficient capacity for building users. | Ongoing. | City of Oakland Bureau of Building |
| **SCA AES-2 (Standard Condition of Approval 17)** *Graffiti Control*<br><br>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:<br><br>i. Installation and maintenance of landscaping to discourage defacement of and/or protect likely graffiti-attracting surfaces.<br><br>ii. Installation and maintenance of lighting to protect likely graffiti-attracting surfaces.<br><br>iii. Use of paint with anti-graffiti coating.<br><br>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).<br><br>v. Other practices approved by the City to deter, protect, or reduce the potential for graffiti defacement.<br><br>b. The project applicant shall remove graffiti by appropriate means within seventy-two (72) hours. Appropriate means include the following:<br><br>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.<br><br>ii. Covering with new paint to match the color of the surrounding surface.<br><br>iii. Replacing with new surfacing (with City permits if required). | Ongoing. | City of Oakland Bureau of Building |

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<tr><th rowspan="2">Standard Conditions of Approval/Mitigation Measures</th><th colspan="2">Mitigation Implementation/Monitoring</th></tr>
<tr><th>Schedule</th><th>Responsibility</th></tr>
<tr><td colspan="3">Aesthetics, Shadow, and Wind (cont.)</td></tr>
<tr><td>SCA AES-3 (Standard Condition of Approval 18) Landscape Plan<br>a. Landscape Plan Required<br>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.<br>b. Landscape Installation<br>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.<br>c. Landscape Maintenance<br>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.</td><td>a. Prior to approval of construction-related permit.<br>b. Prior to building permit final.<br>c. Ongoing</td><td>a. City of Oakland Bureau of Planning<br>b. City of Oakland Bureau of Building<br>c. City of Oakland Bureau of Building</td></tr>
<tr><td>SCA AES-4 (Standard Condition of Approval 19): Lighting<br>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.</td><td>Prior to building permit final.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td>SCA AES-5 (Standard Condition of Approval 92) Public Art for Private Development<br><u>Requirement</u>: The project is subject to the City’s Public Art Requirements for Private Development, adopted by Ordinance No. 13275 C.M.S. (“Ordinance”). The public art contribution requirements are equivalent to one-half percent (0.5%) for the “residential” building development costs, and one percent (1.0%) for the “non-residential” building development costs.<br>The contribution requirement can be met through: 1) the installation of freely accessible art at the site; 2) the installation of freely accessible art within one-quarter mile of the site; or 3) satisfaction of alternative compliance methods described in the Ordinance, including, but not limited to, payment of an in-lieu fee contribution. The applicant shall provide proof of full payment of the in-lieu contribution and/or provide plans, for review and approval by the Planning Director, showing the installation or improvements required by the Ordinance prior to issuance of a building permit.<br>Proof of installation of artwork, or other alternative requirement, is required prior to the City’s issuance of a final certificate of occupancy for each phase of a project unless a separate, legal binding instrument is executed ensuring compliance within a timely manner subject to City approval.</td><td>Payment of in-lieu fees and/or plans showing fulfillment of public art requirement – Prior to Issuance of Building permit<br>Installation of art/cultural space – Prior to Issuance of a Certificate of Occupancy.</td><td>City of Oakland Bureau of Planning and Bureau of Building</td></tr>
<tr><td>Also SCA UTIL-2, Underground Utilities. See Utilities and Service Systems, below.</td><td></td><td></td></tr>
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<tr><th rowspan="2">Standard Conditions of Approval/Mitigation Measures</th><th colspan="2">Mitigation Implementation/Monitoring</th></tr>
<tr><th>Schedule</th><th>Responsibility</th></tr>
<tr><td colspan="3">Air Quality</td></tr>
<tr><td>SCA AIR-1 (Standard Condition of Approval 20) Dust Controls – Construction-Related<br>The Project applicant shall implement all of the following applicable dust control measures during construction of the Project:<br>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.<br>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).<br>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.<br>d. Limit vehicle speeds on unpaved roads to 15 miles per hour.<br>e. All demolition activities (if any) shall be suspended when average wind speeds exceed 20 mph.<br>f. All trucks and equipment, including tires, shall be washed off prior to leaving the site.<br>g. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.</td><td>During construction.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td>SCA AIR-2 (Standard Condition of Approval 21) Criteria Air Pollutant Controls – Construction Related<br><u>Requirement</u>: The project applicant shall implement all of the following applicable basic control measures for criteria air pollutants during construction of the project as applicable:<br>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.<br>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”).<br>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.<br>d. Portable equipment shall be powered by grid electricity if available. If electricity is not available, propane or natural gas generators shall be used if feasible. Diesel engines shall only be used if grid electricity is not available and use propane or natural gas generators cannot meet the electrical demand.<br>e. Low VOC (i.e., ROG) coatings shall be used that comply with BAAQMD Regulation 8, Rule 3: Architectural Coatings.</td><td>During construction.</td><td>City of Oakland Bureau of Building</td></tr>
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| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | **Schedule** | **Responsibility** |
| **Air Quality (cont.)** | | |
| f. All equipment to be used on the construction site and subject to the requirements of Title 13, Section 2449, of the California Code of Regulations (“California Air Resources Board Off-Road Diesel Regulations”) and upon request by the City, the project applicant shall provide written documentation that fleet requirements have been met. | | |
| **SCA AIR-3 (Standard Condition of Approval 22)** *Diesel Particulate Matter Controls-Construction Related*<br><br>***a. Diesel Particulate Matter Reduction Measures***<br><br>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) from construction emissions. The project applicant shall choose one of the following methods:<br><br>i. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with current guidance from the California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment to determine the health risk to sensitive receptors exposed to DPM from project construction emissions. The HRA shall be submitted to the City (and the Air District if specifically requested) for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then DPM reduction measures are not required. If the HRA concludes that the health risk exceeds acceptable levels, DPM reduction measures shall be identified to reduce the health risk to acceptable levels as set forth under subsection b below. Identified DPM reduction measures shall be submitted to the City for review and approval prior to the issuance of building permits and the approved DPM reduction measures shall be implemented during construction.<br><br>- or -<br><br>ii. All off-road diesel equipment shall be equipped with the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by CARB. The equipment shall be properly maintained and tuned in accordance with manufacturer specifications. This shall be verified through an equipment inventory submittal and Certification Statement that the Contractor agrees to compliance and acknowledges that a significant violation of this requirement shall constitute a material breach of contract.<br><br>***b. Construction Emissions Minimization Plan (if required by a above)***<br><br>Requirement: 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:<br><br>i. An equipment inventory summarizing the type of off-road equipment required for each phase of construction, including the equipment manufacturer, equipment identification number, engine model year, engine certification (tier rating), horsepower, and engine serial number. For all VDECS, the equipment inventory shall also include the technology type, serial number, make, model, manufacturer, CARB verification number level, and installation date.<br><br>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. | a. Prior to issuance of a construction related permit (i), during construction (ii).<br><br>b. Prior to issuance of a construction related permit. | a. City of Oakland Bureau of Planning and Bureau of Building.<br><br>b. City of Oakland Bureau of Planning and Bureau of Building. |

| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | **Schedule** | **Responsibility** |
| **Air Quality (cont.)** | | |
| **SCA AIR-4 (Standard Condition of Approval 24)** *Stationary Sources of Air Pollution (Toxic Air Contaminants)*<br><br>Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to on-site stationary sources of toxic air contaminants. The project applicant shall choose **one** of the following methods:<br><br>a. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk associated with proposed stationary sources of pollution in the project. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City. The approved risk reduction measures shall be implemented during construction and/or operations as applicable.<br><br>- or -<br><br>b. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:<br><br>i. Installation of non-diesel fueled generators, if feasible, or;<br><br>ii. Installation of diesel generators with an EPA-certified Tier 4 engine or engines that are retrofitted with a CARB Level 3 Verified Diesel Emissions Control Strategy, if feasible. | Prior to approval of construction-related permit | City of Oakland Bureau of Planning and Bureau of Building. |
| | | |
| **SCA AIR-5 (Standard Condition of Approval 26)** *Asbestos in Structures*<br><br>Requirement: The project applicant shall comply with all applicable laws and regulations regarding demolition and renovation of Asbestos Containing Materials (ACM), including but not limited to California Code of Regulations, Title 8; California Business and Professions Code, Division 3; California Health and Safety Code sections 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended. Evidence of compliance shall be submitted to the City upon request. | Prior to approval of construction-related permit | Applicable regulatory agency with jurisdiction |

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<tr><th rowspan="2">Standard Conditions of Approval/Mitigation Measures</th><th colspan="2">Mitigation Implementation/Monitoring</th></tr>
<tr><th>Schedule</th><th>Responsibility</th></tr>
<tr><td colspan="3">Biological Resources</td></tr>
<tr><td>SCA BIO-1 (Standard Condition of Approval 29) Tree Removal During Bird Breeding Season<br><br><u>Requirement</u>: To the extent feasible, removal of any tree and/or other vegetation suitable for nesting of birds shall not occur during the bird breeding season of February 1 to August 15 (or during December 15 to August 15 for trees located in or near marsh, wetland, or aquatic habitats). If tree removal must occur during the bird breeding season, all trees to be removed shall be surveyed by a qualified biologist to verify the presence or absence of nesting raptors or other birds. Pre-removal surveys shall be conducted within 15 days prior to the start of work and shall be submitted to the City for review and approval. If the survey indicates the potential presence of nesting raptors or other birds, the biologist shall determine an appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the California Department of Fish and Wildlife, and will be based to a large extent on the nesting species and its sensitivity to disturbance. In general, buffer sizes of 200 feet for raptors and 50 feet for other birds should suffice to prevent disturbance to birds nesting in the urban environment, but these buffers may be increased or decreased, as appropriate, depending on the bird species and the level of disturbance anticipated near the nest.</td><td>Prior to removal of trees.</td><td>City of Oakland Bureau of Planning</td></tr>
<tr><td><u>SCA Bio-2 (Standard Condition of Approval 30) Tree Permit</u><br><br>a. Tree Permit Required<br><br><u>Requirement</u>: Pursuant to the City’s Tree Protection Ordinance (OMC chapter 12.36), the project applicant shall obtain a tree permit and abide by the conditions of that permit.<br><br><u>When Required</u>: Prior to approval of construction-related permit<br><br><u>Initial Approval</u>: Permit approval by Public Works Department, Tree Division; evidence of approval submitted to Bureau of Building<br><br><u>Monitoring/Inspection</u>: Bureau of Building<br><br>b. Tree Protection During Construction<br><br><u>Requirement</u>: Adequate protection shall be provided during the construction period for any trees which are to remain standing, including the following, plus any recommendations of an arborist:<br><br>i. Before the start of any clearing, excavation, construction, or other work on the site, every protected tree deemed to be potentially endangered by said site work shall be securely fenced off at a distance from the base of the tree to be determined by the project’s consulting arborist. Such fences shall remain in place for duration of all such work. All trees to be removed shall be clearly marked. A scheme shall be established for the removal and disposal of logs, brush, earth and other debris which will avoid injury to any protected tree.<br><br>ii. Where proposed development or other site work is to encroach upon the protected perimeter of any protected tree, special measures shall be incorporated to allow the roots to breathe and obtain water and nutrients. Any excavation, cutting, filling, or compaction of the existing ground surface within the protected perimeter shall be minimized. No change in existing ground level shall occur within a distance to be determined by the project’s consulting arborist from the base of any protected tree at any time. No burning or use of equipment with an open flame shall occur near or within the protected perimeter of any protected tree.</td><td>Prior to building permit final</td><td>Public Works Department, Tree Division<br><br>City of Oakland Bureau of Building</td></tr>
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| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | Schedule | Responsibility |
| **Biological Resources (cont.)** | | |
| iii. No storage or dumping of oil, gas, chemicals, or other substances that may be harmful to trees shall occur within the distance to be determined by the project's consulting arborist from the base of any protected trees, or any other location on the site from which such substances might enter the protected perimeter. No heavy construction equipment or construction materials shall be operated or stored within a distance from the base of any protected trees to be determined by the project's consulting arborist. Wires, ropes, or other devices shall not be attached to any protected tree, except as needed for support of the tree. No sign, other than a tag showing the botanical classification, shall be attached to any protected tree.<br><br>iv. Periodically during construction, the leaves of protected trees shall be thoroughly sprayed with water to prevent buildup of dust and other pollution that would inhibit leaf transpiration.<br><br>v. If any damage to a protected tree should occur during or as a result of work on the site, the project applicant shall immediately notify the Public Works Department and the project's consulting arborist shall make a recommendation to the City Tree Reviewer as to whether the damaged tree can be preserved. If, in the professional opinion of the Tree Reviewer, such tree cannot be preserved in a healthy state, the Tree Reviewer shall require replacement of any tree removed with another tree or trees on the same site deemed adequate by the Tree Reviewer to compensate for the loss of the tree that is removed.<br><br>vi. All debris created as a result of any tree removal work shall be removed by the project applicant from the property within two weeks of debris creation, and such debris shall be properly disposed of by the project applicant in accordance with all applicable laws, ordinances, and regulations.<br><br>When Required: During construction<br><br>Initial Approval: Public Works Department, Tree Division<br><br>Monitoring/Inspection: Bureau of Building<br><br>c. ***Tree Replacement Plantings***<br><br>Requirement: Replacement plantings shall be required for tree removals for the purposes of erosion control, groundwater replenishment, visual screening, wildlife habitat, and preventing excessive loss of shade, in accordance with the following criteria:<br><br>i. No tree replacement shall be required for the removal of nonnative species, for the removal of trees which is required for the benefit of remaining trees, or where insufficient planting area exists for a mature tree of the species being considered.<br><br>ii. Replacement tree species shall consist of Sequoia sempervirens (Coast Redwood), Quercus agrifolia (Coast Live Oak), Arbutus menziesii (Madrone), Aesculus californica (California Buckeye), Umbellularia californica (California Bay Laurel), or other tree species acceptable to the Tree Division.<br><br>iii. Replacement trees shall be at least twenty-four (24) inch box size, unless a smaller size is recommended by the arborist, except that three fifteen (15) gallon size trees may be substituted for each twenty-four (24) inch box size tree where appropriate.<br><br>iv. Minimum planting areas must be available on site as follows:<br><br>• For Sequoia sempervirens, three hundred fifteen (315) square feet per tree;<br><br>• For other species listed, seven hundred (700) square feet per tree. | | |

| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | Schedule | Responsibility |
| **Biological Resources (cont.)** | | |
| v. In the event that replacement trees are required but cannot be planted due to site constraints, an in lieu fee in accordance with the City's Master Fee Schedule may be substituted for required replacement plantings, with all such revenues applied toward tree planting in city parks, streets and medians.<br>vi. The project applicant shall install the plantings and maintain the plantings until established. The Tree Reviewer of the Tree Division of the Public Works Department may require a landscape plan showing the replacement plantings and the method of irrigation. Any replacement plantings which fail to become established within one year of planting shall be replanted at the project applicant's expense. | | |
| Also **SCA HYD-1, Erosion and Sedimentation Control Plan for Construction**. See *Hydrology and Water Quality*, below. | | |
| Also **SCA HYD-2, NPDES C.3 Stormwater Requirements for Regulated Projects.** See *Hydrology and Water Quality*, below. | | |
| Also **SCA UTIL-7, Water Efficient Landscape Ordinance (WELO).** See *Utilities and Service Systems*, below. | | |
| **Cultural Resources** | | |
| **SCA CUL-1 (Standard Condition of Approval 32):** *Archaeological and Paleontological Resources – Discovery During Construction*<br>Requirement: Pursuant to CEQA Guidelines section 15064.5(f), in the event that any historic or prehistoric subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the Project applicant shall notify the City and consult with a qualified archaeologist or paleontologist, as applicable, to assess the significance of the find. In the case of discovery of paleontological resources, the assessment shall be done in accordance with the Society of Vertebrate Paleontology standards. If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by the City must be followed unless avoidance is determined unnecessary or infeasible by the City. Feasibility of avoidance shall be determined with consideration of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. Work may proceed on other parts of the project site while measures for the cultural resources are implemented.<br>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.<br>In the event of excavation of paleontological resources, the Project applicant shall submit an excavation plan prepared by a qualified paleontologist to the City for review and approval. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by a qualified paleontologist, as appropriate, according to current professional standards and at the expense of the Project applicant. | During construction. | City of Oakland Bureau of Building |

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<tr><td colspan="3">Cultural Resources (cont.)</td></tr>
<tr><td> SCA CUL-2 (Standard Condition of Approval 33): Archaeologically Sensitive Areas – Pre-Construction Measures
<u>Requirement</u>: The project applicant shall implement either Provision A (Intensive Pre-Construction Study) <u>or</u> Provision B (Construction ALERT Sheet) concerning archaeological resources.
Provision A: Intensive Pre-Construction Study.
The Project applicant shall retain a qualified archaeologist to conduct a site-specific, intensive archaeological resources study for review and approval by the City prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence of history-period archaeological resources on the project site. At a minimum, the study shall include:
a. Subsurface presence/absence studies of the project site. Field studies may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources.
b. A report disseminating the results of this research.
c. Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources.
If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction and prepare an ALERT sheet pursuant to Provision B below that details what could potentially be found at the project site. Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the ALERT sheet, required per Provision B below) and the procedures to follow if any artifacts are encountered, field recording and sampling in accordance with the Secretary of Interior’s Standards and Guidelines for Archaeological Documentation, notifying the appropriate officials if human remains or cultural resources are discovered, and preparing a report to document negative findings after construction is completed if no archaeological resources are discovered during construction.
Provision B: Construction ALERT Sheet.
The Project applicant shall prepare a construction “ALERT” sheet developed by a qualified archaeologist for review and approval by the City prior to soil-disturbing activities occurring on the project site. The ALERT sheet shall contain, at a minimum, visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the Project’s prime contractor, any project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving), and utility firms involved in soil- disturbing activities within the project site.
The ALERT sheet shall state, in addition to the basic archaeological resource protection measures contained in other standard conditions of approval, all work must stop and the City’s Environmental Review Officer contacted in the event of discovery of the following cultural materials: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones. Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. The ALERT sheet shall also be posted in a visible location at the project site. </td>
<td>Prior to approval of construction-related permit; during construction.</td>
<td>City of Oakland Bureau of Planning and Bureau of Building</td></tr>
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<tr><td colspan="3">Cultural Resources (cont.)</td></tr>
<tr><td>SCA CUL-3 (Standard Condition of Approval SCA 34): Human Remains – Discovery During Construction<br><br><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.</td><td>During construction.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td>SCA CUL-4 (Standard Condition of Approval 35): Property Relocation<br><br><u>Requirement:</u> Pursuant to Policy 3.7 of the Historic Preservation Element of the Oakland General Plan, the project applicant shall make a good faith effort to relocate the historic resource to a site acceptable to the City. A good faith effort includes, at a minimum, all of the following:<br><br>a. Advertising the availability of the building by: (1) posting of large visible signs (such as banners, at a minimum of 3’ x 6’ size or larger) at the site; (2) placement of advertisements in Bay Area news media acceptable to the City; and (3) contacting neighborhood associations and for-profit and not-for-profit housing and preservation organizations;<br><br>b. Maintaining a log of all the good faith efforts and submitting that along with photos of the subject building showing the large signs (banners) to the City;<br><br>c. Maintaining the signs and advertising in place for a minimum of 90 days; and<br><br>d. Making the building available at no or nominal cost (the amount to be reviewed by the Oakland Cultural Heritage Survey) until removal is necessary for construction of a replacement project, but in no case for less than a period of 90 days after such advertisement.</td><td>Prior to approval of construction related permit.</td><td>City of Oakland Bureau of Planning (including Oakland Cultural Resource Survey)</td></tr>
<tr><td colspan="3">Geology, Soils, and Geohazards</td></tr>
<tr><td>SCA GEO-1 (Standard Condition of Approval 36): Construction-Related Permit(s)<br><br><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.</td><td>Prior to approval of construction-related permit.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td>SCA GEO-2 (Standard Condition of Approval 39): Seismic Hazards Zone (Landslide/Liquefaction)<br><br><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.</td><td>Prior to approval of construction-related permit.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td colspan="3">See SCA HYD-1, Erosion and Sedimentation Control Plan for Construction. See Hydrology and Water Quality, below.</td></tr>
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| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | **Schedule** | **Responsibility** |
| **Greenhouse Gases and Climate Change** | | |
| See **SCA AES-3, Landscape Plan**. See *Aesthetics, Wind, and Shadow*, above. | | |
| See **SCAs AIR-2, Criteria Air Pollutant Controls - Construction Related.** See *Air Quality*, above. | | |
| See **SCAs AIR-3, Diesel Particulate Matter Controls - Construction Related.** See *Air Quality*, above. | | |
| See SCA **TRA-2, Bicycle Parking**. See *Transportation and Circulation*, below. | | |
| See **SCA TRA-4, Transportation and Parking Demand Management.** See *Transportation and Circulation*, below. | | |
| See **SCA TRA-6, Plug-In Electric Vehicle (PEV) Charging Infrastructure.** See *Transportation and Circulation*, below. | | |
| See **SCA UTIL-1, Construction and Demolition Waste Reduction and Recycling**. See *Utilities and Service Systems*, below. | | |
| See **SCA UTIL-4, Green Building Requirements**. See *Utilities and Service Systems*, below. | | |
| **Hazards and Hazardous Materials** | | |
| **SCA HAZ-1 (Standard Condition of Approval 42):** *Hazards Materials Related to Construction*<br><br>Requirement: 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:<br><br>a. Follow manufacture's recommendations for use, storage, and disposal of chemical products used in construction;<br><br>b. Avoid overtopping construction equipment fuel gas tanks;<br><br>c. During routine maintenance of construction equipment, properly contain and remove grease and oils;<br><br>d. Properly dispose of discarded containers of fuels and other chemicals;<br><br>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<br><br>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 |

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<tr><td colspan="3">Hazards and Hazardous Materials (cont.)</td></tr>
<tr><td>SCA HAZ-2 (Standard Condition of Approval 43): Hazardous Building Materials and Site Contamination<br><br>a. Hazardous Building Materials and Site Contamination<br><br><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.<br><br>b. Environmental Site Assessment Required<br><br><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.<br><br>c. Health and Safety Plan Required<br><br><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.<br><br>d. Best Management Practices (BMPs) Required for Contaminated Sites<br><br><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:<br><br>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.<br><br>ii Groundwater pumped from the subsurface shall be contained on-site in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building.</td><td>a. Prior to approval of demolition, grading, or building permits<br><br>b. Prior to approval of construction-related permit<br><br>c. Prior to approval of construction-related permit<br><br>d. During Construction</td><td>a. City of Oakland Bureau of Building<br><br>b. Applicable regulatory agency with jurisdiction<br><br>c. City of Oakland Bureau of Building<br><br>d. City of Oakland Bureau of Building</td></tr>
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<tr><td colspan="3">Hazards and Hazardous Materials (cont.)</td></tr>
<tr><td>SCA HAZ-3 (Standard Condition of Approval 44): Hazardous Materials Business Plan<br><br>The Project applicant shall submit a Hazardous Materials Business Plan for review and approval by the City, and shall implement the approved Plan. The approved Plan shall be kept on file with the City and the project applicant shall update the Plan as applicable. The purpose of the Hazardous Materials Business Plan is to ensure that employees are adequately trained to handle hazardous materials and provides information to the Fire Department should emergency response be required. Hazardous materials shall be handled in accordance with all applicable local, state, and federal requirements. The Hazardous Materials Business Plan shall include the following:<br><br>a. The types of hazardous materials or chemicals stored and/or used on-site, such as petroleum fuel products, lubricants, solvents, and cleaning fluids.<br><br>b. The location of such hazardous materials.<br><br>c. An emergency response plan including employee training information.<br><br>d. A plan that describes the manner in which these materials are handled, transported, and disposed.</td><td>Prior to building permit final</td><td>Oakland Fire Department</td></tr>
<tr><td>See SCA AIR-5, Asbestos in Structures. See Air Quality, above.</td><td></td><td></td></tr>
<tr><td>See SCA TRA-1, Construction Activity in the Public Right-of-Way. See Transportation and Traffic, below.</td><td></td><td></td></tr>
<tr><td colspan="3">Hydrology and Water Quality</td></tr>
<tr><td>SCA HYD-1 (Standard Condition of Approval 47): Erosion and Sedimentation Control Plan for Construction<br><br>a. Erosion and Sedimentation Control Plan Required<br><br><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.<br><br>b. Erosion and Sedimentation Control During Construction<br><br><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.</td><td>a. Prior to approval of construction-related permit.<br><br>b. During construction.</td><td>City of Oakland Bureau of Building</td></tr>
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|---|---|---|
| | Schedule | Responsibility |
| **Hydrology and Water Quality (cont.)** | | |
| **SCA HYD-2 (Standard Condition of Approval 53):** *NPDES C.3 Stormwater Requirements for Regulated Projects*<br>***a. Post-Construction Stormwater Management Plan Required***<br><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:<br>i. Location and size of new and replaced impervious surface;<br>ii. Directional surface flow of stormwater runoff;<br>iii. Location of proposed on-site storm drain lines;<br>iv. Site design measures to reduce the amount of impervious surface area;<br>v. Source control measures to limit stormwater pollution;<br>vi. Stormwater treatment measures to remove pollutants from stormwater runoff, including the method used to hydraulically size the treatment measures; and<br>vii. Hydromodification management measures, if required by Provision C.3, so that post-Project stormwater runoff flow and duration match pre-Project runoff.<br>***b. Maintenance Agreement Required***<br><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:<br>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<br>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.<br>The maintenance agreement shall be recorded at the County Recorder's Office at the applicant's expense. | a. Prior to approval of construction-related permit.<br>b. Prior to building permit final. | a. City of Oakland Bureau of Building<br>b. City of Oakland Bureau of Building |
| Also **SCA GEO-1, Construction-Related Permit(s).** See *Geology, Soils, and Geohazards*, above. | | |
| Also **SCA UTIL-6, Storm Drain System**. See *Utilities and Service Systems*, below. | | |

| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | Schedule | Responsibility |
| **Noise** | | |
| **SCA NOI-1 (Standard Condition of Approval 61)** *Construction Days/Hours*<br>Requirement: The project applicant shall comply with the following restrictions concerning construction days and hours:<br>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.<br>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.<br>c. No construction is allowed on Sunday or federal holidays.<br>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.<br>Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the City, with criteria including the urgency/emergency nature of the work, the proximity of residential or other sensitive uses, and a consideration of nearby residents'/occupants' preferences. The project applicant shall notify property owners and occupants located within 300 feet at least 14 calendar days prior to construction activity proposed outside of the above days/hours. When submitting a request to the City to allow construction activity outside of the above days/hours, the project applicant shall submit information concerning the type and duration of proposed construction activity and the draft public notice for City review and approval prior to distribution of the public notice. | During construction. | City of Oakland Bureau of Building |
| **SCA NOI-2: (Standard Condition of Approval 62)** *Construction Noise*<br>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**:**<br>a. Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) wherever feasible.<br>b. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.<br>c. Applicant shall use temporary power poles instead of generators where feasible.<br>d. Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction.<br>e. The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented. | During construction. | City of Oakland Bureau of Building |

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<tr><td>SCA NOI-3 (Standard Condition of Approval 63) Extreme Construction Noise<br><br>a. Construction Noise Management Plan Required<br><br><u>Requirement</u>: Prior to any extreme noise generating construction activities (e.g., pier drilling, pile driving and other activities generating greater than 90dBA), the project applicant shall submit a Construction Noise Management Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction impacts associated with extreme noise generating activities. The project applicant shall implement the approved Plan during construction. Potential attenuation measures <u>include, but are not limited to, the following</u>:<br><br>i. Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;<br><br>ii. Implement “quiet” pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;<br><br>iii. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;<br><br>iv. Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example <u>and implement such measure if such measures are feasible and would noticeably reduce noise impacts</u>; and<br><br>v. Monitor the effectiveness of noise attenuation measures by taking noise measurements.<br><br>b. Public Notification Required<br><br><u>Requirement</u>: The project applicant shall notify property owners and occupants located within 300 feet of the construction activities at least 14 calendar days prior to commencing extreme noise generating activities. Prior to providing the notice, the project applicant shall submit to the City for review and approval the proposed type and duration of extreme noise generating activities and the proposed public notice. The public notice shall provide the estimated start and end dates of the extreme noise generating activities and describe noise attenuation measures to be implemented.</td><td>a. Prior to approval of construction-related permit.<br><br>b. During construction.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td>NOTE: A Construction Noise Management Plan has been prepared for the Project (Appendix C) and no further action is required for SCA NOI-3a.</td><td></td><td></td></tr>
<tr><td>SCA NOI-4 (Standard Condition of Approval 65) Construction Noise Complaints<br><br><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:<br><br>a. Designation of an on-site construction complaint and enforcement manager for the project;<br><br>b. A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager and City Code Enforcement unit;</td><td>Prior to approval of construction-related permit.</td><td>City of Oakland Bureau of Building</td></tr>
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<tr><td>c. Protocols for receiving, responding to, and tracking received complaints; and<br>d. Maintenance of a complaint log that records received complaints and how complaints were addressed, which shall be submitted to the City for review upon the City’s request.</td><td></td><td></td></tr>
<tr><td>SCA NOI-5 (Standard Condition of Approval 67) Operational Noise<br><u>Requirement</u>: Noise levels from the project site after completion of the project (i.e., during project operation) shall comply with the performance standards of chapter 17.120 of the Oakland Planning Code and chapter 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the City.</td><td>Ongoing.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td>SCA NOI-6 (Standard Condition of Approval 69) Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities<br><u>Requirement:</u> The project applicant shall submit a Vibration Analysis prepared by an acoustical and/or structural engineer or other appropriate qualified professional for City review and approval that establishes pre-construction baseline conditions and threshold levels of vibration that could damage the structure and/or substantially interfere with activities at the Nook at Valdez residential apartments located at 2425 Valdez Street. The Vibration Analysis shall identify design means and methods of construction that shall be utilized in order to not exceed the thresholds. The applicant shall implement the recommendations during construction.</td><td>Prior to construction</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td colspan="3">Population and Housing</td></tr>
<tr><td>SCA POP-1 (Standard Condition of Approval 70) Jobs/Housing Impact Fee<br><u>Requirement</u>: The Project applicant shall submit payment to the City in accordance with the requirements of the City of Oakland Jobs/Housing Impact Fee Program (chapter 15.68 of the Oakland Municipal Code).</td><td>Prior to construction.</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td colspan="3">Public Services, Parks, and Recreation Facilities</td></tr>
<tr><td>SCA PUB-1 (Standard Condition of Approval 72) Capital Improvements Impact Fee<br><u>Requirement</u>: The project applicant shall comply with the requirements of the City of Oakland Capital Improvements Fee Ordinance (chapter 15.74 of the Oakland Municipal Code).</td><td>Prior to issuance of building permit</td><td>City of Oakland Bureau of Building</td></tr>
<tr><td colspan="3">Transportation and Circulation</td></tr>
<tr><td>SCA TRA-1 (Standard Condition of Approval 74) Construction Activity in the Public Right-of-Way<br>a. Obstruction Permit Required<br><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.</td><td>a. Prior to approval of construction-related permit.<br>b. Prior to approval of construction-related permit.<br>c. Prior to building permit final.</td><td>City of Oakland Department of Transportation</td></tr>
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<tr><th rowspan="2">Standard Conditions of Approval/Mitigation Measures</th><th colspan="2">Mitigation Implementation/Monitoring</th></tr>
<tr><th>Schedule</th><th>Responsibility</th></tr>
<tr><td colspan="3">Transportation and Circulation (cont.)</td></tr>
<tr><td>b. Traffic Control Plan Required<br><br><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.<br><br>c. Repair of City Streets<br><br><u>Requirement</u>: The project applicant shall repair any damage to the public right-of way, including streets and sidewalks caused by project construction at his/her expense within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to approval of the final inspection of the construction-related permit. All damage that is a threat to public health or safety shall be repaired immediately.</td><td></td><td></td></tr>
<tr><td>SCA TRA-2 (Standard Condition of Approval 75) Bicycle Parking<br><br><u>Requirement</u>: The project applicant shall comply with the City of Oakland Bicycle Parking Requirements (chapter 17.118 of the Oakland Planning Code). The project drawings submitted for construction-related permits shall demonstrate compliance with the requirements.</td><td>Prior to approval of construction-related permit.</td><td>City of Oakland Bureau of Planning and Bureau of Building</td></tr>
<tr><td>SCA TRA-3 (Standard Condition of Approval 76): Transportation Improvements.<br><br>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:<br><br>a. 2070L Type Controller with cabinet accessory<br><br>b. GPS communication (clock)<br><br>c. Accessible pedestrian crosswalks according to Federal and State Access Board guidelines with signals (audible and tactile)<br><br>d. Countdown pedestrian head module switch out</td><td>Prior to building permit final or as otherwise specified</td><td>City of Oakland Bureau of Building and City of Oakland Department of Transportation</td></tr>
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<tr><th rowspan="2">Standard Conditions of Approval/Mitigation Measures</th><th colspan="2">Mitigation Implementation/Monitoring</th></tr>
<tr><th>Schedule</th><th>Responsibility</th></tr>
<tr><td colspan="3">Transportation and Circulation (cont.)</td></tr>
<tr><td>e. City Standard ADA wheelchair ramps<br>f. Video detection on existing (or new, if required)<br>g. Mast arm poles, full activation (where applicable)<br>h. Polara Push buttons (full activation)<br>i. Bicycle detection (full activation)<br>j. Pull boxes<br>k. Signal interconnect and communication with trenching (where applicable), or through existing conduit (where applicable), 600 feet maximum<br>l. Conduit replacement contingency<br>m. Fiber switch<br>n. PTZ camera (where applicable)<br>o. Transit Signal Priority (TSP) equipment consistent with other signals along corridor<br>p. Signal timing plans for the signals in the coordination group<br>q. Bi-directional curb ramps (where feasible, and if project is on a street corner)<br>r. Upgrade ramps on receiving curb (where feasible, and if project is on a street corner)</td><td></td><td></td></tr>
<tr><td>SCA TRA-4 (Standard Condition of Approval 77) Transportation and Parking Demand Management<br>a. Transportation and Parking Demand Management (TDM) Plan Required<br><u>Requirement</u>: The project applicant shall submit a Transportation and Parking Demand Management (TDM) Plan for review and approval by the City.<br>i. The goals of the TDM Plan shall be the following:<br>• Reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable.<br>• Achieve the following project vehicle trip reductions (VTR):<br>– Projects generating 50-99 net new a.m. or p.m. peak hour vehicle trips: 10 percent VTR<br>– Projects generating 100 or more net new a.m. or p.m. peak hour vehicle trips: 20 percent VTR<br>• Increase pedestrian, bicycle, transit, and carpool/vanpool modes of travel. All four modes of travel shall be considered, as appropriate</td><td>a. Prior to approval of planning application.<br>b. Prior to building permit final<br>c. Ongoing</td><td>a. City of Oakland Bureau of Planning<br>b. City of Oakland Bureau of Building<br>c. City of Oakland Department of Transportation</td></tr>
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| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | Schedule | Responsibility |
| **Transportation and Circulation (cont.)** | | |

- Enhance the City's transportation system, consistent with City policies and programs.

ii. The TDM Plan should include the following:

- Baseline existing conditions of parking and curbside regulations within the surrounding neighborhood that could affect the effectiveness of TDM strategies, including inventory of parking spaces and occupancy if applicable.
- Proposed TDM strategies to achieve VTR goals (see below).

iii. For employers with 100 or more employees at the subject site, the TDM Plan shall also comply with the requirements of Oakland Municipal Code Chapter 10.68 Employer-Based Trip Reduction Program.

iv. The following TDM strategies **must** be incorporated into a TDM Plan based on a project location or other characteristics. When required, these mandatory strategies should be identified as a credit toward a project's VTR.

| Improvement | Required by code or when… |
|---|---|
| **Bus boarding bulbs or islands** | • A bus boarding bulb or island does not already exist and a bus stop is located along the project frontage; and/or<br>• A bus stop along the project frontage serves a route with 15 minutes or better peak hour service and has a shared bus-bike lane curb |
| **Bus shelter** | • A stop with no shelter is located within the project frontage, or<br>• The project is located within 0.10 miles of a flag stop with 25 or more boardings per day |
| **Concrete bus pad** | • A bus stop is located along the project frontage and a concrete bus pad does not already exist |
| **Curb extensions or bulb-outs** | • Identified as an improvement within site analysis |
| **Implementation of a corridor-level bikeway improvement** | • A buffered Class II or Class IV bikeway facility is in a local or county adopted plan within 0.10 miles of the project location; and<br>• The project would generate 500 or more daily bicycle trips |
| **Implementation of a corridor-level transit capital improvement** | • A high-quality transit facility is in a local or county adopted plan within 0.25 miles of the project location; and<br>• The project would generate 400 or more peak period transit trips |

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

| Improvement | Required by code or when… |
|---|---|
| **Installation of amenities such as lighting; pedestrian-oriented green infrastructure, trees, or other greening landscape; and trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan.** | • Always required |
| **In-street bicycle corral** | • A project includes more than 10,000 square feet of ground floor retail, is located along a Tier 1 bikeway, and on-street vehicle parking is provided along the project frontages. |
| **Intersection improvements**[46] | • Identified as an improvement within site analysis |
| **New sidewalk, curb ramps, curb and gutter meeting current City and ADA standards** | • Always required |
| **No monthly permits and establish minimum price floor for public parking**[47] | • If proposed parking ratio exceeds 1:1000 sf. (commercial) |
| **Parking garage is designed with retrofit capability** | • Optional if proposed parking ratio exceeds 1:1.25 (residential) or 1:1000 sf. (commercial) |
| **Parking space reserved for car share** | • If a project is providing parking and a project is located within downtown. One car share space reserved for buildings between 50 – 200 units, then one car share space per 200 units. |
| **Paving, lane striping or restriping (vehicle and bicycle), and signs to midpoint of street section** | • Typically required |
| **Pedestrian crossing improvements** | • Identified as an improvement within site analysis |
| **Pedestrian-supportive signal changes**[48] | • Identified as an improvement within operations analysis |
| **Real-time transit information system** | • A project frontage block includes a bus stop or BART station and is along a Tier 1 transit route with 2 or more routes or peak period frequency of 15 minutes or better |

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

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

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

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

| Improvement | Required by code or when… |
|---|---|
| **Relocating bus stops to far side** | • A project is located within 0.10 mile of any active bus stop that is currently near-side |
| **Signal upgrades**[49] | • Project size exceeds 100 residential units, 80,000 sf. of retail, or 100,000 sf. of commercial; and<br>• Project frontage abuts an intersection with signal infrastructure older than 15 years |
| **Transit queue jumps** | • Identified as a needed improvement within operations analysis of a project with frontage along a Tier 1 transit route with 2 or more routes or peak period frequency of 15 minutes or better |
| **Trenching and placement of conduit for providing traffic signal interconnect** | • Project size exceeds 100 units, 80,000 sf. of retail, or 100,000 sf. of commercial; and<br>• Project frontage block is identified for signal interconnect improvements as part of a planned ITS improvement; and<br>• A major transit improvement is identified within operations analysis requiring traffic signal interconnect |
| **Unbundled parking** | • If proposed parking ratio exceeds 1:1.25 (residential) |

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

- Inclusion of additional long-term and short-term bicycle parking that meets the design standards set forth in chapter five of the Bicycle Master Plan and the Bicycle Parking Ordinance (chapter 17.117 of the Oakland Planning Code), and shower and locker facilities in commercial developments that exceed the requirement.
- Construction of and/or access to bikeways per the Bicycle Master Plan; construction of priority bikeways, on-site signage and bike lane striping.
- Installation of safety elements per the Pedestrian Master Plan (such as crosswalk striping, curb ramps, count down signals, bulb outs, etc.) to encourage convenient and safe crossing at arterials, in addition to safety elements required to address safety impacts of the project.

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

| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | Schedule | Responsibility |
| **Transportation and Circulation (cont.)** | | |
| • Installation of amenities such as lighting, street trees, and trash receptacles per the Pedestrian Master Plan, the Master Street Tree List, Tree Planting Guidelines (which can be viewed at http://www2.oaklandnet.com/oakca1/groups/pwa/documents/report/oak042662.pdf and http://www2.oaklandnet.com/oakca1/groups/pwa/documents/form/oak025595.pdf, respectively), and any applicable streetscape plan.<br>• Construction and development of transit stops/shelters, pedestrian access, way finding signage, and lighting around transit stops per transit agency plans or negotiated improvements.<br>• 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).<br>• Provision of a transit subsidy to employees or residents, determined by the project applicant and subject to review by the City, if employees or residents use transit or commute by other alternative modes.<br>• 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).<br>• Guaranteed ride home program for employees, either through 511.org or through separate program.<br>• Pre-tax commuter benefits (commuter checks) for employees.<br>• 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.<br>• On-site carpooling and/or vanpool program that includes preferential (discounted or free) parking for carpools and vanpools.<br>• Distribution of information concerning alternative transportation options.<br>• 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.<br>• Parking management strategies including attendant/valet parking and shared parking spaces.<br>• Requiring tenants to provide opportunities and the ability to work off-site.<br>• 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).<br>• 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. | | |

| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | Schedule | Responsibility |
| **Transportation and Circulation (cont.)** | | |
| 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.<br><br>***b. TDM Implementation – Physical Improvements***<br><br>Requirement: For VTR strategies involving physical improvements, the project applicant shall obtain the necessary permits/ approvals from the City and install the improvements prior to the completion of the project.<br><br>***c. TDM Implementation – Operational Strategies***<br><br>Requirement: For projects that generate 100 or more net new a.m. or p.m. peak hour vehicle trips and contain ongoing operational VTR strategies, the project applicant shall submit an annual compliance report for the first five years following completion of the project (or completion of each phase for phased projects) for review and approval by the City. The annual report shall document the status and effectiveness of the TDM program, including the actual VTR achieved by the project during operation. If deemed necessary, the City may elect to have a peer review consultant, paid for by the project applicant, review the annual report. If timely reports are not submitted and/or the annual reports indicate that the project applicant has failed to implement the TDM Plan, the project will be considered in violation of the Conditions of Approval and the City may initiate enforcement action as provided for in these Conditions of Approval. The project shall not be considered in violation of this Condition if the TDM Plan is implemented but the VTR goal is not achieved.<br><br>**NOTE: This measure has been implemented by the project applicant and no further action is required.** | | |
| **SCA TRA-5 (Standard Condition of Approval 78)** *Transportation Impact Fee*<br><br>Requirement: The project applicant shall comply with the requirements of the City of Oakland Transportation Impact Fee Ordinance (chapter 15.74 of the Oakland Municipal Code). | Prior to issuance of building permit. | City of Oakland Bureau of Building |
| **SCA TRA-6 (Standard Condition of Approval 80)** *Plug-In Electric Vehicle (PEV) Charging Infrastructure*<br><br>a. ***PEV-Ready Parking Spaces***<br><br>Requirement: 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.<br><br>b. ***PEV-Capable Parking Spaces***<br><br>Requirement: 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. | Prior to Issuance of Building Permit | City of Oakland Bureau of Building |

| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | Schedule | Responsibility |
| **Transportation and Circulation (cont.)** | | |
| c. ***ADA-Accessible Spaces***<br><br>Requirement: The applicant shall submit, for review and approval of the Building Official, plans that show the location of future accessible EV parking spaces as required under Title 24 Chapter 11B Table 11B-228.3.2.1, and specify plans to construct all future accessible EV parking spaces with appropriate grade, vertical clearance, and accessible path of travel to allow installation of accessible EV charging station(s). | | |
| **BVDSP TRA Mitigation Measures**<br><br>All the mitigation measures identified in the BVDSP EIR are included in the citywide Transportation Impact Fee (TIF). Therefore, the project applicant shall mitigate the project impacts by paying the required TIF. | | |
| **Utilities and Service Systems** | | |
| **SCA UTIL-1 (Standard Condition of Approval 81)** *Construction and Demolition Waste Reduction and Recycling*<br><br>Requirement: The Project applicant shall comply with the City of Oakland Construction and Demolition Waste Reduction and Recycling Ordinance (chapter 15.34 of the Oakland Municipal Code) by submitting a Construction and Demolition Waste Reduction and Recycling Plan (WRRP) for City review and approval, and shall implement the approved WRRP. Projects subject to these requirements include all new construction, renovations/alterations/modifications with construction values of $50,000 or more (except R-3 type construction), and all demolition (including soft demolition) except demolition of type R-3 construction. The WRRP must specify the methods by which the Project will divert construction and demolition debris waste from landfill disposal in accordance with current City requirements. The WRRP may be submitted electronically at www.greenhalosystems.com or manually at the City's Green Building Resource Center. Current standards, FAQs, and forms are available on the City's website and in the Green Building Resource Center. | Prior to approval of construction-related permit | City of Oakland Public Works Department, Environmental Services Division |
| **SCA UTIL-2 (Standard Condition of Approval 82)** *Underground Utilities*<br><br>Requirement: The Project applicant shall place underground all new utilities serving the Project and under the control of the Project applicant and the City, including all new gas, electric, cable, and telephone facilities, fire alarm conduits, street light wiring, and other wiring, conduits, and similar facilities. The new facilities shall be placed underground along the Project's street frontage and from the Project structures to the point of service. Utilities under the control of other agencies, such as PG&E, shall be placed underground if feasible. All utilities shall be installed in accordance with standard specifications of the serving utilities. | During construction. | City of Oakland Bureau of Building |
| **SCA UTIL-3 (Standard Condition of Approval 83)** *Recycling Collection and Storage Space*<br><br>Requirement: The Project applicant shall comply with the City of Oakland Recycling Space Allocation Ordinance (chapter 17.118 of the Oakland Planning Code). The Project drawings submitted for construction-related permits shall contain recycling collection and storage areas in compliance with the Ordinance. For residential projects, at least two cubic feet of storage and collection space per residential unit is required, with a minimum of ten cubic feet. For nonresidential projects, at least two cubic feet of storage and collection space per 1,000 square feet of building floor area is required, with a minimum of ten cubic feet. | 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 |
| **Utilities and Service Systems (cont.)** | | |
| **SCA UTIL-4 (Standard Condition of Approval 84)** *Green Building Requirements*<br>***a. Compliance with Green Building Requirements During Plan-Check***<br>Requirement: 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).<br>i. The following information shall be submitted to the City for review and approval with the application for a building permit:<br>• Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards.<br>• Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit.<br>• Copy of the Unreasonable Hardship Exemption, if granted, during the review of the Planning and Zoning permit.<br>• Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (ii) below.<br>• 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.<br>• 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.<br>• Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.<br>ii. The set of plans in subsection (i) shall demonstrate compliance with the following:<br>• CALGreen mandatory measures.<br>• Compliance with the appropriate and applicable checklist approved during the Planning entitlement process.<br>• 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.<br>• The required green building point minimums in the appropriate credit categories.<br>***b. Compliance with Green Building Requirements During Construction***<br>Requirement: The Project applicant shall comply with the applicable requirements of CALGreen and the Oakland Green Building Ordinance during construction of the Project.<br>The following information shall be submitted to the City for review and approval: | a. Prior to approval of construction-related permit.<br>b. During construction.<br>c. Prior to Final Approval. | a. City of Oakland Bureau of Building<br>b. City of Oakland Bureau of Building<br>c. City of Oakland Bureau of Planning and Bureau of Building |

| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | **Schedule** | **Responsibility** |
| **Utilities and Service Systems (cont.)** | | |
| 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.<br>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.<br>iii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.<br>***c. Compliance with Green Building Requirements After Construction***<br>Requirement: Prior to the finalizing the Building Permit, the Green Building Certifier shall submit the appropriate documentation to City staff and attain the minimum required point level. | | |
| **SCA UTIL-5 (Standard Condition of Approval 86)** *Sanitary Sewer System*<br>Requirement: The Project applicant shall prepare and submit a Sanitary Sewer Impact Analysis to the City for review and approval in accordance with the City of Oakland Sanitary Sewer Design Guidelines. The Impact Analysis shall include an estimate of pre-Project and post-Project wastewater flow from the Project site. In the event that the Impact Analysis indicates that the net increase in Project wastewater flow exceeds City-projected increases in wastewater flow in the sanitary sewer system, the Project applicant shall pay the Sanitary Sewer Impact Fee in accordance with the City's Master Fee Schedule for funding improvements to the sanitary sewer system. | Prior to approval of construction-related permit. | City of Oakland Public Works Department, Department of Engineering and Construction |
| **SCA UTIL-6 (Standard Condition of Approval 87)** *Storm Drain System*<br>Requirement: The Project storm drainage system shall be designed in accordance with the City of Oakland's Storm Drainage Design Guidelines. To the maximum extent practicable, peak stormwater runoff from the project site shall be reduced by at least 25 percent compared to the pre-Project condition. | Prior to approval of construction-related permit. | City of Oakland Bureau of Building |
| **SCA UTIL-7 (Standard Condition of Approval 89)** *Water Efficient Landscape Ordinance (WELO)*<br>Requirement: The project applicant shall comply with California's Water Efficient Landscape Ordinance (WELO) in order to reduce landscape water usage. For any landscape project with an aggregate (total noncontiguous) landscape area equal to 2,500 sq. ft. or less. The project applicant may implement either the Prescriptive Measures or the Performance Measures, of, and in accordance with the California's Model Water Efficient Landscape Ordinance. For any landscape project with an aggregate (total noncontiguous) landscape area over 2,500 sq. ft., the project applicant shall implement the Performance Measures in accordance with the WELO.<br>*Prescriptive Measures:* Prior to construction, the project applicant shall submit documentation showing compliance with Appendix D of California's Model Water Efficient Landscape Ordinance (see website below starting on page 23): http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/Title%2023%20extract%20-%20Official%20CCR%20pages.pdf<br>*Performance Measures*: Prior to construction, the project applicant shall prepare and submit a Landscape Documentation Package for review and approval, which includes the following:<br>a. Project Information:<br>i. Date, | Prior to approval of construction-related permit. | City of Oakland Bureau of Planning |

| Standard Conditions of Approval/Mitigation Measures | Mitigation Implementation/Monitoring | |
|---|---|---|
| | **Schedule** | **Responsibility** |
| **Utilities and Service Systems (cont.)** | | |
| ii. Applicant and property owner name,<br>iii. Project address,<br>iv. Total landscape area,<br>v. Project type (new, rehabilitated, cemetery, or home owner installed),<br>vi. Water supply type and water purveyor,<br>vii. Checklist of documents in the package, and<br>viii. Applicant signature and date with the statement: "I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package."<br>b. Water Efficient Landscape Worksheet<br>i. Hydrozone Information Table<br>ii. Water Budget Calculations with Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use<br>c. Soil Management Report<br>d. Landscape Design Plan<br>e. Irrigation Design Plan, and<br>f. Grading Plan<br>Upon installation of the landscaping and irrigation systems, the Project applicant shall submit a Certificate of Completion and landscape and irrigation maintenance schedule for review and approval by the City. The Certificate of Compliance shall also be submitted to the local water purveyor and property owner or his or her designee.<br>i. For the specific requirements within the Water Efficient Landscape Worksheet, Soil Management Report, Landscape Design Plan, Irrigation Design Plan and Grading Plan, see the link below. Effective May 1, 2018 Page 77 http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/Title%2023%20extract%20-%20Official%20CCR%20pages.pdf | | |
| Also **SCA HYD-1, Erosion and Sedimentation Control Plan for Construction**. See *Hydrology and Water Quality*, above. | | |
| Also **SCA HYD-2 NPDES C.3 Stormwater Requirements for Regulated Projects.** See *Hydrology and Water Quality*, above. | | |

# ATTACHMENT B

# Criteria for Use of Addendum, per 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 6 of this document, the analysis in the BVDSP EIR is considered for this assessment under Section and 15164.

## Project Modifications

The Broadway Valdez District Specific Plan (BVDSP) EIR analyzed the Broadway Valdez District Development Program (Development Program), which represents the maximum feasible development that the City of Oakland has projected can reasonably be expected to occur in the BVDSP area (Plan area) over a 25-year planning period.[50]

The EIR indicates that the CEQA analysis was based on the maximum development quantities set forth in the Development Program. The intent of the BVDSP is to provide as much flexibility as is feasible in terms of precise mix of newly developed land uses and their location in the Plan area, while conforming to the CEQA analysis and thresholds established in the EIR. Traffic capacity was identified in the BVDSP EIR as the key environmental factor constraining development. The City of Oakland is tracking and measuring vehicle trip generation created by projects proposed under the BVDSP, not land uses, to monitor when thresholds established have been met. Thus, it is traffic capacity that caps development under the BVDSP, not uses, which were contemplated to evolve and, as long as impacts fall within the maximum development analyzed in the BVDSP EIR, additional CEQA analysis is unnecessary.

The Project would provide quantities of commercial space that exceed the parameters contemplated for Valdez Triangle Subdistrict 3, as indicated in Table 1 herein and Table 4.13-7 of the BVDSP EIR, but are within the 336,000 square feet of general office use identified for the

[50] In total, the Broadway Valdez Development Program includes approximately 3.7 million square feet of development, including approximately 695,000 square feet of office space, 1,114,000 square feet of restaurant/retail space, 1,800 residential units, a new 180-room hotel, approximately 6,500 parking spaces provided by the development program, and approximately 4,500 new jobs.

Plan area as a whole.[51] The Project's 11,332 square feet of retail use would be well below the 251,398 square feet identified in the Development Program for Subdistrict 3. Further, the Project conforms to the traffic generation parameters analyzed in the BVDSP EIR, as described in Section 7.14, *Transportation and Circulation*, above.

As described in Section 7.14, *Transportation and Circulation*, of this CEQA Checklist, the Project would generate approximately 73 net new vehicle trips during the weekday AM peak hour and approximately 72 net new vehicle trips during the weekday PM peak hour.

Trips generated by the Project, together with the trips generated by other projects that are currently under construction, approved, and proposed for development in the Plan area, would represent approximately 59 percent of the AM peak-hour trips and 53 percent of the PM peak-hour trips anticipated in the BVDSP EIR for the entire Plan area. The combined trip generation for the projects under construction, approved, and proposed within the Valdez Triangle Subarea would represent approximately 106 percent of the AM peak-hour trips and 78 percent of the PM peak-hour trips anticipated in the BVDSP EIR for the Valdez Triangle. Trips generated by the Project, together with the trips generated by other projects that are currently under construction, approved, and proposed for development in Subdistrict 3 would represent approximately 101 percent of the AM peak-hour trips and 66 percent of the PM peak-hour trips anticipated in the BVDSP EIR for Subdistrict 3. 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 BVDSP would be within the program analyzed under the BVDSP EIR for the Plan area.

Therefore, the Project would represent a minor change in the Development Program, and such changes are 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

[51] Subdistrict 3 is defined in the BVDSP as the area north of 24th Street, west of Valdez Street, and south of 27th Street.

(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 BVDSP 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 7 of this document. No new information has emerged that would substantially change the analyses or conclusions set forth in the BVDSP 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 effects, or necessitate implementation of additional or considerably different mitigation measures than those identified in BVDSP EIR, nor 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 BVDSP EIR. No major revisions to the BVDSP EIR are required.

The analysis presented in this CEQA Checklist, combined with the prior BVDSP EIR analysis, demonstrates that the Project would not result in significant impacts that were not previously identified in the BVDSP 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 BVDSP EIR. Overall, the Project's impacts are similar to those identified and discussed in the BVDSP EIR, as described in the CEQA Checklist, and the findings reached in the BVDSP EIR are applicable.

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# ATTACHMENT C

# 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 General Plan land use designation for the site is Central Business District (CBD). This designation applies to areas suitable for high density mixed-use urban center with a mix of large-scale offices, commercial, urban (high-rise) residential, and infill hotel uses, among many others, in the central Downtown core of the city. The proposed retail and office commercial project would be consistent with this designation.
- The project site is located within the boundaries of the Plan area's Retail Priority Sites Zone (D-BV-1, Priority Site 3C) and Retail Zone (D-BV-2). The regulatory framework of D-BV-1 ensures that larger sites and opportunity areas are reserved primarily for new large-scale retail development that is oriented toward consumer goods, at least on the ground floor. The intent of the D-BV-2 zone is to create, maintain, and enhance areas of the plan area with ground-level retail, restaurants, entertainment, and art activities with pedestrian-oriented active storefront uses. Upper stories are intended to be available for office and residential uses. The Project would be consistent with the regulatory framework of D-BV-1 and D-BV-2, as it would provide approximately 11,332 square feet of large-scale retail oriented toward consumer goods along the ground floor along Webster Street with office uses occupying the upper stories.
- The southern portion of the project site is within the 85-foot height area and the northern portion is within the 45* foot height area. In the 45* foot height area, height and density is limited by the amount of retail square footage provided by a proposed project. To exceed 45 feet in height, projects must provide a minimum retail square footage of 50 percent of the lot area. Projects that satisfy the criteria for the Retail Priority Site area are allowed a maximum base height of 85 feet, a maximum overall height of 200 feet, and the development of residential uses. The Project is located on one parcel out of five that comprise Retail Priority Site 3C. Table LAN-1 (see Section 7.10, *Land Use, Plans, and Policies*) shows the square footages of each of the parcels contained within this Retail Priority Site. As shown in the table, the total amount of proposed/existing ground-floor retail is approximately 17,740 square feet, which is approximately equal to 50 percent of the total lot square footage. Therefore, the Project meets the Retail Priority Site requirements allowing a maximum base height of 85 feet and a maximum height of 200 feet. The proposed building would have base height of 85 feet across the project site with a tower on the northern part of the site reaching a maximum height of 178 feet (elevator/roof stair/mechanical equipment will be screened from view and add another 14 feet to the overall height). In accordance with Section 15183.3 of the CEQA Guidelines, the Project is consistent with the BVDSP EIR.
- The permitted FAR is 8.0 for the parcel classified as D-BV-1 because the project achieves the 50 percent Retail Priority Site area threshold. This parcel is approximately 12,500 square feet, and therefore the maximum non-residential FAR allowed would be 100,000 square feet. The permitted FAR is 4.5 for remaining parcels classified as D-BV-2. This portion is approximately 13,965 square feet, and therefore the maximum non-residential FAR allowed would be 62,844 square feet. The Project would provide approximately 156,187 square feet of retail and office space and is below the maximum FAR. Therefore, the Project would comply with the amount of 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 General Plan Land Use and Transportation Element (LUTE) EIR.
- The Project is consistent with the development goals in the Central District Urban Renewal Plan (2011 Renewal Plan Amendments EIR). The 2011 Renewal Plan Amendments EIR details particular projects and programs that are anticipated to include targeting investments

and activities toward certain catalyst projects, infrastructure improvement projects and infill development projects that are consistent with the General Plan. The Project is consistent with at least five major goals of these projects and programs:

- Strengthening of the Redevelopment Project Area's existing role as an important office center for administrative, financial, business service and governmental activities.
- Revitalization and strengthening of the Oakland Central District's historical role as the major regional retail center for the Metropolitan Oakland Area.
- Provisions of employment and other economic benefits to disadvantaged persons living within or near the Redevelopment Project Area.
- Correcting health and safety concerns, improving economic conditions and eliminating physical blight conditions throughout the Redevelopment Project Area
- Improved environmental design within the Project Area, including creation of a definite sense of place, clear gateways, emphatic focal points and physical design which expresses and respects the special nature of each sub-area.

**Project-specific impacts peculiar to the project or site, or those not analyzed in a prior EIR.** Because the Project is consistent with the policies, land use designation, and development parameters in the LUTE and Broadway Valdez District Specific Plan (BVDSP), the Project's potential contribution to cumulatively significant effects has already been addressed in those prior EIRs. In addition, the 2011 Renewal Plan Amendments EIR analyzed the cumulative effects of development projects that would occur absent the Renewal Plan Amendments, which would include the Project, which is not specifically addressed in the EIR.

Therefore, consistent with CEQA Guidelines Section 15183 which allows for streamlined environmental review, this document needs only to consider whether there are project-specific effects peculiar to the project or its site, and relies on the streamlining provisions of CEQA Guidelines Section 15183 to not re-consider cumulative effects.

# New Significant Effects

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

Specifically, the CEQA Checklist analysis includes the resource topics that the 2011 Renewal Plan Amendments EIR and BVDSP EIR determined could have significant unavoidable impacts:

- Aesthetics, Shadow, and Wind
- Air Quality
- Cultural Resources
- Greenhouse Gas

- Noise
- Transportation/Traffic

As these analyses demonstrate, the Project would not substantially increase the severity of the significant impacts identified in the LUTE EIR, the BVDSP EIR, or 2011 Renewal Plan Amendments EIR, nor would it result in new significant impacts that were not identified in these Previous EIRs. Further, there have been no substantial changes in circumstances following certification of the 2011 Renewal Plan Amendments EIR in 2011 or BVDSP 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 2011 Renewal Plan Amendments EIR or the BVDSP EIR were certified that would cause more severe adverse impacts than discussed in the prior EIRs. There have been no significant changes in the underlying development assumptions, nor in the applicability or feasibility of mitigation measures or SCAs included in the prior EIRs.

## Standard Conditions of Approval

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

# ATTACHMENT D

## Criteria for Use of Other Applicable Previous CEQA Documents, per CEQA Guidelines Section 15168

Section 15168(a) of the California Environmental Quality Act (CEQA) Guidelines states that "A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:

1. Geographically,
2. As logical parts in the chain of contemplated actions,
3. In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or
4. As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

Further, Section 15168(c) states that "Later activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared." Specifically,

(1) If a later activity would have effects that were not examined in the program EIR, a new initial study would need to be prepared leading to either an EIR or a negative declaration. That later analysis may tier from the program EIR as provided in Section 15152.

(2) If the [lead] agency finds that pursuant to Section 15162, no subsequent EIR would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required. Whether a later activity is within the scope of a program EIR is a factual question that the lead agency determines based on substantial evidence in the record. Factors that an agency may consider in making that determination include, but are not limited to, consistency of the later activity with the type of allowable land use, overall planned density and building intensity, geographic area analyzed for environmental impacts, and covered infrastructure, as described in the program EIR.

(3) An agency shall incorporate feasible mitigation measures and alternatives developed in the program EIR into later activities in the program.

(4) Where the later activities involve site specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope of the program EIR.

(5) A program EIR will be most helpful in dealing with later activities if it provides a description of planned activities that would implement the program and deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed project description and analysis of the program, many later activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents would be required.

As discussed in detail in Section 6 of this document, the program-level analyses completed in Oakland's 1998 General Plan Land Use and Transportation Element EIR (1998 LUTE EIR), the 2011 Central District Urban Renewal Plan Amendments EIR (2011 Renewal Plan Amendments EIR), and BVDSP EIR is considered for this assessment under Sections 15162 and 15168. These are referred to collectively in this attachment as the "Prior EIRs."

**New Significant Effects.** As demonstrated in Section 7 of the CEQA Checklist and Attachment C to this CEQA Checklist, the Project would not cause new specific effects that were not addressed in the LUTE EIR, the BVDSP EIR, or the 2011 Renewal Plan Amendments EIR. Therefore, an initial study is not required for the Project.

**Project Consistency**. Attachment B to this CEQA Checklist demonstrates the Project's consistency with the development density established by the existing zoning, community plan, and general plan policies previously analyzed in the Prior EIRs. Attachment C to this CEQA Checklist establishes that the Project would represent a minor change in the BVDSP Development Program, and such changes are anticipated and analyzed in the BVDSP EIR. Pursuant to Section 15162, no subsequent EIR would be required as the Project is within the scope of the project covered by the Prior EIRs

**Mitigation Incorporation**. The analysis conducted incorporates by reference the information contained in each of the Prior EIRs. The Project is legally required to incorporate and/or comply with the applicable requirements of the mitigation measures identified in the BVDSP 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.

**CEQA Checklist**. Section 7 of this CEQA Checklist evaluates the potential project-specific environmental effects of the Project, and evaluates whether such impacts were adequately covered by the BVDSP EIR, as well as the Prior EIRs, to allow the provisions afforded by Guidelines Section 5168 to apply.

The information presented in this environmental review document and attachments supports that the Project is within the scope of the project described in the BVDSP EIR and Prior EIRs and meets all requirements under CEQA Guidelines Section 15168. As such, the Project qualifies for the tiering provisions afforded under CEQA Guidelines Section 15168 and no supplemental environmental review is required.

# Appendix A
## Wind Study

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# REPORT

# 2410-2424 WEBSTER STREET

OAKLAND, CA

PEDESTRIAN WIND STUDY
RWDI #1904649
January 4, 2021


**SUBMITTED TO**

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# EXECUTIVE SUMMARY

RWDI was retained to conduct a pedestrian wind assessment for the proposed 2410-2424 Webster Street development in Oakland, CA (Image 1). Based on our wind-tunnel testing for the proposed development under the Existing, Existing + Project, and Project + Cumulative configurations (Images 2A through 2C), and the local wind records (Image 3), the potential wind hazard conditions are predicted as shown on site plans in Figures 1A through 2C, while the associated wind speeds are listed in Tables 1. These results can be summarized as follows:

| Configurations | | WIND HAZARD | | |
|---|---|---|---|---|
| | | **Average Speed** | **Total Hours** | **Total Exceedances** |
| **A** | **Existing** | 20 mph | 0 | 0 / 44 |
| **B** | **Existing + Project** | 24 mph | 0 | 0 / 44 |
| **C** | **Project + Cumulative** | 23 mph | 0 | 0 / 44 |

- Wind speeds at all locations are predicted to comply with the wind hazard criterion for the three configurations tested since the project would not create wind exceeding 36mph for more than one hour during daylight hours during the year.

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# 1 INTRODUCTION

RWDI was retained to conduct a pedestrian wind assessment for the proposed 2410-2424 Webster Street development in Oakland, CA. This report presents the project objectives, background and approach, and discusses of the results from RWDI's assessment.

## 1.1 Project Description

The project (site shown in Image 1) is located on the east side of Webster Street and north side of 24th Street. It consists of an 11-story office tower with retail space on the ground floor.

## 1.2 Objectives

The objective of the study was to assess the effect of the proposed development on local conditions in pedestrian areas on and around the study site and provide recommendations for minimizing adverse effects, if needed. This quantitative assessment was based on wind speed measurements on a scale model of the project and its surroundings in one of RWDI's boundary-layer wind tunnels. These measurements were combined with the local wind records and compared to appropriate criteria for gauging wind hazard in pedestrian areas. The assessment focused on critical pedestrian areas, including building entrances and public sidewalks.


**Image 1: Aerial View of Site and Surroundings (Photo Courtesy of Google™ Earth)**

# 2 BACKGROUND AND APPROACH

## 2.1 Wind Tunnel Study Model

To assess the wind environment around the proposed project, a 1:400 scale model of the project site and surroundings was constructed for the wind tunnel tests of the following configurations:

| | |
|---|---|
| A - Existing: | Existing site with existing surroundings (Image 2A), |
| B – Existing+ Project: | Proposed project with existing surroundings (Image 2B), and, |
| C – Project + Cumulative: | Proposed project with existing and future surroundings (Image 2C). |

The wind tunnel model included all relevant surrounding buildings and topography within an approximately 1600 ft radius of the study site. The wind and turbulence profiles in the atmospheric boundary layer beyond the modelled area were also simulated in RWDI's wind tunnel. The wind tunnel model was instrumented with 44 specially designed wind speed sensors to measure mean and gust speeds at a full-scale height of approximately 5 ft above local grade in pedestrian areas throughout the study site. Wind speeds were measured for 36 directions in a 10-degree increment. The measurements at each sensor location were recorded in the form of ratios of local mean and gust speeds to the mean wind speed at a reference height above the model. The placement of wind measurement locations was based on our experience and understanding of the pedestrian usage for this site and reviewed by design team.

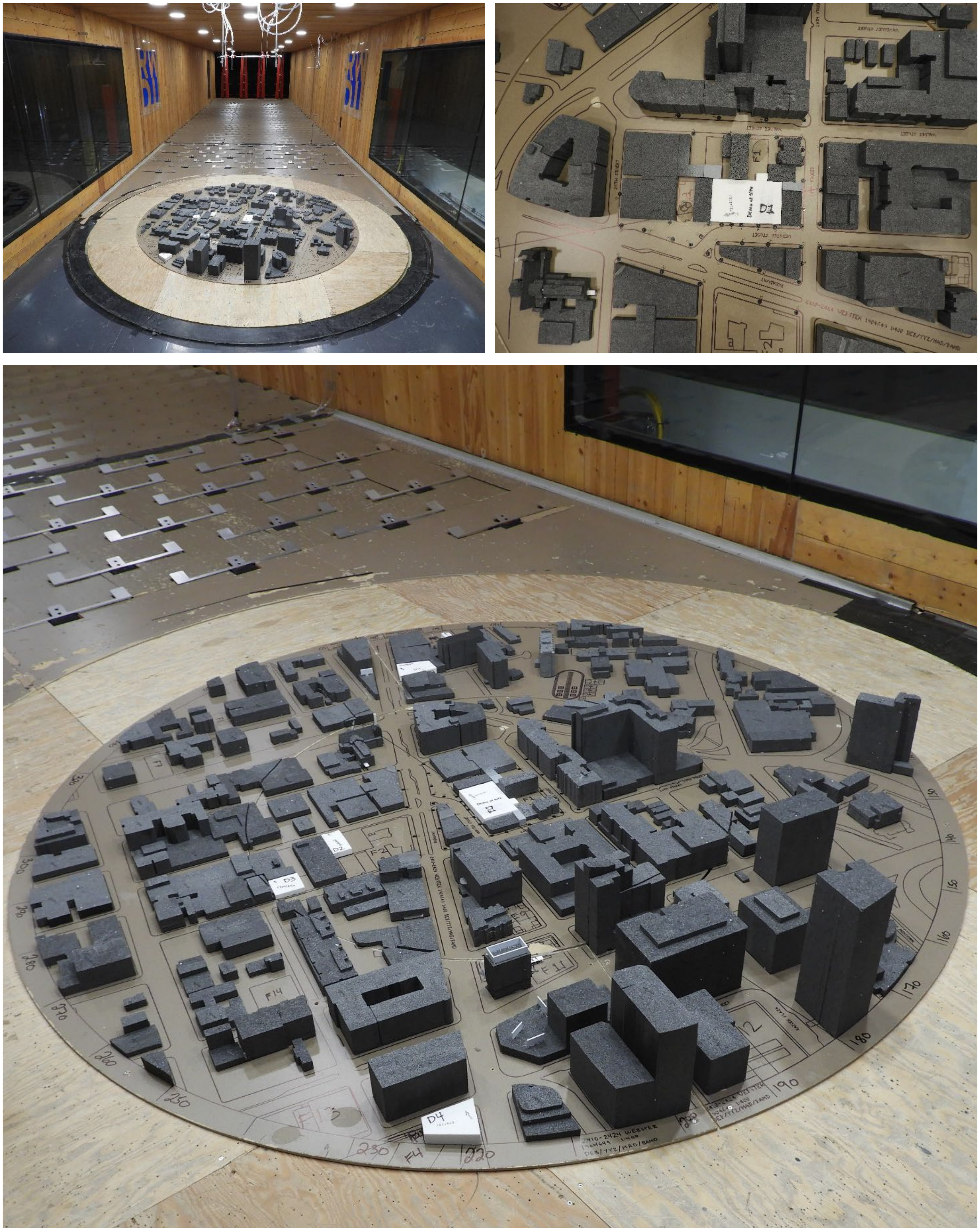



**Image 2A: Wind Tunnel Study Model – Existing Configuration**

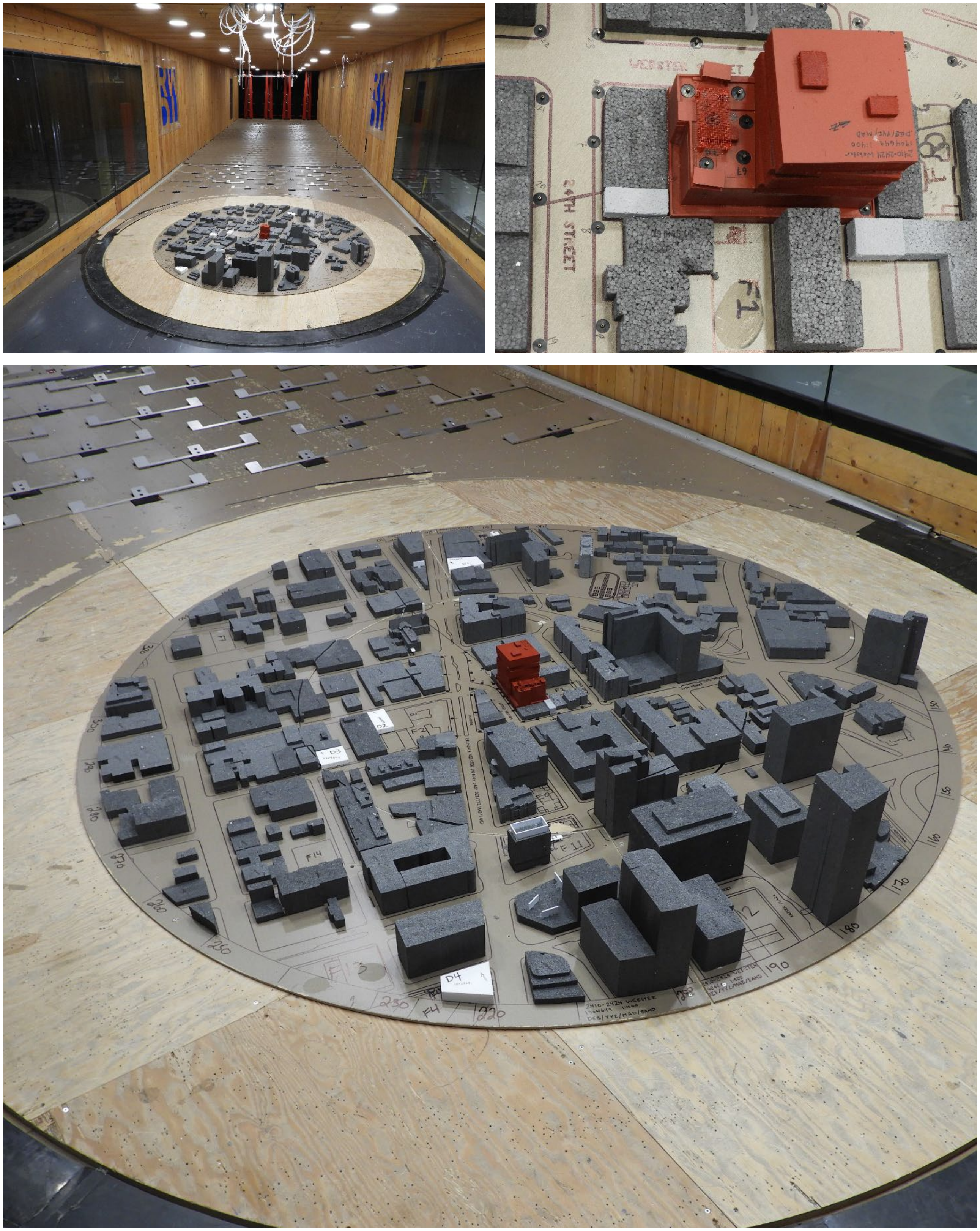



**Image 2B: Wind Tunnel Study Model – Existing + Project Configuration**

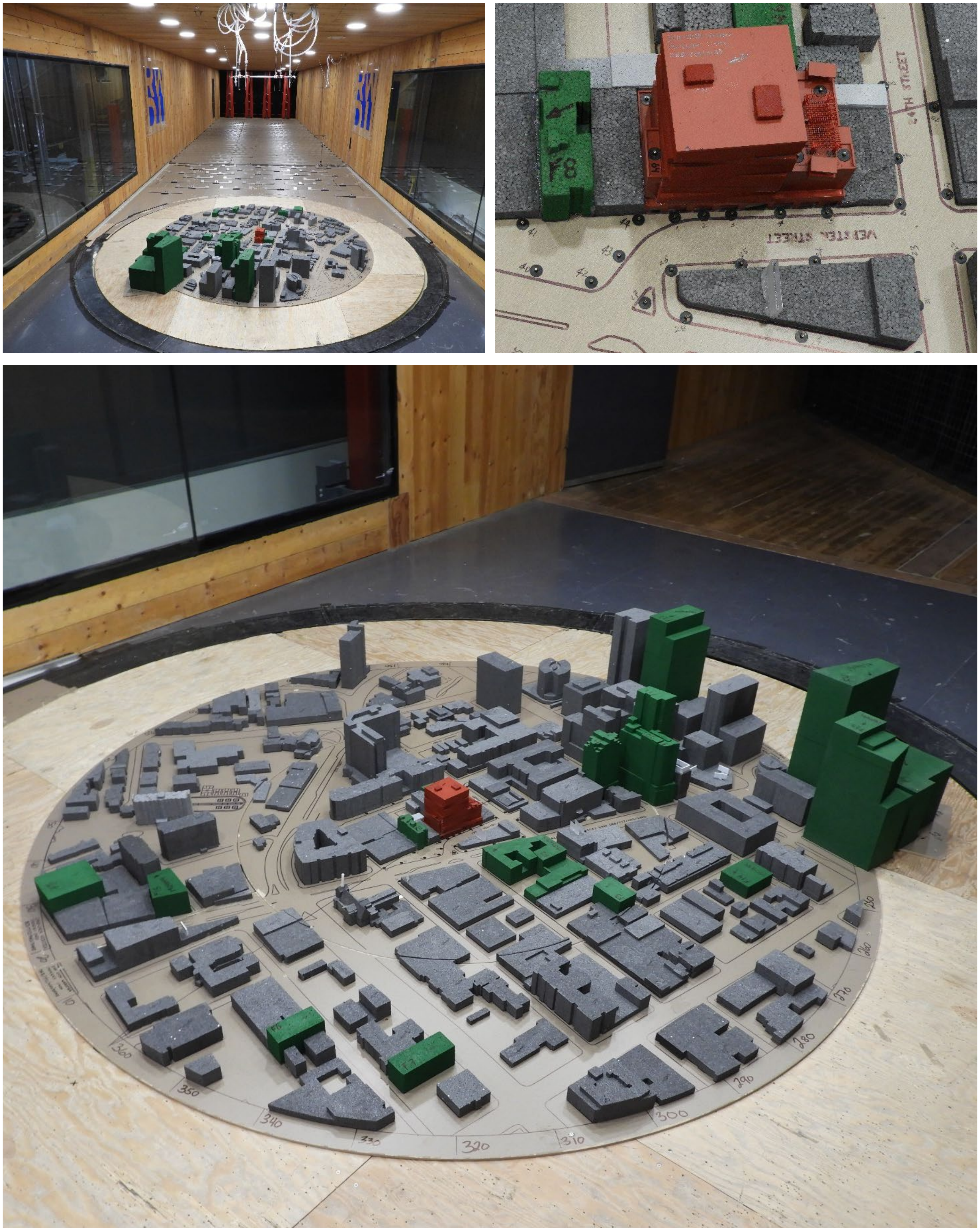
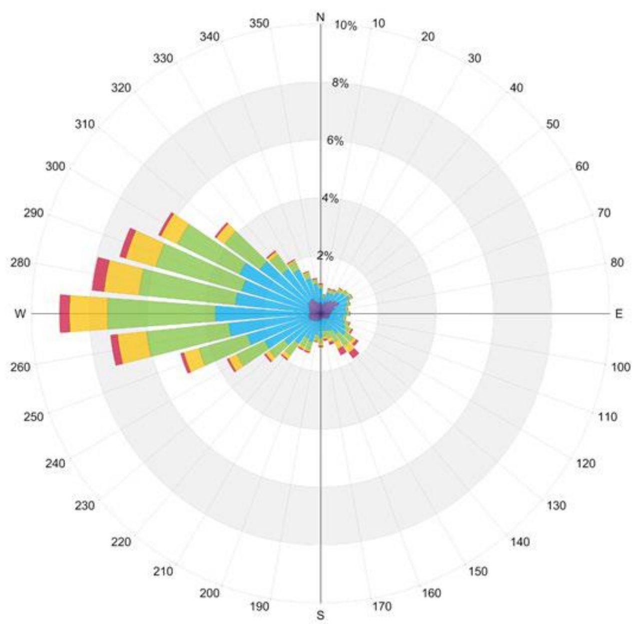



**Image 2C: Wind Tunnel Study Model – Project + Cumulative Configuration**

## 2.2 Meteorological Data

Wind statistics recorded at Metropolitan Oakland International Airport between 1988 and 2018 were analyzed for annual wind conditions. Image 3 graphically depicts the directional distributions of annual wind frequencies and speeds. Winds are frequent from the northwest through west-southwest directions throughout the year, as indicated by the wind rose. Strong winds of a mean speed greater than 15 mph measured at the airport (at an anemometer height of 33 feet) occur 11.5% of the time annually.

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




**Annual Winds**

| Wind Speed (mph) | Probability (%) |
|---|---|
| Calm | 11.7 |
| 1-5 | 13.9 |
| 6-10 | 36.5 |
| 11-15 | 26.5 |
| 16-20 | 8.7 |
| >20 | 2.8 |

**Image 3: Directional distribution of winds approaching Metropolitan Oakland International Airport from 1988 to 2018**

# 2.3 Significant Threshold

## Significant Threshold

A wind analysis needs to be done if the height of the project is 100 feet or greater (measured to the roof) and one of the following conditions exists: (a) the project is located adjacent to a substantial water body (i.e. Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the project is located Downtown. Since the proposed project (approximately 150 feet tall) exceeds 100 feet in height and is located Downtown, a wind analysis is required.

For the purposes of this study, the City of Oakland considers a significant wind impact to occur if a project were to "Create winds exceeding 36 mph for more than one hour during daylight hours during the year". Equivalent wind speeds (EWS) were calculated using the average wind speed (mean velocity) adjusted to include the level of gustiness and turbulence. In the formula below, the mean wind speed is increased when the turbulence intensity is greater than 15%:

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

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

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

$\boldsymbol{TI}$ = turbulence intensity

## 2.4 Cumulative Buildings

Anticipated future buildings were included in the Project + Cumulative configuration. These sites are shown in Image 4 and listed in the table below.[1]

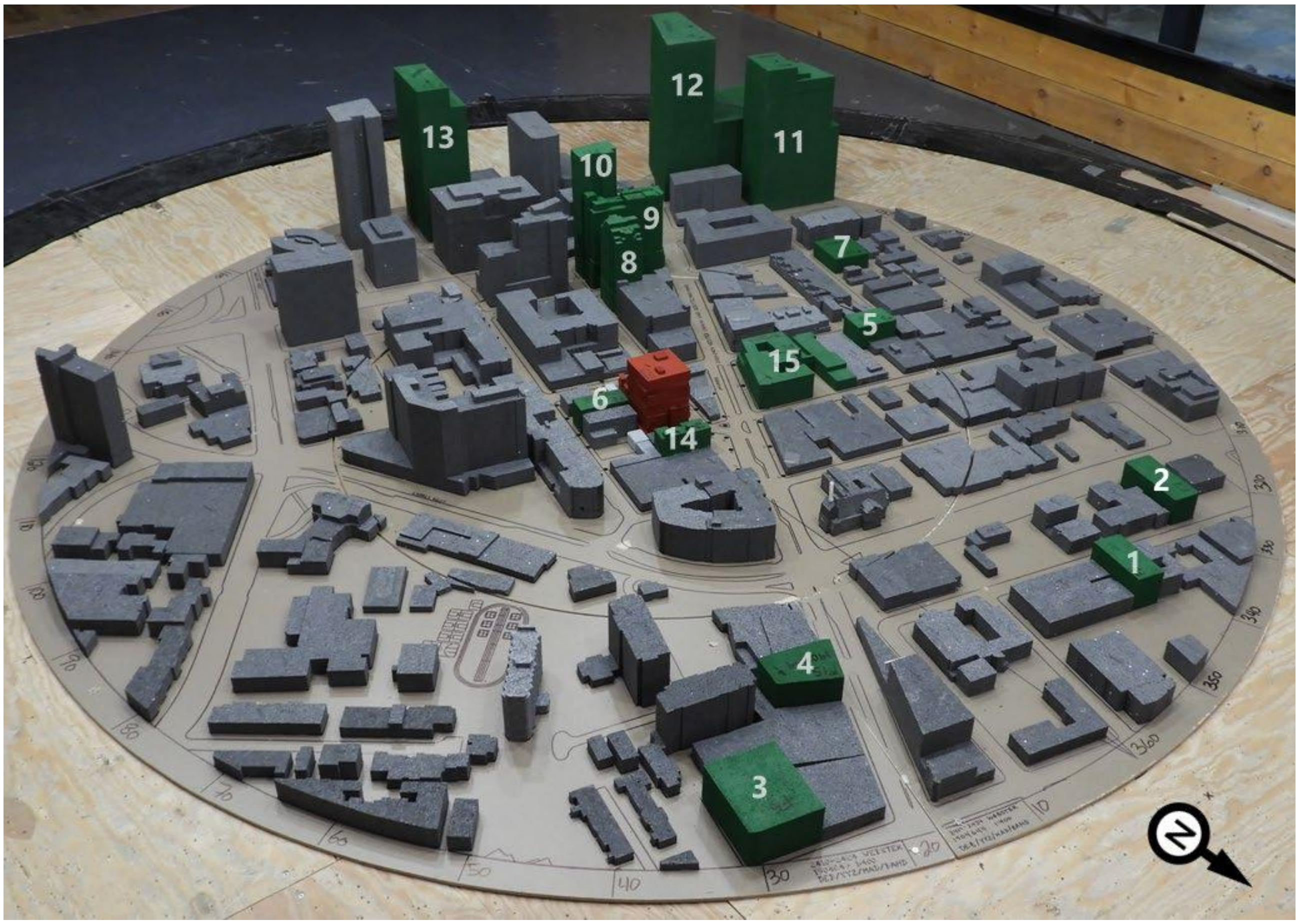



**Image 4: Cumulative Buildings**

| CUMULATIVE BUILDINGS | | | | | |
|---|---|---|---|---|---|
| **1** | 452 28th Street | **6** | 2415 Valdez Street | **11** | 2201 Valley Street |
| **2** | 451 28th Street | **7** | 2323 Valley Street | **12** | 2100 Telegraph Avenue |
| **3** | 295 29th Street | **8** | 2305 Webster Street | **13** | 2 Kaiser Plaza |
| **4** | Broadstone Phase 2 | **9** | 2270 Broadway | **14** | 2500 Webster Street |
| **5** | 460 24th Street | **10** | 88 Grande Avenue | **15** | 2401 Broadway |

**Note**: the pre-application for the proposed 2359 Harrison Street project was filed in February 2020. The development application was filed as recently as May 2020. The wind study was conducted prior to these filings and thus does not include this cumulative project. Considering the proposed height of 2359 Harrison Street (16 Stories), its addition would not result in any negative wind impacts at or around the proposed site.

# 3 RESULTS AND DISCUSSION

This section presents the results of the wind tunnel measurements analyzed in terms of equivalent wind speeds as defined by the equation in Section 2.3. The text of the report simply refers to the data as wind speeds.

The wind hazard results for the configurations tested are graphically depicted on a site plan in Figures 1A through 1C located in the "Figures" sections of this report. Table 1, located in the "Tables" section of the report, presents the wind hazard results, and lists the predicted wind speed to be exceeded one hour per year. The predicted number of hours per year that the City of Oakland Significant Wind Impact Criterion (one-minute wind speed of 36 mph) is exceeded is also provided.

## 3.1 Existing Configuration

For the Existing configuration (Figure 1A), the significance threshold is not exceeded at any of the 44 locations. For all locations, the average wind speed which is exceeded for 1 hour per year is 20 mph (Table 1).

## 3.2 Existing plus Project Configuration

Compared to the Existing configuration, the addition of the proposed Project would result in similar wind conditions around the project site. The average wind speed exceeded for 1 hour per year is predicted to increase to 24 mph (Table 1), but the wind hazard threshold is not exceeded at any of the 44 locations (Figure 1B).

## 3.3 Project plus Cumulative Configuration

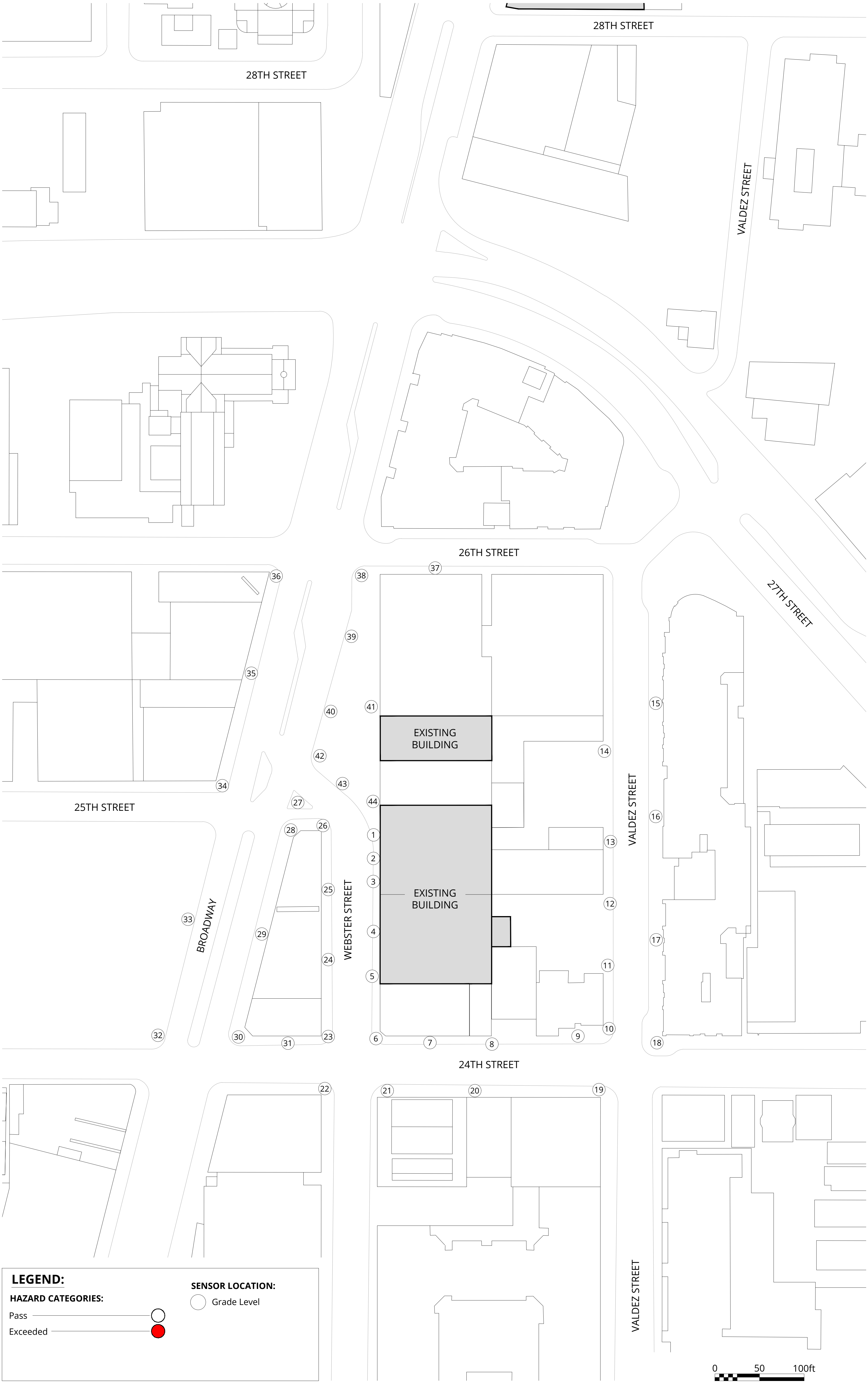
The addition of the approved cumulative (future) developments in the surrounding area would provide wind speeds similar to the Existing and Existing plus Project configurations. The wind hazard threshold is not exceeded at any of the 44 test locations (Figure 1C). The average wind speed exceeded for 1 hour per year is predicted to be 23 mph (Table 1).

# 4 APPLICABILITY OF RESULTS

The wind conditions presented in this report pertain to the model of the 2410-2424 Webster Street development constructed using the drawings and information listed below. Should there be any design changes that deviate from this list of drawings, the wind condition predictions presented may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

| File Name | File Type | Date Received (dd/mm/yyyy) |
|---|---|---|
| **19-0923 2424 Webster.skp** | SketchUp Model | 15/10/2019 |

# FIGURES

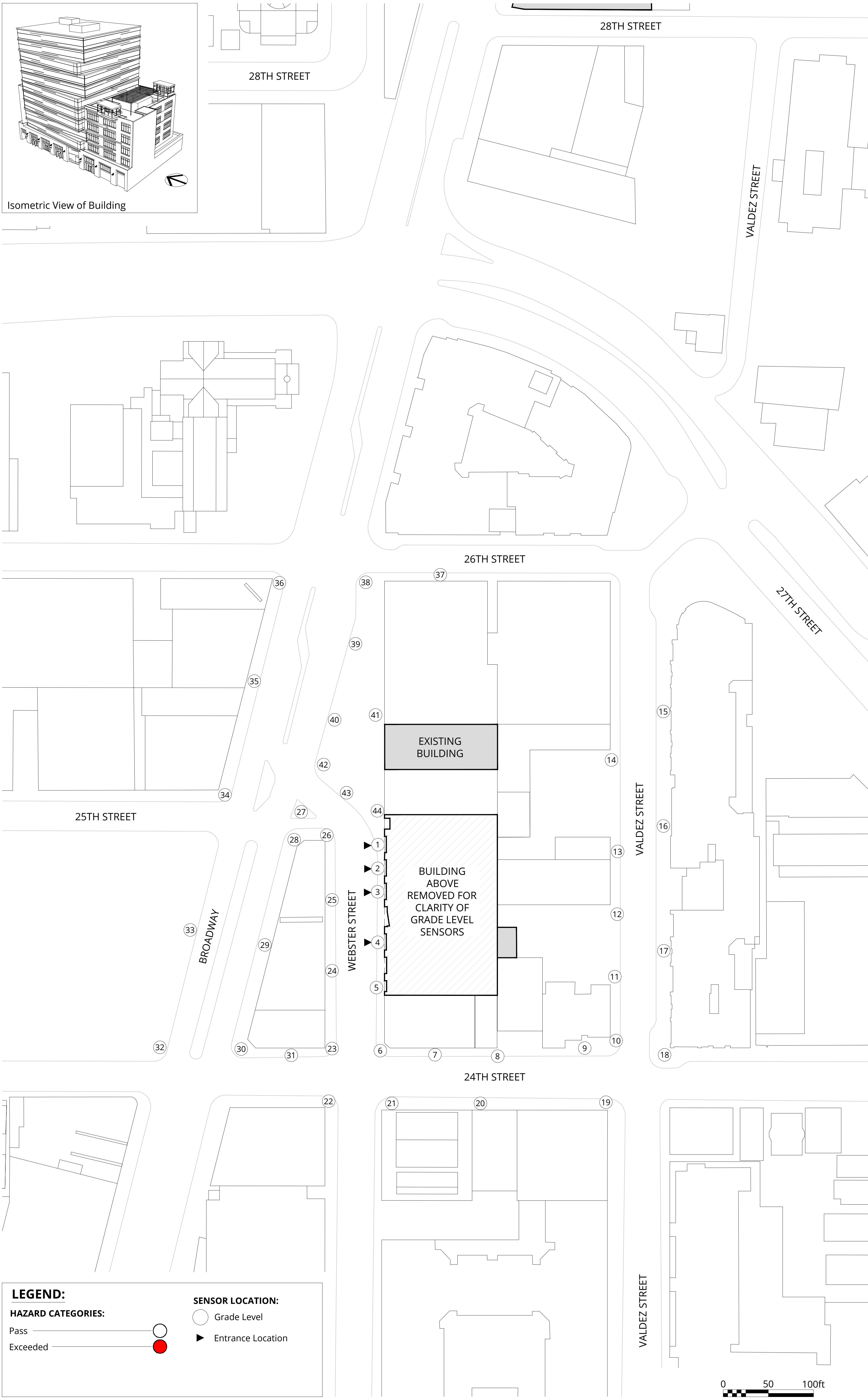



**Pedestrian Wind Hazard Conditions**
Existing
Annual

True North

Drawn by: GRE | Figure: 1A
Approx. Scale: 1"=100'

2410-2424 Webster Street - Oakland, CA
Project #1904649
Date Revised: Mar. 23, 2020




**LEGEND:**

**HAZARD CATEGORIES:**

- Pass
- Exceeded

**SENSOR LOCATION:**

- Grade Level
- ▶ Entrance Location

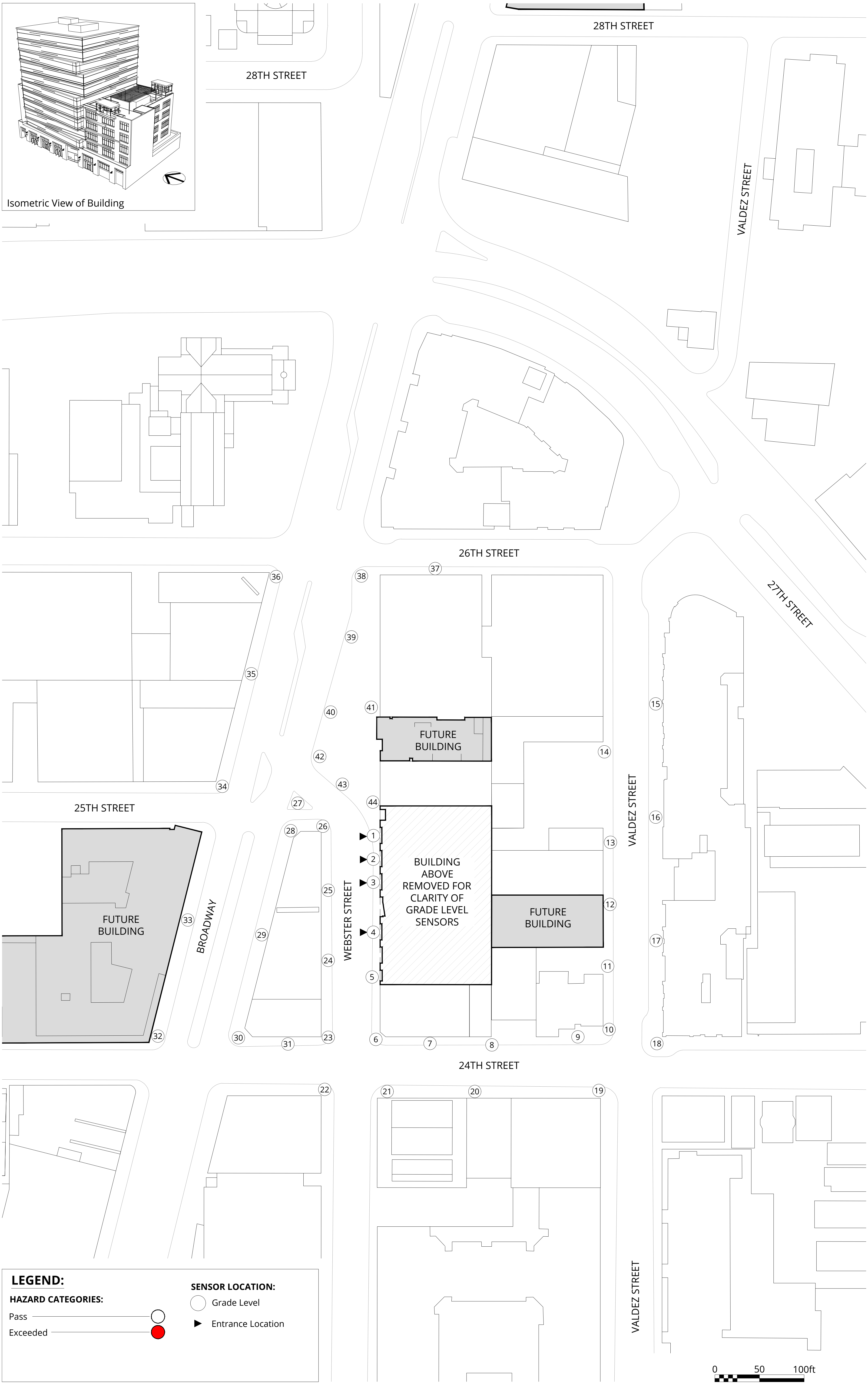
**Pedestrian Wind Hazard Conditions**
Existing + Project
Annual

2410-2424 Webster Street - Oakland, CA

True North

Project #1904649

| | |
|---|---|
| Drawn by: GRE | Figure: 1B |
| Approx. Scale: | 1"=100' |
| Date Revised: | Mar. 23, 2020 |




**Pedestrian Wind Hazard Conditions**
Project + Cumulative
Annual

True North

Drawn by: GRE | Figure: 1C
Approx. Scale: 1"=100'
Date Revised: Mar. 23, 2020

2410-2424 Webster Street - Oakland, CA

Project #1904649

# TABLES

## Table 1: Wind Hazard Conditions

| Location | Existing | | | Existing + Project | | | | Project + Cumulative | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Wind Speed Exceeded 1hr/year (mph) | Hours per Year Wind Speed Exceeds Hazard Criteria | Exceeds | Wind Speed Exceeded 1hr/year (mph) | Hours per Year Wind Speed Exceeds Hazard Criteria | Hours Change Relative to Existing | Exceeds | Wind Speed Exceeded 1hr/year (mph) | Hours per Year Wind Speed Exceeds Hazard Criteria | Hours Change Relative to Existing | Exceeds |
| **1** | 16 | 0 | | 24 | 0 | 0 | | 19 | 0 | 0 | |
| **2** | 17 | 0 | | 20 | 0 | 0 | | 18 | 0 | 0 | |
| **3** | 19 | 0 | | 18 | 0 | 0 | | 18 | 0 | 0 | |
| **4** | 18 | 0 | | 20 | 0 | 0 | | 22 | 0 | 0 | |
| **5** | 17 | 0 | | 24 | 0 | 0 | | 27 | 0 | 0 | |
| **6** | 18 | 0 | | 28 | 0 | 0 | | 27 | 0 | 0 | |
| **7** | 19 | 0 | | 28 | 0 | 0 | | 24 | 0 | 0 | |
| **8** | 18 | 0 | | 22 | 0 | 0 | | 19 | 0 | 0 | |
| **9** | 20 | 0 | | 20 | 0 | 0 | | 18 | 0 | 0 | |
| **10** | 21 | 0 | | 20 | 0 | 0 | | 19 | 0 | 0 | |
| **11** | 21 | 0 | | 27 | 0 | 0 | | 22 | 0 | 0 | |
| **12** | 22 | 0 | | 25 | 0 | 0 | | 20 | 0 | 0 | |
| **13** | 20 | 0 | | 23 | 0 | 0 | | 21 | 0 | 0 | |
| **14** | 24 | 0 | | 26 | 0 | 0 | | 23 | 0 | 0 | |
| **15** | 19 | 0 | | 18 | 0 | 0 | | 17 | 0 | 0 | |
| **16** | 19 | 0 | | 24 | 0 | 0 | | 21 | 0 | 0 | |
| **17** | 19 | 0 | | 22 | 0 | 0 | | 21 | 0 | 0 | |
| **18** | 26 | 0 | | 22 | 0 | 0 | | 21 | 0 | 0 | |
| **19** | 24 | 0 | | 28 | 0 | 0 | | 22 | 0 | 0 | |
| **20** | 22 | 0 | | 27 | 0 | 0 | | 27 | 0 | 0 | |
| **21** | 23 | 0 | | 26 | 0 | 0 | | 19 | 0 | 0 | |
| **22** | 26 | 0 | | 26 | 0 | 0 | | 21 | 0 | 0 | |
| **23** | 19 | 0 | | 20 | 0 | 0 | | 25 | 0 | 0 | |
| **24** | 19 | 0 | | 24 | 0 | 0 | | 23 | 0 | 0 | |
| **25** | 18 | 0 | | 29 | 0 | 0 | | 26 | 0 | 0 | |
| **26** | 17 | 0 | | 24 | 0 | 0 | | 28 | 0 | 0 | |
| **27** | 21 | 0 | | 26 | 0 | 0 | | 21 | 0 | 0 | |
| **28** | 22 | 0 | | 26 | 0 | 0 | | 20 | 0 | 0 | |
| **29** | 18 | 0 | | 25 | 0 | 0 | | 24 | 0 | 0 | |
| **30** | 25 | 0 | | 23 | 0 | 0 | | 29 | 0 | 0 | |
| **31** | 23 | 0 | | 22 | 0 | 0 | | 24 | 0 | 0 | |
| **32** | 21 | 0 | | 22 | 0 | 0 | | 22 | 0 | 0 | |
| **33** | 21 | 0 | | 24 | 0 | 0 | | 19 | 0 | 0 | |
| **34** | 23 | 0 | | 23 | 0 | 0 | | 25 | 0 | 0 | |
| **35** | 17 | 0 | | 17 | 0 | 0 | | 17 | 0 | 0 | |
| **36** | 22 | 0 | | 21 | 0 | 0 | | 19 | 0 | 0 | |
| **37** | 25 | 0 | | 24 | 0 | 0 | | 25 | 0 | 0 | |
| **38** | 24 | 0 | | 23 | 0 | 0 | | 23 | 0 | 0 | |
| **39** | 21 | 0 | | 20 | 0 | 0 | | 25 | 0 | 0 | |
| **40** | 20 | 0 | | 22 | 0 | 0 | | 28 | 0 | 0 | |
| **41** | 17 | 0 | | 23 | 0 | 0 | | 23 | 0 | 0 | |
| **42** | 20 | 0 | | 22 | 0 | 0 | | 27 | 0 | 0 | |
| **43** | 19 | 0 | | 33 | 0 | 0 | | 31 | 0 | 0 | |
| **44** | 17 | 0 | | 31 | 0 | 0 | | 22 | 0 | 0 | |

**Table 1: Wind Hazard Conditions**

| Location | Existing | | | Existing + Project | | | | Project + Cumulative | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Wind Speed Exceeded 1hr/year (mph) | Hours per Year Wind Speed Exceeds Hazard Criteria | Exceeds | Wind Speed Exceeded 1hr/year (mph) | Hours per Year Wind Speed Exceeds Hazard Criteria | Hours Change Relative to Existing | Exceeds | Wind Speed Exceeded 1hr/year (mph) | Hours per Year Wind Speed Exceeds Hazard Criteria | Hours Change Relative to Existing | Exceeds |
| **Summary** | **Average (mph)** | **Total Hours** | **Total** | **Average (mph)** | **Total Hours** | **Hours Change** | **Total** | **Average (mph)** | **Total Hours** | **Hours Change** | **Total** |
| | **20** | **0** | **0<br>----<br>44** | **24** | **0** | **0** | **0<br>----<br>44** | **23** | **0** | **0** | **0<br>----<br>44** |

# Appendix B
## Air Quality Tables

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# 2424 Webster - Construction Data

**Enter data only in highlighted cells.**

| Proposed Land Uses | Area | Units | Service Population | |
|---|---|---|---|---|
| Office | 146606 | sqft | 484 | 148842 |
| Retail | 9581 | sqft | 19 | |
| Lobby, Service & Utility | 2236 | sqft | 0 | |
| Parking | 0 | sqft | 0 | |

| | | |
|---|---|---|
| Site Area | 0.61 | acres |
| Area to be demolished | 25,000 | square feet |
| Total Proposed building area | 158,423 | square feet |
| Volume of infill to be brought in | 0 | cubic yards |
| Volume of material to be exported | 5,185 | cubic yards |

**Construction schedule**

| | |
|---|---|
| Start date of construction | 3/1/2021 |
| First year of operation | 2023 |

| Construction Phase | From | To | # of days |
|---|---|---|---|
| Demolition | 3/1/2021 | 4/2/2021 | 25 |
| Site Preparation | 4/5/2021 | 4/16/2021 | 10 |
| Grading | 4/19/2021 | 7/9/2021 | 60 |
| Building Construction | 7/12/2021 | 1/23/2023 | 401 |
| Paving | 1/9/2023 | 1/23/2023 | 11 |
| Architectural Coating | 6/20/2022 | 10/17/2022 | 86 |
| Total workdays (accounting for overlapping construction) | | | 496 |

**Construction Equipment**

Please list the types of construction equipment that would be used for each phase by selecting from the drop down menu in each cell

Demolition

| Equipment | Number | No. of Days used | Hrs/day used | Adjusted hrs/day |
|---|---|---|---|---|
| Concrete/Industrial Saws | 1 | 5 | 6 | 1.2 |
| Excavators | 1 | 20 | 5 | 4 |
| Tractors/Loaders/Backhoes | 2 | 20 | 4 | 3.2 |
| Crushing/Proc. Equipment | 1 | 3 | 6 | 0.72 |
| Skid Steer Loaders | 1 | 3 | 6 | 0.72 |
| | | | | |

Site Preparation

| Equipment | Number | No. of Days used | Hrs/day used | Adjusted hrs/day |
|---|---|---|---|---|
| Graders | 1 | 4 | 6 | 2.4 |
| Tractors/Loaders/Backhoes | 1 | 3 | 4 | 1.2 |
| | | | | |

Grading

| Equipment | Number | No. of Days used | Hrs/day used | Adjusted hrs/day |
|---|---|---|---|---|
| Graders | 1 | 20 | 6 | 2 |
| Excavators | 1 | 15 | 6 | 1.5 |
| Tractors/Loaders/Backhoes | 2 | 10 | 6 | 1 |
| | | | | |

Building Construction

| Equipment | Number | No. of Days used | Hrs/day used | Adjusted hrs/day |
|---|---|---|---|---|
| Cranes | 1 | 340 | 4 | 3.4 |
| Forklifts | 2 | 300 | 6 | 4.5 |
| Tractors/Loaders/Backhoes | 2 | 300 | 6 | 4.5 |
| Skid Steer Loaders | 2 | 60 | 6 | 0.9 |

| | | | | |
|---|---|---|---|---|
| | | | | |
| Paving | | | | |
| Equipment | Number | No. of Days used | Hrs/day used | Adjusted hrs/day |
| Pavers | 1 | 7 | 5 | 3.2 |
| Rollers | 2 | 7 | 5 | 3.2 |
| Tractors/Loaders/Backhoes | 1 | 7 | 4 | 2.5 |
| Cement and Mortar Mixers | 2 | 4 | 6 | 2.2 |
| | | | | |
| Architectural Coating | | | | |
| Equipment | Number | No. of Days used | Hrs/day used | Adjusted hrs/day |
| Air Compressors | 2 | 70 | 6 | 4.9 |
| Cement and Mortar Mixers | 2 | 60 | 6 | 4.2 |
| | | | | |

**Construction Vehicle Trips**

Please provide the number **trips (2-way)** associated with workers, material delivery and hauling during each construction phase

| **Construction Phase** | **worker trips/day** | **Vendor Truck Trips/day** | **Hauling Truck trips/day** | Hauling Truck trips/phase |
|---|---|---|---|---|
| Demolition | 8 | 0 | 6 | 150 |
| Site Preparation | 5 | 0 | 0 | 0 |
| Grading | 6 | 0 | 0 | 648 |
| Building Construction | 25 | 3 | 0 | 0 |
| Paving | 10 | 6 | 0 | 0 |
| Architectural Coating | 4 | 2 | 0 | 0 |

# EMISSIONS SUMMARIES - 2424 Webster

**UNCONTROLLED CONSTRUCTION EMISSIONS - Criteria Air Pollutants**

| Year | No. of Construction Wokdays | Tons over Construction Period | | | | Average Pounds per day | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | ROG | NOx | Exhaust PM-10 | Exhaust PM-2.5 | ROG | NOx | Exhaust PM-10 | Exhaust PM-2.5 |
| 2021 | | 0.06 | 0.64 | 0.03 | 0.02 | | | | |
| 2022 | | 0.93 | 0.88 | 0.04 | 0.04 | | | | |
| 2023 | | 0.01 | 0.06 | 0.00 | 0.00 | | | | |
| PROJECT TOTAL | 496 | 1.00 | 1.59 | 0.07 | 0.06 | 4.0 | 6.4 | 0.3 | 0.3 |

**CONSTRUCTION EMISSIONS - Criteria Air Pollutants - Tier 4 Final for all equipment**

| Year | No. of Construction Wokdays[1] | Tons over Construction Period | | | | Average Pounds per day | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | ROG | NOx | Exhaust PM-10 | Exhaust PM-2.5 | ROG | NOx | Exhaust PM-10 | Exhaust PM-2.5 |
| 2021 | | 0.03 | 0.21 | 0.002 | 0.002 | | | | |
| 2022 | | 0.87 | 0.21 | 0.003 | 0.003 | | | | |
| 2023 | | 0.00 | 0.02 | 0.000 | 0.000 | | | | |
| PROJECT TOTAL | 496 | 0.89 | 0.43 | 0.005 | 0.004 | 3.6 | 1.7 | 0.0 | 0.0 |

**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 | 0.70 | 3.00E-05 | 1.00E-05 | 1.00E-05 | 3.8 | 0.0 | 0.0001 | 0.0001 |
| Energy | 0.02 | 0.14 | 0.01 | 0.01 | 0.1 | 0.8 | 0.1 | 0.1 |
| Mobile | 0.26 | 0.48 | 0.45 | 0.12 | 1.4 | 2.6 | 2.5 | 0.7 |
| Backup Generator | 0.004 | 0.08 | 0.004 | 0.004 | 0.02 | 0.4 | 0.02 | 0.02 |
| TOTAL | 0.98 | 0.70 | 0.47 | 0.14 | 5.4 | 3.8 | 2.6 | 0.8 |
| **Existing Uses** | | | | | | | | |
| Area | 0.132 | 0.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 |
| Energy | 0.003 | 0.03 | 0.002 | 0.002 | 0.02 | 0.1 | 0.01 | 0.01 |
| Mobile | 0.145 | 0.252 | 0.17 | 0.048 | 0.8 | 1.4 | 0.93 | 0.26 |
| TOTAL | 0.28 | 0.28 | 0.17 | 0.05 | 1.5 | 1.5 | 0.94 | 0.27 |
| Net Increase in Operational Emissions | 0.71 | 0.42 | 0.29 | 0.09 | **3.9** | **2.3** | **1.6** | **0.5** |

**CONSTRUCTION EMISSIONS - GHG as tons of $CO_2e$**

| | |
|---|---|
| 2021 | 128 |
| 2022 | 183 |
| 2023 | 14 |
| Total | 326 |
| Life of project (years) | 40 |
| Amortized annual emissions (tons/year) | 8.2 |

**OPERATIONAL EMISSIONS - GHG as $CO_2e$ (metric tons/year)**

| Operational Source | $CO_2e$ |
|---|---|
| Area | 0.0 |
| Energy | 422 |
| Mobile | 468 |
| Solid waste | 75 |
| Water & Wastewater | 72 |
| Total Project Operational Emissions | 1036 |
| Project Construction Amortized Average | 8 |
| Less existing emissions | 297 |
| Net Increase | 747 |
| Service Population | 503 |
| Emissions/Service Population | 1.5 |

**OPERATIONAL STATIONARY SOURCE EMISSIONS - GHG as $CO_2e$ (metric tons/year)**

| Stationary Source | $CO_2e$ |
|---|---|
| Emergency Generator | 17.8 |
| City of Oakland Stationary Source Threshold | 10000 |

## 2424 Webster Street Emergency Generator

### Generator Emissions

**Conversion Factors**

| | | |
|---|---|---|
| HP/kW | 1.3410 | |
| lb/g | 0.0022 | |
| lb/ton | 2,000 | |
| Metric ton/ton | 0.90719 | |
| $PM_{10}$ Fraction of Total PM | 0.960 | Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION |
| $PM_{2.5}$ Fraction of Total PM | 0.937 | Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION |
| $CO_2$ kg/gal | 10.21 | Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf |
| $CH_4$ g/gal | 0.58 | Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf |
| $N_2O$ g/gal | 0.26 | Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf |
| GWP $CH_4$ | 25 | IPCC AR4, https://ww2.arb.ca.gov/ghg-gwps |
| GWP $N_2O$ | 298 | IPCC AR4, https://ww2.arb.ca.gov/ghg-gwps |
| $CO_2e$ g/gal | 10,302 | |
| $CO_2$ g/gal | 10,210 | |
| $CO_2/CO_2e$ | 0.9911 | |

| | | | |
|---|---|---|---|
| Generator Rating: | 500 | kW | *(Source: Project Description)* |
| | 671 | HP | *(based on conservative engineering assumptions; conversion from kW to hp)* |
| Load Factor: | 0.74 | | *(based on CalEEMod Generator Set Load Factor)* |
| Engine Emissions Tier: | | | *(compliance with CARB diesel regulations)* |
| Operating Hours per Unit: | 50 | hours/year | |
| | 1.00 | hours/day - maximum | |
| | 0.14 | hours/day - average | |

| Units | Criteria Pollutants [1, 2] | | | | | Greenhouse Gases [3] | |
|---|---|---|---|---|---|---|---|
| | VOC | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ | $CO_2$ | $CO_2e$ |
| g/kW-hr | — | — | 3.50 | — | — | — | — |
| g/HP-hr | 0.15 | 2.85 | 2.61 | 0.1440 | 0.1406 | 526.17 | 530.91 |
| lbs/hr | 0.16 | 3.12 | 2.86 | 0.16 | 0.15 | 778.36 | 785.37 |
| lbs/day(maximum daily) | 0.16 | 3.12 | 2.86 | 0.16 | 0.15 | 778.36 | 785.37 |
| **lbs/day (average daily)** | **0.02** | **0.43** | **0.39** | **0.02** | **0.02** | **106.62** | 107.59 |
| lbs/yr | 8.21 | 155.99 | 142.85 | 7.88 | 7.69 | 38,918.00 | 39,268.61 |
| tons/yr | 0.00 | 0.08 | 0.07 | 0.004 | 0.004 | 19.46 | 19.63 |
| **metric tons/yr** | — | — | — | — | — | **17.65** | **17.81** |

Notes:

1. Emission factors for VOC and NOX: ARB 2011 Final Regulation Order for the ATCM for stationary engines, Table 1, Model year 2008+: https://www.arb.ca.gov/regact/2010/atcm2010/finalregorder.pdf; Policy: CARB Emission Factors for CI Diesel Engines – Percent HC in Relation to NMHC + NOx: http://www.baaqmd.gov/~/media/Files/Engineering/policy_and_procedures/Engines/EmissionFactorsforDieselEngines.ashx
2. Emission factors for CO, $PM_{10}$, and $PM_{2.5}$: ARB 2011 Final Regulation Order for the ATCM for stationary engines, Table 1, Model year 2008+: https://www.arb.ca.gov/regact/2010/atcm2010/finalregorder.pdf
3 Emission factor for $CO_2$: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the $CO_2e$ emissions occur as $CO_2$, based on Climate Registry emission factors as referenced above.

# 2424 Webster Street Construction - Health Risk Assessment

## Residential Risk

### Onsite DPM Emissions per Year (tons)

| Year | Uncontrolled | Tier 4 |
|---|---|---|
| 2021 | 0.03 | 1.77E-03 |
| 2022 | 0.04 | 2.55E-03 |
| 2023 | 0.00 | 1.90E-04 |

### $PM_{2.5}$ Concentration

| Total tons/year | Emission Rate (g/s) | $PM_{2.5}$ Conc. ($\mu g/m^3$) | |
|---|---|---|---|
| 0.06 | 0.001 | 0.18 | Uncontrolled |
| 0.004 | 0.000 | 0.01 | Tier 4 |

### Emission Rates - Scaling Factors (g/s)

| Year | Uncontrolled | Tier 4 |
|---|---|---|
| 2021 | 0.0021 | 0.0001 |
| 2022 | 0.0033 | 0.0002 |
| 2023 | 0.0002 | 0.0000 |

Exposure Duration in seconds
52*(12*5)*60*60 = 11232000

### AERMOD Output [$\mu g/m^3$]/[g/s]

| | | | | UTM X | UTM Y |
|---|---|---|---|---|---|
| Annual Average | Resident | 129.73 | $ug/m^3$ | 564774.66 | 4185408.85 |

Nook on Valdez Apartments

### Emission Impact - ($\mu g/m^3$)

| Year | Uncontrolled | Tier 4 |
|---|---|---|
| 2021 | 2.70E-01 | 1.85E-02 |
| 2022 | 4.29E-01 | 2.67E-02 |
| 2023 | 2.72E-02 | 1.99E-03 |

| Age Group | 3rd Trimester | Age 0<2 | Age 2<16 |
|---|---|---|---|
| Exposure Duration | 91 | 730 | 5110 |
| 2021 | 0.25 | 0.58 | 0.00 |
| 2022 | 0.00 | 1.00 | 0.00 |
| 2023 | 0.00 | 0.08 | 0.00 |

**Cancer Risk = Dose inhalation × Inhalation CPF × ASF × ED/AT × FAH** **(Equation 8.2.4 A)**

Where:

Cancer Risk = residential inhalation cancer risk

**Dose inhalation (mg/kg-day) = $C_{AIR}$ × DBR × A × EF × $10^{-6}$** **(Equation 2)**

Inhalation CPF = inhalation cancer potency factor ($[mg/kg/day]^{-1}$)

ASF = age sensitivity factor for a specified age group (unitless)

ED = exposure duration for a specified age group (years)

AT = averaging time period over which exposure is averaged in days (years)

FAH = fraction of time at home (unitless)

Where:

$C_{AIR}$ = concentration of compound in air in micrograms per cubic meter ($\mu g/m^3$)

DBR = daily breathing rate in liter per kilogram of body weight per day (L/kg-body weight/day)

A = inhalation absorption factor (1 for DPM, unitless)

EF = exposure frequency in days per year (unitless, days/365 days)

$10^{-6}$ = micrograms to milligrams conversion, liters to cubic meters conversion

## Dose Inhalation Inputs

| Receptor Type | Exposure Scenario | Receptor Group Age | $C_{AIR}$ (µg/m$^3$) Uncontrolled | $C_{AIR}$ (µg/m$^3$) Tier 4 | DBR (L/kg-day) | A (unitless) | EF (days/year) |
|---|---|---|---|---|---|---|---|
| Off-Site Child Resident | Construction | 3rd Trimester | 2.70E-01 | 1.85E-02 | 361 | 1 | 0.96 |
| | | Age 0<2 | 3.53E-01 | 2.26E-02 | 1090 | 1 | 0.96 |
| | | Age 2<16 | 0.00E+00 | 0.00E+00 | 745 | 1 | 0.96 |

## Dose Inhalation Outputs

| Receptor Type | Exposure Scenario | Receptor Group Age | Dose inhalation (mg/kg-day) Uncontrolled | Dose inhalation (mg/kg-day) Tier 4 |
|---|---|---|---|---|
| Off-Site Child Resident | Construction | 3rd Trimester | 9.36E-05 | 6.42E-06 |
| | | Age 0<2 | 3.69E-04 | 2.36E-05 |
| | | Age 2<16 | 0.00E+00 | 0.00E+00 |

## Risk Inputs

| Receptor Type | Exposure Scenario | Receptor Group Age | CPF (mg/kg-day$^{-1}$) | ASF (unitless) | ED (years) | AT (years) | FAH (unitless) | REL (µg/m$^3$) |
|---|---|---|---|---|---|---|---|---|
| Off-Site Child Resident | Construction | 3rd Trimester | 1.1 | 10 | 0.25 | 70.00 | 0.85 | 5 |
| | | Age 0<2 | 1.1 | 10 | 1.67 | 70.00 | 0.85 | 5 |
| | | Age 2<16 | 1.1 | 3 | 0.00 | 70.00 | 0.72 | 5 |

## Risk Outputs

| Receptor Type | Exposure Scenario | Receptor Group Age | Cancer Risk Uncontrolled | Cancer Risk Tier 4 | Chronic Non-Cancer Risk Uncontrolled | Chronic Non-Cancer Risk Tier 4 |
|---|---|---|---|---|---|---|
| Off-Site Child Resident | Construction | 3rd Trimester | 3.12E-06 | 2.14E-07 | | |
| | | Age 0<2 | 8.22E-05 | 5.26E-06 | | |
| | | Age 2<16 | 0.00E+00 | 0.00E+00 | | |
| | | **Total Risk** | 8.53E-05 | 5.48E-06 | 0.086 | 0.005 |
| | | **Risk per Million** | 85.29 | 5.48 | NA | NA |

SOURCE: Office of Environmental Health Hazard Assessment, 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments*. February.

Daily breathing rate for residential receptor is based on the OEHHA 95th percentile moderate intensity breathing rates (OEHHA Table 5.7).

Fraction of time at home is set to values per OEHHA Table 8.4 for residential since the nearest school has an unmitigated cancer risk of <1 per million.

Inhalation cancer potency factor from OEHHA Table 7.1

## 2424 Webster Street Construction - Health Risk Assessment

### Onsite DPM Emissions per Year (tons)

### Daycare and School Risk

| Year | Uncontrolled | Tier 4 |
|---|---|---|
| 2021 | 0.03 | 1.77E-03 |
| 2022 | 0.04 | 2.55E-03 |
| 2023 | 0.00 | 1.90E-04 |

### $PM_{2.5}$ Concentration

| Total tons/year | Emission Rate (g/s) | $PM_{2.5}$ Conc. ($\mu g/m^3$) Westlake | $PM_{2.5}$ Conc. ($\mu g/m^3$) Smalltrans | |
|---|---|---|---|---|
| 0.06 | 0.001 | 0.003 | 0.001 | Uncontrolled |
| 0.004 | 0.000 | 0.000 | 0.000 | Tier 4 |

### Emission Rates - Scaling Factors (g/s)

| Year | Uncontrolled | Tier 4 |
|---|---|---|
| 2021 | 0.0021 | 0.0001 |
| 2022 | 0.0033 | 0.0002 |
| 2023 | 0.0002 | 0.0000 |

Exposure Duration in seconds
52*(12*5)*60*60 = 11232000

### AERMOD Output [$\mu g/m^3$]/[g/s]

| | | | |
|---|---|---|---|
| Annual Average** | Westlake Middle School | 2.33 | $\mu g/m^3$ |
| | New Day Preschool & Learning Center | 0.29 | $\mu g/m^3$ |
| | Valdez Plaza School Line | 0.59 | $\mu g/m^3$ |
| | Smalltrans Depot Daycare | 0.47 | $\mu g/m^3$ |

**spacial averaging applied

| Exposure Range (age x < y) | | Total Years |
|---|---|---|
| 11.00 | 14.00 | 3.00 |
| 2.00 | 6.00 | 4.00 |
| 5.00 | 16.00 | 11.00 |
| 0.25 | 3.00 | 2.75 |

### Emission Impact - ($\mu g/m^3$)

Uncontrolled

| Year | Westlake Middle School | New Day Preschool & Learning Center | Valdez Plaza School Line | Smalltrans Depot Daycare |
|---|---|---|---|---|
| 2021 | 4.86E-03 | 6.03E-04 | 1.23E-03 | 9.82E-04 |
| 2022 | 7.70E-03 | 9.56E-04 | 1.94E-03 | 1.56E-03 |
| 2023 | 4.89E-04 | 6.08E-05 | 1.24E-04 | 9.89E-05 |

Tier 4

| Year | Westlake Middle School | New Day Preschool & Learning Center | Valdez Plaza School Line | Smalltrans Depot Daycare |
|---|---|---|---|---|
| 2021 | 3.33E-04 | 4.14E-05 | 8.42E-05 | 6.73E-05 |
| 2022 | 4.80E-04 | 5.96E-05 | 1.21E-04 | 9.70E-05 |
| 2023 | 3.58E-05 | 4.44E-06 | 9.03E-06 | 7.23E-06 |

| | Westlake Middle School | New Day Preschool & Learning Center | Valdez Plaza School Line | Smalltrans Depot Daycare | |
|---|---|---|---|---|---|
| Age Group | Age 2<16 | Age 2<9 | Age 2<16 | Age 0<2 | Age 2<9 |
| Exposure Duration | 700 | 700 | 700 | 639 | 61 |
| 2021 | 0.83 | 0.83 | 0.83 | 0.83 | 0.00 |
| 2022 | 1.00 | 1.00 | 1.00 | 0.92 | 0.08 |
| 2023 | 0.08 | 0.08 | 0.08 | 0.00 | 0.08 |
| | 1.92 | 1.92 | 1.92 | 1.75 | 0.17 |

**Cancer Risk = Dose inhalation × Inhalation CPF × ASF × ED/AT × FAH** **(Equation 8.2.4 A)**

Where:

Cancer Risk = residential inhalation cancer risk

**Dose inhalation (mg/kg-day) = $C_{AIR}$ × DBR × A × EF × $10^{-6}$** **(Equation 2)**

Inhalation CPF = inhalation cancer potency factor ($[mg/kg/day]^{-1}$)

ASF = age sensitivity factor for a specified age group (unitless)

ED = exposure duration for a specified age group (years)

AT = averaging time period over which exposure is averaged in days (years)

FAH = fraction of time at home (unitless)

Where:

$C_{AIR}$ = concentration of compound in air in micrograms per cubic meter ($\mu g/m^3$)

DBR = daily breathing rate in liter per kilogram of body weight per day (L/kg-body weight/day)

A = inhalation absorption factor (1 for DPM, unitless)
EF = exposure frequency in days per year (unitless, days/365 days)
$10^{-6}$ = micrograms to milligrams conversion, liters to cubic meters conversion

**Dose Inhalation Inputs**

| Receptor Type | Exposure Scenario | Receptor Group Age | $C_{AIR}$ ($\mu g/m^3$) Uncontrolled | $C_{AIR}$ ($\mu g/m^3$) Tier 4 | 8hr-DBR (L/kg-day) | A (unitless) | EF (days/year) |
|---|---|---|---|---|---|---|---|
| School - Westlake | Construction | Age 2<16 | 6.15E-03 | 3.97E-04 | 520 | 1 | 0.49 |
| Preschool - New Day | Construction | Age 2<9 | 7.64E-04 | 4.93E-05 | 640 | 1 | 0.68 |
| School - Valdez Plaza | Construction | Age 2<16 | 1.55E-03 | 1.00E-04 | 520 | 1 | 0.49 |
| Daycare - Smalltrans | Construction | Age 0<2 | 1.28E-03 | 8.29E-05 | 1200 | 1 | 0.68 |
| | | Age 2<9 | 8.27E-04 | 5.21E-05 | 640 | 1 | 0.68 |

**Dose Inhalation Outputs**

| Receptor Type | Exposure Scenario | Receptor Group Age | Dose inhalation (mg/kg-day) Uncontrolled | Dose inhalation (mg/kg-day) Tier 4 |
|---|---|---|---|---|
| School - Westlake | Construction | Age 2<16 | 1.57E-06 | 1.01E-07 |
| Preschool - New Day | Construction | Age 2<9 | 3.32E-07 | 2.14E-08 |
| School - Valdez Plaza | Construction | Age 2<16 | 3.96E-07 | 2.55E-08 |
| Daycare - Smalltrans | Construction | Age 0<2 | 1.05E-06 | 6.76E-08 |
| | | Age 2<9 | 3.60E-07 | 2.27E-08 |

**Risk Inputs**

| Receptor Type | Exposure Scenario | Receptor Group Age | CPF (mg/kg-day$^{-1}$) | ASF (unitless) | ED (years) | AT (years) | FAH (unitless) | REL ($\mu g/m^3$) |
|---|---|---|---|---|---|---|---|---|
| School - Westlake | Construction | Age 2<16 | 1.1 | 3 | 1.92 | 70.00 | 0.33 | 5 |
| Preschool - New Day | Construction | Age 2<9 | 1.1 | 3 | 1.92 | 70.00 | 0.33 | 5 |
| School - Valdez Plaza | Construction | Age 2<16 | 1.1 | 3 | 1.92 | 70.00 | 0.33 | 5 |
| Daycare - Smalltrans | Construction | Age 0<2 | 1.1 | 10 | 1.75 | 70.00 | 0.33 | 5 |
| | | Age 2<9 | 1.1 | 3 | 0.17 | 70.00 | 0.33 | 5 |

**Risk Outputs**

| Receptor Type | Exposure Scenario | Receptor Group Age | Cancer Risk Uncontrolled | Cancer Risk Tier 4 | Chronic Non-Cancer Risk Uncontrolled | Chronic Non-Cancer Risk Tier 4 |
|---|---|---|---|---|---|---|
| School - Westlake | Construction | Age 2<16 | 4.67E-08 | 3.01E-09 | 1.23E-03 | 7.94E-05 |
| Preschool - New Day | Construction | Age 2<9 | 9.91E-09 | 6.40E-10 | 1.53E-04 | 9.86E-06 |
| School - Valdez Plaza | Construction | Age 2<16 | 1.18E-08 | 7.62E-10 | 3.11E-04 | 2.00E-05 |
| Daycare - Smalltrans | Construction | Age 0<2 | 9.50E-08 | 6.14E-09 | 2.56E-04 | 1.66E-05 |
| | | Age 2<9 | 9.34E-10 | 5.88E-11 | 1.65E-04 | 1.04E-05 |
| | | **Total Risk** | | | | |
| | | School - Westlake | 4.67E-08 | 3.01E-09 | 0.002 | 0.000 |
| | | Preschool - New Day | 9.91E-09 | 6.40E-10 | 1.91E-04 | 1.19E-05 |
| | | School - Valdez Plaza | 1.18E-08 | 7.62E-10 | 3.89E-04 | 2.42E-05 |
| | | Daycare - Smalltrans | 9.59E-08 | 6.20E-09 | 0.0003 | 0.0000 |
| | | **Risk per Million** | | | | |
| | | School - Westlake | 0.05 | 0.003 | -- | -- |
| | | Preschool - New Day | 0.01 | 0.00 | -- | -- |
| | | School - Valdez Plaza | 0.01 | 0.00 | -- | -- |
| | | Daycare - Smalltrans | 0.10 | 0.01 | -- | -- |

SOURCE: Office of Environmental Health Hazard Assessment, 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments*. February.
Daily breathing rate for school receptor is based on the OEHHA 95th percentile 8-hour moderate intensity breathing rates (Table 5.8).
Inhalation cancer potency factor from Table 7.1

## CUMULATIVE SCREENING ANALYSIS - 2424 Webster

| | | | | Screening Risk | | | Exposure to MEIR | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **BAAQMD Plant #** | **Name of Source** | **Address** | **Source Type** | **Cancer Risk** | **HI** | **$PM_{2.5}$** | **Distance to MEIR (feet)** | **Adj. Cancer Risk** | **Adj. HI** | **Adj. $PM_{2.5}$** |
| **BAAQMD Permitted Stationary Sources within 1,000 feet[1,2]** | | | | | | | | | | |
| 13705 | Saint Pauls Tower | 100 Bay Place | Generators | 0.37 | 0 | 0 | 900 | 0.02 | 0.0E+00 | 0.0E+00 |
| 16640 | Mach II 180 Grand LLC | 180 Grand Avenue | Generators | 10.3546 | 0.016 | 0.0162 | 886 | 0.52 | 1.6E-03 | 8.1E-04 |
| 18861 | Whole Foods Market California | 230 Bay Place | Generators | 0 | 0 | 0 | 915 | 0.00 | 0.0E+00 | 0.0E+00 |
| 19269 | West Lake Christian Terrace | 275 28th Street | Generators | 0.92 | 0 | 0 | 973 | 0.04 | 0.0E+00 | 0.0E+00 |
| 19344 | VIP Auto Collision Repair | 293 27th St | coating operation | | 0 | | 436 | 0.00 | 0.0E+00 | 0.0E+00 |
| 19467 | Lake Merritt Management, LLC | 155 Grand Avenue | generator, boiler | 9.8547 | 0.0153 | 0.0367 | 1000 | 0.39 | 7.7E-04 | 1.5E-03 |
| 20013 | Mpower Communications / Telepacific | 23rd & Waverly St | Generators | 2.4619 | 0.0007 | 0.0031 | 964 | 0.10 | 6.3E-05 | 1.2E-04 |
| 22279 | Verizon Wireless (Broadway & 29th) | 2923 Webster Street | natural gas generator | | | 0.003 | 810 | 0.00 | 0.0E+00 | 2.8E-03 |
| 23098 | Royal Coffee Company | 2523 Broadway | coffee roaster (2) | 0.106 | 0.001 | 0.184 | 560 | 0.11 | 7.0E-04 | 1.8E-01 |
| 200538 | Uptown Body and Fender | 401 26th St | coating operation | | 0.0048 | | 870 | 0.00 | 4.8E-03 | 0.0E+00 |
| | | | | | | | | | | |
| | **Project Sources[3]** | | | | | | | | | |
| | 2424 Webster Street | Construction | | | | | | 5.5 | 0.0053 | 0.0122 |
| | 2424 Webster Street | Diesel Generator | | 10.000 | 0.004 | 0.0182 | 150 | 0.6 | 0.0036 | 0.0106 |
| | | | | | | | | | | |
| | **Proposed Projects within 1,000 feet[4,5]** | | | | | | | | | |
| | 2270 Broadway | Diesel Generator | | 10.000 | 0.004 | 0.0182 | 825 | 0.6 | 0.0002 | 0.0011 |
| | 2305 Webster | Diesel Generator | | 10.000 | 0.004 | 0.0182 | 670 | 0.8 | 0.0003 | 0.0015 |
| | 2302 Valdez | Diesel Generator | | 10.000 | 0.004 | 0.0182 | 600 | 0.9 | 0.0004 | 0.0016 |
| | 2315 Valdez | Diesel Generator | | 10.000 | 0.004 | 0.0182 | 535 | 1.0 | 0.0005 | 0.0018 |
| | 2425 Valdez | Diesel Generator | | 10.000 | 0.004 | 0.0182 | 0 | 10.0 | 0.0021 | 0.0182 |
| | 88 Grand | Diesel Generator | | 10.000 | 0.004 | 0.0182 | 900 | 0.5 | 0.0002 | 0.0009 |
| | 325 27th Street/2640 Broadway[6] | Diesel Generator | | 10.000 | 0.004 | 0.0182 | 550 | 1.0 | 0.0003 | 0.0018 |
| | 2400 Valdez/2500 Valdez[6] | Diesel Generator | | 10.000 | 0.004 | 0.0182 | 130 | 5.8 | 0.0030 | 0.0106 |
| | 277 27th Street[6] | Diesel Generator | | 10.000 | 0.004 | 0.0182 | 475 | 1.4 | 0.0004 | 0.0026 |
| | 460 24th street[6] | Diesel Generator | | 10.000 | 0.004 | 0.0182 | 855 | 0.5 | 0.0002 | 0.0009 |
| | | | | | | | | | | |
| | **Mobile Sources[7]** | | | | | | | | | |
| | Highway | | | | | | | 16.6 | -- | 0.3660 |
| | Major Roadway | | | | | | | 3.6 | -- | 0.031 |
| **Cumulative Health Risks** | | | | | | | | **49.9** | **0.025** | **0.650** |
| City of Oakland Significance Thresholds | | | | | | | | 100 | 10 | 0.8 |

**NOTES:**

1. Health risk screening values obtained from BAAQMD's Permitted Stationary Sources Risk and Hazards web tool and response to the SSIF.
2. Health risks for diesel generators adjusted for distance using the BAAQMD's distance multiplier.
3. Based on construction and operational HRA conducted for the Project.
4. List of proposed projects was derived based on the analysis for 88 Grand Avenue and Oakland Planning Bureau Major Projects List - March 2020. All projects were assumed to include an emergency generator.
5. Health risks for diesel generators adjusted for distance using the BAAQMD's distance multiplier.
6. Information about the presence of backup generators not available for the cumulative projects highlighted in yellow. These projects have been conservatively assumed to have a generator producing a maximum allowed risk of 10 in a million at the source. This will be updated if further information about these projects is available from the City.
7. Data from BAAQMD.

# 2424 Webster

## Alameda County, Annual

# 1.0 Project Characteristics

## 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Government Office Building | 148.84 | 1000sqft | 0.61 | 148,842.00 | 0 |
| Enclosed Parking Structure | 173.00 | Space | 0.00 | 2,186.00 | 0 |
| Strip Mall | 9.58 | 1000sqft | 0.00 | 9,581.00 | 0 |

## 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 63 |
| **Climate Zone** | 5 | | | **Operational Year** | 2023 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 294 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

## 1.3 User Entered Comments & Non-Default Data

Project Characteristics - https://www.pgecurrents.com/2018/03/26/independent-registry-confirms-record-low-carbon-emissions-for-pge/

Land Use - Project site area

Construction Phase - Project construction schedule

Off-road Equipment - Project data

Off-road Equipment - Project data

Off-road Equipment - Project data

Off-road Equipment - Project data

Off-road Equipment - Project data

Off-road Equipment - Project data

Trips and VMT - Project data

Demolition -

Grading - Project site area

Vehicle Trips - Adjusted based on project trips

Energy Use -

Water And Wastewater - 20

Construction Off-road Equipment Mitigation - Tier 4 Final equipment used as BACT in compliance with City SCA

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 4.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |

| | | | |
|---|---|---|---|
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 1.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 2.00 |
| tblConstEquipMitigation | NumberOfEquipmentMitigated | 0.00 | 8.00 |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier | No Change | Tier 4 Final |
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| tblConstructionPhase | NumDays | 100.00 | 401.00 |
| tblConstructionPhase | NumDays | 10.00 | 25.00 |
| tblConstructionPhase | NumDays | 2.00 | 60.00 |
| tblConstructionPhase | NumDays | 5.00 | 11.00 |
| tblConstructionPhase | NumDays | 1.00 | 10.00 |
| tblFleetMix | HHD | 0.05 | 0.04 |
| tblFleetMix | HHD | 0.05 | 0.04 |
| tblFleetMix | HHD | 0.05 | 0.04 |
| tblFleetMix | LDA | 0.56 | 0.56 |

| | | | |
|---|---|---|---|
| tblFleetMix | LDA | 0.56 | 0.56 |
| tblFleetMix | LDA | 0.56 | 0.56 |
| tblFleetMix | LDT1 | 0.04 | 0.05 |
| tblFleetMix | LDT1 | 0.04 | 0.05 |
| tblFleetMix | LDT1 | 0.04 | 0.05 |
| tblFleetMix | LDT2 | 0.19 | 0.18 |
| tblFleetMix | LDT2 | 0.19 | 0.18 |
| tblFleetMix | LDT2 | 0.19 | 0.18 |
| tblFleetMix | LHD1 | 0.02 | 0.02 |
| tblFleetMix | LHD1 | 0.02 | 0.02 |
| tblFleetMix | LHD1 | 0.02 | 0.02 |
| tblFleetMix | LHD2 | 5.1800e-003 | 5.1893e-003 |
| tblFleetMix | LHD2 | 5.1800e-003 | 5.1893e-003 |
| tblFleetMix | LHD2 | 5.1800e-003 | 5.1893e-003 |
| tblFleetMix | MCY | 5.4910e-003 | 5.1134e-003 |
| tblFleetMix | MCY | 5.4910e-003 | 5.1134e-003 |
| tblFleetMix | MCY | 5.4910e-003 | 5.1134e-003 |
| tblFleetMix | MDV | 0.11 | 0.11 |
| tblFleetMix | MDV | 0.11 | 0.11 |
| tblFleetMix | MDV | 0.11 | 0.11 |
| tblFleetMix | MH | 7.0400e-004 | 6.7319e-004 |
| tblFleetMix | MH | 7.0400e-004 | 6.7319e-004 |
| tblFleetMix | MH | 7.0400e-004 | 6.7319e-004 |
| tblFleetMix | MHD | 0.02 | 0.02 |
| tblFleetMix | MHD | 0.02 | 0.02 |
| tblFleetMix | MHD | 0.02 | 0.02 |
| tblFleetMix | OBUS | 2.2090e-003 | 1.3296e-003 |

| | | | |
|---|---|---|---|
| tblFleetMix | OBUS | 2.2090e-003 | 1.3296e-003 |
| tblFleetMix | OBUS | 2.2090e-003 | 1.3296e-003 |
| tblFleetMix | SBUS | 3.3400e-004 | 3.3177e-004 |
| tblFleetMix | SBUS | 3.3400e-004 | 3.3177e-004 |
| tblFleetMix | SBUS | 3.3400e-004 | 3.3177e-004 |
| tblFleetMix | UBUS | 2.4560e-003 | 1.8032e-003 |
| tblFleetMix | UBUS | 2.4560e-003 | 1.8032e-003 |
| tblFleetMix | UBUS | 2.4560e-003 | 1.8032e-003 |
| tblGrading | AcresOfGrading | 7.50 | 0.61 |
| tblGrading | AcresOfGrading | 1.50 | 0.61 |
| tblGrading | MaterialExported | 0.00 | 5,185.00 |
| tblLandUse | LandUseSquareFeet | 148,840.00 | 148,842.00 |
| tblLandUse | LandUseSquareFeet | 69,200.00 | 2,186.00 |
| tblLandUse | LandUseSquareFeet | 9,580.00 | 9,581.00 |
| tblLandUse | LotAcreage | 3.42 | 0.61 |
| tblLandUse | LotAcreage | 1.56 | 0.00 |
| tblLandUse | LotAcreage | 0.22 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 4.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 2.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 6.00 | 4.90 |
| tblOffRoadEquipment | UsageHours | 6.00 | 2.20 |
| tblOffRoadEquipment | UsageHours | 8.00 | 1.20 |
| tblOffRoadEquipment | UsageHours | 8.00 | 0.00 |

| | | | |
|---|---|---|---|
| tblOffRoadEquipment | UsageHours | 4.00 | 3.40 |
| tblOffRoadEquipment | UsageHours | 6.00 | 4.50 |
| tblOffRoadEquipment | UsageHours | 8.00 | 2.40 |
| tblOffRoadEquipment | UsageHours | 7.00 | 3.20 |
| tblOffRoadEquipment | UsageHours | 7.00 | 3.20 |
| tblOffRoadEquipment | UsageHours | 1.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 1.00 | 0.00 |
| tblOffRoadEquipment | UsageHours | 8.00 | 4.50 |
| tblOffRoadEquipment | UsageHours | 6.00 | 3.20 |
| tblOffRoadEquipment | UsageHours | 6.00 | 1.00 |
| tblOffRoadEquipment | UsageHours | 7.00 | 2.50 |
| tblOffRoadEquipment | UsageHours | 8.00 | 1.20 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 294 |
| tblTripsAndVMT | HaulingTripNumber | 114.00 | 150.00 |
| tblTripsAndVMT | VendorTripNumber | 26.00 | 6.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 4.00 |
| tblTripsAndVMT | VendorTripNumber | 0.00 | 12.00 |
| tblTripsAndVMT | WorkerTripNumber | 15.00 | 16.00 |
| tblTripsAndVMT | WorkerTripNumber | 5.00 | 10.00 |
| tblTripsAndVMT | WorkerTripNumber | 10.00 | 12.00 |
| tblTripsAndVMT | WorkerTripNumber | 52.00 | 50.00 |
| tblTripsAndVMT | WorkerTripNumber | 10.00 | 8.00 |
| tblTripsAndVMT | WorkerTripNumber | 15.00 | 20.00 |
| tblVehicleEF | HHD | 0.62 | 0.02 |
| tblVehicleEF | HHD | 0.04 | 0.03 |
| tblVehicleEF | HHD | 0.08 | 2.2459e-007 |
| tblVehicleEF | HHD | 1.68 | 6.67 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 0.78 | 0.34 |
| tblVehicleEF | HHD | 2.05 | 4.2512e-003 |
| tblVehicleEF | HHD | 4,767.28 | 1,103.40 |
| tblVehicleEF | HHD | 1,547.06 | 1,394.59 |
| tblVehicleEF | HHD | 6.46 | 0.05 |
| tblVehicleEF | HHD | 14.52 | 5.51 |
| tblVehicleEF | HHD | 2.04 | 2.58 |
| tblVehicleEF | HHD | 20.07 | 2.28 |
| tblVehicleEF | HHD | 6.5450e-003 | 2.4078e-003 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 6.1300e-003 | 0.03 |
| tblVehicleEF | HHD | 5.2000e-005 | 2.8014e-007 |
| tblVehicleEF | HHD | 6.2620e-003 | 2.3037e-003 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 8.8970e-003 | 8.9232e-003 |
| tblVehicleEF | HHD | 5.8640e-003 | 0.02 |
| tblVehicleEF | HHD | 4.8000e-005 | 2.5758e-007 |
| tblVehicleEF | HHD | 4.8000e-005 | 1.5105e-006 |
| tblVehicleEF | HHD | 2.8330e-003 | 7.7142e-005 |
| tblVehicleEF | HHD | 0.44 | 0.45 |
| tblVehicleEF | HHD | 3.3000e-005 | 1.0048e-006 |
| tblVehicleEF | HHD | 0.09 | 0.02 |
| tblVehicleEF | HHD | 2.1500e-004 | 3.9664e-004 |
| tblVehicleEF | HHD | 0.05 | 1.1738e-006 |
| tblVehicleEF | HHD | 0.04 | 0.01 |
| tblVehicleEF | HHD | 0.01 | 0.01 |

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|---|---|---|---|
| tblVehicleEF | HHD | 9.8000e-005 | 4.6668e-007 |
| tblVehicleEF | HHD | 4.8000e-005 | 1.5105e-006 |
| tblVehicleEF | HHD | 2.8330e-003 | 7.7142e-005 |
| tblVehicleEF | HHD | 0.51 | 0.52 |
| tblVehicleEF | HHD | 3.3000e-005 | 1.0048e-006 |
| tblVehicleEF | HHD | 0.14 | 0.06 |
| tblVehicleEF | HHD | 2.1500e-004 | 3.9664e-004 |
| tblVehicleEF | HHD | 0.06 | 1.2851e-006 |
| tblVehicleEF | HHD | 0.58 | 0.03 |
| tblVehicleEF | HHD | 0.04 | 0.03 |
| tblVehicleEF | HHD | 0.08 | 2.0792e-007 |
| tblVehicleEF | HHD | 1.22 | 6.58 |
| tblVehicleEF | HHD | 0.79 | 0.34 |
| tblVehicleEF | HHD | 1.87 | 3.8679e-003 |
| tblVehicleEF | HHD | 5,050.51 | 1,089.96 |
| tblVehicleEF | HHD | 1,547.06 | 1,394.59 |
| tblVehicleEF | HHD | 6.46 | 0.05 |
| tblVehicleEF | HHD | 14.99 | 5.25 |
| tblVehicleEF | HHD | 1.96 | 2.48 |
| tblVehicleEF | HHD | 20.06 | 2.28 |
| tblVehicleEF | HHD | 5.5180e-003 | 2.1174e-003 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 6.1300e-003 | 0.03 |
| tblVehicleEF | HHD | 5.2000e-005 | 2.8014e-007 |
| tblVehicleEF | HHD | 5.2800e-003 | 2.0258e-003 |
| tblVehicleEF | HHD | 0.03 | 0.03 |

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|---|---|---|---|
| tblVehicleEF | HHD | 8.8970e-003 | 8.9232e-003 |
| tblVehicleEF | HHD | 5.8640e-003 | 0.02 |
| tblVehicleEF | HHD | 4.8000e-005 | 2.5758e-007 |
| tblVehicleEF | HHD | 1.1600e-004 | 3.8781e-006 |
| tblVehicleEF | HHD | 3.0450e-003 | 8.3662e-005 |
| tblVehicleEF | HHD | 0.41 | 0.48 |
| tblVehicleEF | HHD | 7.1000e-005 | 2.3107e-006 |
| tblVehicleEF | HHD | 0.09 | 0.02 |
| tblVehicleEF | HHD | 2.0800e-004 | 3.8662e-004 |
| tblVehicleEF | HHD | 0.05 | 1.0921e-006 |
| tblVehicleEF | HHD | 0.05 | 0.01 |
| tblVehicleEF | HHD | 0.01 | 0.01 |
| tblVehicleEF | HHD | 9.5000e-005 | 4.6066e-007 |
| tblVehicleEF | HHD | 1.1600e-004 | 3.8781e-006 |
| tblVehicleEF | HHD | 3.0450e-003 | 8.3662e-005 |
| tblVehicleEF | HHD | 0.48 | 0.55 |
| tblVehicleEF | HHD | 7.1000e-005 | 2.3107e-006 |
| tblVehicleEF | HHD | 0.14 | 0.06 |
| tblVehicleEF | HHD | 2.0800e-004 | 3.8662e-004 |
| tblVehicleEF | HHD | 0.05 | 1.1958e-006 |
| tblVehicleEF | HHD | 0.67 | 0.02 |
| tblVehicleEF | HHD | 0.04 | 0.03 |
| tblVehicleEF | HHD | 0.09 | 2.3723e-007 |
| tblVehicleEF | HHD | 2.32 | 6.79 |
| tblVehicleEF | HHD | 0.78 | 0.34 |
| tblVehicleEF | HHD | 2.21 | 4.5731e-003 |
| tblVehicleEF | HHD | 4,376.16 | 1,121.97 |

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|---|---|---|---|
| tblVehicleEF | HHD | 1,547.06 | 1,394.59 |
| tblVehicleEF | HHD | 6.46 | 0.05 |
| tblVehicleEF | HHD | 13.87 | 5.87 |
| tblVehicleEF | HHD | 2.07 | 2.62 |
| tblVehicleEF | HHD | 20.08 | 2.28 |
| tblVehicleEF | HHD | 7.9630e-003 | 2.8089e-003 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 6.1300e-003 | 0.03 |
| tblVehicleEF | HHD | 5.2000e-005 | 2.8014e-007 |
| tblVehicleEF | HHD | 7.6190e-003 | 2.6874e-003 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 8.8970e-003 | 8.9232e-003 |
| tblVehicleEF | HHD | 5.8640e-003 | 0.02 |
| tblVehicleEF | HHD | 4.8000e-005 | 2.5758e-007 |
| tblVehicleEF | HHD | 2.3000e-005 | 6.6115e-007 |
| tblVehicleEF | HHD | 2.9280e-003 | 8.2080e-005 |
| tblVehicleEF | HHD | 0.47 | 0.41 |
| tblVehicleEF | HHD | 1.6000e-005 | 4.6737e-007 |
| tblVehicleEF | HHD | 0.09 | 0.02 |
| tblVehicleEF | HHD | 2.4000e-004 | 4.4062e-004 |
| tblVehicleEF | HHD | 0.05 | 1.2356e-006 |
| tblVehicleEF | HHD | 0.04 | 0.01 |
| tblVehicleEF | HHD | 0.01 | 0.01 |
| tblVehicleEF | HHD | 1.0100e-004 | 4.7173e-007 |
| tblVehicleEF | HHD | 2.3000e-005 | 6.6115e-007 |
| tblVehicleEF | HHD | 2.9280e-003 | 8.2080e-005 |

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|---|---|---|---|
| tblVehicleEF | HHD | 0.55 | 0.47 |
| tblVehicleEF | HHD | 1.6000e-005 | 4.6737e-007 |
| tblVehicleEF | HHD | 0.14 | 0.06 |
| tblVehicleEF | HHD | 2.4000e-004 | 4.4062e-004 |
| tblVehicleEF | HHD | 0.06 | 1.3528e-006 |
| tblVehicleEF | LDA | 3.8970e-003 | 2.1173e-003 |
| tblVehicleEF | LDA | 5.6840e-003 | 0.05 |
| tblVehicleEF | LDA | 0.53 | 0.57 |
| tblVehicleEF | LDA | 1.25 | 2.24 |
| tblVehicleEF | LDA | 244.94 | 247.51 |
| tblVehicleEF | LDA | 56.21 | 52.38 |
| tblVehicleEF | LDA | 0.05 | 0.04 |
| tblVehicleEF | LDA | 0.07 | 0.19 |
| tblVehicleEF | LDA | 0.04 | 0.04 |
| tblVehicleEF | LDA | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDA | 1.7490e-003 | 1.4468e-003 |
| tblVehicleEF | LDA | 2.2460e-003 | 1.7645e-003 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDA | 1.6120e-003 | 1.3335e-003 |
| tblVehicleEF | LDA | 2.0650e-003 | 1.6224e-003 |
| tblVehicleEF | LDA | 0.03 | 0.04 |
| tblVehicleEF | LDA | 0.11 | 0.10 |
| tblVehicleEF | LDA | 0.03 | 0.04 |
| tblVehicleEF | LDA | 9.8450e-003 | 8.2227e-003 |
| tblVehicleEF | LDA | 0.04 | 0.22 |
| tblVehicleEF | LDA | 0.08 | 0.23 |

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|---|---|---|---|
| tblVehicleEF | LDA | 2.4520e-003 | 2.4483e-003 |
| tblVehicleEF | LDA | 5.8300e-004 | 5.1833e-004 |
| tblVehicleEF | LDA | 0.03 | 0.04 |
| tblVehicleEF | LDA | 0.11 | 0.10 |
| tblVehicleEF | LDA | 0.03 | 0.04 |
| tblVehicleEF | LDA | 0.01 | 0.01 |
| tblVehicleEF | LDA | 0.04 | 0.22 |
| tblVehicleEF | LDA | 0.08 | 0.25 |
| tblVehicleEF | LDA | 4.3500e-003 | 2.4012e-003 |
| tblVehicleEF | LDA | 4.6290e-003 | 0.04 |
| tblVehicleEF | LDA | 0.63 | 0.67 |
| tblVehicleEF | LDA | 0.96 | 1.72 |
| tblVehicleEF | LDA | 264.78 | 267.19 |
| tblVehicleEF | LDA | 56.21 | 51.40 |
| tblVehicleEF | LDA | 0.04 | 0.03 |
| tblVehicleEF | LDA | 0.06 | 0.16 |
| tblVehicleEF | LDA | 0.04 | 0.04 |
| tblVehicleEF | LDA | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDA | 1.7490e-003 | 1.4468e-003 |
| tblVehicleEF | LDA | 2.2460e-003 | 1.7645e-003 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDA | 1.6120e-003 | 1.3335e-003 |
| tblVehicleEF | LDA | 2.0650e-003 | 1.6224e-003 |
| tblVehicleEF | LDA | 0.08 | 0.09 |
| tblVehicleEF | LDA | 0.12 | 0.11 |
| tblVehicleEF | LDA | 0.06 | 0.08 |

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|---|---|---|---|
| tblVehicleEF | LDA | 0.01 | 9.1606e-003 |
| tblVehicleEF | LDA | 0.03 | 0.20 |
| tblVehicleEF | LDA | 0.06 | 0.19 |
| tblVehicleEF | LDA | 2.6520e-003 | 2.6431e-003 |
| tblVehicleEF | LDA | 5.7800e-004 | 5.0867e-004 |
| tblVehicleEF | LDA | 0.08 | 0.09 |
| tblVehicleEF | LDA | 0.12 | 0.11 |
| tblVehicleEF | LDA | 0.06 | 0.08 |
| tblVehicleEF | LDA | 0.02 | 0.01 |
| tblVehicleEF | LDA | 0.03 | 0.20 |
| tblVehicleEF | LDA | 0.07 | 0.20 |
| tblVehicleEF | LDA | 3.8110e-003 | 2.0447e-003 |
| tblVehicleEF | LDA | 6.4210e-003 | 0.06 |
| tblVehicleEF | LDA | 0.53 | 0.56 |
| tblVehicleEF | LDA | 1.46 | 2.63 |
| tblVehicleEF | LDA | 242.96 | 245.55 |
| tblVehicleEF | LDA | 56.21 | 53.08 |
| tblVehicleEF | LDA | 0.05 | 0.04 |
| tblVehicleEF | LDA | 0.08 | 0.20 |
| tblVehicleEF | LDA | 0.04 | 0.04 |
| tblVehicleEF | LDA | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDA | 1.7490e-003 | 1.4468e-003 |
| tblVehicleEF | LDA | 2.2460e-003 | 1.7645e-003 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDA | 1.6120e-003 | 1.3335e-003 |
| tblVehicleEF | LDA | 2.0650e-003 | 1.6224e-003 |

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|---|---|---|---|
| tblVehicleEF | LDA | 0.01 | 0.02 |
| tblVehicleEF | LDA | 0.11 | 0.10 |
| tblVehicleEF | LDA | 0.01 | 0.02 |
| tblVehicleEF | LDA | 9.6340e-003 | 8.0396e-003 |
| tblVehicleEF | LDA | 0.04 | 0.26 |
| tblVehicleEF | LDA | 0.09 | 0.26 |
| tblVehicleEF | LDA | 2.4320e-003 | 2.4289e-003 |
| tblVehicleEF | LDA | 5.8700e-004 | 5.2530e-004 |
| tblVehicleEF | LDA | 0.01 | 0.02 |
| tblVehicleEF | LDA | 0.11 | 0.10 |
| tblVehicleEF | LDA | 0.01 | 0.02 |
| tblVehicleEF | LDA | 0.01 | 0.01 |
| tblVehicleEF | LDA | 0.04 | 0.26 |
| tblVehicleEF | LDA | 0.09 | 0.28 |
| tblVehicleEF | LDT1 | 8.0930e-003 | 4.2578e-003 |
| tblVehicleEF | LDT1 | 0.01 | 0.07 |
| tblVehicleEF | LDT1 | 0.99 | 0.93 |
| tblVehicleEF | LDT1 | 2.67 | 2.45 |
| tblVehicleEF | LDT1 | 300.74 | 295.52 |
| tblVehicleEF | LDT1 | 69.06 | 63.25 |
| tblVehicleEF | LDT1 | 0.10 | 0.08 |
| tblVehicleEF | LDT1 | 0.15 | 0.25 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDT1 | 2.2930e-003 | 1.8241e-003 |
| tblVehicleEF | LDT1 | 3.0800e-003 | 2.3358e-003 |
| tblVehicleEF | LDT1 | 0.02 | 0.02 |

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|---|---|---|---|
| tblVehicleEF | LDT1 | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDT1 | 2.1120e-003 | 1.6787e-003 |
| tblVehicleEF | LDT1 | 2.8320e-003 | 2.1477e-003 |
| tblVehicleEF | LDT1 | 0.08 | 0.08 |
| tblVehicleEF | LDT1 | 0.24 | 0.18 |
| tblVehicleEF | LDT1 | 0.07 | 0.07 |
| tblVehicleEF | LDT1 | 0.02 | 0.02 |
| tblVehicleEF | LDT1 | 0.15 | 0.65 |
| tblVehicleEF | LDT1 | 0.18 | 0.34 |
| tblVehicleEF | LDT1 | 3.0180e-003 | 2.9244e-003 |
| tblVehicleEF | LDT1 | 7.3700e-004 | 6.2587e-004 |
| tblVehicleEF | LDT1 | 0.08 | 0.08 |
| tblVehicleEF | LDT1 | 0.24 | 0.18 |
| tblVehicleEF | LDT1 | 0.07 | 0.07 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 0.15 | 0.65 |
| tblVehicleEF | LDT1 | 0.19 | 0.37 |
| tblVehicleEF | LDT1 | 8.9420e-003 | 4.7810e-003 |
| tblVehicleEF | LDT1 | 0.01 | 0.06 |
| tblVehicleEF | LDT1 | 1.15 | 1.08 |
| tblVehicleEF | LDT1 | 2.04 | 1.87 |
| tblVehicleEF | LDT1 | 324.25 | 315.81 |
| tblVehicleEF | LDT1 | 69.06 | 62.11 |
| tblVehicleEF | LDT1 | 0.09 | 0.07 |
| tblVehicleEF | LDT1 | 0.13 | 0.22 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 8.0000e-003 | 8.0000e-003 |

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|---|---|---|---|
| tblVehicleEF | LDT1 | 2.2930e-003 | 1.8241e-003 |
| tblVehicleEF | LDT1 | 3.0800e-003 | 2.3358e-003 |
| tblVehicleEF | LDT1 | 0.02 | 0.02 |
| tblVehicleEF | LDT1 | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDT1 | 2.1120e-003 | 1.6787e-003 |
| tblVehicleEF | LDT1 | 2.8320e-003 | 2.1477e-003 |
| tblVehicleEF | LDT1 | 0.21 | 0.21 |
| tblVehicleEF | LDT1 | 0.27 | 0.20 |
| tblVehicleEF | LDT1 | 0.16 | 0.16 |
| tblVehicleEF | LDT1 | 0.02 | 0.02 |
| tblVehicleEF | LDT1 | 0.14 | 0.60 |
| tblVehicleEF | LDT1 | 0.14 | 0.28 |
| tblVehicleEF | LDT1 | 3.2560e-003 | 3.1252e-003 |
| tblVehicleEF | LDT1 | 7.2600e-004 | 6.1462e-004 |
| tblVehicleEF | LDT1 | 0.21 | 0.21 |
| tblVehicleEF | LDT1 | 0.27 | 0.20 |
| tblVehicleEF | LDT1 | 0.16 | 0.16 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 0.14 | 0.60 |
| tblVehicleEF | LDT1 | 0.16 | 0.30 |
| tblVehicleEF | LDT1 | 7.9620e-003 | 4.1270e-003 |
| tblVehicleEF | LDT1 | 0.01 | 0.08 |
| tblVehicleEF | LDT1 | 0.99 | 0.92 |
| tblVehicleEF | LDT1 | 3.13 | 2.87 |
| tblVehicleEF | LDT1 | 298.39 | 293.51 |
| tblVehicleEF | LDT1 | 69.06 | 64.06 |
| tblVehicleEF | LDT1 | 0.11 | 0.09 |

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|---|---|---|---|
| tblVehicleEF | LDT1 | 0.16 | 0.27 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDT1 | 2.2930e-003 | 1.8241e-003 |
| tblVehicleEF | LDT1 | 3.0800e-003 | 2.3358e-003 |
| tblVehicleEF | LDT1 | 0.02 | 0.02 |
| tblVehicleEF | LDT1 | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDT1 | 2.1120e-003 | 1.6787e-003 |
| tblVehicleEF | LDT1 | 2.8320e-003 | 2.1477e-003 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 0.26 | 0.19 |
| tblVehicleEF | LDT1 | 0.03 | 0.04 |
| tblVehicleEF | LDT1 | 0.02 | 0.02 |
| tblVehicleEF | LDT1 | 0.18 | 0.80 |
| tblVehicleEF | LDT1 | 0.20 | 0.39 |
| tblVehicleEF | LDT1 | 2.9950e-003 | 2.9044e-003 |
| tblVehicleEF | LDT1 | 7.4500e-004 | 6.3397e-004 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 0.26 | 0.19 |
| tblVehicleEF | LDT1 | 0.03 | 0.04 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 0.18 | 0.80 |
| tblVehicleEF | LDT1 | 0.22 | 0.42 |
| tblVehicleEF | LDT2 | 5.0510e-003 | 3.2185e-003 |
| tblVehicleEF | LDT2 | 6.9140e-003 | 0.07 |
| tblVehicleEF | LDT2 | 0.66 | 0.75 |
| tblVehicleEF | LDT2 | 1.52 | 2.87 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 339.26 | 317.40 |
| tblVehicleEF | LDT2 | 77.68 | 68.44 |
| tblVehicleEF | LDT2 | 0.07 | 0.07 |
| tblVehicleEF | LDT2 | 0.11 | 0.28 |
| tblVehicleEF | LDT2 | 0.04 | 0.04 |
| tblVehicleEF | LDT2 | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDT2 | 1.7210e-003 | 1.4409e-003 |
| tblVehicleEF | LDT2 | 2.3050e-003 | 1.7672e-003 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDT2 | 1.5830e-003 | 1.3263e-003 |
| tblVehicleEF | LDT2 | 2.1190e-003 | 1.6249e-003 |
| tblVehicleEF | LDT2 | 0.04 | 0.06 |
| tblVehicleEF | LDT2 | 0.11 | 0.13 |
| tblVehicleEF | LDT2 | 0.04 | 0.06 |
| tblVehicleEF | LDT2 | 0.01 | 0.01 |
| tblVehicleEF | LDT2 | 0.06 | 0.44 |
| tblVehicleEF | LDT2 | 0.09 | 0.32 |
| tblVehicleEF | LDT2 | 3.3970e-003 | 3.1400e-003 |
| tblVehicleEF | LDT2 | 8.0200e-004 | 6.7731e-004 |
| tblVehicleEF | LDT2 | 0.04 | 0.06 |
| tblVehicleEF | LDT2 | 0.11 | 0.13 |
| tblVehicleEF | LDT2 | 0.04 | 0.06 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.06 | 0.44 |
| tblVehicleEF | LDT2 | 0.10 | 0.35 |
| tblVehicleEF | LDT2 | 5.6330e-003 | 3.6366e-003 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 5.6340e-003 | 0.06 |
| tblVehicleEF | LDT2 | 0.78 | 0.89 |
| tblVehicleEF | LDT2 | 1.17 | 2.19 |
| tblVehicleEF | LDT2 | 366.22 | 337.19 |
| tblVehicleEF | LDT2 | 77.68 | 67.17 |
| tblVehicleEF | LDT2 | 0.06 | 0.06 |
| tblVehicleEF | LDT2 | 0.10 | 0.25 |
| tblVehicleEF | LDT2 | 0.04 | 0.04 |
| tblVehicleEF | LDT2 | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDT2 | 1.7210e-003 | 1.4409e-003 |
| tblVehicleEF | LDT2 | 2.3050e-003 | 1.7672e-003 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDT2 | 1.5830e-003 | 1.3263e-003 |
| tblVehicleEF | LDT2 | 2.1190e-003 | 1.6249e-003 |
| tblVehicleEF | LDT2 | 0.09 | 0.14 |
| tblVehicleEF | LDT2 | 0.12 | 0.14 |
| tblVehicleEF | LDT2 | 0.08 | 0.13 |
| tblVehicleEF | LDT2 | 0.01 | 0.01 |
| tblVehicleEF | LDT2 | 0.06 | 0.40 |
| tblVehicleEF | LDT2 | 0.08 | 0.26 |
| tblVehicleEF | LDT2 | 3.6680e-003 | 3.3358e-003 |
| tblVehicleEF | LDT2 | 7.9600e-004 | 6.6471e-004 |
| tblVehicleEF | LDT2 | 0.09 | 0.14 |
| tblVehicleEF | LDT2 | 0.12 | 0.14 |
| tblVehicleEF | LDT2 | 0.08 | 0.13 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 0.06 | 0.40 |
| tblVehicleEF | LDT2 | 0.08 | 0.29 |
| tblVehicleEF | LDT2 | 4.9370e-003 | 3.1101e-003 |
| tblVehicleEF | LDT2 | 7.8080e-003 | 0.08 |
| tblVehicleEF | LDT2 | 0.65 | 0.75 |
| tblVehicleEF | LDT2 | 1.77 | 3.36 |
| tblVehicleEF | LDT2 | 336.57 | 315.43 |
| tblVehicleEF | LDT2 | 77.68 | 69.36 |
| tblVehicleEF | LDT2 | 0.08 | 0.07 |
| tblVehicleEF | LDT2 | 0.12 | 0.31 |
| tblVehicleEF | LDT2 | 0.04 | 0.04 |
| tblVehicleEF | LDT2 | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDT2 | 1.7210e-003 | 1.4409e-003 |
| tblVehicleEF | LDT2 | 2.3050e-003 | 1.7672e-003 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDT2 | 1.5830e-003 | 1.3263e-003 |
| tblVehicleEF | LDT2 | 2.1190e-003 | 1.6249e-003 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.11 | 0.13 |
| tblVehicleEF | LDT2 | 0.02 | 0.03 |
| tblVehicleEF | LDT2 | 0.01 | 0.01 |
| tblVehicleEF | LDT2 | 0.08 | 0.53 |
| tblVehicleEF | LDT2 | 0.11 | 0.36 |
| tblVehicleEF | LDT2 | 3.3700e-003 | 3.1205e-003 |
| tblVehicleEF | LDT2 | 8.0700e-004 | 6.8639e-004 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 0.11 | 0.13 |
| tblVehicleEF | LDT2 | 0.02 | 0.03 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.08 | 0.53 |
| tblVehicleEF | LDT2 | 0.12 | 0.40 |
| tblVehicleEF | LHD1 | 5.4470e-003 | 5.3748e-003 |
| tblVehicleEF | LHD1 | 0.02 | 8.9071e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 0.15 | 0.19 |
| tblVehicleEF | LHD1 | 1.08 | 0.81 |
| tblVehicleEF | LHD1 | 2.63 | 1.12 |
| tblVehicleEF | LHD1 | 9.01 | 8.94 |
| tblVehicleEF | LHD1 | 694.94 | 806.45 |
| tblVehicleEF | LHD1 | 32.75 | 12.21 |
| tblVehicleEF | LHD1 | 0.07 | 0.06 |
| tblVehicleEF | LHD1 | 1.26 | 0.76 |
| tblVehicleEF | LHD1 | 1.04 | 0.34 |
| tblVehicleEF | LHD1 | 8.7000e-004 | 7.9246e-004 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |
| tblVehicleEF | LHD1 | 0.01 | 9.6773e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 9.3800e-004 | 2.6043e-004 |
| tblVehicleEF | LHD1 | 8.3200e-004 | 7.5818e-004 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 2.5100e-003 | 2.4193e-003 |
| tblVehicleEF | LHD1 | 0.02 | 9.8825e-003 |
| tblVehicleEF | LHD1 | 8.6300e-004 | 2.3946e-004 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 2.3470e-003 | 1.8484e-003 |
| tblVehicleEF | LHD1 | 0.10 | 0.08 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 1.3470e-003 | 1.0565e-003 |
| tblVehicleEF | LHD1 | 0.12 | 0.09 |
| tblVehicleEF | LHD1 | 0.30 | 0.55 |
| tblVehicleEF | LHD1 | 0.27 | 0.08 |
| tblVehicleEF | LHD1 | 9.0000e-005 | 8.6841e-005 |
| tblVehicleEF | LHD1 | 6.8250e-003 | 7.8807e-003 |
| tblVehicleEF | LHD1 | 3.7700e-004 | 1.2080e-004 |
| tblVehicleEF | LHD1 | 2.3470e-003 | 1.8484e-003 |
| tblVehicleEF | LHD1 | 0.10 | 0.08 |
| tblVehicleEF | LHD1 | 0.02 | 0.03 |
| tblVehicleEF | LHD1 | 1.3470e-003 | 1.0565e-003 |
| tblVehicleEF | LHD1 | 0.15 | 0.12 |
| tblVehicleEF | LHD1 | 0.30 | 0.55 |
| tblVehicleEF | LHD1 | 0.29 | 0.09 |
| tblVehicleEF | LHD1 | 5.4470e-003 | 5.3917e-003 |
| tblVehicleEF | LHD1 | 0.02 | 9.1612e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 0.15 | 0.19 |
| tblVehicleEF | LHD1 | 1.10 | 0.83 |
| tblVehicleEF | LHD1 | 2.41 | 1.03 |
| tblVehicleEF | LHD1 | 9.01 | 8.94 |
| tblVehicleEF | LHD1 | 694.94 | 806.49 |
| tblVehicleEF | LHD1 | 32.75 | 12.05 |
| tblVehicleEF | LHD1 | 0.07 | 0.06 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 1.20 | 0.72 |
| tblVehicleEF | LHD1 | 0.96 | 0.31 |
| tblVehicleEF | LHD1 | 8.7000e-004 | 7.9246e-004 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |
| tblVehicleEF | LHD1 | 0.01 | 9.6773e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 9.3800e-004 | 2.6043e-004 |
| tblVehicleEF | LHD1 | 8.3200e-004 | 7.5818e-004 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 2.5100e-003 | 2.4193e-003 |
| tblVehicleEF | LHD1 | 0.02 | 9.8825e-003 |
| tblVehicleEF | LHD1 | 8.6300e-004 | 2.3946e-004 |
| tblVehicleEF | LHD1 | 5.7580e-003 | 4.5636e-003 |
| tblVehicleEF | LHD1 | 0.12 | 0.09 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 2.8690e-003 | 2.2696e-003 |
| tblVehicleEF | LHD1 | 0.13 | 0.10 |
| tblVehicleEF | LHD1 | 0.29 | 0.53 |
| tblVehicleEF | LHD1 | 0.25 | 0.07 |
| tblVehicleEF | LHD1 | 9.0000e-005 | 8.6841e-005 |
| tblVehicleEF | LHD1 | 6.8250e-003 | 7.8811e-003 |
| tblVehicleEF | LHD1 | 3.7300e-004 | 1.1924e-004 |
| tblVehicleEF | LHD1 | 5.7580e-003 | 4.5636e-003 |
| tblVehicleEF | LHD1 | 0.12 | 0.09 |
| tblVehicleEF | LHD1 | 0.02 | 0.03 |
| tblVehicleEF | LHD1 | 2.8690e-003 | 2.2696e-003 |
| tblVehicleEF | LHD1 | 0.16 | 0.12 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 0.29 | 0.53 |
| tblVehicleEF | LHD1 | 0.27 | 0.08 |
| tblVehicleEF | LHD1 | 5.4470e-003 | 5.3616e-003 |
| tblVehicleEF | LHD1 | 0.02 | 8.7278e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 0.15 | 0.19 |
| tblVehicleEF | LHD1 | 1.06 | 0.79 |
| tblVehicleEF | LHD1 | 2.83 | 1.20 |
| tblVehicleEF | LHD1 | 9.01 | 8.94 |
| tblVehicleEF | LHD1 | 694.94 | 806.42 |
| tblVehicleEF | LHD1 | 32.75 | 12.35 |
| tblVehicleEF | LHD1 | 0.07 | 0.06 |
| tblVehicleEF | LHD1 | 1.29 | 0.77 |
| tblVehicleEF | LHD1 | 1.11 | 0.36 |
| tblVehicleEF | LHD1 | 8.7000e-004 | 7.9246e-004 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |
| tblVehicleEF | LHD1 | 0.01 | 9.6773e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 9.3800e-004 | 2.6043e-004 |
| tblVehicleEF | LHD1 | 8.3200e-004 | 7.5818e-004 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 2.5100e-003 | 2.4193e-003 |
| tblVehicleEF | LHD1 | 0.02 | 9.8825e-003 |
| tblVehicleEF | LHD1 | 8.6300e-004 | 2.3946e-004 |
| tblVehicleEF | LHD1 | 9.7500e-004 | 7.5746e-004 |
| tblVehicleEF | LHD1 | 0.11 | 0.09 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 6.5800e-004 | 5.0948e-004 |
| tblVehicleEF | LHD1 | 0.12 | 0.09 |
| tblVehicleEF | LHD1 | 0.34 | 0.61 |
| tblVehicleEF | LHD1 | 0.28 | 0.08 |
| tblVehicleEF | LHD1 | 9.0000e-005 | 8.6841e-005 |
| tblVehicleEF | LHD1 | 6.8240e-003 | 7.8804e-003 |
| tblVehicleEF | LHD1 | 3.8100e-004 | 1.2218e-004 |
| tblVehicleEF | LHD1 | 9.7500e-004 | 7.5746e-004 |
| tblVehicleEF | LHD1 | 0.11 | 0.09 |
| tblVehicleEF | LHD1 | 0.02 | 0.03 |
| tblVehicleEF | LHD1 | 6.5800e-004 | 5.0948e-004 |
| tblVehicleEF | LHD1 | 0.15 | 0.11 |
| tblVehicleEF | LHD1 | 0.34 | 0.61 |
| tblVehicleEF | LHD1 | 0.31 | 0.09 |
| tblVehicleEF | LHD2 | 3.6270e-003 | 3.6920e-003 |
| tblVehicleEF | LHD2 | 8.0300e-003 | 7.1738e-003 |
| tblVehicleEF | LHD2 | 7.5680e-003 | 9.9606e-003 |
| tblVehicleEF | LHD2 | 0.13 | 0.15 |
| tblVehicleEF | LHD2 | 0.58 | 0.63 |
| tblVehicleEF | LHD2 | 1.26 | 0.72 |
| tblVehicleEF | LHD2 | 13.84 | 13.61 |
| tblVehicleEF | LHD2 | 714.57 | 797.43 |
| tblVehicleEF | LHD2 | 25.84 | 9.13 |
| tblVehicleEF | LHD2 | 0.10 | 0.09 |
| tblVehicleEF | LHD2 | 0.78 | 0.86 |
| tblVehicleEF | LHD2 | 0.51 | 0.22 |
| tblVehicleEF | LHD2 | 1.2000e-003 | 1.2935e-003 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 0.09 | 0.09 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 4.1700e-004 | 1.4400e-004 |
| tblVehicleEF | LHD2 | 1.1480e-003 | 1.2375e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.04 |
| tblVehicleEF | LHD2 | 2.6730e-003 | 2.6419e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 3.8400e-004 | 1.3241e-004 |
| tblVehicleEF | LHD2 | 8.1400e-004 | 1.0875e-003 |
| tblVehicleEF | LHD2 | 0.03 | 0.05 |
| tblVehicleEF | LHD2 | 0.01 | 0.02 |
| tblVehicleEF | LHD2 | 4.9300e-004 | 6.3173e-004 |
| tblVehicleEF | LHD2 | 0.11 | 0.11 |
| tblVehicleEF | LHD2 | 0.07 | 0.32 |
| tblVehicleEF | LHD2 | 0.10 | 0.05 |
| tblVehicleEF | LHD2 | 1.3500e-004 | 1.3038e-004 |
| tblVehicleEF | LHD2 | 6.9560e-003 | 7.7201e-003 |
| tblVehicleEF | LHD2 | 2.8100e-004 | 9.0385e-005 |
| tblVehicleEF | LHD2 | 8.1400e-004 | 1.0875e-003 |
| tblVehicleEF | LHD2 | 0.03 | 0.05 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 4.9300e-004 | 6.3173e-004 |
| tblVehicleEF | LHD2 | 0.12 | 0.13 |
| tblVehicleEF | LHD2 | 0.07 | 0.32 |
| tblVehicleEF | LHD2 | 0.11 | 0.05 |
| tblVehicleEF | LHD2 | 3.6270e-003 | 3.7033e-003 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 8.1720e-003 | 7.2797e-003 |
| tblVehicleEF | LHD2 | 7.1120e-003 | 9.3464e-003 |
| tblVehicleEF | LHD2 | 0.13 | 0.15 |
| tblVehicleEF | LHD2 | 0.59 | 0.64 |
| tblVehicleEF | LHD2 | 1.16 | 0.67 |
| tblVehicleEF | LHD2 | 13.84 | 13.61 |
| tblVehicleEF | LHD2 | 714.57 | 797.45 |
| tblVehicleEF | LHD2 | 25.84 | 9.03 |
| tblVehicleEF | LHD2 | 0.10 | 0.09 |
| tblVehicleEF | LHD2 | 0.75 | 0.82 |
| tblVehicleEF | LHD2 | 0.48 | 0.21 |
| tblVehicleEF | LHD2 | 1.2000e-003 | 1.2935e-003 |
| tblVehicleEF | LHD2 | 0.09 | 0.09 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 4.1700e-004 | 1.4400e-004 |
| tblVehicleEF | LHD2 | 1.1480e-003 | 1.2375e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.04 |
| tblVehicleEF | LHD2 | 2.6730e-003 | 2.6419e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 3.8400e-004 | 1.3241e-004 |
| tblVehicleEF | LHD2 | 1.9850e-003 | 2.6787e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.05 |
| tblVehicleEF | LHD2 | 0.01 | 0.02 |
| tblVehicleEF | LHD2 | 1.0480e-003 | 1.3569e-003 |
| tblVehicleEF | LHD2 | 0.11 | 0.11 |
| tblVehicleEF | LHD2 | 0.07 | 0.30 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 0.10 | 0.05 |
| tblVehicleEF | LHD2 | 1.3500e-004 | 1.3038e-004 |
| tblVehicleEF | LHD2 | 6.9560e-003 | 7.7202e-003 |
| tblVehicleEF | LHD2 | 2.7900e-004 | 8.9381e-005 |
| tblVehicleEF | LHD2 | 1.9850e-003 | 2.6787e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.05 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 1.0480e-003 | 1.3569e-003 |
| tblVehicleEF | LHD2 | 0.12 | 0.13 |
| tblVehicleEF | LHD2 | 0.07 | 0.30 |
| tblVehicleEF | LHD2 | 0.11 | 0.05 |
| tblVehicleEF | LHD2 | 3.6270e-003 | 3.6831e-003 |
| tblVehicleEF | LHD2 | 7.9290e-003 | 7.0976e-003 |
| tblVehicleEF | LHD2 | 7.9280e-003 | 0.01 |
| tblVehicleEF | LHD2 | 0.13 | 0.15 |
| tblVehicleEF | LHD2 | 0.58 | 0.63 |
| tblVehicleEF | LHD2 | 1.35 | 0.77 |
| tblVehicleEF | LHD2 | 13.84 | 13.61 |
| tblVehicleEF | LHD2 | 714.57 | 797.42 |
| tblVehicleEF | LHD2 | 25.84 | 9.22 |
| tblVehicleEF | LHD2 | 0.10 | 0.09 |
| tblVehicleEF | LHD2 | 0.80 | 0.88 |
| tblVehicleEF | LHD2 | 0.54 | 0.24 |
| tblVehicleEF | LHD2 | 1.2000e-003 | 1.2935e-003 |
| tblVehicleEF | LHD2 | 0.09 | 0.09 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 4.1700e-004 | 1.4400e-004 |
| tblVehicleEF | LHD2 | 1.1480e-003 | 1.2375e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.04 |
| tblVehicleEF | LHD2 | 2.6730e-003 | 2.6419e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 3.8400e-004 | 1.3241e-004 |
| tblVehicleEF | LHD2 | 3.5500e-004 | 4.5956e-004 |
| tblVehicleEF | LHD2 | 0.04 | 0.05 |
| tblVehicleEF | LHD2 | 0.01 | 0.02 |
| tblVehicleEF | LHD2 | 2.4500e-004 | 3.1226e-004 |
| tblVehicleEF | LHD2 | 0.11 | 0.11 |
| tblVehicleEF | LHD2 | 0.08 | 0.35 |
| tblVehicleEF | LHD2 | 0.11 | 0.05 |
| tblVehicleEF | LHD2 | 1.3500e-004 | 1.3038e-004 |
| tblVehicleEF | LHD2 | 6.9560e-003 | 7.7199e-003 |
| tblVehicleEF | LHD2 | 2.8300e-004 | 9.1265e-005 |
| tblVehicleEF | LHD2 | 3.5500e-004 | 4.5956e-004 |
| tblVehicleEF | LHD2 | 0.04 | 0.05 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 2.4500e-004 | 3.1226e-004 |
| tblVehicleEF | LHD2 | 0.12 | 0.13 |
| tblVehicleEF | LHD2 | 0.08 | 0.35 |
| tblVehicleEF | LHD2 | 0.12 | 0.06 |
| tblVehicleEF | MCY | 0.46 | 0.34 |
| tblVehicleEF | MCY | 0.17 | 0.26 |
| tblVehicleEF | MCY | 20.03 | 20.15 |
| tblVehicleEF | MCY | 10.24 | 9.10 |

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|---|---|---|---|
| tblVehicleEF | MCY | 174.71 | 215.41 |
| tblVehicleEF | MCY | 45.85 | 61.83 |
| tblVehicleEF | MCY | 1.17 | 1.17 |
| tblVehicleEF | MCY | 0.32 | 0.27 |
| tblVehicleEF | MCY | 0.01 | 0.01 |
| tblVehicleEF | MCY | 4.0000e-003 | 4.0000e-003 |
| tblVehicleEF | MCY | 2.1220e-003 | 2.0687e-003 |
| tblVehicleEF | MCY | 3.9700e-003 | 3.1978e-003 |
| tblVehicleEF | MCY | 5.0400e-003 | 5.0400e-003 |
| tblVehicleEF | MCY | 1.0000e-003 | 1.0000e-003 |
| tblVehicleEF | MCY | 1.9850e-003 | 1.9349e-003 |
| tblVehicleEF | MCY | 3.7430e-003 | 3.0123e-003 |
| tblVehicleEF | MCY | 0.81 | 0.80 |
| tblVehicleEF | MCY | 0.74 | 0.73 |
| tblVehicleEF | MCY | 0.50 | 0.50 |
| tblVehicleEF | MCY | 2.33 | 2.34 |
| tblVehicleEF | MCY | 0.60 | 2.18 |
| tblVehicleEF | MCY | 2.26 | 1.99 |
| tblVehicleEF | MCY | 2.1430e-003 | 2.1316e-003 |
| tblVehicleEF | MCY | 6.9300e-004 | 6.1181e-004 |
| tblVehicleEF | MCY | 0.81 | 0.80 |
| tblVehicleEF | MCY | 0.74 | 0.73 |
| tblVehicleEF | MCY | 0.50 | 0.50 |
| tblVehicleEF | MCY | 2.88 | 2.89 |
| tblVehicleEF | MCY | 0.60 | 2.18 |
| tblVehicleEF | MCY | 2.46 | 2.17 |
| tblVehicleEF | MCY | 0.45 | 0.33 |

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|---|---|---|---|
| tblVehicleEF | MCY | 0.14 | 0.21 |
| tblVehicleEF | MCY | 18.97 | 19.08 |
| tblVehicleEF | MCY | 8.85 | 7.79 |
| tblVehicleEF | MCY | 174.71 | 213.35 |
| tblVehicleEF | MCY | 45.85 | 58.50 |
| tblVehicleEF | MCY | 1.02 | 1.02 |
| tblVehicleEF | MCY | 0.29 | 0.25 |
| tblVehicleEF | MCY | 0.01 | 0.01 |
| tblVehicleEF | MCY | 4.0000e-003 | 4.0000e-003 |
| tblVehicleEF | MCY | 2.1220e-003 | 2.0687e-003 |
| tblVehicleEF | MCY | 3.9700e-003 | 3.1978e-003 |
| tblVehicleEF | MCY | 5.0400e-003 | 5.0400e-003 |
| tblVehicleEF | MCY | 1.0000e-003 | 1.0000e-003 |
| tblVehicleEF | MCY | 1.9850e-003 | 1.9349e-003 |
| tblVehicleEF | MCY | 3.7430e-003 | 3.0123e-003 |
| tblVehicleEF | MCY | 2.35 | 2.34 |
| tblVehicleEF | MCY | 0.98 | 0.97 |
| tblVehicleEF | MCY | 1.45 | 1.43 |
| tblVehicleEF | MCY | 2.23 | 2.24 |
| tblVehicleEF | MCY | 0.56 | 2.03 |
| tblVehicleEF | MCY | 1.85 | 1.62 |
| tblVehicleEF | MCY | 2.1230e-003 | 2.1112e-003 |
| tblVehicleEF | MCY | 6.5700e-004 | 5.7895e-004 |
| tblVehicleEF | MCY | 2.35 | 2.34 |
| tblVehicleEF | MCY | 0.98 | 0.97 |
| tblVehicleEF | MCY | 1.45 | 1.43 |
| tblVehicleEF | MCY | 2.76 | 2.77 |

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|---|---|---|---|
| tblVehicleEF | MCY | 0.56 | 2.03 |
| tblVehicleEF | MCY | 2.01 | 1.76 |
| tblVehicleEF | MCY | 0.48 | 0.35 |
| tblVehicleEF | MCY | 0.19 | 0.30 |
| tblVehicleEF | MCY | 21.70 | 21.83 |
| tblVehicleEF | MCY | 11.67 | 10.43 |
| tblVehicleEF | MCY | 174.71 | 218.44 |
| tblVehicleEF | MCY | 45.85 | 65.04 |
| tblVehicleEF | MCY | 1.25 | 1.25 |
| tblVehicleEF | MCY | 0.34 | 0.29 |
| tblVehicleEF | MCY | 0.01 | 0.01 |
| tblVehicleEF | MCY | 4.0000e-003 | 4.0000e-003 |
| tblVehicleEF | MCY | 2.1220e-003 | 2.0687e-003 |
| tblVehicleEF | MCY | 3.9700e-003 | 3.1978e-003 |
| tblVehicleEF | MCY | 5.0400e-003 | 5.0400e-003 |
| tblVehicleEF | MCY | 1.0000e-003 | 1.0000e-003 |
| tblVehicleEF | MCY | 1.9850e-003 | 1.9349e-003 |
| tblVehicleEF | MCY | 3.7430e-003 | 3.0123e-003 |
| tblVehicleEF | MCY | 0.21 | 0.21 |
| tblVehicleEF | MCY | 0.89 | 0.86 |
| tblVehicleEF | MCY | 0.17 | 0.18 |
| tblVehicleEF | MCY | 2.43 | 2.44 |
| tblVehicleEF | MCY | 0.71 | 2.58 |
| tblVehicleEF | MCY | 2.62 | 2.33 |
| tblVehicleEF | MCY | 2.1730e-003 | 2.1617e-003 |
| tblVehicleEF | MCY | 7.2700e-004 | 6.4366e-004 |
| tblVehicleEF | MCY | 0.21 | 0.21 |

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|---|---|---|---|
| tblVehicleEF | MCY | 0.89 | 0.86 |
| tblVehicleEF | MCY | 0.17 | 0.18 |
| tblVehicleEF | MCY | 3.00 | 3.01 |
| tblVehicleEF | MCY | 0.71 | 2.58 |
| tblVehicleEF | MCY | 2.85 | 2.53 |
| tblVehicleEF | MDV | 9.7550e-003 | 3.8518e-003 |
| tblVehicleEF | MDV | 0.02 | 0.08 |
| tblVehicleEF | MDV | 1.05 | 0.83 |
| tblVehicleEF | MDV | 2.91 | 3.26 |
| tblVehicleEF | MDV | 457.07 | 381.97 |
| tblVehicleEF | MDV | 102.80 | 82.05 |
| tblVehicleEF | MDV | 0.13 | 0.08 |
| tblVehicleEF | MDV | 0.25 | 0.34 |
| tblVehicleEF | MDV | 0.04 | 0.04 |
| tblVehicleEF | MDV | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | MDV | 1.8870e-003 | 1.5678e-003 |
| tblVehicleEF | MDV | 2.5190e-003 | 1.9600e-003 |
| tblVehicleEF | MDV | 0.02 | 0.02 |
| tblVehicleEF | MDV | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | MDV | 1.7400e-003 | 1.4459e-003 |
| tblVehicleEF | MDV | 2.3160e-003 | 1.8024e-003 |
| tblVehicleEF | MDV | 0.06 | 0.07 |
| tblVehicleEF | MDV | 0.17 | 0.14 |
| tblVehicleEF | MDV | 0.06 | 0.07 |
| tblVehicleEF | MDV | 0.02 | 0.02 |
| tblVehicleEF | MDV | 0.10 | 0.47 |
| tblVehicleEF | MDV | 0.22 | 0.41 |

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|---|---|---|---|
| tblVehicleEF | MDV | 4.5760e-003 | 3.7756e-003 |
| tblVehicleEF | MDV | 1.0790e-003 | 8.1192e-004 |
| tblVehicleEF | MDV | 0.06 | 0.07 |
| tblVehicleEF | MDV | 0.17 | 0.14 |
| tblVehicleEF | MDV | 0.06 | 0.07 |
| tblVehicleEF | MDV | 0.04 | 0.02 |
| tblVehicleEF | MDV | 0.10 | 0.47 |
| tblVehicleEF | MDV | 0.24 | 0.45 |
| tblVehicleEF | MDV | 0.01 | 4.3470e-003 |
| tblVehicleEF | MDV | 0.01 | 0.07 |
| tblVehicleEF | MDV | 1.23 | 0.97 |
| tblVehicleEF | MDV | 2.23 | 2.48 |
| tblVehicleEF | MDV | 492.38 | 401.98 |
| tblVehicleEF | MDV | 102.80 | 80.55 |
| tblVehicleEF | MDV | 0.12 | 0.07 |
| tblVehicleEF | MDV | 0.22 | 0.30 |
| tblVehicleEF | MDV | 0.04 | 0.04 |
| tblVehicleEF | MDV | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | MDV | 1.8870e-003 | 1.5678e-003 |
| tblVehicleEF | MDV | 2.5190e-003 | 1.9600e-003 |
| tblVehicleEF | MDV | 0.02 | 0.02 |
| tblVehicleEF | MDV | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | MDV | 1.7400e-003 | 1.4459e-003 |
| tblVehicleEF | MDV | 2.3160e-003 | 1.8024e-003 |
| tblVehicleEF | MDV | 0.14 | 0.16 |
| tblVehicleEF | MDV | 0.19 | 0.16 |
| tblVehicleEF | MDV | 0.13 | 0.15 |

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|---|---|---|---|
| tblVehicleEF | MDV | 0.03 | 0.02 |
| tblVehicleEF | MDV | 0.09 | 0.43 |
| tblVehicleEF | MDV | 0.18 | 0.33 |
| tblVehicleEF | MDV | 4.9310e-003 | 3.9737e-003 |
| tblVehicleEF | MDV | 1.0670e-003 | 7.9715e-004 |
| tblVehicleEF | MDV | 0.14 | 0.16 |
| tblVehicleEF | MDV | 0.19 | 0.16 |
| tblVehicleEF | MDV | 0.13 | 0.15 |
| tblVehicleEF | MDV | 0.04 | 0.03 |
| tblVehicleEF | MDV | 0.09 | 0.43 |
| tblVehicleEF | MDV | 0.20 | 0.36 |
| tblVehicleEF | MDV | 9.5770e-003 | 3.7328e-003 |
| tblVehicleEF | MDV | 0.02 | 0.09 |
| tblVehicleEF | MDV | 1.04 | 0.82 |
| tblVehicleEF | MDV | 3.40 | 3.83 |
| tblVehicleEF | MDV | 453.54 | 379.98 |
| tblVehicleEF | MDV | 102.80 | 83.12 |
| tblVehicleEF | MDV | 0.15 | 0.09 |
| tblVehicleEF | MDV | 0.28 | 0.37 |
| tblVehicleEF | MDV | 0.04 | 0.04 |
| tblVehicleEF | MDV | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | MDV | 1.8870e-003 | 1.5678e-003 |
| tblVehicleEF | MDV | 2.5190e-003 | 1.9600e-003 |
| tblVehicleEF | MDV | 0.02 | 0.02 |
| tblVehicleEF | MDV | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | MDV | 1.7400e-003 | 1.4459e-003 |
| tblVehicleEF | MDV | 2.3160e-003 | 1.8024e-003 |

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|---|---|---|---|
| tblVehicleEF | MDV | 0.02 | 0.03 |
| tblVehicleEF | MDV | 0.18 | 0.15 |
| tblVehicleEF | MDV | 0.03 | 0.03 |
| tblVehicleEF | MDV | 0.02 | 0.02 |
| tblVehicleEF | MDV | 0.12 | 0.57 |
| tblVehicleEF | MDV | 0.25 | 0.46 |
| tblVehicleEF | MDV | 4.5400e-003 | 3.7559e-003 |
| tblVehicleEF | MDV | 1.0880e-003 | 8.2256e-004 |
| tblVehicleEF | MDV | 0.02 | 0.03 |
| tblVehicleEF | MDV | 0.18 | 0.15 |
| tblVehicleEF | MDV | 0.03 | 0.03 |
| tblVehicleEF | MDV | 0.03 | 0.02 |
| tblVehicleEF | MDV | 0.12 | 0.57 |
| tblVehicleEF | MDV | 0.27 | 0.50 |
| tblVehicleEF | MH | 0.03 | 0.01 |
| tblVehicleEF | MH | 0.03 | 0.02 |
| tblVehicleEF | MH | 2.15 | 1.09 |
| tblVehicleEF | MH | 5.90 | 2.17 |
| tblVehicleEF | MH | 1,214.25 | 1,537.97 |
| tblVehicleEF | MH | 59.49 | 19.02 |
| tblVehicleEF | MH | 1.30 | 1.27 |
| tblVehicleEF | MH | 0.86 | 0.25 |
| tblVehicleEF | MH | 0.13 | 0.13 |
| tblVehicleEF | MH | 0.01 | 0.01 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.1590e-003 | 2.7886e-004 |
| tblVehicleEF | MH | 0.06 | 0.06 |

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|---|---|---|---|
| tblVehicleEF | MH | 3.2120e-003 | 3.2609e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.0660e-003 | 2.5640e-004 |
| tblVehicleEF | MH | 0.75 | 0.61 |
| tblVehicleEF | MH | 0.07 | 0.06 |
| tblVehicleEF | MH | 0.29 | 0.24 |
| tblVehicleEF | MH | 0.10 | 0.07 |
| tblVehicleEF | MH | 0.02 | 1.41 |
| tblVehicleEF | MH | 0.34 | 0.10 |
| tblVehicleEF | MH | 0.01 | 0.02 |
| tblVehicleEF | MH | 6.9800e-004 | 1.8822e-004 |
| tblVehicleEF | MH | 0.75 | 0.61 |
| tblVehicleEF | MH | 0.07 | 0.06 |
| tblVehicleEF | MH | 0.29 | 0.24 |
| tblVehicleEF | MH | 0.13 | 0.09 |
| tblVehicleEF | MH | 0.02 | 1.41 |
| tblVehicleEF | MH | 0.37 | 0.11 |
| tblVehicleEF | MH | 0.03 | 0.01 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 2.25 | 1.14 |
| tblVehicleEF | MH | 5.31 | 1.96 |
| tblVehicleEF | MH | 1,214.25 | 1,538.05 |
| tblVehicleEF | MH | 59.49 | 18.66 |
| tblVehicleEF | MH | 1.21 | 1.20 |
| tblVehicleEF | MH | 0.79 | 0.23 |
| tblVehicleEF | MH | 0.13 | 0.13 |
| tblVehicleEF | MH | 0.01 | 0.01 |

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|---|---|---|---|
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.1590e-003 | 2.7886e-004 |
| tblVehicleEF | MH | 0.06 | 0.06 |
| tblVehicleEF | MH | 3.2120e-003 | 3.2609e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.0660e-003 | 2.5640e-004 |
| tblVehicleEF | MH | 1.86 | 1.50 |
| tblVehicleEF | MH | 0.08 | 0.06 |
| tblVehicleEF | MH | 0.62 | 0.51 |
| tblVehicleEF | MH | 0.10 | 0.07 |
| tblVehicleEF | MH | 0.02 | 1.37 |
| tblVehicleEF | MH | 0.31 | 0.09 |
| tblVehicleEF | MH | 0.01 | 0.02 |
| tblVehicleEF | MH | 6.8700e-004 | 1.8466e-004 |
| tblVehicleEF | MH | 1.86 | 1.50 |
| tblVehicleEF | MH | 0.08 | 0.06 |
| tblVehicleEF | MH | 0.62 | 0.51 |
| tblVehicleEF | MH | 0.14 | 0.09 |
| tblVehicleEF | MH | 0.02 | 1.37 |
| tblVehicleEF | MH | 0.34 | 0.10 |
| tblVehicleEF | MH | 0.03 | 0.01 |
| tblVehicleEF | MH | 0.03 | 0.02 |
| tblVehicleEF | MH | 2.08 | 1.06 |
| tblVehicleEF | MH | 6.40 | 2.34 |
| tblVehicleEF | MH | 1,214.25 | 1,537.92 |
| tblVehicleEF | MH | 59.49 | 19.30 |
| tblVehicleEF | MH | 1.34 | 1.30 |

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|---|---|---|---|
| tblVehicleEF | MH | 0.91 | 0.27 |
| tblVehicleEF | MH | 0.13 | 0.13 |
| tblVehicleEF | MH | 0.01 | 0.01 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.1590e-003 | 2.7886e-004 |
| tblVehicleEF | MH | 0.06 | 0.06 |
| tblVehicleEF | MH | 3.2120e-003 | 3.2609e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.0660e-003 | 2.5640e-004 |
| tblVehicleEF | MH | 0.29 | 0.24 |
| tblVehicleEF | MH | 0.09 | 0.07 |
| tblVehicleEF | MH | 0.14 | 0.12 |
| tblVehicleEF | MH | 0.09 | 0.07 |
| tblVehicleEF | MH | 0.02 | 1.52 |
| tblVehicleEF | MH | 0.36 | 0.10 |
| tblVehicleEF | MH | 0.01 | 0.02 |
| tblVehicleEF | MH | 7.0600e-004 | 1.9102e-004 |
| tblVehicleEF | MH | 0.29 | 0.24 |
| tblVehicleEF | MH | 0.09 | 0.07 |
| tblVehicleEF | MH | 0.14 | 0.12 |
| tblVehicleEF | MH | 0.13 | 0.09 |
| tblVehicleEF | MH | 0.02 | 1.52 |
| tblVehicleEF | MH | 0.39 | 0.11 |
| tblVehicleEF | MHD | 0.02 | 2.7377e-003 |
| tblVehicleEF | MHD | 3.7500e-003 | 1.5027e-003 |
| tblVehicleEF | MHD | 0.05 | 7.1960e-003 |
| tblVehicleEF | MHD | 0.29 | 0.36 |

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|---|---|---|---|
| tblVehicleEF | MHD | 0.32 | 0.22 |
| tblVehicleEF | MHD | 4.66 | 0.85 |
| tblVehicleEF | MHD | 166.31 | 73.92 |
| tblVehicleEF | MHD | 1,184.93 | 1,059.43 |
| tblVehicleEF | MHD | 46.12 | 7.10 |
| tblVehicleEF | MHD | 0.46 | 0.43 |
| tblVehicleEF | MHD | 1.12 | 1.43 |
| tblVehicleEF | MHD | 12.97 | 1.81 |
| tblVehicleEF | MHD | 1.2900e-004 | 3.5512e-004 |
| tblVehicleEF | MHD | 0.13 | 0.13 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 3.0820e-003 | 6.8016e-003 |
| tblVehicleEF | MHD | 6.6500e-004 | 8.1245e-005 |
| tblVehicleEF | MHD | 1.2300e-004 | 3.3975e-004 |
| tblVehicleEF | MHD | 0.06 | 0.06 |
| tblVehicleEF | MHD | 3.0000e-003 | 3.0000e-003 |
| tblVehicleEF | MHD | 2.9450e-003 | 6.5032e-003 |
| tblVehicleEF | MHD | 6.1100e-004 | 7.4702e-005 |
| tblVehicleEF | MHD | 6.8000e-004 | 2.7798e-004 |
| tblVehicleEF | MHD | 0.04 | 0.01 |
| tblVehicleEF | MHD | 0.02 | 0.02 |
| tblVehicleEF | MHD | 3.9700e-004 | 1.6276e-004 |
| tblVehicleEF | MHD | 0.04 | 0.01 |
| tblVehicleEF | MHD | 0.01 | 0.09 |
| tblVehicleEF | MHD | 0.28 | 0.04 |
| tblVehicleEF | MHD | 1.5960e-003 | 7.0055e-004 |
| tblVehicleEF | MHD | 0.01 | 0.01 |

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|---|---|---|---|
| tblVehicleEF | MHD | 5.4300e-004 | 7.0246e-005 |
| tblVehicleEF | MHD | 6.8000e-004 | 2.7798e-004 |
| tblVehicleEF | MHD | 0.04 | 0.01 |
| tblVehicleEF | MHD | 0.03 | 0.02 |
| tblVehicleEF | MHD | 3.9700e-004 | 1.6276e-004 |
| tblVehicleEF | MHD | 0.05 | 0.02 |
| tblVehicleEF | MHD | 0.01 | 0.09 |
| tblVehicleEF | MHD | 0.31 | 0.04 |
| tblVehicleEF | MHD | 0.01 | 2.5887e-003 |
| tblVehicleEF | MHD | 3.8260e-003 | 1.5452e-003 |
| tblVehicleEF | MHD | 0.05 | 6.7287e-003 |
| tblVehicleEF | MHD | 0.20 | 0.31 |
| tblVehicleEF | MHD | 0.32 | 0.22 |
| tblVehicleEF | MHD | 4.24 | 0.77 |
| tblVehicleEF | MHD | 176.30 | 73.80 |
| tblVehicleEF | MHD | 1,184.93 | 1,059.44 |
| tblVehicleEF | MHD | 46.12 | 6.97 |
| tblVehicleEF | MHD | 0.48 | 0.42 |
| tblVehicleEF | MHD | 1.07 | 1.37 |
| tblVehicleEF | MHD | 12.91 | 1.81 |
| tblVehicleEF | MHD | 1.0800e-004 | 3.0272e-004 |
| tblVehicleEF | MHD | 0.13 | 0.13 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 3.0820e-003 | 6.8016e-003 |
| tblVehicleEF | MHD | 6.6500e-004 | 8.1245e-005 |
| tblVehicleEF | MHD | 1.0400e-004 | 2.8962e-004 |
| tblVehicleEF | MHD | 0.06 | 0.06 |

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|---|---|---|---|
| tblVehicleEF | MHD | 3.0000e-003 | 3.0000e-003 |
| tblVehicleEF | MHD | 2.9450e-003 | 6.5032e-003 |
| tblVehicleEF | MHD | 6.1100e-004 | 7.4702e-005 |
| tblVehicleEF | MHD | 1.7170e-003 | 6.9915e-004 |
| tblVehicleEF | MHD | 0.04 | 0.02 |
| tblVehicleEF | MHD | 0.02 | 0.01 |
| tblVehicleEF | MHD | 8.8800e-004 | 3.6299e-004 |
| tblVehicleEF | MHD | 0.04 | 0.02 |
| tblVehicleEF | MHD | 0.01 | 0.08 |
| tblVehicleEF | MHD | 0.26 | 0.04 |
| tblVehicleEF | MHD | 1.6900e-003 | 6.9950e-004 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 5.3600e-004 | 6.8962e-005 |
| tblVehicleEF | MHD | 1.7170e-003 | 6.9915e-004 |
| tblVehicleEF | MHD | 0.04 | 0.02 |
| tblVehicleEF | MHD | 0.03 | 0.02 |
| tblVehicleEF | MHD | 8.8800e-004 | 3.6299e-004 |
| tblVehicleEF | MHD | 0.05 | 0.02 |
| tblVehicleEF | MHD | 0.01 | 0.08 |
| tblVehicleEF | MHD | 0.29 | 0.04 |
| tblVehicleEF | MHD | 0.02 | 2.8829e-003 |
| tblVehicleEF | MHD | 3.6990e-003 | 1.4733e-003 |
| tblVehicleEF | MHD | 0.05 | 7.5441e-003 |
| tblVehicleEF | MHD | 0.38 | 0.41 |
| tblVehicleEF | MHD | 0.32 | 0.21 |
| tblVehicleEF | MHD | 5.02 | 0.91 |
| tblVehicleEF | MHD | 152.80 | 74.18 |

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|---|---|---|---|
| tblVehicleEF | MHD | 1,184.93 | 1,059.43 |
| tblVehicleEF | MHD | 46.12 | 7.21 |
| tblVehicleEF | MHD | 0.44 | 0.44 |
| tblVehicleEF | MHD | 1.14 | 1.45 |
| tblVehicleEF | MHD | 13.01 | 1.82 |
| tblVehicleEF | MHD | 1.5700e-004 | 4.2748e-004 |
| tblVehicleEF | MHD | 0.13 | 0.13 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 3.0820e-003 | 6.8016e-003 |
| tblVehicleEF | MHD | 6.6500e-004 | 8.1245e-005 |
| tblVehicleEF | MHD | 1.5000e-004 | 4.0898e-004 |
| tblVehicleEF | MHD | 0.06 | 0.06 |
| tblVehicleEF | MHD | 3.0000e-003 | 3.0000e-003 |
| tblVehicleEF | MHD | 2.9450e-003 | 6.5032e-003 |
| tblVehicleEF | MHD | 6.1100e-004 | 7.4702e-005 |
| tblVehicleEF | MHD | 2.7800e-004 | 1.1470e-004 |
| tblVehicleEF | MHD | 0.04 | 0.02 |
| tblVehicleEF | MHD | 0.02 | 0.02 |
| tblVehicleEF | MHD | 1.8800e-004 | 7.7741e-005 |
| tblVehicleEF | MHD | 0.04 | 0.01 |
| tblVehicleEF | MHD | 0.02 | 0.10 |
| tblVehicleEF | MHD | 0.29 | 0.04 |
| tblVehicleEF | MHD | 1.4680e-003 | 7.0294e-004 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 5.4900e-004 | 7.1318e-005 |
| tblVehicleEF | MHD | 2.7800e-004 | 1.1470e-004 |
| tblVehicleEF | MHD | 0.04 | 0.02 |

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|---|---|---|---|
| tblVehicleEF | MHD | 0.03 | 0.02 |
| tblVehicleEF | MHD | 1.8800e-004 | 7.7741e-005 |
| tblVehicleEF | MHD | 0.05 | 0.02 |
| tblVehicleEF | MHD | 0.02 | 0.10 |
| tblVehicleEF | MHD | 0.32 | 0.04 |
| tblVehicleEF | OBUS | 0.01 | 8.4728e-003 |
| tblVehicleEF | OBUS | 8.2390e-003 | 7.2806e-003 |
| tblVehicleEF | OBUS | 0.03 | 0.02 |
| tblVehicleEF | OBUS | 0.24 | 0.58 |
| tblVehicleEF | OBUS | 0.56 | 0.81 |
| tblVehicleEF | OBUS | 5.79 | 2.54 |
| tblVehicleEF | OBUS | 108.13 | 82.95 |
| tblVehicleEF | OBUS | 1,293.96 | 1,469.46 |
| tblVehicleEF | OBUS | 66.33 | 19.88 |
| tblVehicleEF | OBUS | 0.23 | 0.32 |
| tblVehicleEF | OBUS | 0.91 | 1.23 |
| tblVehicleEF | OBUS | 3.06 | 0.80 |
| tblVehicleEF | OBUS | 2.1000e-005 | 1.0612e-004 |
| tblVehicleEF | OBUS | 0.13 | 0.13 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 2.6580e-003 | 6.8522e-003 |
| tblVehicleEF | OBUS | 8.5400e-004 | 1.9313e-004 |
| tblVehicleEF | OBUS | 2.0000e-005 | 1.0153e-004 |
| tblVehicleEF | OBUS | 0.06 | 0.06 |
| tblVehicleEF | OBUS | 3.0000e-003 | 3.0000e-003 |
| tblVehicleEF | OBUS | 2.5240e-003 | 6.5372e-003 |
| tblVehicleEF | OBUS | 7.8500e-004 | 1.7757e-004 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 1.2020e-003 | 1.4594e-003 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.03 | 0.05 |
| tblVehicleEF | OBUS | 5.6300e-004 | 6.8850e-004 |
| tblVehicleEF | OBUS | 0.05 | 0.04 |
| tblVehicleEF | OBUS | 0.04 | 0.27 |
| tblVehicleEF | OBUS | 0.35 | 0.12 |
| tblVehicleEF | OBUS | 1.0430e-003 | 7.9004e-004 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 7.6500e-004 | 1.9678e-004 |
| tblVehicleEF | OBUS | 1.2020e-003 | 1.4594e-003 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.05 | 0.07 |
| tblVehicleEF | OBUS | 5.6300e-004 | 6.8850e-004 |
| tblVehicleEF | OBUS | 0.06 | 0.06 |
| tblVehicleEF | OBUS | 0.04 | 0.27 |
| tblVehicleEF | OBUS | 0.39 | 0.13 |
| tblVehicleEF | OBUS | 0.01 | 8.5637e-003 |
| tblVehicleEF | OBUS | 8.5090e-003 | 7.5601e-003 |
| tblVehicleEF | OBUS | 0.03 | 0.02 |
| tblVehicleEF | OBUS | 0.24 | 0.57 |
| tblVehicleEF | OBUS | 0.57 | 0.84 |
| tblVehicleEF | OBUS | 5.23 | 2.30 |
| tblVehicleEF | OBUS | 113.59 | 82.03 |
| tblVehicleEF | OBUS | 1,293.96 | 1,469.51 |
| tblVehicleEF | OBUS | 66.33 | 19.46 |
| tblVehicleEF | OBUS | 0.24 | 0.30 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 0.86 | 1.17 |
| tblVehicleEF | OBUS | 2.99 | 0.78 |
| tblVehicleEF | OBUS | 1.8000e-005 | 9.4299e-005 |
| tblVehicleEF | OBUS | 0.13 | 0.13 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 2.6580e-003 | 6.8522e-003 |
| tblVehicleEF | OBUS | 8.5400e-004 | 1.9313e-004 |
| tblVehicleEF | OBUS | 1.7000e-005 | 9.0220e-005 |
| tblVehicleEF | OBUS | 0.06 | 0.06 |
| tblVehicleEF | OBUS | 3.0000e-003 | 3.0000e-003 |
| tblVehicleEF | OBUS | 2.5240e-003 | 6.5372e-003 |
| tblVehicleEF | OBUS | 7.8500e-004 | 1.7757e-004 |
| tblVehicleEF | OBUS | 2.9030e-003 | 3.4904e-003 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.03 | 0.05 |
| tblVehicleEF | OBUS | 1.2270e-003 | 1.4711e-003 |
| tblVehicleEF | OBUS | 0.05 | 0.04 |
| tblVehicleEF | OBUS | 0.03 | 0.26 |
| tblVehicleEF | OBUS | 0.33 | 0.11 |
| tblVehicleEF | OBUS | 1.0950e-003 | 7.8127e-004 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 7.5500e-004 | 1.9262e-004 |
| tblVehicleEF | OBUS | 2.9030e-003 | 3.4904e-003 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.04 | 0.07 |
| tblVehicleEF | OBUS | 1.2270e-003 | 1.4711e-003 |
| tblVehicleEF | OBUS | 0.06 | 0.06 |

| | | | |
|---|---|---|---|
| tblVehicleEF | OBUS | 0.03 | 0.26 |
| tblVehicleEF | OBUS | 0.36 | 0.12 |
| tblVehicleEF | OBUS | 0.01 | 8.3667e-003 |
| tblVehicleEF | OBUS | 8.0560e-003 | 7.0903e-003 |
| tblVehicleEF | OBUS | 0.03 | 0.02 |
| tblVehicleEF | OBUS | 0.25 | 0.58 |
| tblVehicleEF | OBUS | 0.55 | 0.79 |
| tblVehicleEF | OBUS | 6.23 | 2.74 |
| tblVehicleEF | OBUS | 100.59 | 84.24 |
| tblVehicleEF | OBUS | 1,293.96 | 1,469.42 |
| tblVehicleEF | OBUS | 66.33 | 20.21 |
| tblVehicleEF | OBUS | 0.22 | 0.34 |
| tblVehicleEF | OBUS | 0.93 | 1.26 |
| tblVehicleEF | OBUS | 3.12 | 0.82 |
| tblVehicleEF | OBUS | 2.6000e-005 | 1.2246e-004 |
| tblVehicleEF | OBUS | 0.13 | 0.13 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 2.6580e-003 | 6.8522e-003 |
| tblVehicleEF | OBUS | 8.5400e-004 | 1.9313e-004 |
| tblVehicleEF | OBUS | 2.5000e-005 | 1.1716e-004 |
| tblVehicleEF | OBUS | 0.06 | 0.06 |
| tblVehicleEF | OBUS | 3.0000e-003 | 3.0000e-003 |
| tblVehicleEF | OBUS | 2.5240e-003 | 6.5372e-003 |
| tblVehicleEF | OBUS | 7.8500e-004 | 1.7757e-004 |
| tblVehicleEF | OBUS | 5.5600e-004 | 6.8191e-004 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.03 | 0.05 |

| | | | |
|---|---|---|---|
| tblVehicleEF | OBUS | 2.9000e-004 | 3.5637e-004 |
| tblVehicleEF | OBUS | 0.05 | 0.04 |
| tblVehicleEF | OBUS | 0.04 | 0.29 |
| tblVehicleEF | OBUS | 0.37 | 0.12 |
| tblVehicleEF | OBUS | 9.7100e-004 | 8.0214e-004 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 7.7200e-004 | 2.0001e-004 |
| tblVehicleEF | OBUS | 5.5600e-004 | 6.8191e-004 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.05 | 0.06 |
| tblVehicleEF | OBUS | 2.9000e-004 | 3.5637e-004 |
| tblVehicleEF | OBUS | 0.06 | 0.06 |
| tblVehicleEF | OBUS | 0.04 | 0.29 |
| tblVehicleEF | OBUS | 0.41 | 0.14 |
| tblVehicleEF | SBUS | 0.84 | 0.07 |
| tblVehicleEF | SBUS | 0.02 | 4.4001e-003 |
| tblVehicleEF | SBUS | 0.07 | 5.8296e-003 |
| tblVehicleEF | SBUS | 10.65 | 2.77 |
| tblVehicleEF | SBUS | 1.01 | 0.35 |
| tblVehicleEF | SBUS | 11.22 | 0.85 |
| tblVehicleEF | SBUS | 974.60 | 342.95 |
| tblVehicleEF | SBUS | 934.35 | 997.56 |
| tblVehicleEF | SBUS | 72.90 | 4.89 |
| tblVehicleEF | SBUS | 6.31 | 2.88 |
| tblVehicleEF | SBUS | 2.72 | 3.57 |
| tblVehicleEF | SBUS | 9.19 | 1.11 |
| tblVehicleEF | SBUS | 5.9520e-003 | 2.9748e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | SBUS | 0.74 | 0.74 |
| tblVehicleEF | SBUS | 9.7910e-003 | 0.01 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 1.2910e-003 | 6.8676e-005 |
| tblVehicleEF | SBUS | 5.6940e-003 | 2.8461e-003 |
| tblVehicleEF | SBUS | 0.32 | 0.32 |
| tblVehicleEF | SBUS | 2.4480e-003 | 2.6498e-003 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 1.1870e-003 | 6.3145e-005 |
| tblVehicleEF | SBUS | 2.9140e-003 | 3.2757e-004 |
| tblVehicleEF | SBUS | 0.03 | 3.2319e-003 |
| tblVehicleEF | SBUS | 1.28 | 0.31 |
| tblVehicleEF | SBUS | 1.3900e-003 | 1.5592e-004 |
| tblVehicleEF | SBUS | 0.09 | 0.06 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 0.55 | 0.03 |
| tblVehicleEF | SBUS | 9.6730e-003 | 3.2695e-003 |
| tblVehicleEF | SBUS | 9.0870e-003 | 9.5533e-003 |
| tblVehicleEF | SBUS | 9.2200e-004 | 4.8414e-005 |
| tblVehicleEF | SBUS | 2.9140e-003 | 3.2757e-004 |
| tblVehicleEF | SBUS | 0.03 | 3.2319e-003 |
| tblVehicleEF | SBUS | 1.85 | 0.44 |
| tblVehicleEF | SBUS | 1.3900e-003 | 1.5592e-004 |
| tblVehicleEF | SBUS | 0.12 | 0.07 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 0.60 | 0.04 |
| tblVehicleEF | SBUS | 0.84 | 0.07 |

| | | | |
|---|---|---|---|
| tblVehicleEF | SBUS | 0.02 | 4.4792e-003 |
| tblVehicleEF | SBUS | 0.06 | 4.8183e-003 |
| tblVehicleEF | SBUS | 10.58 | 2.74 |
| tblVehicleEF | SBUS | 1.05 | 0.36 |
| tblVehicleEF | SBUS | 8.01 | 0.60 |
| tblVehicleEF | SBUS | 1,011.14 | 348.64 |
| tblVehicleEF | SBUS | 934.35 | 997.58 |
| tblVehicleEF | SBUS | 72.90 | 4.49 |
| tblVehicleEF | SBUS | 6.50 | 2.92 |
| tblVehicleEF | SBUS | 2.60 | 3.42 |
| tblVehicleEF | SBUS | 9.13 | 1.10 |
| tblVehicleEF | SBUS | 5.0170e-003 | 2.5166e-003 |
| tblVehicleEF | SBUS | 0.74 | 0.74 |
| tblVehicleEF | SBUS | 9.7910e-003 | 0.01 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 1.2910e-003 | 6.8676e-005 |
| tblVehicleEF | SBUS | 4.8000e-003 | 2.4077e-003 |
| tblVehicleEF | SBUS | 0.32 | 0.32 |
| tblVehicleEF | SBUS | 2.4480e-003 | 2.6498e-003 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 1.1870e-003 | 6.3145e-005 |
| tblVehicleEF | SBUS | 7.0300e-003 | 8.1243e-004 |
| tblVehicleEF | SBUS | 0.03 | 3.4016e-003 |
| tblVehicleEF | SBUS | 1.27 | 0.31 |
| tblVehicleEF | SBUS | 3.0460e-003 | 3.5901e-004 |
| tblVehicleEF | SBUS | 0.09 | 0.06 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |

| | | | |
|---|---|---|---|
| tblVehicleEF | SBUS | 0.45 | 0.03 |
| tblVehicleEF | SBUS | 0.01 | 3.3232e-003 |
| tblVehicleEF | SBUS | 9.0870e-003 | 9.5534e-003 |
| tblVehicleEF | SBUS | 8.6800e-004 | 4.4421e-005 |
| tblVehicleEF | SBUS | 7.0300e-003 | 8.1243e-004 |
| tblVehicleEF | SBUS | 0.03 | 3.4016e-003 |
| tblVehicleEF | SBUS | 1.85 | 0.44 |
| tblVehicleEF | SBUS | 3.0460e-003 | 3.5901e-004 |
| tblVehicleEF | SBUS | 0.12 | 0.07 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 0.50 | 0.03 |
| tblVehicleEF | SBUS | 0.85 | 0.07 |
| tblVehicleEF | SBUS | 0.02 | 4.3444e-003 |
| tblVehicleEF | SBUS | 0.08 | 6.5988e-003 |
| tblVehicleEF | SBUS | 10.76 | 2.82 |
| tblVehicleEF | SBUS | 0.99 | 0.34 |
| tblVehicleEF | SBUS | 13.97 | 1.06 |
| tblVehicleEF | SBUS | 924.14 | 335.10 |
| tblVehicleEF | SBUS | 934.35 | 997.55 |
| tblVehicleEF | SBUS | 72.90 | 5.24 |
| tblVehicleEF | SBUS | 6.03 | 2.82 |
| tblVehicleEF | SBUS | 2.78 | 3.64 |
| tblVehicleEF | SBUS | 9.24 | 1.11 |
| tblVehicleEF | SBUS | 7.2420e-003 | 3.6076e-003 |
| tblVehicleEF | SBUS | 0.74 | 0.74 |
| tblVehicleEF | SBUS | 9.7910e-003 | 0.01 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |

| | | | |
|---|---|---|---|
| tblVehicleEF | SBUS | 1.2910e-003 | 6.8676e-005 |
| tblVehicleEF | SBUS | 6.9290e-003 | 3.4515e-003 |
| tblVehicleEF | SBUS | 0.32 | 0.32 |
| tblVehicleEF | SBUS | 2.4480e-003 | 2.6498e-003 |
| tblVehicleEF | SBUS | 0.01 | 0.02 |
| tblVehicleEF | SBUS | 1.1870e-003 | 6.3145e-005 |
| tblVehicleEF | SBUS | 1.3760e-003 | 1.4787e-004 |
| tblVehicleEF | SBUS | 0.03 | 3.3056e-003 |
| tblVehicleEF | SBUS | 1.28 | 0.31 |
| tblVehicleEF | SBUS | 7.2200e-004 | 7.7761e-005 |
| tblVehicleEF | SBUS | 0.09 | 0.06 |
| tblVehicleEF | SBUS | 0.02 | 0.03 |
| tblVehicleEF | SBUS | 0.62 | 0.04 |
| tblVehicleEF | SBUS | 9.1910e-003 | 3.1954e-003 |
| tblVehicleEF | SBUS | 9.0860e-003 | 9.5532e-003 |
| tblVehicleEF | SBUS | 9.6800e-004 | 5.1822e-005 |
| tblVehicleEF | SBUS | 1.3760e-003 | 1.4787e-004 |
| tblVehicleEF | SBUS | 0.03 | 3.3056e-003 |
| tblVehicleEF | SBUS | 1.86 | 0.44 |
| tblVehicleEF | SBUS | 7.2200e-004 | 7.7761e-005 |
| tblVehicleEF | SBUS | 0.11 | 0.07 |
| tblVehicleEF | SBUS | 0.02 | 0.03 |
| tblVehicleEF | SBUS | 0.68 | 0.04 |
| tblVehicleEF | UBUS | 0.27 | 1.04 |
| tblVehicleEF | UBUS | 0.04 | 1.0480e-003 |
| tblVehicleEF | UBUS | 6.51 | 7.55 |
| tblVehicleEF | UBUS | 7.42 | 0.07 |

| | | | |
|---|---|---|---|
| tblVehicleEF | UBUS | 2,210.19 | 1,661.93 |
| tblVehicleEF | UBUS | 75.27 | 0.85 |
| tblVehicleEF | UBUS | 15.33 | 1.13 |
| tblVehicleEF | UBUS | 16.64 | 8.9267e-003 |
| tblVehicleEF | UBUS | 0.66 | 0.07 |
| tblVehicleEF | UBUS | 0.01 | 0.03 |
| tblVehicleEF | UBUS | 0.32 | 5.7229e-003 |
| tblVehicleEF | UBUS | 8.7700e-004 | 6.4762e-006 |
| tblVehicleEF | UBUS | 0.28 | 0.03 |
| tblVehicleEF | UBUS | 3.0000e-003 | 7.8871e-003 |
| tblVehicleEF | UBUS | 0.30 | 5.4749e-003 |
| tblVehicleEF | UBUS | 8.0700e-004 | 5.9546e-006 |
| tblVehicleEF | UBUS | 2.2740e-003 | 4.8519e-005 |
| tblVehicleEF | UBUS | 0.05 | 7.0277e-004 |
| tblVehicleEF | UBUS | 1.1250e-003 | 3.1845e-005 |
| tblVehicleEF | UBUS | 0.79 | 0.02 |
| tblVehicleEF | UBUS | 0.01 | 4.1920e-003 |
| tblVehicleEF | UBUS | 0.56 | 4.5577e-003 |
| tblVehicleEF | UBUS | 0.02 | 0.01 |
| tblVehicleEF | UBUS | 8.8600e-004 | 8.4415e-006 |
| tblVehicleEF | UBUS | 2.2740e-003 | 4.8519e-005 |
| tblVehicleEF | UBUS | 0.05 | 7.0277e-004 |
| tblVehicleEF | UBUS | 1.1250e-003 | 3.1845e-005 |
| tblVehicleEF | UBUS | 1.12 | 1.06 |
| tblVehicleEF | UBUS | 0.01 | 4.1920e-003 |
| tblVehicleEF | UBUS | 0.61 | 4.9901e-003 |
| tblVehicleEF | UBUS | 0.27 | 1.03 |

| | | | |
|---|---|---|---|
| tblVehicleEF | UBUS | 0.04 | 9.0672e-004 |
| tblVehicleEF | UBUS | 6.56 | 7.45 |
| tblVehicleEF | UBUS | 5.80 | 0.06 |
| tblVehicleEF | UBUS | 2,210.19 | 1,639.89 |
| tblVehicleEF | UBUS | 75.27 | 0.81 |
| tblVehicleEF | UBUS | 14.70 | 1.12 |
| tblVehicleEF | UBUS | 16.56 | 8.1020e-003 |
| tblVehicleEF | UBUS | 0.66 | 0.07 |
| tblVehicleEF | UBUS | 0.01 | 0.03 |
| tblVehicleEF | UBUS | 0.32 | 5.6470e-003 |
| tblVehicleEF | UBUS | 8.7700e-004 | 6.3665e-006 |
| tblVehicleEF | UBUS | 0.28 | 0.03 |
| tblVehicleEF | UBUS | 3.0000e-003 | 7.9018e-003 |
| tblVehicleEF | UBUS | 0.30 | 5.4023e-003 |
| tblVehicleEF | UBUS | 8.0700e-004 | 5.8537e-006 |
| tblVehicleEF | UBUS | 5.7800e-003 | 1.1553e-004 |
| tblVehicleEF | UBUS | 0.05 | 7.6888e-004 |
| tblVehicleEF | UBUS | 2.4730e-003 | 6.6729e-005 |
| tblVehicleEF | UBUS | 0.79 | 0.01 |
| tblVehicleEF | UBUS | 0.01 | 3.7143e-003 |
| tblVehicleEF | UBUS | 0.48 | 3.9141e-003 |
| tblVehicleEF | UBUS | 0.02 | 0.01 |
| tblVehicleEF | UBUS | 8.5800e-004 | 8.0518e-006 |
| tblVehicleEF | UBUS | 5.7800e-003 | 1.1553e-004 |
| tblVehicleEF | UBUS | 0.05 | 7.6888e-004 |
| tblVehicleEF | UBUS | 2.4730e-003 | 6.6729e-005 |
| tblVehicleEF | UBUS | 1.13 | 1.05 |

| | | | |
|---|---|---|---|
| tblVehicleEF | UBUS | 0.01 | 3.7143e-003 |
| tblVehicleEF | UBUS | 0.53 | 4.2855e-003 |
| tblVehicleEF | UBUS | 0.26 | 1.03 |
| tblVehicleEF | UBUS | 0.05 | 1.1230e-003 |
| tblVehicleEF | UBUS | 6.47 | 7.45 |
| tblVehicleEF | UBUS | 8.79 | 0.09 |
| tblVehicleEF | UBUS | 2,210.19 | 1,639.89 |
| tblVehicleEF | UBUS | 75.27 | 0.86 |
| tblVehicleEF | UBUS | 15.58 | 1.12 |
| tblVehicleEF | UBUS | 16.69 | 9.2758e-003 |
| tblVehicleEF | UBUS | 0.66 | 0.07 |
| tblVehicleEF | UBUS | 0.01 | 0.03 |
| tblVehicleEF | UBUS | 0.32 | 5.6470e-003 |
| tblVehicleEF | UBUS | 8.7700e-004 | 6.3665e-006 |
| tblVehicleEF | UBUS | 0.28 | 0.03 |
| tblVehicleEF | UBUS | 3.0000e-003 | 7.9018e-003 |
| tblVehicleEF | UBUS | 0.30 | 5.4023e-003 |
| tblVehicleEF | UBUS | 8.0700e-004 | 5.8537e-006 |
| tblVehicleEF | UBUS | 8.8500e-004 | 2.3443e-005 |
| tblVehicleEF | UBUS | 0.06 | 7.1551e-004 |
| tblVehicleEF | UBUS | 5.3400e-004 | 1.6532e-005 |
| tblVehicleEF | UBUS | 0.78 | 0.01 |
| tblVehicleEF | UBUS | 0.01 | 5.1505e-003 |
| tblVehicleEF | UBUS | 0.62 | 4.9103e-003 |
| tblVehicleEF | UBUS | 0.02 | 0.01 |
| tblVehicleEF | UBUS | 9.1000e-004 | 8.5032e-006 |
| tblVehicleEF | UBUS | 8.8500e-004 | 2.3443e-005 |

| | | | |
|---|---|---|---|
| tblVehicleEF | UBUS | 0.06 | 7.1551e-004 |
| tblVehicleEF | UBUS | 5.3400e-004 | 1.6532e-005 |
| tblVehicleEF | UBUS | 1.12 | 1.05 |
| tblVehicleEF | UBUS | 0.01 | 5.1505e-003 |
| tblVehicleEF | UBUS | 0.68 | 5.3762e-003 |
| tblVehicleTrips | ST_TR | 42.04 | 18.93 |
| tblVehicleTrips | SU_TR | 20.43 | 9.20 |
| tblVehicleTrips | WD_TR | 68.93 | 5.10 |
| tblVehicleTrips | WD_TR | 44.32 | 19.95 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 0.0625 | 0.6426 | 0.5401 | 1.4100e-003 | 0.0520 | 0.0258 | 0.0778 | 0.0124 | 0.0238 | 0.0362 | 0.0000 | 127.8619 | 127.8619 | 0.0224 | 0.0000 | 128.4226 |
| 2022 | 0.9300 | 0.8839 | 0.9520 | 2.0500e-003 | 0.0604 | 0.0409 | 0.1013 | 0.0162 | 0.0382 | 0.0544 | 0.0000 | 182.3739 | 182.3739 | 0.0337 | 0.0000 | 183.2175 |
| 2023 | 6.7800e-003 | 0.0619 | 0.0707 | 1.6000e-004 | 4.7800e-003 | 2.6000e-003 | 7.3900e-003 | 1.2900e-003 | 2.4000e-003 | 3.6900e-003 | 0.0000 | 14.3333 | 14.3333 | 2.8300e-003 | 0.0000 | 14.4041 |
| **Maximum** | **0.9300** | **0.8839** | **0.9520** | **2.0500e-003** | **0.0604** | **0.0409** | **0.1013** | **0.0162** | **0.0382** | **0.0544** | **0.0000** | **182.3739** | **182.3739** | **0.0337** | **0.0000** | **183.2175** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 0.0253 | 0.2087 | 0.5861 | 1.4100e-003 | 0.0520 | 1.7700e-003 | 0.0538 | 0.0124 | 1.7400e-003 | 0.0141 | 0.0000 | 127.8618 | 127.8618 | 0.0224 | 0.0000 | 128.4226 |
| 2022 | 0.8654 | 0.2067 | 1.0002 | 2.0500e-003 | 0.0604 | 2.5500e-003 | 0.0629 | 0.0162 | 2.5100e-003 | 0.0187 | 0.0000 | 182.3738 | 182.3738 | 0.0337 | 0.0000 | 183.2173 |
| 2023 | 2.8300e-003 | 0.0167 | 0.0761 | 1.6000e-004 | 4.7800e-003 | 1.9000e-004 | 4.9700e-003 | 1.2900e-003 | 1.8000e-004 | 1.4700e-003 | 0.0000 | 14.3333 | 14.3333 | 2.8300e-003 | 0.0000 | 14.4041 |
| **Maximum** | **0.8654** | **0.2087** | **1.0002** | **2.0500e-003** | **0.0604** | **2.5500e-003** | **0.0629** | **0.0162** | **2.5100e-003** | **0.0187** | **0.0000** | **182.3738** | **182.3738** | **0.0337** | **0.0000** | **183.2173** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **10.57** | **72.80** | **-6.37** | **0.00** | **0.00** | **93.50** | **34.78** | **0.00** | **93.12** | **63.60** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **3-1-2021** | **5-31-2021** | 0.1643 | 0.0766 |
| **2** | **6-1-2021** | **8-31-2021** | 0.2090 | 0.0759 |
| **3** | **9-1-2021** | **11-30-2021** | 0.2354 | 0.0560 |
| **4** | **12-1-2021** | **2-28-2022** | 0.2162 | 0.0545 |
| **5** | **3-1-2022** | **5-31-2022** | 0.2111 | 0.0543 |
| **6** | **6-1-2022** | **8-31-2022** | 0.8041 | 0.5737 |
| **7** | **9-1-2022** | **11-30-2022** | 0.5912 | 0.3888 |
| **8** | **12-1-2022** | **2-28-2023** | 0.1409 | 0.0384 |
| | | **Highest** | 0.8041 | 0.5737 |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.7018 | 3.0000e-005 | 3.0400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.9200e-003 | 5.9200e-003 | 2.0000e-005 | 0.0000 | 6.3100e-003 |
| Energy | 0.0158 | 0.1432 | 0.1203 | 8.6000e-004 | | 0.0109 | 0.0109 | | 0.0109 | 0.0109 | 0.0000 | 418.6443 | 418.6443 | 0.0289 | 8.2200e-003 | 421.8166 |
| Mobile | 0.2626 | 0.4750 | 1.7483 | 5.0100e-003 | 0.4466 | 4.4300e-003 | 0.4511 | 0.1197 | 4.1500e-003 | 0.1239 | 0.0000 | 466.9367 | 466.9367 | 0.0238 | 0.0000 | 467.5312 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 30.1401 | 0.0000 | 30.1401 | 1.7812 | 0.0000 | 74.6708 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 9.6059 | 30.5101 | 40.1159 | 0.9896 | 0.0239 | 71.9843 |
| **Total** | **0.9802** | **0.6183** | **1.8716** | **5.8700e-003** | **0.4466** | **0.0153** | **0.4620** | **0.1197** | **0.0150** | **0.1348** | **39.7460** | **916.0970** | **955.8429** | **2.8236** | **0.0321** | **1,036.0092** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.7018 | 3.0000e-005 | 3.0400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.9200e-003 | 5.9200e-003 | 2.0000e-005 | 0.0000 | 6.3100e-003 |
| Energy | 0.0158 | 0.1432 | 0.1203 | 8.6000e-004 | | 0.0109 | 0.0109 | | 0.0109 | 0.0109 | 0.0000 | 418.6443 | 418.6443 | 0.0289 | 8.2200e-003 | 421.8166 |
| Mobile | 0.2626 | 0.4750 | 1.7483 | 5.0100e-003 | 0.4466 | 4.4300e-003 | 0.4511 | 0.1197 | 4.1500e-003 | 0.1239 | 0.0000 | 466.9367 | 466.9367 | 0.0238 | 0.0000 | 467.5312 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 30.1401 | 0.0000 | 30.1401 | 1.7812 | 0.0000 | 74.6708 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 9.6059 | 30.5101 | 40.1159 | 0.9896 | 0.0239 | 71.9843 |
| **Total** | **0.9802** | **0.6183** | **1.8716** | **5.8700e-003** | **0.4466** | **0.0153** | **0.4620** | **0.1197** | **0.0150** | **0.1348** | **39.7460** | **916.0970** | **955.8429** | **2.8236** | **0.0321** | **1,036.0092** |

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

## 3.0 Construction Detail

**Construction Phase**

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| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 3/1/2021 | 4/2/2021 | 5 | 25 | |
| 2 | Site Preparation | Site Preparation | 4/5/2021 | 4/16/2021 | 5 | 10 | |
| 3 | Grading | Grading | 4/19/2021 | 7/9/2021 | 5 | 60 | |
| 4 | Building Construction | Building Construction | 7/12/2021 | 1/23/2023 | 5 | 401 | |
| 5 | Architectural Coating | Architectural Coating | 6/20/2022 | 10/17/2022 | 5 | 86 | |
| 6 | Paving | Paving | 1/9/2023 | 1/23/2023 | 5 | 11 | |

**Acres of Grading (Site Preparation Phase): 0.61**

**Acres of Grading (Grading Phase): 0.61**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 237,635; Non-Residential Outdoor: 79,212; Striped Parking Area: 131 (Architectural Coating – sqft)**

**<u>OffRoad Equipment</u>**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Demolition | Concrete/Industrial Saws | 1 | 1.20 | 81 | 0.73 |
| Demolition | Crushing/Proc. Equipment | 1 | 0.70 | 85 | 0.78 |
| Demolition | Excavators | 1 | 4.00 | 158 | 0.38 |
| Demolition | Rubber Tired Dozers | 0 | 0.00 | 247 | 0.40 |
| Demolition | Rubber Tired Loaders | 1 | 0.70 | 203 | 0.36 |
| Demolition | Tractors/Loaders/Backhoes | 2 | 3.20 | 97 | 0.37 |
| Site Preparation | Graders | 1 | 2.40 | 187 | 0.41 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 1.20 | 97 | 0.37 |
| Grading | Concrete/Industrial Saws | 0 | 0.00 | 81 | 0.73 |
| Grading | Excavators | 1 | 1.50 | 158 | 0.38 |
| Grading | Graders | 1 | 2.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 0 | 0.00 | 247 | 0.40 |
| Grading | Tractors/Loaders/Backhoes | 2 | 1.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 3.40 | 231 | 0.29 |
| Building Construction | Forklifts | 2 | 4.50 | 89 | 0.20 |
| Building Construction | Skid Steer Loaders | 2 | 0.90 | 65 | 0.37 |
| Building Construction | Tractors/Loaders/Backhoes | 2 | 4.50 | 97 | 0.37 |
| Paving | Cement and Mortar Mixers | 2 | 2.20 | 9 | 0.56 |
| Paving | Pavers | 1 | 3.20 | 130 | 0.42 |
| Paving | Rollers | 2 | 3.20 | 80 | 0.38 |
| Paving | Tractors/Loaders/Backhoes | 1 | 2.50 | 97 | 0.37 |
| Architectural Coating | Air Compressors | 2 | 4.90 | 78 | 0.48 |
| Architectural Coating | Cement and Mortar Mixers | 2 | 4.20 | 9 | 0.56 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 6 | 16.00 | 0.00 | 150.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 2 | 10.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 4 | 12.00 | 0.00 | 648.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 7 | 50.00 | 6.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 20.00 | 12.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 4 | 8.00 | 4.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

## 3.2 Demolition - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0123 | 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 | 4.9600e-003 | 0.0462 | 0.0564 | 9.0000e-005 | | 2.4600e-003 | 2.4600e-003 | | 2.3100e-003 | 2.3100e-003 | 0.0000 | 7.8338 | 7.8338 | 2.1000e-003 | 0.0000 | 7.8862 |
| **Total** | **4.9600e-003** | **0.0462** | **0.0564** | **9.0000e-005** | **0.0123** | **2.4600e-003** | **0.0148** | **1.8600e-003** | **2.3100e-003** | **4.1700e-003** | **0.0000** | **7.8338** | **7.8338** | **2.1000e-003** | **0.0000** | **7.8862** |

## 3.2 Demolition - 2021

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 6.0000e-004 | 0.0202 | 3.7500e-003 | 6.0000e-005 | 1.2700e-003 | 6.0000e-005 | 1.3300e-003 | 3.5000e-004 | 6.0000e-005 | 4.1000e-004 | 0.0000 | 5.6703 | 5.6703 | 2.8000e-004 | 0.0000 | 5.6773 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4000e-004 | 4.6000e-004 | 4.7700e-003 | 2.0000e-005 | 1.5800e-003 | 1.0000e-005 | 1.5900e-003 | 4.2000e-004 | 1.0000e-005 | 4.3000e-004 | 0.0000 | 1.3570 | 1.3570 | 3.0000e-005 | 0.0000 | 1.3578 |
| **Total** | **1.2400e-003** | **0.0207** | **8.5200e-003** | **8.0000e-005** | **2.8500e-003** | **7.0000e-005** | **2.9200e-003** | **7.7000e-004** | **7.0000e-005** | **8.4000e-004** | **0.0000** | **7.0273** | **7.0273** | **3.1000e-004** | **0.0000** | **7.0351** |

### 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 | 1.0600e-003 | 4.5700e-003 | 0.0630 | 9.0000e-005 | | 1.4000e-004 | 1.4000e-004 | | 1.4000e-004 | 1.4000e-004 | 0.0000 | 7.8338 | 7.8338 | 2.1000e-003 | 0.0000 | 7.8862 |
| **Total** | **1.0600e-003** | **4.5700e-003** | **0.0630** | **9.0000e-005** | **0.0123** | **1.4000e-004** | **0.0124** | **1.8600e-003** | **1.4000e-004** | **2.0000e-003** | **0.0000** | **7.8338** | **7.8338** | **2.1000e-003** | **0.0000** | **7.8862** |

## 3.2 Demolition - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 6.0000e-004 | 0.0202 | 3.7500e-003 | 6.0000e-005 | 1.2700e-003 | 6.0000e-005 | 1.3300e-003 | 3.5000e-004 | 6.0000e-005 | 4.1000e-004 | 0.0000 | 5.6703 | 5.6703 | 2.8000e-004 | 0.0000 | 5.6773 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.4000e-004 | 4.6000e-004 | 4.7700e-003 | 2.0000e-005 | 1.5800e-003 | 1.0000e-005 | 1.5900e-003 | 4.2000e-004 | 1.0000e-005 | 4.3000e-004 | 0.0000 | 1.3570 | 1.3570 | 3.0000e-005 | 0.0000 | 1.3578 |
| **Total** | **1.2400e-003** | **0.0207** | **8.5200e-003** | **8.0000e-005** | **2.8500e-003** | **7.0000e-005** | **2.9200e-003** | **7.7000e-004** | **7.0000e-005** | **8.4000e-004** | **0.0000** | **7.0273** | **7.0273** | **3.1000e-004** | **0.0000** | **7.0351** |

## 3.3 Site Preparation - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 3.2000e-004 | 0.0000 | 3.2000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 8.2000e-004 | 0.0103 | 4.3500e-003 | 1.0000e-005 | | 3.7000e-004 | 3.7000e-004 | | 3.4000e-004 | 3.4000e-004 | 0.0000 | 1.0779 | 1.0779 | 3.5000e-004 | 0.0000 | 1.0866 |
| **Total** | **8.2000e-004** | **0.0103** | **4.3500e-003** | **1.0000e-005** | **3.2000e-004** | **3.7000e-004** | **6.9000e-004** | **3.0000e-005** | **3.4000e-004** | **3.7000e-004** | **0.0000** | **1.0779** | **1.0779** | **3.5000e-004** | **0.0000** | **1.0866** |

### 3.3 Site Preparation - 2021

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.6000e-004 | 1.1000e-004 | 1.1900e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3392 | 0.3392 | 1.0000e-005 | 0.0000 | 0.3394 |
| **Total** | **1.6000e-004** | **1.1000e-004** | **1.1900e-003** | **0.0000** | **4.0000e-004** | **0.0000** | **4.0000e-004** | **1.1000e-004** | **0.0000** | **1.1000e-004** | **0.0000** | **0.3392** | **0.3392** | **1.0000e-005** | **0.0000** | **0.3394** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 3.2000e-004 | 0.0000 | 3.2000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.5000e-004 | 6.5000e-004 | 6.2200e-003 | 1.0000e-005 | | 2.0000e-005 | 2.0000e-005 | | 2.0000e-005 | 2.0000e-005 | 0.0000 | 1.0779 | 1.0779 | 3.5000e-004 | 0.0000 | 1.0866 |
| **Total** | **1.5000e-004** | **6.5000e-004** | **6.2200e-003** | **1.0000e-005** | **3.2000e-004** | **2.0000e-005** | **3.4000e-004** | **3.0000e-005** | **2.0000e-005** | **5.0000e-005** | **0.0000** | **1.0779** | **1.0779** | **3.5000e-004** | **0.0000** | **1.0866** |

## 3.3 Site Preparation - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.6000e-004 | 1.1000e-004 | 1.1900e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3392 | 0.3392 | 1.0000e-005 | 0.0000 | 0.3394 |
| **Total** | **1.6000e-004** | **1.1000e-004** | **1.1900e-003** | **0.0000** | **4.0000e-004** | **0.0000** | **4.0000e-004** | **1.1000e-004** | **0.0000** | **1.1000e-004** | **0.0000** | **0.3392** | **0.3392** | **1.0000e-005** | **0.0000** | **0.3394** |

## 3.4 Grading - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 6.2000e-004 | 0.0000 | 6.2000e-004 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 6.0900e-003 | 0.0708 | 0.0486 | 1.0000e-004 | | 2.8300e-003 | 2.8300e-003 | | 2.6100e-003 | 2.6100e-003 | 0.0000 | 8.9657 | 8.9657 | 2.9000e-003 | 0.0000 | 9.0382 |
| **Total** | **6.0900e-003** | **0.0708** | **0.0486** | **1.0000e-004** | **6.2000e-004** | **2.8300e-003** | **3.4500e-003** | **8.0000e-005** | **2.6100e-003** | **2.6900e-003** | **0.0000** | **8.9657** | **8.9657** | **2.9000e-003** | **0.0000** | **9.0382** |

## 3.4 Grading - 2021

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 2.6000e-003 | 0.0874 | 0.0162 | 2.5000e-004 | 5.4900e-003 | 2.7000e-004 | 5.7500e-003 | 1.5100e-003 | 2.6000e-004 | 1.7700e-003 | 0.0000 | 24.4957 | 24.4957 | 1.2100e-003 | 0.0000 | 24.5261 |
| 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 | 1.1500e-003 | 8.2000e-004 | 8.5800e-003 | 3.0000e-005 | 2.8500e-003 | 2.0000e-005 | 2.8700e-003 | 7.6000e-004 | 2.0000e-005 | 7.7000e-004 | 0.0000 | 2.4425 | 2.4425 | 6.0000e-005 | 0.0000 | 2.4440 |
| **Total** | **3.7500e-003** | **0.0882** | **0.0248** | **2.8000e-004** | **8.3400e-003** | **2.9000e-004** | **8.6200e-003** | **2.2700e-003** | **2.8000e-004** | **2.5400e-003** | **0.0000** | **26.9382** | **26.9382** | **1.2700e-003** | **0.0000** | **26.9701** |

**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 | | | | | 6.2000e-004 | 0.0000 | 6.2000e-004 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 1.2500e-003 | 5.4200e-003 | 0.0619 | 1.0000e-004 | | 1.7000e-004 | 1.7000e-004 | | 1.7000e-004 | 1.7000e-004 | 0.0000 | 8.9657 | 8.9657 | 2.9000e-003 | 0.0000 | 9.0382 |
| **Total** | **1.2500e-003** | **5.4200e-003** | **0.0619** | **1.0000e-004** | **6.2000e-004** | **1.7000e-004** | **7.9000e-004** | **8.0000e-005** | **1.7000e-004** | **2.5000e-004** | **0.0000** | **8.9657** | **8.9657** | **2.9000e-003** | **0.0000** | **9.0382** |

## 3.4 Grading - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 2.6000e-003 | 0.0874 | 0.0162 | 2.5000e-004 | 5.4900e-003 | 2.7000e-004 | 5.7500e-003 | 1.5100e-003 | 2.6000e-004 | 1.7700e-003 | 0.0000 | 24.4957 | 24.4957 | 1.2100e-003 | 0.0000 | 24.5261 |
| 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 | 1.1500e-003 | 8.2000e-004 | 8.5800e-003 | 3.0000e-005 | 2.8500e-003 | 2.0000e-005 | 2.8700e-003 | 7.6000e-004 | 2.0000e-005 | 7.7000e-004 | 0.0000 | 2.4425 | 2.4425 | 6.0000e-005 | 0.0000 | 2.4440 |
| **Total** | **3.7500e-003** | **0.0882** | **0.0248** | **2.8000e-004** | **8.3400e-003** | **2.9000e-004** | **8.6200e-003** | **2.2700e-003** | **2.8000e-004** | **2.5400e-003** | **0.0000** | **26.9382** | **26.9382** | **1.2700e-003** | **0.0000** | **26.9701** |

## 3.5 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0343 | 0.3591 | 0.3133 | 5.1000e-004 | | 0.0196 | 0.0196 | | 0.0180 | 0.0180 | 0.0000 | 44.6537 | 44.6537 | 0.0144 | 0.0000 | 45.0147 |
| **Total** | **0.0343** | **0.3591** | **0.3133** | **5.1000e-004** | | **0.0196** | **0.0196** | | **0.0180** | **0.0180** | **0.0000** | **44.6537** | **44.6537** | **0.0144** | **0.0000** | **45.0147** |

## 3.5 Building Construction - 2021

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 1.1600e-003 | 0.0401 | 8.5000e-003 | 1.0000e-004 | 2.4600e-003 | 8.0000e-005 | 2.5500e-003 | 7.1000e-004 | 8.0000e-005 | 7.9000e-004 | 0.0000 | 9.8239 | 9.8239 | 5.4000e-004 | 0.0000 | 9.8374 |
| Worker | 9.9800e-003 | 7.1100e-003 | 0.0745 | 2.3000e-004 | 0.0247 | 1.7000e-004 | 0.0249 | 6.5700e-003 | 1.5000e-004 | 6.7300e-003 | 0.0000 | 21.2023 | 21.2023 | 5.1000e-004 | 0.0000 | 21.2149 |
| **Total** | **0.0111** | **0.0472** | **0.0830** | **3.3000e-004** | **0.0272** | **2.5000e-004** | **0.0274** | **7.2800e-003** | **2.3000e-004** | **7.5200e-003** | **0.0000** | **31.0262** | **31.0262** | **1.0500e-003** | **0.0000** | **31.0523** |

### 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 | 6.5900e-003 | 0.0418 | 0.3375 | 5.1000e-004 | | 8.3000e-004 | 8.3000e-004 | | 8.3000e-004 | 8.3000e-004 | 0.0000 | 44.6536 | 44.6536 | 0.0144 | 0.0000 | 45.0147 |
| **Total** | **6.5900e-003** | **0.0418** | **0.3375** | **5.1000e-004** | | **8.3000e-004** | **8.3000e-004** | | **8.3000e-004** | **8.3000e-004** | **0.0000** | **44.6536** | **44.6536** | **0.0144** | **0.0000** | **45.0147** |

## 3.5 Building Construction - 2021

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 1.1600e-003 | 0.0401 | 8.5000e-003 | 1.0000e-004 | 2.4600e-003 | 8.0000e-005 | 2.5500e-003 | 7.1000e-004 | 8.0000e-005 | 7.9000e-004 | 0.0000 | 9.8239 | 9.8239 | 5.4000e-004 | 0.0000 | 9.8374 |
| Worker | 9.9800e-003 | 7.1100e-003 | 0.0745 | 2.3000e-004 | 0.0247 | 1.7000e-004 | 0.0249 | 6.5700e-003 | 1.5000e-004 | 6.7300e-003 | 0.0000 | 21.2023 | 21.2023 | 5.1000e-004 | 0.0000 | 21.2149 |
| **Total** | **0.0111** | **0.0472** | **0.0830** | **3.3000e-004** | **0.0272** | **2.5000e-004** | **0.0274** | **7.2800e-003** | **2.3000e-004** | **7.5200e-003** | **0.0000** | **31.0262** | **31.0262** | **1.0500e-003** | **0.0000** | **31.0523** |

## 3.5 Building Construction - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0634 | 0.6577 | 0.6412 | 1.0600e-003 | | 0.0340 | 0.0340 | | 0.0313 | 0.0313 | 0.0000 | 92.9343 | 92.9343 | 0.0301 | 0.0000 | 93.6857 |
| **Total** | **0.0634** | **0.6577** | **0.6412** | **1.0600e-003** | | **0.0340** | **0.0340** | | **0.0313** | **0.0313** | **0.0000** | **92.9343** | **92.9343** | **0.0301** | **0.0000** | **93.6857** |

## 3.5 Building Construction - 2022

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 2.2600e-003 | 0.0792 | 0.0166 | 2.1000e-004 | 5.1200e-003 | 1.5000e-004 | 5.2700e-003 | 1.4800e-003 | 1.4000e-004 | 1.6300e-003 | 0.0000 | 20.2339 | 20.2339 | 1.0700e-003 | 0.0000 | 20.2607 |
| Worker | 0.0193 | 0.0132 | 0.1418 | 4.7000e-004 | 0.0514 | 3.4000e-004 | 0.0517 | 0.0137 | 3.1000e-004 | 0.0140 | 0.0000 | 42.4935 | 42.4935 | 9.4000e-004 | 0.0000 | 42.5171 |
| **Total** | **0.0215** | **0.0925** | **0.1584** | **6.8000e-004** | **0.0565** | **4.9000e-004** | **0.0570** | **0.0152** | **4.5000e-004** | **0.0156** | **0.0000** | **62.7274** | **62.7274** | **2.0100e-003** | **0.0000** | **62.7778** |

**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 | 0.0137 | 0.0870 | 0.7019 | 1.0600e-003 | | 1.7300e-003 | 1.7300e-003 | | 1.7300e-003 | 1.7300e-003 | 0.0000 | 92.9342 | 92.9342 | 0.0301 | 0.0000 | 93.6856 |
| **Total** | **0.0137** | **0.0870** | **0.7019** | **1.0600e-003** | | **1.7300e-003** | **1.7300e-003** | | **1.7300e-003** | **1.7300e-003** | **0.0000** | **92.9342** | **92.9342** | **0.0301** | **0.0000** | **93.6856** |

## 3.5 Building Construction - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 2.2600e-003 | 0.0792 | 0.0166 | 2.1000e-004 | 5.1200e-003 | 1.5000e-004 | 5.2700e-003 | 1.4800e-003 | 1.4000e-004 | 1.6300e-003 | 0.0000 | 20.2339 | 20.2339 | 1.0700e-003 | 0.0000 | 20.2607 |
| Worker | 0.0193 | 0.0132 | 0.1418 | 4.7000e-004 | 0.0514 | 3.4000e-004 | 0.0517 | 0.0137 | 3.1000e-004 | 0.0140 | 0.0000 | 42.4935 | 42.4935 | 9.4000e-004 | 0.0000 | 42.5171 |
| **Total** | **0.0215** | **0.0925** | **0.1584** | **6.8000e-004** | **0.0565** | **4.9000e-004** | **0.0570** | **0.0152** | **4.5000e-004** | **0.0156** | **0.0000** | **62.7274** | **62.7274** | **2.0100e-003** | **0.0000** | **62.7778** |

## 3.5 Building Construction - 2023

**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 | 3.6000e-003 | 0.0370 | 0.0391 | 7.0000e-005 | | 1.8100e-003 | 1.8100e-003 | | 1.6700e-003 | 1.6700e-003 | 0.0000 | 5.7219 | 5.7219 | 1.8500e-003 | 0.0000 | 5.7682 |
| **Total** | **3.6000e-003** | **0.0370** | **0.0391** | **7.0000e-005** | | **1.8100e-003** | **1.8100e-003** | | **1.6700e-003** | **1.6700e-003** | **0.0000** | **5.7219** | **5.7219** | **1.8500e-003** | **0.0000** | **5.7682** |

## 3.5 Building Construction - 2023

### 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 | 1.0000e-004 | 3.7700e-003 | 8.9000e-004 | 1.0000e-005 | 3.2000e-004 | 0.0000 | 3.2000e-004 | 9.0000e-005 | 0.0000 | 1.0000e-004 | 0.0000 | 1.2097 | 1.2097 | 5.0000e-005 | 0.0000 | 1.2111 |
| Worker | 1.1000e-003 | 7.3000e-004 | 7.9900e-003 | 3.0000e-005 | 3.1600e-003 | 2.0000e-005 | 3.1800e-003 | 8.4000e-004 | 2.0000e-005 | 8.6000e-004 | 0.0000 | 2.5150 | 2.5150 | 5.0000e-005 | 0.0000 | 2.5163 |
| **Total** | **1.2000e-003** | **4.5000e-003** | **8.8800e-003** | **4.0000e-005** | **3.4800e-003** | **2.0000e-005** | **3.5000e-003** | **9.3000e-004** | **2.0000e-005** | **9.6000e-004** | **0.0000** | **3.7247** | **3.7247** | **1.0000e-004** | **0.0000** | **3.7273** |

### 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 | 8.4000e-004 | 5.3500e-003 | 0.0432 | 7.0000e-005 | | 1.1000e-004 | 1.1000e-004 | | 1.1000e-004 | 1.1000e-004 | 0.0000 | 5.7219 | 5.7219 | 1.8500e-003 | 0.0000 | 5.7682 |
| **Total** | **8.4000e-004** | **5.3500e-003** | **0.0432** | **7.0000e-005** | | **1.1000e-004** | **1.1000e-004** | | **1.1000e-004** | **1.1000e-004** | **0.0000** | **5.7219** | **5.7219** | **1.8500e-003** | **0.0000** | **5.7682** |

## 3.5 Building Construction - 2023

**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 | 1.0000e-004 | 3.7700e-003 | 8.9000e-004 | 1.0000e-005 | 3.2000e-004 | 0.0000 | 3.2000e-004 | 9.0000e-005 | 0.0000 | 1.0000e-004 | 0.0000 | 1.2097 | 1.2097 | 5.0000e-005 | 0.0000 | 1.2111 |
| Worker | 1.1000e-003 | 7.3000e-004 | 7.9900e-003 | 3.0000e-005 | 3.1600e-003 | 2.0000e-005 | 3.1800e-003 | 8.4000e-004 | 2.0000e-005 | 8.6000e-004 | 0.0000 | 2.5150 | 2.5150 | 5.0000e-005 | 0.0000 | 2.5163 |
| **Total** | **1.2000e-003** | **4.5000e-003** | **8.8800e-003** | **4.0000e-005** | **3.4800e-003** | **2.0000e-005** | **3.5000e-003** | **9.3000e-004** | **2.0000e-005** | **9.6000e-004** | **0.0000** | **3.7247** | **3.7247** | **1.0000e-004** | **0.0000** | **3.7273** |

## 3.6 Architectural Coating - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.8265 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0170 | 0.1156 | 0.1413 | 2.4000e-004 | | 6.3900e-003 | 6.3900e-003 | | 6.3900e-003 | 6.3900e-003 | 0.0000 | 20.0015 | 20.0015 | 1.3800e-003 | 0.0000 | 20.0360 |
| **Total** | **0.8436** | **0.1156** | **0.1413** | **2.4000e-004** | | **6.3900e-003** | **6.3900e-003** | | **6.3900e-003** | **6.3900e-003** | **0.0000** | **20.0015** | **20.0015** | **1.3800e-003** | **0.0000** | **20.0360** |

## 3.6 Architectural Coating - 2022

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.0000e-004 | 0.0175 | 3.6500e-003 | 5.0000e-005 | 1.1300e-003 | 3.0000e-005 | 1.1600e-003 | 3.3000e-004 | 3.0000e-005 | 3.6000e-004 | 0.0000 | 4.4618 | 4.4618 | 2.4000e-004 | 0.0000 | 4.4678 |
| Worker | 1.0200e-003 | 7.0000e-004 | 7.5100e-003 | 2.0000e-005 | 2.7200e-003 | 2.0000e-005 | 2.7400e-003 | 7.2000e-004 | 2.0000e-005 | 7.4000e-004 | 0.0000 | 2.2489 | 2.2489 | 5.0000e-005 | 0.0000 | 2.2501 |
| **Total** | **1.5200e-003** | **0.0182** | **0.0112** | **7.0000e-005** | **3.8500e-003** | **5.0000e-005** | **3.9000e-003** | **1.0500e-003** | **5.0000e-005** | **1.1000e-003** | **0.0000** | **6.7107** | **6.7107** | **2.9000e-004** | **0.0000** | **6.7179** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.8265 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.0900e-003 | 9.0400e-003 | 0.1287 | 2.4000e-004 | | 2.8000e-004 | 2.8000e-004 | | 2.8000e-004 | 2.8000e-004 | 0.0000 | 20.0015 | 20.0015 | 1.3800e-003 | 0.0000 | 20.0360 |
| **Total** | **0.8286** | **9.0400e-003** | **0.1287** | **2.4000e-004** | | **2.8000e-004** | **2.8000e-004** | | **2.8000e-004** | **2.8000e-004** | **0.0000** | **20.0015** | **20.0015** | **1.3800e-003** | **0.0000** | **20.0360** |

## 3.6 Architectural Coating - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.0000e-004 | 0.0175 | 3.6500e-003 | 5.0000e-005 | 1.1300e-003 | 3.0000e-005 | 1.1600e-003 | 3.3000e-004 | 3.0000e-005 | 3.6000e-004 | 0.0000 | 4.4618 | 4.4618 | 2.4000e-004 | 0.0000 | 4.4678 |
| Worker | 1.0200e-003 | 7.0000e-004 | 7.5100e-003 | 2.0000e-005 | 2.7200e-003 | 2.0000e-005 | 2.7400e-003 | 7.2000e-004 | 2.0000e-005 | 7.4000e-004 | 0.0000 | 2.2489 | 2.2489 | 5.0000e-005 | 0.0000 | 2.2501 |
| **Total** | **1.5200e-003** | **0.0182** | **0.0112** | **7.0000e-005** | **3.8500e-003** | **5.0000e-005** | **3.9000e-003** | **1.0500e-003** | **5.0000e-005** | **1.1000e-003** | **0.0000** | **6.7107** | **6.7107** | **2.9000e-004** | **0.0000** | **6.7179** |

## 3.7 Paving - 2023

**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 | 1.5400e-003 | 0.0150 | 0.0193 | 3.0000e-005 | | 7.6000e-004 | 7.6000e-004 | | 7.0000e-004 | 7.0000e-004 | 0.0000 | 2.5317 | 2.5317 | 7.9000e-004 | 0.0000 | 2.5514 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **1.5400e-003** | **0.0150** | **0.0193** | **3.0000e-005** | | **7.6000e-004** | **7.6000e-004** | | **7.0000e-004** | **7.0000e-004** | **0.0000** | **2.5317** | **2.5317** | **7.9000e-004** | **0.0000** | **2.5514** |

## 3.7 Paving - 2023

**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 | 1.4000e-004 | 5.1900e-003 | 1.2200e-003 | 2.0000e-005 | 4.3000e-004 | 1.0000e-005 | 4.4000e-004 | 1.3000e-004 | 1.0000e-005 | 1.3000e-004 | 0.0000 | 1.6634 | 1.6634 | 7.0000e-005 | 0.0000 | 1.6652 |
| Worker | 3.0000e-004 | 2.0000e-004 | 2.2000e-003 | 1.0000e-005 | 8.7000e-004 | 1.0000e-005 | 8.8000e-004 | 2.3000e-004 | 1.0000e-005 | 2.4000e-004 | 0.0000 | 0.6916 | 0.6916 | 1.0000e-005 | 0.0000 | 0.6920 |
| **Total** | **4.4000e-004** | **5.3900e-003** | **3.4200e-003** | **3.0000e-005** | **1.3000e-003** | **2.0000e-005** | **1.3200e-003** | **3.6000e-004** | **2.0000e-005** | **3.7000e-004** | **0.0000** | **2.3550** | **2.3550** | **8.0000e-005** | **0.0000** | **2.3572** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 3.3000e-004 | 1.4500e-003 | 0.0206 | 3.0000e-005 | | 4.0000e-005 | 4.0000e-005 | | 4.0000e-005 | 4.0000e-005 | 0.0000 | 2.5317 | 2.5317 | 7.9000e-004 | 0.0000 | 2.5514 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **3.3000e-004** | **1.4500e-003** | **0.0206** | **3.0000e-005** | | **4.0000e-005** | **4.0000e-005** | | **4.0000e-005** | **4.0000e-005** | **0.0000** | **2.5317** | **2.5317** | **7.9000e-004** | **0.0000** | **2.5514** |

### 3.7 Paving - 2023

**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 | 1.4000e-004 | 5.1900e-003 | 1.2200e-003 | 2.0000e-005 | 4.3000e-004 | 1.0000e-005 | 4.4000e-004 | 1.3000e-004 | 1.0000e-005 | 1.3000e-004 | 0.0000 | 1.6634 | 1.6634 | 7.0000e-005 | 0.0000 | 1.6652 |
| Worker | 3.0000e-004 | 2.0000e-004 | 2.2000e-003 | 1.0000e-005 | 8.7000e-004 | 1.0000e-005 | 8.8000e-004 | 2.3000e-004 | 1.0000e-005 | 2.4000e-004 | 0.0000 | 0.6916 | 0.6916 | 1.0000e-005 | 0.0000 | 0.6920 |
| **Total** | **4.4000e-004** | **5.3900e-003** | **3.4200e-003** | **3.0000e-005** | **1.3000e-003** | **2.0000e-005** | **1.3200e-003** | **3.6000e-004** | **2.0000e-005** | **3.7000e-004** | **0.0000** | **2.3550** | **2.3550** | **8.0000e-005** | **0.0000** | **2.3572** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.2626 | 0.4750 | 1.7483 | 5.0100e-003 | 0.4466 | 4.4300e-003 | 0.4511 | 0.1197 | 4.1500e-003 | 0.1239 | 0.0000 | 466.9367 | 466.9367 | 0.0238 | 0.0000 | 467.5312 |
| Unmitigated | 0.2626 | 0.4750 | 1.7483 | 5.0100e-003 | 0.4466 | 4.4300e-003 | 0.4511 | 0.1197 | 4.1500e-003 | 0.1239 | 0.0000 | 466.9367 | 466.9367 | 0.0238 | 0.0000 | 467.5312 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Enclosed Parking Structure | 0.00 | 0.00 | 0.00 | | |
| Government Office Building | 759.08 | 0.00 | 0.00 | 929,813 | 929,813 |
| Strip Mall | 191.12 | 181.35 | 88.14 | 269,526 | 269,526 |
| Total | 950.21 | 181.35 | 88.14 | 1,199,339 | 1,199,339 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Enclosed Parking Structure | 9.50 | 7.30 | 7.30 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 |
| Government Office Building | 9.50 | 7.30 | 7.30 | 33.00 | 62.00 | 5.00 | 50 | 34 | 16 |
| Strip Mall | 9.50 | 7.30 | 7.30 | 16.60 | 64.40 | 19.00 | 45 | 40 | 15 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Enclosed Parking Structure | 0.559811 | 0.054314 | 0.176013 | 0.106180 | 0.021092 | 0.005189 | 0.023515 | 0.044635 | 0.001330 | 0.001803 | 0.005113 | 0.000332 | 0.000673 |
| Government Office Building | 0.559811 | 0.054314 | 0.176013 | 0.106180 | 0.021092 | 0.005189 | 0.023515 | 0.044635 | 0.001330 | 0.001803 | 0.005113 | 0.000332 | 0.000673 |
| Strip Mall | 0.559811 | 0.054314 | 0.176013 | 0.106180 | 0.021092 | 0.005189 | 0.023515 | 0.044635 | 0.001330 | 0.001803 | 0.005113 | 0.000332 | 0.000673 |

# 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 | 262.7585 | 262.7585 | 0.0259 | 5.3600e-003 | 265.0045 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 262.7585 | 262.7585 | 0.0259 | 5.3600e-003 | 265.0045 |
| NaturalGas Mitigated | 0.0158 | 0.1432 | 0.1203 | 8.6000e-004 | | 0.0109 | 0.0109 | | 0.0109 | 0.0109 | 0.0000 | 155.8857 | 155.8857 | 2.9900e-003 | 2.8600e-003 | 156.8121 |
| NaturalGas Unmitigated | 0.0158 | 0.1432 | 0.1203 | 8.6000e-004 | | 0.0109 | 0.0109 | | 0.0109 | 0.0109 | 0.0000 | 155.8857 | 155.8857 | 2.9900e-003 | 2.8600e-003 | 156.8121 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Enclosed Parking Structure | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Government Office Building | 2.87712e +006 | 0.0155 | 0.1410 | 0.1185 | 8.5000e-004 | | 0.0107 | 0.0107 | | 0.0107 | 0.0107 | 0.0000 | 153.5339 | 153.5339 | 2.9400e-003 | 2.8100e-003 | 154.4462 |
| Strip Mall | 44072.6 | 2.4000e-004 | 2.1600e-003 | 1.8100e-003 | 1.0000e-005 | | 1.6000e-004 | 1.6000e-004 | | 1.6000e-004 | 1.6000e-004 | 0.0000 | 2.3519 | 2.3519 | 5.0000e-005 | 4.0000e-005 | 2.3659 |
| **Total** | | **0.0158** | **0.1432** | **0.1203** | **8.6000e-004** | | **0.0109** | **0.0109** | | **0.0109** | **0.0109** | **0.0000** | **155.8857** | **155.8857** | **2.9900e-003** | **2.8500e-003** | **156.8121** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Enclosed Parking Structure | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Government Office Building | 2.87712e +006 | 0.0155 | 0.1410 | 0.1185 | 8.5000e-004 | | 0.0107 | 0.0107 | | 0.0107 | 0.0107 | 0.0000 | 153.5339 | 153.5339 | 2.9400e-003 | 2.8100e-003 | 154.4462 |
| Strip Mall | 44072.6 | 2.4000e-004 | 2.1600e-003 | 1.8100e-003 | 1.0000e-005 | | 1.6000e-004 | 1.6000e-004 | | 1.6000e-004 | 1.6000e-004 | 0.0000 | 2.3519 | 2.3519 | 5.0000e-005 | 4.0000e-005 | 2.3659 |
| **Total** | | **0.0158** | **0.1432** | **0.1203** | **8.6000e-004** | | **0.0109** | **0.0109** | | **0.0109** | **0.0109** | **0.0000** | **155.8857** | **155.8857** | **2.9900e-003** | **2.8500e-003** | **156.8121** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Enclosed Parking Structure | 12394.6 | 1.6529 | 1.6000e-004 | 3.0000e-005 | 1.6670 |
| Government Office Building | 1.85755e+006 | 247.7155 | 0.0244 | 5.0600e-003 | 249.8329 |
| Strip Mall | 100409 | 13.3901 | 1.3200e-003 | 2.7000e-004 | 13.5046 |
| **Total** | | **262.7585** | **0.0259** | **5.3600e-003** | **265.0045** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Enclosed Parking Structure | 12394.6 | 1.6529 | 1.6000e-004 | 3.0000e-005 | 1.6670 |
| Government Office Building | 1.85755e+006 | 247.7155 | 0.0244 | 5.0600e-003 | 249.8329 |
| Strip Mall | 100409 | 13.3901 | 1.3200e-003 | 2.7000e-004 | 13.5046 |
| **Total** | | **262.7585** | **0.0259** | **5.3600e-003** | **265.0045** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.7018 | 3.0000e-005 | 3.0400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.9200e-003 | 5.9200e-003 | 2.0000e-005 | 0.0000 | 6.3100e-003 |
| Unmitigated | 0.7018 | 3.0000e-005 | 3.0400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.9200e-003 | 5.9200e-003 | 2.0000e-005 | 0.0000 | 6.3100e-003 |

## 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 | 0.0827 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6189 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.8000e-004 | 3.0000e-005 | 3.0400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.9200e-003 | 5.9200e-003 | 2.0000e-005 | 0.0000 | 6.3100e-003 |
| **Total** | **0.7018** | **3.0000e-005** | **3.0400e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **5.9200e-003** | **5.9200e-003** | **2.0000e-005** | **0.0000** | **6.3100e-003** |

## 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 | 0.0827 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.6189 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 2.8000e-004 | 3.0000e-005 | 3.0400e-003 | 0.0000 | | 1.0000e-005 | 1.0000e-005 | | 1.0000e-005 | 1.0000e-005 | 0.0000 | 5.9200e-003 | 5.9200e-003 | 2.0000e-005 | 0.0000 | 6.3100e-003 |
| **Total** | **0.7018** | **3.0000e-005** | **3.0400e-003** | **0.0000** | | **1.0000e-005** | **1.0000e-005** | | **1.0000e-005** | **1.0000e-005** | **0.0000** | **5.9200e-003** | **5.9200e-003** | **2.0000e-005** | **0.0000** | **6.3100e-003** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 40.1159 | 0.9896 | 0.0239 | 71.9843 |
| Unmitigated | 40.1159 | 0.9896 | 0.0239 | 71.9843 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Enclosed Parking Structure | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Government Office Building | 29.5685 / 18.1226 | 39.1757 | 0.9664 | 0.0234 | 70.2972 |
| Strip Mall | 0.709615 / 0.434925 | 0.9402 | 0.0232 | 5.6000e-004 | 1.6871 |
| **Total** | | **40.1159** | **0.9896** | **0.0239** | **71.9843** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Enclosed Parking Structure | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Government Office Building | 29.5685 / 18.1226 | 39.1757 | 0.9664 | 0.0234 | 70.2972 |
| Strip Mall | 0.709615 / 0.434925 | 0.9402 | 0.0232 | 5.6000e-004 | 1.6871 |
| **Total** | | **40.1159** | **0.9896** | **0.0239** | **71.9843** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 30.1401 | 1.7812 | 0.0000 | 74.6708 |
| Unmitigated | 30.1401 | 1.7812 | 0.0000 | 74.6708 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Enclosed Parking Structure | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Government Office Building | 138.42 | 28.0980 | 1.6605 | 0.0000 | 69.6116 |
| Strip Mall | 10.06 | 2.0421 | 0.1207 | 0.0000 | 5.0592 |
| **Total** | | **30.1401** | **1.7812** | **0.0000** | **74.6708** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Enclosed Parking Structure | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Government Office Building | 138.42 | 28.0980 | 1.6605 | 0.0000 | 69.6116 |
| Strip Mall | 10.06 | 2.0421 | 0.1207 | 0.0000 | 5.0592 |
| **Total** | | **30.1401** | **1.7812** | **0.0000** | **74.6708** |

# 9.0 Operational Offroad

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

# 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# 2424 Webster - Existing Uses

**Alameda County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Government Office Building | 9.50 | 1000sqft | 0.00 | 9,500.00 | 0 |
| Automobile Care Center | 12.50 | 1000sqft | 0.61 | 12,500.00 | 0 |
| Strip Mall | 7.70 | 1000sqft | 0.00 | 7,700.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 63 |
| **Climate Zone** | 5 | | | **Operational Year** | 2021 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 294 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - https://www.pgecurrents.com/2018/03/26/independent-registry-confirms-record-low-carbon-emissions-for-pge/

Land Use - Existing land uses on site

Construction Phase - Project construction schedule

Off-road Equipment - Project data

Off-road Equipment - Project data

Off-road Equipment - Project data

Off-road Equipment - Project data

Off-road Equipment - Project data

Off-road Equipment - Project data

Trips and VMT - Project data

Demolition -

Grading - Project site area

Vehicle Trips - Adjusted based on traffic report

Energy Use -

Water And Wastewater - 20

Construction Off-road Equipment Mitigation - Tier 4 Final equipment used as BACT in compliance with City SCA

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblFleetMix | HHD | 0.04 | 0.04 |
| tblFleetMix | HHD | 0.04 | 0.04 |
| tblFleetMix | HHD | 0.04 | 0.04 |
| tblFleetMix | LDA | 0.56 | 0.56 |
| tblFleetMix | LDA | 0.56 | 0.56 |
| tblFleetMix | LDA | 0.56 | 0.56 |
| tblFleetMix | LDT1 | 0.04 | 0.05 |
| tblFleetMix | LDT1 | 0.04 | 0.05 |
| tblFleetMix | LDT1 | 0.04 | 0.05 |

| | | | |
|---|---|---|---|
| tblFleetMix | LDT2 | 0.19 | 0.18 |
| tblFleetMix | LDT2 | 0.19 | 0.18 |
| tblFleetMix | LDT2 | 0.19 | 0.18 |
| tblFleetMix | LHD1 | 0.02 | 0.02 |
| tblFleetMix | LHD1 | 0.02 | 0.02 |
| tblFleetMix | LHD1 | 0.02 | 0.02 |
| tblFleetMix | LHD2 | 5.2130e-003 | 5.0894e-003 |
| tblFleetMix | LHD2 | 5.2130e-003 | 5.0894e-003 |
| tblFleetMix | LHD2 | 5.2130e-003 | 5.0894e-003 |
| tblFleetMix | MCY | 5.5450e-003 | 5.1622e-003 |
| tblFleetMix | MCY | 5.5450e-003 | 5.1622e-003 |
| tblFleetMix | MCY | 5.5450e-003 | 5.1622e-003 |
| tblFleetMix | MDV | 0.11 | 0.11 |
| tblFleetMix | MDV | 0.11 | 0.11 |
| tblFleetMix | MDV | 0.11 | 0.11 |
| tblFleetMix | MH | 7.3900e-004 | 6.7040e-004 |
| tblFleetMix | MH | 7.3900e-004 | 6.7040e-004 |
| tblFleetMix | MH | 7.3900e-004 | 6.7040e-004 |
| tblFleetMix | MHD | 0.02 | 0.02 |
| tblFleetMix | MHD | 0.02 | 0.02 |
| tblFleetMix | MHD | 0.02 | 0.02 |
| tblFleetMix | OBUS | 2.1520e-003 | 1.3699e-003 |
| tblFleetMix | OBUS | 2.1520e-003 | 1.3699e-003 |
| tblFleetMix | OBUS | 2.1520e-003 | 1.3699e-003 |
| tblFleetMix | SBUS | 3.1600e-004 | 3.0973e-004 |
| tblFleetMix | SBUS | 3.1600e-004 | 3.0973e-004 |
| tblFleetMix | SBUS | 3.1600e-004 | 3.0973e-004 |

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|---|---|---|---|
| tblFleetMix | UBUS | 2.6690e-003 | 1.8422e-003 |
| tblFleetMix | UBUS | 2.6690e-003 | 1.8422e-003 |
| tblFleetMix | UBUS | 2.6690e-003 | 1.8422e-003 |
| tblLandUse | LotAcreage | 0.22 | 0.00 |
| tblLandUse | LotAcreage | 0.29 | 0.61 |
| tblLandUse | LotAcreage | 0.18 | 0.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 294 |
| tblVehicleEF | HHD | 0.90 | 0.02 |
| tblVehicleEF | HHD | 0.04 | 0.03 |
| tblVehicleEF | HHD | 0.10 | 2.2476e-007 |
| tblVehicleEF | HHD | 2.72 | 5.94 |
| tblVehicleEF | HHD | 0.89 | 0.61 |
| tblVehicleEF | HHD | 2.12 | 4.6200e-003 |
| tblVehicleEF | HHD | 5,021.26 | 1,132.47 |
| tblVehicleEF | HHD | 1,630.56 | 1,503.58 |
| tblVehicleEF | HHD | 6.45 | 0.05 |
| tblVehicleEF | HHD | 22.13 | 6.04 |
| tblVehicleEF | HHD | 3.98 | 3.92 |
| tblVehicleEF | HHD | 20.10 | 1.83 |
| tblVehicleEF | HHD | 0.02 | 8.6259e-003 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 0.02 | 0.06 |
| tblVehicleEF | HHD | 5.4000e-005 | 4.5324e-007 |
| tblVehicleEF | HHD | 0.02 | 8.2528e-003 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 8.8920e-003 | 8.9182e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 0.02 | 0.06 |
| tblVehicleEF | HHD | 5.0000e-005 | 4.1674e-007 |
| tblVehicleEF | HHD | 5.1000e-005 | 2.1691e-006 |
| tblVehicleEF | HHD | 3.0920e-003 | 1.0868e-004 |
| tblVehicleEF | HHD | 0.70 | 0.46 |
| tblVehicleEF | HHD | 3.5000e-005 | 1.4011e-006 |
| tblVehicleEF | HHD | 0.14 | 0.13 |
| tblVehicleEF | HHD | 2.5900e-004 | 6.8070e-004 |
| tblVehicleEF | HHD | 0.06 | 1.1761e-006 |
| tblVehicleEF | HHD | 0.05 | 0.01 |
| tblVehicleEF | HHD | 0.02 | 0.01 |
| tblVehicleEF | HHD | 1.0000e-004 | 5.3667e-007 |
| tblVehicleEF | HHD | 5.1000e-005 | 2.1691e-006 |
| tblVehicleEF | HHD | 3.0920e-003 | 1.0868e-004 |
| tblVehicleEF | HHD | 0.81 | 0.52 |
| tblVehicleEF | HHD | 3.5000e-005 | 1.4011e-006 |
| tblVehicleEF | HHD | 0.20 | 0.18 |
| tblVehicleEF | HHD | 2.5900e-004 | 6.8070e-004 |
| tblVehicleEF | HHD | 0.07 | 1.2877e-006 |
| tblVehicleEF | HHD | 0.85 | 0.03 |
| tblVehicleEF | HHD | 0.04 | 0.03 |
| tblVehicleEF | HHD | 0.09 | 2.0808e-007 |
| tblVehicleEF | HHD | 1.98 | 5.80 |
| tblVehicleEF | HHD | 0.90 | 0.61 |
| tblVehicleEF | HHD | 1.93 | 4.2035e-003 |
| tblVehicleEF | HHD | 5,317.62 | 1,129.07 |
| tblVehicleEF | HHD | 1,630.56 | 1,503.58 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 6.45 | 0.05 |
| tblVehicleEF | HHD | 22.84 | 5.87 |
| tblVehicleEF | HHD | 3.83 | 3.77 |
| tblVehicleEF | HHD | 20.09 | 1.83 |
| tblVehicleEF | HHD | 0.02 | 8.0997e-003 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 0.02 | 0.06 |
| tblVehicleEF | HHD | 5.4000e-005 | 4.5324e-007 |
| tblVehicleEF | HHD | 0.01 | 7.7493e-003 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 8.8920e-003 | 8.9182e-003 |
| tblVehicleEF | HHD | 0.02 | 0.06 |
| tblVehicleEF | HHD | 5.0000e-005 | 4.1674e-007 |
| tblVehicleEF | HHD | 1.2800e-004 | 5.8559e-006 |
| tblVehicleEF | HHD | 3.3440e-003 | 1.1952e-004 |
| tblVehicleEF | HHD | 0.66 | 0.48 |
| tblVehicleEF | HHD | 7.9000e-005 | 3.5203e-006 |
| tblVehicleEF | HHD | 0.14 | 0.13 |
| tblVehicleEF | HHD | 2.5300e-004 | 6.7511e-004 |
| tblVehicleEF | HHD | 0.06 | 1.0943e-006 |
| tblVehicleEF | HHD | 0.05 | 0.01 |
| tblVehicleEF | HHD | 0.02 | 0.01 |
| tblVehicleEF | HHD | 9.7000e-005 | 5.3013e-007 |
| tblVehicleEF | HHD | 1.2800e-004 | 5.8559e-006 |
| tblVehicleEF | HHD | 3.3440e-003 | 1.1952e-004 |
| tblVehicleEF | HHD | 0.76 | 0.55 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 7.9000e-005 | 3.5203e-006 |
| tblVehicleEF | HHD | 0.20 | 0.18 |
| tblVehicleEF | HHD | 2.5300e-004 | 6.7511e-004 |
| tblVehicleEF | HHD | 0.06 | 1.1981e-006 |
| tblVehicleEF | HHD | 0.97 | 0.02 |
| tblVehicleEF | HHD | 0.04 | 0.03 |
| tblVehicleEF | HHD | 0.11 | 2.3741e-007 |
| tblVehicleEF | HHD | 3.74 | 6.13 |
| tblVehicleEF | HHD | 0.88 | 0.60 |
| tblVehicleEF | HHD | 2.29 | 4.9699e-003 |
| tblVehicleEF | HHD | 4,612.01 | 1,137.16 |
| tblVehicleEF | HHD | 1,630.56 | 1,503.58 |
| tblVehicleEF | HHD | 6.45 | 0.05 |
| tblVehicleEF | HHD | 21.15 | 6.28 |
| tblVehicleEF | HHD | 4.05 | 3.98 |
| tblVehicleEF | HHD | 20.11 | 1.83 |
| tblVehicleEF | HHD | 0.02 | 9.3526e-003 |
| tblVehicleEF | HHD | 0.06 | 0.06 |
| tblVehicleEF | HHD | 0.04 | 0.04 |
| tblVehicleEF | HHD | 0.02 | 0.06 |
| tblVehicleEF | HHD | 5.4000e-005 | 4.5324e-007 |
| tblVehicleEF | HHD | 0.02 | 8.9480e-003 |
| tblVehicleEF | HHD | 0.03 | 0.03 |
| tblVehicleEF | HHD | 8.8920e-003 | 8.9182e-003 |
| tblVehicleEF | HHD | 0.02 | 0.06 |
| tblVehicleEF | HHD | 5.0000e-005 | 4.1674e-007 |
| tblVehicleEF | HHD | 2.3000e-005 | 8.5563e-007 |

| | | | |
|---|---|---|---|
| tblVehicleEF | HHD | 3.2400e-003 | 1.1928e-004 |
| tblVehicleEF | HHD | 0.75 | 0.43 |
| tblVehicleEF | HHD | 1.6000e-005 | 5.8907e-007 |
| tblVehicleEF | HHD | 0.14 | 0.13 |
| tblVehicleEF | HHD | 2.8700e-004 | 7.4600e-004 |
| tblVehicleEF | HHD | 0.07 | 1.2381e-006 |
| tblVehicleEF | HHD | 0.04 | 0.01 |
| tblVehicleEF | HHD | 0.02 | 0.01 |
| tblVehicleEF | HHD | 1.0200e-004 | 5.4216e-007 |
| tblVehicleEF | HHD | 2.3000e-005 | 8.5563e-007 |
| tblVehicleEF | HHD | 3.2400e-003 | 1.1928e-004 |
| tblVehicleEF | HHD | 0.87 | 0.49 |
| tblVehicleEF | HHD | 1.6000e-005 | 5.8907e-007 |
| tblVehicleEF | HHD | 0.20 | 0.18 |
| tblVehicleEF | HHD | 2.8700e-004 | 7.4600e-004 |
| tblVehicleEF | HHD | 0.07 | 1.3556e-006 |
| tblVehicleEF | LDA | 4.8120e-003 | 2.8062e-003 |
| tblVehicleEF | LDA | 7.5300e-003 | 0.06 |
| tblVehicleEF | LDA | 0.62 | 0.67 |
| tblVehicleEF | LDA | 1.55 | 2.39 |
| tblVehicleEF | LDA | 266.07 | 262.95 |
| tblVehicleEF | LDA | 60.44 | 55.55 |
| tblVehicleEF | LDA | 0.06 | 0.05 |
| tblVehicleEF | LDA | 0.10 | 0.22 |
| tblVehicleEF | LDA | 0.04 | 0.04 |
| tblVehicleEF | LDA | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDA | 1.8380e-003 | 1.6020e-003 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDA | 2.3020e-003 | 1.9167e-003 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDA | 1.6960e-003 | 1.4773e-003 |
| tblVehicleEF | LDA | 2.1170e-003 | 1.7625e-003 |
| tblVehicleEF | LDA | 0.04 | 0.04 |
| tblVehicleEF | LDA | 0.12 | 0.12 |
| tblVehicleEF | LDA | 0.03 | 0.04 |
| tblVehicleEF | LDA | 0.01 | 0.01 |
| tblVehicleEF | LDA | 0.04 | 0.24 |
| tblVehicleEF | LDA | 0.10 | 0.28 |
| tblVehicleEF | LDA | 2.6650e-003 | 2.6011e-003 |
| tblVehicleEF | LDA | 6.3100e-004 | 5.4970e-004 |
| tblVehicleEF | LDA | 0.04 | 0.04 |
| tblVehicleEF | LDA | 0.12 | 0.12 |
| tblVehicleEF | LDA | 0.03 | 0.04 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 0.04 | 0.24 |
| tblVehicleEF | LDA | 0.11 | 0.31 |
| tblVehicleEF | LDA | 5.3660e-003 | 3.1766e-003 |
| tblVehicleEF | LDA | 6.1220e-003 | 0.05 |
| tblVehicleEF | LDA | 0.73 | 0.79 |
| tblVehicleEF | LDA | 1.19 | 1.82 |
| tblVehicleEF | LDA | 287.67 | 283.93 |
| tblVehicleEF | LDA | 60.44 | 54.48 |
| tblVehicleEF | LDA | 0.05 | 0.04 |
| tblVehicleEF | LDA | 0.09 | 0.19 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDA | 0.04 | 0.04 |
| tblVehicleEF | LDA | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDA | 1.8380e-003 | 1.6020e-003 |
| tblVehicleEF | LDA | 2.3020e-003 | 1.9167e-003 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDA | 1.6960e-003 | 1.4773e-003 |
| tblVehicleEF | LDA | 2.1170e-003 | 1.7625e-003 |
| tblVehicleEF | LDA | 0.09 | 0.11 |
| tblVehicleEF | LDA | 0.14 | 0.13 |
| tblVehicleEF | LDA | 0.07 | 0.09 |
| tblVehicleEF | LDA | 0.01 | 0.01 |
| tblVehicleEF | LDA | 0.04 | 0.22 |
| tblVehicleEF | LDA | 0.08 | 0.23 |
| tblVehicleEF | LDA | 2.8820e-003 | 2.8086e-003 |
| tblVehicleEF | LDA | 6.2500e-004 | 5.3912e-004 |
| tblVehicleEF | LDA | 0.09 | 0.11 |
| tblVehicleEF | LDA | 0.14 | 0.13 |
| tblVehicleEF | LDA | 0.07 | 0.09 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 0.04 | 0.22 |
| tblVehicleEF | LDA | 0.09 | 0.25 |
| tblVehicleEF | LDA | 4.7160e-003 | 2.7134e-003 |
| tblVehicleEF | LDA | 8.5190e-003 | 0.07 |
| tblVehicleEF | LDA | 0.61 | 0.66 |
| tblVehicleEF | LDA | 1.82 | 2.80 |
| tblVehicleEF | LDA | 263.91 | 260.86 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDA | 60.44 | 56.32 |
| tblVehicleEF | LDA | 0.06 | 0.05 |
| tblVehicleEF | LDA | 0.11 | 0.23 |
| tblVehicleEF | LDA | 0.04 | 0.04 |
| tblVehicleEF | LDA | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDA | 1.8380e-003 | 1.6020e-003 |
| tblVehicleEF | LDA | 2.3020e-003 | 1.9167e-003 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDA | 1.6960e-003 | 1.4773e-003 |
| tblVehicleEF | LDA | 2.1170e-003 | 1.7625e-003 |
| tblVehicleEF | LDA | 0.01 | 0.02 |
| tblVehicleEF | LDA | 0.13 | 0.12 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 0.01 | 0.01 |
| tblVehicleEF | LDA | 0.05 | 0.28 |
| tblVehicleEF | LDA | 0.11 | 0.32 |
| tblVehicleEF | LDA | 2.6430e-003 | 2.5804e-003 |
| tblVehicleEF | LDA | 6.3600e-004 | 5.5732e-004 |
| tblVehicleEF | LDA | 0.01 | 0.02 |
| tblVehicleEF | LDA | 0.13 | 0.12 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 0.02 | 0.02 |
| tblVehicleEF | LDA | 0.05 | 0.28 |
| tblVehicleEF | LDA | 0.13 | 0.35 |
| tblVehicleEF | LDT1 | 0.01 | 5.7484e-003 |
| tblVehicleEF | LDT1 | 0.02 | 0.08 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDT1 | 1.22 | 1.17 |
| tblVehicleEF | LDT1 | 3.36 | 2.63 |
| tblVehicleEF | LDT1 | 322.13 | 312.45 |
| tblVehicleEF | LDT1 | 73.01 | 66.89 |
| tblVehicleEF | LDT1 | 0.13 | 0.11 |
| tblVehicleEF | LDT1 | 0.19 | 0.30 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDT1 | 2.5150e-003 | 2.1181e-003 |
| tblVehicleEF | LDT1 | 3.3770e-003 | 2.6728e-003 |
| tblVehicleEF | LDT1 | 0.02 | 0.02 |
| tblVehicleEF | LDT1 | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDT1 | 2.3170e-003 | 1.9497e-003 |
| tblVehicleEF | LDT1 | 3.1060e-003 | 2.4578e-003 |
| tblVehicleEF | LDT1 | 0.09 | 0.10 |
| tblVehicleEF | LDT1 | 0.27 | 0.21 |
| tblVehicleEF | LDT1 | 0.08 | 0.09 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 0.17 | 0.76 |
| tblVehicleEF | LDT1 | 0.23 | 0.43 |
| tblVehicleEF | LDT1 | 3.2360e-003 | 3.0919e-003 |
| tblVehicleEF | LDT1 | 7.8900e-004 | 6.6197e-004 |
| tblVehicleEF | LDT1 | 0.09 | 0.10 |
| tblVehicleEF | LDT1 | 0.27 | 0.21 |
| tblVehicleEF | LDT1 | 0.08 | 0.09 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 0.17 | 0.76 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDT1 | 0.25 | 0.47 |
| tblVehicleEF | LDT1 | 0.01 | 6.4400e-003 |
| tblVehicleEF | LDT1 | 0.01 | 0.07 |
| tblVehicleEF | LDT1 | 1.42 | 1.36 |
| tblVehicleEF | LDT1 | 2.55 | 2.00 |
| tblVehicleEF | LDT1 | 347.24 | 334.11 |
| tblVehicleEF | LDT1 | 73.01 | 65.62 |
| tblVehicleEF | LDT1 | 0.11 | 0.09 |
| tblVehicleEF | LDT1 | 0.17 | 0.26 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDT1 | 2.5150e-003 | 2.1181e-003 |
| tblVehicleEF | LDT1 | 3.3770e-003 | 2.6728e-003 |
| tblVehicleEF | LDT1 | 0.02 | 0.02 |
| tblVehicleEF | LDT1 | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDT1 | 2.3170e-003 | 1.9497e-003 |
| tblVehicleEF | LDT1 | 3.1060e-003 | 2.4578e-003 |
| tblVehicleEF | LDT1 | 0.24 | 0.25 |
| tblVehicleEF | LDT1 | 0.31 | 0.24 |
| tblVehicleEF | LDT1 | 0.18 | 0.19 |
| tblVehicleEF | LDT1 | 0.03 | 0.03 |
| tblVehicleEF | LDT1 | 0.16 | 0.70 |
| tblVehicleEF | LDT1 | 0.18 | 0.34 |
| tblVehicleEF | LDT1 | 3.4890e-003 | 3.3062e-003 |
| tblVehicleEF | LDT1 | 7.7500e-004 | 6.4935e-004 |
| tblVehicleEF | LDT1 | 0.24 | 0.25 |
| tblVehicleEF | LDT1 | 0.31 | 0.24 |

| | | | |
|---|---|---|---|
| tblVehicleEF | LDT1 | 0.18 | 0.19 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 0.16 | 0.70 |
| tblVehicleEF | LDT1 | 0.20 | 0.38 |
| tblVehicleEF | LDT1 | 0.01 | 5.5820e-003 |
| tblVehicleEF | LDT1 | 0.02 | 0.09 |
| tblVehicleEF | LDT1 | 1.22 | 1.16 |
| tblVehicleEF | LDT1 | 3.95 | 3.09 |
| tblVehicleEF | LDT1 | 319.62 | 310.31 |
| tblVehicleEF | LDT1 | 73.01 | 67.81 |
| tblVehicleEF | LDT1 | 0.14 | 0.12 |
| tblVehicleEF | LDT1 | 0.21 | 0.32 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDT1 | 2.5150e-003 | 2.1181e-003 |
| tblVehicleEF | LDT1 | 3.3770e-003 | 2.6728e-003 |
| tblVehicleEF | LDT1 | 0.02 | 0.02 |
| tblVehicleEF | LDT1 | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDT1 | 2.3170e-003 | 1.9497e-003 |
| tblVehicleEF | LDT1 | 3.1060e-003 | 2.4578e-003 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 0.30 | 0.22 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 0.03 | 0.02 |
| tblVehicleEF | LDT1 | 0.21 | 0.94 |
| tblVehicleEF | LDT1 | 0.26 | 0.48 |
| tblVehicleEF | LDT1 | 3.2100e-003 | 3.0707e-003 |

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|---|---|---|---|
| tblVehicleEF | LDT1 | 7.9900e-004 | 6.7107e-004 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 0.30 | 0.22 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 0.04 | 0.04 |
| tblVehicleEF | LDT1 | 0.21 | 0.94 |
| tblVehicleEF | LDT1 | 0.29 | 0.53 |
| tblVehicleEF | LDT2 | 6.0030e-003 | 4.0030e-003 |
| tblVehicleEF | LDT2 | 8.7920e-003 | 0.08 |
| tblVehicleEF | LDT2 | 0.75 | 0.88 |
| tblVehicleEF | LDT2 | 1.84 | 3.06 |
| tblVehicleEF | LDT2 | 365.23 | 340.72 |
| tblVehicleEF | LDT2 | 82.97 | 73.34 |
| tblVehicleEF | LDT2 | 0.08 | 0.08 |
| tblVehicleEF | LDT2 | 0.15 | 0.34 |
| tblVehicleEF | LDT2 | 0.04 | 0.04 |
| tblVehicleEF | LDT2 | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDT2 | 1.7120e-003 | 1.5465e-003 |
| tblVehicleEF | LDT2 | 2.2680e-003 | 1.8818e-003 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDT2 | 1.5750e-003 | 1.4234e-003 |
| tblVehicleEF | LDT2 | 2.0860e-003 | 1.7303e-003 |
| tblVehicleEF | LDT2 | 0.04 | 0.06 |
| tblVehicleEF | LDT2 | 0.12 | 0.14 |
| tblVehicleEF | LDT2 | 0.04 | 0.06 |
| tblVehicleEF | LDT2 | 0.01 | 0.02 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 0.07 | 0.46 |
| tblVehicleEF | LDT2 | 0.12 | 0.38 |
| tblVehicleEF | LDT2 | 3.6580e-003 | 3.3709e-003 |
| tblVehicleEF | LDT2 | 8.6100e-004 | 7.2575e-004 |
| tblVehicleEF | LDT2 | 0.04 | 0.06 |
| tblVehicleEF | LDT2 | 0.12 | 0.14 |
| tblVehicleEF | LDT2 | 0.04 | 0.06 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.07 | 0.46 |
| tblVehicleEF | LDT2 | 0.13 | 0.41 |
| tblVehicleEF | LDT2 | 6.6860e-003 | 4.5165e-003 |
| tblVehicleEF | LDT2 | 7.1540e-003 | 0.07 |
| tblVehicleEF | LDT2 | 0.88 | 1.04 |
| tblVehicleEF | LDT2 | 1.42 | 2.34 |
| tblVehicleEF | LDT2 | 394.28 | 362.21 |
| tblVehicleEF | LDT2 | 82.97 | 71.95 |
| tblVehicleEF | LDT2 | 0.07 | 0.08 |
| tblVehicleEF | LDT2 | 0.13 | 0.29 |
| tblVehicleEF | LDT2 | 0.04 | 0.04 |
| tblVehicleEF | LDT2 | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDT2 | 1.7120e-003 | 1.5465e-003 |
| tblVehicleEF | LDT2 | 2.2680e-003 | 1.8818e-003 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | LDT2 | 1.5750e-003 | 1.4234e-003 |
| tblVehicleEF | LDT2 | 2.0860e-003 | 1.7303e-003 |
| tblVehicleEF | LDT2 | 0.10 | 0.15 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 0.14 | 0.15 |
| tblVehicleEF | LDT2 | 0.09 | 0.13 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.06 | 0.43 |
| tblVehicleEF | LDT2 | 0.10 | 0.31 |
| tblVehicleEF | LDT2 | 3.9500e-003 | 3.5835e-003 |
| tblVehicleEF | LDT2 | 8.5400e-004 | 7.1201e-004 |
| tblVehicleEF | LDT2 | 0.10 | 0.15 |
| tblVehicleEF | LDT2 | 0.14 | 0.15 |
| tblVehicleEF | LDT2 | 0.09 | 0.13 |
| tblVehicleEF | LDT2 | 0.02 | 0.03 |
| tblVehicleEF | LDT2 | 0.06 | 0.43 |
| tblVehicleEF | LDT2 | 0.11 | 0.34 |
| tblVehicleEF | LDT2 | 5.8750e-003 | 3.8723e-003 |
| tblVehicleEF | LDT2 | 9.9380e-003 | 0.09 |
| tblVehicleEF | LDT2 | 0.74 | 0.87 |
| tblVehicleEF | LDT2 | 2.15 | 3.59 |
| tblVehicleEF | LDT2 | 362.33 | 338.59 |
| tblVehicleEF | LDT2 | 82.97 | 74.34 |
| tblVehicleEF | LDT2 | 0.09 | 0.09 |
| tblVehicleEF | LDT2 | 0.16 | 0.37 |
| tblVehicleEF | LDT2 | 0.04 | 0.04 |
| tblVehicleEF | LDT2 | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | LDT2 | 1.7120e-003 | 1.5465e-003 |
| tblVehicleEF | LDT2 | 2.2680e-003 | 1.8818e-003 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 2.0000e-003 | 2.0000e-003 |

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|---|---|---|---|
| tblVehicleEF | LDT2 | 1.5750e-003 | 1.4234e-003 |
| tblVehicleEF | LDT2 | 2.0860e-003 | 1.7303e-003 |
| tblVehicleEF | LDT2 | 0.02 | 0.03 |
| tblVehicleEF | LDT2 | 0.13 | 0.14 |
| tblVehicleEF | LDT2 | 0.02 | 0.03 |
| tblVehicleEF | LDT2 | 0.01 | 0.02 |
| tblVehicleEF | LDT2 | 0.08 | 0.56 |
| tblVehicleEF | LDT2 | 0.13 | 0.43 |
| tblVehicleEF | LDT2 | 3.6290e-003 | 3.3497e-003 |
| tblVehicleEF | LDT2 | 8.6600e-004 | 7.3565e-004 |
| tblVehicleEF | LDT2 | 0.02 | 0.03 |
| tblVehicleEF | LDT2 | 0.13 | 0.14 |
| tblVehicleEF | LDT2 | 0.02 | 0.03 |
| tblVehicleEF | LDT2 | 0.02 | 0.02 |
| tblVehicleEF | LDT2 | 0.08 | 0.56 |
| tblVehicleEF | LDT2 | 0.15 | 0.47 |
| tblVehicleEF | LHD1 | 5.9930e-003 | 5.7224e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 0.15 | 0.19 |
| tblVehicleEF | LHD1 | 1.26 | 0.97 |
| tblVehicleEF | LHD1 | 2.99 | 1.21 |
| tblVehicleEF | LHD1 | 9.01 | 9.06 |
| tblVehicleEF | LHD1 | 710.55 | 835.88 |
| tblVehicleEF | LHD1 | 34.16 | 12.79 |
| tblVehicleEF | LHD1 | 0.08 | 0.06 |
| tblVehicleEF | LHD1 | 1.47 | 0.95 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 1.13 | 0.37 |
| tblVehicleEF | LHD1 | 8.7000e-004 | 7.5712e-004 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |
| tblVehicleEF | LHD1 | 9.9240e-003 | 9.5899e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 1.0390e-003 | 2.8596e-004 |
| tblVehicleEF | LHD1 | 8.3300e-004 | 7.2437e-004 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 2.4810e-003 | 2.3975e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 9.5500e-004 | 2.6293e-004 |
| tblVehicleEF | LHD1 | 2.4640e-003 | 2.0468e-003 |
| tblVehicleEF | LHD1 | 0.11 | 0.08 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 1.3810e-003 | 1.1416e-003 |
| tblVehicleEF | LHD1 | 0.14 | 0.10 |
| tblVehicleEF | LHD1 | 0.31 | 0.61 |
| tblVehicleEF | LHD1 | 0.31 | 0.09 |
| tblVehicleEF | LHD1 | 9.1000e-005 | 8.8088e-005 |
| tblVehicleEF | LHD1 | 6.9890e-003 | 8.1742e-003 |
| tblVehicleEF | LHD1 | 3.9800e-004 | 1.2657e-004 |
| tblVehicleEF | LHD1 | 2.4640e-003 | 2.0468e-003 |
| tblVehicleEF | LHD1 | 0.11 | 0.08 |
| tblVehicleEF | LHD1 | 0.02 | 0.03 |
| tblVehicleEF | LHD1 | 1.3810e-003 | 1.1416e-003 |
| tblVehicleEF | LHD1 | 0.17 | 0.13 |
| tblVehicleEF | LHD1 | 0.31 | 0.61 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 0.33 | 0.10 |
| tblVehicleEF | LHD1 | 5.9930e-003 | 5.7402e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 0.15 | 0.19 |
| tblVehicleEF | LHD1 | 1.29 | 1.00 |
| tblVehicleEF | LHD1 | 2.74 | 1.11 |
| tblVehicleEF | LHD1 | 9.01 | 9.06 |
| tblVehicleEF | LHD1 | 710.55 | 835.94 |
| tblVehicleEF | LHD1 | 34.16 | 12.62 |
| tblVehicleEF | LHD1 | 0.08 | 0.06 |
| tblVehicleEF | LHD1 | 1.40 | 0.90 |
| tblVehicleEF | LHD1 | 1.04 | 0.34 |
| tblVehicleEF | LHD1 | 8.7000e-004 | 7.5712e-004 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |
| tblVehicleEF | LHD1 | 9.9240e-003 | 9.5899e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 1.0390e-003 | 2.8596e-004 |
| tblVehicleEF | LHD1 | 8.3300e-004 | 7.2437e-004 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 2.4810e-003 | 2.3975e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 9.5500e-004 | 2.6293e-004 |
| tblVehicleEF | LHD1 | 6.1240e-003 | 5.1203e-003 |
| tblVehicleEF | LHD1 | 0.12 | 0.09 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 3.0020e-003 | 2.5066e-003 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 0.14 | 0.11 |
| tblVehicleEF | LHD1 | 0.30 | 0.59 |
| tblVehicleEF | LHD1 | 0.28 | 0.08 |
| tblVehicleEF | LHD1 | 9.1000e-005 | 8.8088e-005 |
| tblVehicleEF | LHD1 | 6.9900e-003 | 8.1747e-003 |
| tblVehicleEF | LHD1 | 3.9300e-004 | 1.2485e-004 |
| tblVehicleEF | LHD1 | 6.1240e-003 | 5.1203e-003 |
| tblVehicleEF | LHD1 | 0.12 | 0.09 |
| tblVehicleEF | LHD1 | 0.02 | 0.03 |
| tblVehicleEF | LHD1 | 3.0020e-003 | 2.5066e-003 |
| tblVehicleEF | LHD1 | 0.17 | 0.13 |
| tblVehicleEF | LHD1 | 0.30 | 0.59 |
| tblVehicleEF | LHD1 | 0.31 | 0.09 |
| tblVehicleEF | LHD1 | 5.9930e-003 | 5.7085e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 0.15 | 0.19 |
| tblVehicleEF | LHD1 | 1.23 | 0.95 |
| tblVehicleEF | LHD1 | 3.22 | 1.29 |
| tblVehicleEF | LHD1 | 9.01 | 9.06 |
| tblVehicleEF | LHD1 | 710.55 | 835.85 |
| tblVehicleEF | LHD1 | 34.16 | 12.94 |
| tblVehicleEF | LHD1 | 0.08 | 0.06 |
| tblVehicleEF | LHD1 | 1.51 | 0.97 |
| tblVehicleEF | LHD1 | 1.19 | 0.40 |
| tblVehicleEF | LHD1 | 8.7000e-004 | 7.5712e-004 |
| tblVehicleEF | LHD1 | 0.08 | 0.08 |

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|---|---|---|---|
| tblVehicleEF | LHD1 | 9.9240e-003 | 9.5899e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 1.0390e-003 | 2.8596e-004 |
| tblVehicleEF | LHD1 | 8.3300e-004 | 7.2437e-004 |
| tblVehicleEF | LHD1 | 0.03 | 0.03 |
| tblVehicleEF | LHD1 | 2.4810e-003 | 2.3975e-003 |
| tblVehicleEF | LHD1 | 0.02 | 0.01 |
| tblVehicleEF | LHD1 | 9.5500e-004 | 2.6293e-004 |
| tblVehicleEF | LHD1 | 9.9300e-004 | 8.1280e-004 |
| tblVehicleEF | LHD1 | 0.12 | 0.09 |
| tblVehicleEF | LHD1 | 0.02 | 0.02 |
| tblVehicleEF | LHD1 | 6.6100e-004 | 5.3957e-004 |
| tblVehicleEF | LHD1 | 0.13 | 0.10 |
| tblVehicleEF | LHD1 | 0.34 | 0.67 |
| tblVehicleEF | LHD1 | 0.32 | 0.09 |
| tblVehicleEF | LHD1 | 9.1000e-005 | 8.8088e-005 |
| tblVehicleEF | LHD1 | 6.9880e-003 | 8.1739e-003 |
| tblVehicleEF | LHD1 | 4.0200e-004 | 1.2809e-004 |
| tblVehicleEF | LHD1 | 9.9300e-004 | 8.1280e-004 |
| tblVehicleEF | LHD1 | 0.12 | 0.09 |
| tblVehicleEF | LHD1 | 0.02 | 0.03 |
| tblVehicleEF | LHD1 | 6.6100e-004 | 5.3957e-004 |
| tblVehicleEF | LHD1 | 0.17 | 0.13 |
| tblVehicleEF | LHD1 | 0.34 | 0.67 |
| tblVehicleEF | LHD1 | 0.35 | 0.10 |
| tblVehicleEF | LHD2 | 4.1160e-003 | 4.0242e-003 |
| tblVehicleEF | LHD2 | 0.01 | 8.3490e-003 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 9.8530e-003 | 0.01 |
| tblVehicleEF | LHD2 | 0.13 | 0.15 |
| tblVehicleEF | LHD2 | 0.68 | 0.73 |
| tblVehicleEF | LHD2 | 1.50 | 0.81 |
| tblVehicleEF | LHD2 | 13.88 | 13.70 |
| tblVehicleEF | LHD2 | 730.45 | 830.37 |
| tblVehicleEF | LHD2 | 27.18 | 9.84 |
| tblVehicleEF | LHD2 | 0.11 | 0.10 |
| tblVehicleEF | LHD2 | 1.05 | 1.09 |
| tblVehicleEF | LHD2 | 0.60 | 0.25 |
| tblVehicleEF | LHD2 | 1.2410e-003 | 1.2429e-003 |
| tblVehicleEF | LHD2 | 0.09 | 0.09 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 4.7800e-004 | 1.6479e-004 |
| tblVehicleEF | LHD2 | 1.1870e-003 | 1.1892e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.04 |
| tblVehicleEF | LHD2 | 2.6580e-003 | 2.6190e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.02 |
| tblVehicleEF | LHD2 | 4.3900e-004 | 1.5152e-004 |
| tblVehicleEF | LHD2 | 9.7400e-004 | 1.2573e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.05 |
| tblVehicleEF | LHD2 | 0.01 | 0.02 |
| tblVehicleEF | LHD2 | 5.6500e-004 | 7.0081e-004 |
| tblVehicleEF | LHD2 | 0.11 | 0.11 |
| tblVehicleEF | LHD2 | 0.09 | 0.38 |
| tblVehicleEF | LHD2 | 0.13 | 0.06 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 1.3600e-004 | 1.3143e-004 |
| tblVehicleEF | LHD2 | 7.1160e-003 | 8.0471e-003 |
| tblVehicleEF | LHD2 | 2.9900e-004 | 9.7421e-005 |
| tblVehicleEF | LHD2 | 9.7400e-004 | 1.2573e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.05 |
| tblVehicleEF | LHD2 | 0.02 | 0.03 |
| tblVehicleEF | LHD2 | 5.6500e-004 | 7.0081e-004 |
| tblVehicleEF | LHD2 | 0.13 | 0.14 |
| tblVehicleEF | LHD2 | 0.09 | 0.38 |
| tblVehicleEF | LHD2 | 0.15 | 0.06 |
| tblVehicleEF | LHD2 | 4.1160e-003 | 4.0363e-003 |
| tblVehicleEF | LHD2 | 0.01 | 8.4996e-003 |
| tblVehicleEF | LHD2 | 9.2310e-003 | 0.01 |
| tblVehicleEF | LHD2 | 0.13 | 0.15 |
| tblVehicleEF | LHD2 | 0.68 | 0.75 |
| tblVehicleEF | LHD2 | 1.38 | 0.75 |
| tblVehicleEF | LHD2 | 13.88 | 13.70 |
| tblVehicleEF | LHD2 | 730.45 | 830.40 |
| tblVehicleEF | LHD2 | 27.18 | 9.73 |
| tblVehicleEF | LHD2 | 0.11 | 0.10 |
| tblVehicleEF | LHD2 | 1.00 | 1.04 |
| tblVehicleEF | LHD2 | 0.56 | 0.23 |
| tblVehicleEF | LHD2 | 1.2410e-003 | 1.2429e-003 |
| tblVehicleEF | LHD2 | 0.09 | 0.09 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 4.7800e-004 | 1.6479e-004 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 1.1870e-003 | 1.1892e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.04 |
| tblVehicleEF | LHD2 | 2.6580e-003 | 2.6190e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.02 |
| tblVehicleEF | LHD2 | 4.3900e-004 | 1.5152e-004 |
| tblVehicleEF | LHD2 | 2.4110e-003 | 3.1431e-003 |
| tblVehicleEF | LHD2 | 0.05 | 0.06 |
| tblVehicleEF | LHD2 | 0.01 | 0.02 |
| tblVehicleEF | LHD2 | 1.2260e-003 | 1.5386e-003 |
| tblVehicleEF | LHD2 | 0.11 | 0.12 |
| tblVehicleEF | LHD2 | 0.09 | 0.37 |
| tblVehicleEF | LHD2 | 0.12 | 0.06 |
| tblVehicleEF | LHD2 | 1.3600e-004 | 1.3143e-004 |
| tblVehicleEF | LHD2 | 7.1170e-003 | 8.0473e-003 |
| tblVehicleEF | LHD2 | 2.9700e-004 | 9.6272e-005 |
| tblVehicleEF | LHD2 | 2.4110e-003 | 3.1431e-003 |
| tblVehicleEF | LHD2 | 0.05 | 0.06 |
| tblVehicleEF | LHD2 | 0.02 | 0.03 |
| tblVehicleEF | LHD2 | 1.2260e-003 | 1.5386e-003 |
| tblVehicleEF | LHD2 | 0.13 | 0.14 |
| tblVehicleEF | LHD2 | 0.09 | 0.37 |
| tblVehicleEF | LHD2 | 0.14 | 0.06 |
| tblVehicleEF | LHD2 | 4.1160e-003 | 4.0148e-003 |
| tblVehicleEF | LHD2 | 9.8970e-003 | 8.2411e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.13 | 0.15 |
| tblVehicleEF | LHD2 | 0.67 | 0.73 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 1.61 | 0.87 |
| tblVehicleEF | LHD2 | 13.88 | 13.70 |
| tblVehicleEF | LHD2 | 730.45 | 830.36 |
| tblVehicleEF | LHD2 | 27.18 | 9.95 |
| tblVehicleEF | LHD2 | 0.11 | 0.10 |
| tblVehicleEF | LHD2 | 1.07 | 1.11 |
| tblVehicleEF | LHD2 | 0.63 | 0.26 |
| tblVehicleEF | LHD2 | 1.2410e-003 | 1.2429e-003 |
| tblVehicleEF | LHD2 | 0.09 | 0.09 |
| tblVehicleEF | LHD2 | 0.01 | 0.01 |
| tblVehicleEF | LHD2 | 0.02 | 0.02 |
| tblVehicleEF | LHD2 | 4.7800e-004 | 1.6479e-004 |
| tblVehicleEF | LHD2 | 1.1870e-003 | 1.1892e-003 |
| tblVehicleEF | LHD2 | 0.04 | 0.04 |
| tblVehicleEF | LHD2 | 2.6580e-003 | 2.6190e-003 |
| tblVehicleEF | LHD2 | 0.01 | 0.02 |
| tblVehicleEF | LHD2 | 4.3900e-004 | 1.5152e-004 |
| tblVehicleEF | LHD2 | 4.0600e-004 | 5.0815e-004 |
| tblVehicleEF | LHD2 | 0.05 | 0.06 |
| tblVehicleEF | LHD2 | 0.01 | 0.02 |
| tblVehicleEF | LHD2 | 2.7500e-004 | 3.3864e-004 |
| tblVehicleEF | LHD2 | 0.11 | 0.11 |
| tblVehicleEF | LHD2 | 0.10 | 0.42 |
| tblVehicleEF | LHD2 | 0.14 | 0.06 |
| tblVehicleEF | LHD2 | 1.3600e-004 | 1.3143e-004 |
| tblVehicleEF | LHD2 | 7.1160e-003 | 8.0469e-003 |
| tblVehicleEF | LHD2 | 3.0100e-004 | 9.8427e-005 |

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|---|---|---|---|
| tblVehicleEF | LHD2 | 4.0600e-004 | 5.0815e-004 |
| tblVehicleEF | LHD2 | 0.05 | 0.06 |
| tblVehicleEF | LHD2 | 0.02 | 0.03 |
| tblVehicleEF | LHD2 | 2.7500e-004 | 3.3864e-004 |
| tblVehicleEF | LHD2 | 0.13 | 0.14 |
| tblVehicleEF | LHD2 | 0.10 | 0.42 |
| tblVehicleEF | LHD2 | 0.15 | 0.07 |
| tblVehicleEF | MCY | 0.46 | 0.35 |
| tblVehicleEF | MCY | 0.17 | 0.26 |
| tblVehicleEF | MCY | 20.87 | 21.00 |
| tblVehicleEF | MCY | 10.20 | 9.04 |
| tblVehicleEF | MCY | 173.61 | 215.78 |
| tblVehicleEF | MCY | 46.69 | 62.56 |
| tblVehicleEF | MCY | 1.17 | 1.17 |
| tblVehicleEF | MCY | 0.32 | 0.27 |
| tblVehicleEF | MCY | 0.01 | 0.01 |
| tblVehicleEF | MCY | 4.0000e-003 | 4.0000e-003 |
| tblVehicleEF | MCY | 2.0730e-003 | 2.0041e-003 |
| tblVehicleEF | MCY | 4.3890e-003 | 3.4530e-003 |
| tblVehicleEF | MCY | 5.0400e-003 | 5.0400e-003 |
| tblVehicleEF | MCY | 1.0000e-003 | 1.0000e-003 |
| tblVehicleEF | MCY | 1.9430e-003 | 1.8775e-003 |
| tblVehicleEF | MCY | 4.1490e-003 | 3.2610e-003 |
| tblVehicleEF | MCY | 0.81 | 0.81 |
| tblVehicleEF | MCY | 0.78 | 0.76 |
| tblVehicleEF | MCY | 0.51 | 0.51 |
| tblVehicleEF | MCY | 2.38 | 2.39 |

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| tblVehicleEF | MCY | 0.64 | 2.38 |
| tblVehicleEF | MCY | 2.29 | 2.02 |
| tblVehicleEF | MCY | 2.1460e-003 | 2.1353e-003 |
| tblVehicleEF | MCY | 7.0100e-004 | 6.1907e-004 |
| tblVehicleEF | MCY | 0.81 | 0.81 |
| tblVehicleEF | MCY | 0.78 | 0.76 |
| tblVehicleEF | MCY | 0.51 | 0.51 |
| tblVehicleEF | MCY | 2.93 | 2.93 |
| tblVehicleEF | MCY | 0.64 | 2.38 |
| tblVehicleEF | MCY | 2.50 | 2.20 |
| tblVehicleEF | MCY | 0.44 | 0.34 |
| tblVehicleEF | MCY | 0.14 | 0.22 |
| tblVehicleEF | MCY | 19.71 | 19.84 |
| tblVehicleEF | MCY | 8.85 | 7.78 |
| tblVehicleEF | MCY | 173.61 | 213.52 |
| tblVehicleEF | MCY | 46.69 | 59.27 |
| tblVehicleEF | MCY | 1.02 | 1.03 |
| tblVehicleEF | MCY | 0.29 | 0.25 |
| tblVehicleEF | MCY | 0.01 | 0.01 |
| tblVehicleEF | MCY | 4.0000e-003 | 4.0000e-003 |
| tblVehicleEF | MCY | 2.0730e-003 | 2.0041e-003 |
| tblVehicleEF | MCY | 4.3890e-003 | 3.4530e-003 |
| tblVehicleEF | MCY | 5.0400e-003 | 5.0400e-003 |
| tblVehicleEF | MCY | 1.0000e-003 | 1.0000e-003 |
| tblVehicleEF | MCY | 1.9430e-003 | 1.8775e-003 |
| tblVehicleEF | MCY | 4.1490e-003 | 3.2610e-003 |
| tblVehicleEF | MCY | 2.38 | 2.36 |

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|---|---|---|---|
| tblVehicleEF | MCY | 1.01 | 1.00 |
| tblVehicleEF | MCY | 1.48 | 1.46 |
| tblVehicleEF | MCY | 2.27 | 2.28 |
| tblVehicleEF | MCY | 0.60 | 2.22 |
| tblVehicleEF | MCY | 1.87 | 1.63 |
| tblVehicleEF | MCY | 2.1240e-003 | 2.1130e-003 |
| tblVehicleEF | MCY | 6.6600e-004 | 5.8649e-004 |
| tblVehicleEF | MCY | 2.38 | 2.36 |
| tblVehicleEF | MCY | 1.01 | 1.00 |
| tblVehicleEF | MCY | 1.48 | 1.46 |
| tblVehicleEF | MCY | 2.79 | 2.80 |
| tblVehicleEF | MCY | 0.60 | 2.22 |
| tblVehicleEF | MCY | 2.04 | 1.78 |
| tblVehicleEF | MCY | 0.47 | 0.36 |
| tblVehicleEF | MCY | 0.20 | 0.30 |
| tblVehicleEF | MCY | 22.67 | 22.82 |
| tblVehicleEF | MCY | 11.61 | 10.35 |
| tblVehicleEF | MCY | 173.61 | 219.06 |
| tblVehicleEF | MCY | 46.69 | 65.78 |
| tblVehicleEF | MCY | 1.26 | 1.26 |
| tblVehicleEF | MCY | 0.34 | 0.29 |
| tblVehicleEF | MCY | 0.01 | 0.01 |
| tblVehicleEF | MCY | 4.0000e-003 | 4.0000e-003 |
| tblVehicleEF | MCY | 2.0730e-003 | 2.0041e-003 |
| tblVehicleEF | MCY | 4.3890e-003 | 3.4530e-003 |
| tblVehicleEF | MCY | 5.0400e-003 | 5.0400e-003 |
| tblVehicleEF | MCY | 1.0000e-003 | 1.0000e-003 |

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|---|---|---|---|
| tblVehicleEF | MCY | 1.9430e-003 | 1.8775e-003 |
| tblVehicleEF | MCY | 4.1490e-003 | 3.2610e-003 |
| tblVehicleEF | MCY | 0.21 | 0.22 |
| tblVehicleEF | MCY | 0.94 | 0.91 |
| tblVehicleEF | MCY | 0.18 | 0.18 |
| tblVehicleEF | MCY | 2.49 | 2.50 |
| tblVehicleEF | MCY | 0.75 | 2.80 |
| tblVehicleEF | MCY | 2.67 | 2.37 |
| tblVehicleEF | MCY | 2.1780e-003 | 2.1677e-003 |
| tblVehicleEF | MCY | 7.3600e-004 | 6.5099e-004 |
| tblVehicleEF | MCY | 0.21 | 0.22 |
| tblVehicleEF | MCY | 0.94 | 0.91 |
| tblVehicleEF | MCY | 0.18 | 0.18 |
| tblVehicleEF | MCY | 3.06 | 3.07 |
| tblVehicleEF | MCY | 0.75 | 2.80 |
| tblVehicleEF | MCY | 2.90 | 2.58 |
| tblVehicleEF | MDV | 0.01 | 5.2508e-003 |
| tblVehicleEF | MDV | 0.02 | 0.10 |
| tblVehicleEF | MDV | 1.32 | 1.05 |
| tblVehicleEF | MDV | 3.54 | 3.66 |
| tblVehicleEF | MDV | 487.41 | 410.84 |
| tblVehicleEF | MDV | 108.69 | 88.42 |
| tblVehicleEF | MDV | 0.17 | 0.11 |
| tblVehicleEF | MDV | 0.32 | 0.42 |
| tblVehicleEF | MDV | 0.04 | 0.04 |
| tblVehicleEF | MDV | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | MDV | 1.9640e-003 | 1.7443e-003 |

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|---|---|---|---|
| tblVehicleEF | MDV | 2.6470e-003 | 2.1974e-003 |
| tblVehicleEF | MDV | 0.02 | 0.02 |
| tblVehicleEF | MDV | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | MDV | 1.8120e-003 | 1.6092e-003 |
| tblVehicleEF | MDV | 2.4360e-003 | 2.0220e-003 |
| tblVehicleEF | MDV | 0.06 | 0.07 |
| tblVehicleEF | MDV | 0.19 | 0.16 |
| tblVehicleEF | MDV | 0.06 | 0.07 |
| tblVehicleEF | MDV | 0.03 | 0.02 |
| tblVehicleEF | MDV | 0.10 | 0.51 |
| tblVehicleEF | MDV | 0.28 | 0.50 |
| tblVehicleEF | MDV | 4.8830e-003 | 4.0615e-003 |
| tblVehicleEF | MDV | 1.1500e-003 | 8.7500e-004 |
| tblVehicleEF | MDV | 0.06 | 0.07 |
| tblVehicleEF | MDV | 0.19 | 0.16 |
| tblVehicleEF | MDV | 0.06 | 0.07 |
| tblVehicleEF | MDV | 0.05 | 0.03 |
| tblVehicleEF | MDV | 0.10 | 0.51 |
| tblVehicleEF | MDV | 0.30 | 0.55 |
| tblVehicleEF | MDV | 0.01 | 5.8683e-003 |
| tblVehicleEF | MDV | 0.02 | 0.08 |
| tblVehicleEF | MDV | 1.52 | 1.22 |
| tblVehicleEF | MDV | 2.73 | 2.79 |
| tblVehicleEF | MDV | 525.13 | 432.89 |
| tblVehicleEF | MDV | 108.69 | 86.72 |
| tblVehicleEF | MDV | 0.15 | 0.10 |
| tblVehicleEF | MDV | 0.28 | 0.37 |

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|---|---|---|---|
| tblVehicleEF | MDV | 0.04 | 0.04 |
| tblVehicleEF | MDV | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | MDV | 1.9640e-003 | 1.7443e-003 |
| tblVehicleEF | MDV | 2.6470e-003 | 2.1974e-003 |
| tblVehicleEF | MDV | 0.02 | 0.02 |
| tblVehicleEF | MDV | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | MDV | 1.8120e-003 | 1.6092e-003 |
| tblVehicleEF | MDV | 2.4360e-003 | 2.0220e-003 |
| tblVehicleEF | MDV | 0.15 | 0.18 |
| tblVehicleEF | MDV | 0.21 | 0.17 |
| tblVehicleEF | MDV | 0.13 | 0.16 |
| tblVehicleEF | MDV | 0.04 | 0.03 |
| tblVehicleEF | MDV | 0.10 | 0.47 |
| tblVehicleEF | MDV | 0.22 | 0.41 |
| tblVehicleEF | MDV | 5.2630e-003 | 4.2797e-003 |
| tblVehicleEF | MDV | 1.1350e-003 | 8.5821e-004 |
| tblVehicleEF | MDV | 0.15 | 0.18 |
| tblVehicleEF | MDV | 0.21 | 0.17 |
| tblVehicleEF | MDV | 0.13 | 0.16 |
| tblVehicleEF | MDV | 0.05 | 0.04 |
| tblVehicleEF | MDV | 0.10 | 0.47 |
| tblVehicleEF | MDV | 0.25 | 0.44 |
| tblVehicleEF | MDV | 0.01 | 5.1208e-003 |
| tblVehicleEF | MDV | 0.02 | 0.11 |
| tblVehicleEF | MDV | 1.32 | 1.05 |
| tblVehicleEF | MDV | 4.14 | 4.30 |
| tblVehicleEF | MDV | 483.64 | 408.67 |

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|---|---|---|---|
| tblVehicleEF | MDV | 108.69 | 89.65 |
| tblVehicleEF | MDV | 0.19 | 0.12 |
| tblVehicleEF | MDV | 0.35 | 0.46 |
| tblVehicleEF | MDV | 0.04 | 0.04 |
| tblVehicleEF | MDV | 8.0000e-003 | 8.0000e-003 |
| tblVehicleEF | MDV | 1.9640e-003 | 1.7443e-003 |
| tblVehicleEF | MDV | 2.6470e-003 | 2.1974e-003 |
| tblVehicleEF | MDV | 0.02 | 0.02 |
| tblVehicleEF | MDV | 2.0000e-003 | 2.0000e-003 |
| tblVehicleEF | MDV | 1.8120e-003 | 1.6092e-003 |
| tblVehicleEF | MDV | 2.4360e-003 | 2.0220e-003 |
| tblVehicleEF | MDV | 0.03 | 0.03 |
| tblVehicleEF | MDV | 0.19 | 0.17 |
| tblVehicleEF | MDV | 0.03 | 0.04 |
| tblVehicleEF | MDV | 0.03 | 0.02 |
| tblVehicleEF | MDV | 0.13 | 0.61 |
| tblVehicleEF | MDV | 0.31 | 0.57 |
| tblVehicleEF | MDV | 4.8460e-003 | 4.0400e-003 |
| tblVehicleEF | MDV | 1.1600e-003 | 8.8716e-004 |
| tblVehicleEF | MDV | 0.03 | 0.03 |
| tblVehicleEF | MDV | 0.19 | 0.17 |
| tblVehicleEF | MDV | 0.03 | 0.04 |
| tblVehicleEF | MDV | 0.05 | 0.03 |
| tblVehicleEF | MDV | 0.13 | 0.61 |
| tblVehicleEF | MDV | 0.34 | 0.62 |
| tblVehicleEF | MH | 0.05 | 0.01 |
| tblVehicleEF | MH | 0.03 | 0.03 |

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|---|---|---|---|
| tblVehicleEF | MH | 3.26 | 1.63 |
| tblVehicleEF | MH | 7.19 | 2.42 |
| tblVehicleEF | MH | 1,225.73 | 1,592.37 |
| tblVehicleEF | MH | 60.63 | 20.18 |
| tblVehicleEF | MH | 1.51 | 1.40 |
| tblVehicleEF | MH | 0.97 | 0.25 |
| tblVehicleEF | MH | 0.13 | 0.13 |
| tblVehicleEF | MH | 0.01 | 0.01 |
| tblVehicleEF | MH | 0.03 | 0.02 |
| tblVehicleEF | MH | 1.3530e-003 | 3.1802e-004 |
| tblVehicleEF | MH | 0.06 | 0.06 |
| tblVehicleEF | MH | 3.2060e-003 | 3.2481e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.2440e-003 | 2.9241e-004 |
| tblVehicleEF | MH | 0.92 | 0.75 |
| tblVehicleEF | MH | 0.09 | 0.07 |
| tblVehicleEF | MH | 0.34 | 0.28 |
| tblVehicleEF | MH | 0.13 | 0.09 |
| tblVehicleEF | MH | 0.02 | 1.75 |
| tblVehicleEF | MH | 0.41 | 0.11 |
| tblVehicleEF | MH | 0.01 | 0.02 |
| tblVehicleEF | MH | 7.3100e-004 | 1.9966e-004 |
| tblVehicleEF | MH | 0.92 | 0.75 |
| tblVehicleEF | MH | 0.09 | 0.07 |
| tblVehicleEF | MH | 0.34 | 0.28 |
| tblVehicleEF | MH | 0.19 | 0.12 |
| tblVehicleEF | MH | 0.02 | 1.75 |

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|---|---|---|---|
| tblVehicleEF | MH | 0.45 | 0.12 |
| tblVehicleEF | MH | 0.05 | 0.01 |
| tblVehicleEF | MH | 0.03 | 0.02 |
| tblVehicleEF | MH | 3.42 | 1.71 |
| tblVehicleEF | MH | 6.44 | 2.19 |
| tblVehicleEF | MH | 1,225.73 | 1,592.50 |
| tblVehicleEF | MH | 60.63 | 19.77 |
| tblVehicleEF | MH | 1.40 | 1.32 |
| tblVehicleEF | MH | 0.90 | 0.23 |
| tblVehicleEF | MH | 0.13 | 0.13 |
| tblVehicleEF | MH | 0.01 | 0.01 |
| tblVehicleEF | MH | 0.03 | 0.02 |
| tblVehicleEF | MH | 1.3530e-003 | 3.1802e-004 |
| tblVehicleEF | MH | 0.06 | 0.06 |
| tblVehicleEF | MH | 3.2060e-003 | 3.2481e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.2440e-003 | 2.9241e-004 |
| tblVehicleEF | MH | 2.30 | 1.88 |
| tblVehicleEF | MH | 0.10 | 0.08 |
| tblVehicleEF | MH | 0.77 | 0.62 |
| tblVehicleEF | MH | 0.14 | 0.09 |
| tblVehicleEF | MH | 0.02 | 1.70 |
| tblVehicleEF | MH | 0.38 | 0.10 |
| tblVehicleEF | MH | 0.01 | 0.02 |
| tblVehicleEF | MH | 7.1900e-004 | 1.9566e-004 |
| tblVehicleEF | MH | 2.30 | 1.88 |
| tblVehicleEF | MH | 0.10 | 0.08 |

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|---|---|---|---|
| tblVehicleEF | MH | 0.77 | 0.62 |
| tblVehicleEF | MH | 0.20 | 0.12 |
| tblVehicleEF | MH | 0.02 | 1.70 |
| tblVehicleEF | MH | 0.41 | 0.11 |
| tblVehicleEF | MH | 0.04 | 0.01 |
| tblVehicleEF | MH | 0.03 | 0.03 |
| tblVehicleEF | MH | 3.15 | 1.58 |
| tblVehicleEF | MH | 7.82 | 2.61 |
| tblVehicleEF | MH | 1,225.73 | 1,592.29 |
| tblVehicleEF | MH | 60.63 | 20.49 |
| tblVehicleEF | MH | 1.56 | 1.44 |
| tblVehicleEF | MH | 1.03 | 0.27 |
| tblVehicleEF | MH | 0.13 | 0.13 |
| tblVehicleEF | MH | 0.01 | 0.01 |
| tblVehicleEF | MH | 0.03 | 0.02 |
| tblVehicleEF | MH | 1.3530e-003 | 3.1802e-004 |
| tblVehicleEF | MH | 0.06 | 0.06 |
| tblVehicleEF | MH | 3.2060e-003 | 3.2481e-003 |
| tblVehicleEF | MH | 0.02 | 0.02 |
| tblVehicleEF | MH | 1.2440e-003 | 2.9241e-004 |
| tblVehicleEF | MH | 0.33 | 0.28 |
| tblVehicleEF | MH | 0.11 | 0.08 |
| tblVehicleEF | MH | 0.16 | 0.14 |
| tblVehicleEF | MH | 0.13 | 0.08 |
| tblVehicleEF | MH | 0.02 | 1.88 |
| tblVehicleEF | MH | 0.43 | 0.11 |
| tblVehicleEF | MH | 0.01 | 0.02 |

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| tblVehicleEF | MH | 0.33 | 0.28 |
| tblVehicleEF | MH | 0.11 | 0.08 |
| tblVehicleEF | MH | 0.16 | 0.14 |
| tblVehicleEF | MH | 0.18 | 0.11 |
| tblVehicleEF | MH | 0.02 | 1.88 |
| tblVehicleEF | MH | 0.47 | 0.13 |
| tblVehicleEF | MHD | 0.02 | 2.8223e-003 |
| tblVehicleEF | MHD | 5.4870e-003 | 8.9501e-003 |
| tblVehicleEF | MHD | 0.06 | 7.7051e-003 |
| tblVehicleEF | MHD | 0.33 | 0.35 |
| tblVehicleEF | MHD | 0.40 | 0.64 |
| tblVehicleEF | MHD | 5.81 | 0.94 |
| tblVehicleEF | MHD | 166.87 | 77.35 |
| tblVehicleEF | MHD | 1,201.02 | 1,127.39 |
| tblVehicleEF | MHD | 48.75 | 7.36 |
| tblVehicleEF | MHD | 0.70 | 0.65 |
| tblVehicleEF | MHD | 1.61 | 2.69 |
| tblVehicleEF | MHD | 12.71 | 1.28 |
| tblVehicleEF | MHD | 9.2500e-004 | 1.9016e-003 |
| tblVehicleEF | MHD | 0.13 | 0.13 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 6.9640e-003 | 0.07 |
| tblVehicleEF | MHD | 7.6000e-004 | 8.7221e-005 |
| tblVehicleEF | MHD | 8.8500e-004 | 1.8193e-003 |
| tblVehicleEF | MHD | 0.06 | 0.06 |
| tblVehicleEF | MHD | 3.0000e-003 | 3.0000e-003 |

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| tblVehicleEF | MHD | 6.6590e-003 | 0.06 |
| tblVehicleEF | MHD | 6.9900e-004 | 8.0197e-005 |
| tblVehicleEF | MHD | 8.1200e-004 | 3.1917e-004 |
| tblVehicleEF | MHD | 0.04 | 0.02 |
| tblVehicleEF | MHD | 0.02 | 0.02 |
| tblVehicleEF | MHD | 4.5300e-004 | 1.7902e-004 |
| tblVehicleEF | MHD | 0.06 | 0.17 |
| tblVehicleEF | MHD | 0.02 | 0.10 |
| tblVehicleEF | MHD | 0.35 | 0.04 |
| tblVehicleEF | MHD | 1.6020e-003 | 7.3300e-004 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 5.8900e-004 | 7.2869e-005 |
| tblVehicleEF | MHD | 8.1200e-004 | 3.1917e-004 |
| tblVehicleEF | MHD | 0.04 | 0.02 |
| tblVehicleEF | MHD | 0.03 | 0.02 |
| tblVehicleEF | MHD | 4.5300e-004 | 1.7902e-004 |
| tblVehicleEF | MHD | 0.07 | 0.19 |
| tblVehicleEF | MHD | 0.02 | 0.10 |
| tblVehicleEF | MHD | 0.38 | 0.05 |
| tblVehicleEF | MHD | 0.02 | 2.6595e-003 |
| tblVehicleEF | MHD | 5.6090e-003 | 9.0138e-003 |
| tblVehicleEF | MHD | 0.06 | 7.1985e-003 |
| tblVehicleEF | MHD | 0.23 | 0.29 |
| tblVehicleEF | MHD | 0.41 | 0.64 |
| tblVehicleEF | MHD | 5.29 | 0.86 |
| tblVehicleEF | MHD | 176.89 | 78.54 |
| tblVehicleEF | MHD | 1,201.02 | 1,127.40 |

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| tblVehicleEF | MHD | 48.75 | 7.22 |
| tblVehicleEF | MHD | 0.72 | 0.66 |
| tblVehicleEF | MHD | 1.54 | 2.58 |
| tblVehicleEF | MHD | 12.64 | 1.28 |
| tblVehicleEF | MHD | 7.7900e-004 | 1.6060e-003 |
| tblVehicleEF | MHD | 0.13 | 0.13 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 6.9640e-003 | 0.07 |
| tblVehicleEF | MHD | 7.6000e-004 | 8.7221e-005 |
| tblVehicleEF | MHD | 7.4600e-004 | 1.5365e-003 |
| tblVehicleEF | MHD | 0.06 | 0.06 |
| tblVehicleEF | MHD | 3.0000e-003 | 3.0000e-003 |
| tblVehicleEF | MHD | 6.6590e-003 | 0.06 |
| tblVehicleEF | MHD | 6.9900e-004 | 8.0197e-005 |
| tblVehicleEF | MHD | 2.0880e-003 | 8.1830e-004 |
| tblVehicleEF | MHD | 0.05 | 0.02 |
| tblVehicleEF | MHD | 0.02 | 0.02 |
| tblVehicleEF | MHD | 1.0460e-003 | 4.1175e-004 |
| tblVehicleEF | MHD | 0.06 | 0.17 |
| tblVehicleEF | MHD | 0.02 | 0.09 |
| tblVehicleEF | MHD | 0.32 | 0.04 |
| tblVehicleEF | MHD | 1.6970e-003 | 7.4440e-004 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 5.8000e-004 | 7.1437e-005 |
| tblVehicleEF | MHD | 2.0880e-003 | 8.1830e-004 |
| tblVehicleEF | MHD | 0.05 | 0.02 |
| tblVehicleEF | MHD | 0.03 | 0.02 |

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|---|---|---|---|
| tblVehicleEF | MHD | 1.0460e-003 | 4.1175e-004 |
| tblVehicleEF | MHD | 0.07 | 0.19 |
| tblVehicleEF | MHD | 0.02 | 0.09 |
| tblVehicleEF | MHD | 0.36 | 0.04 |
| tblVehicleEF | MHD | 0.02 | 2.9878e-003 |
| tblVehicleEF | MHD | 5.4030e-003 | 8.9062e-003 |
| tblVehicleEF | MHD | 0.06 | 8.0831e-003 |
| tblVehicleEF | MHD | 0.44 | 0.41 |
| tblVehicleEF | MHD | 0.40 | 0.63 |
| tblVehicleEF | MHD | 6.26 | 1.01 |
| tblVehicleEF | MHD | 153.32 | 75.80 |
| tblVehicleEF | MHD | 1,201.02 | 1,127.38 |
| tblVehicleEF | MHD | 48.75 | 7.48 |
| tblVehicleEF | MHD | 0.67 | 0.64 |
| tblVehicleEF | MHD | 1.64 | 2.74 |
| tblVehicleEF | MHD | 12.76 | 1.29 |
| tblVehicleEF | MHD | 1.1250e-003 | 2.3098e-003 |
| tblVehicleEF | MHD | 0.13 | 0.13 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 6.9640e-003 | 0.07 |
| tblVehicleEF | MHD | 7.6000e-004 | 8.7221e-005 |
| tblVehicleEF | MHD | 1.0760e-003 | 2.2099e-003 |
| tblVehicleEF | MHD | 0.06 | 0.06 |
| tblVehicleEF | MHD | 3.0000e-003 | 3.0000e-003 |
| tblVehicleEF | MHD | 6.6590e-003 | 0.06 |
| tblVehicleEF | MHD | 6.9900e-004 | 8.0197e-005 |
| tblVehicleEF | MHD | 3.1300e-004 | 1.2487e-004 |

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|---|---|---|---|
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| tblVehicleEF | MHD | 0.03 | 0.02 |
| tblVehicleEF | MHD | 2.0700e-004 | 8.2750e-005 |
| tblVehicleEF | MHD | 0.06 | 0.17 |
| tblVehicleEF | MHD | 0.02 | 0.11 |
| tblVehicleEF | MHD | 0.37 | 0.04 |
| tblVehicleEF | MHD | 1.4740e-003 | 7.1822e-004 |
| tblVehicleEF | MHD | 0.01 | 0.01 |
| tblVehicleEF | MHD | 5.9700e-004 | 7.4066e-005 |
| tblVehicleEF | MHD | 3.1300e-004 | 1.2487e-004 |
| tblVehicleEF | MHD | 0.04 | 0.02 |
| tblVehicleEF | MHD | 0.04 | 0.03 |
| tblVehicleEF | MHD | 2.0700e-004 | 8.2750e-005 |
| tblVehicleEF | MHD | 0.07 | 0.19 |
| tblVehicleEF | MHD | 0.02 | 0.11 |
| tblVehicleEF | MHD | 0.40 | 0.05 |
| tblVehicleEF | OBUS | 0.01 | 8.9899e-003 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 0.03 | 0.02 |
| tblVehicleEF | OBUS | 0.28 | 0.57 |
| tblVehicleEF | OBUS | 0.76 | 1.32 |
| tblVehicleEF | OBUS | 6.54 | 2.68 |
| tblVehicleEF | OBUS | 118.46 | 87.89 |
| tblVehicleEF | OBUS | 1,314.57 | 1,544.17 |
| tblVehicleEF | OBUS | 66.78 | 20.49 |
| tblVehicleEF | OBUS | 0.63 | 0.56 |
| tblVehicleEF | OBUS | 1.93 | 2.17 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 3.21 | 0.63 |
| tblVehicleEF | OBUS | 2.1800e-004 | 2.2358e-003 |
| tblVehicleEF | OBUS | 0.13 | 0.13 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 8.9260e-003 | 0.05 |
| tblVehicleEF | OBUS | 8.3000e-004 | 1.9273e-004 |
| tblVehicleEF | OBUS | 2.0900e-004 | 2.1391e-003 |
| tblVehicleEF | OBUS | 0.06 | 0.06 |
| tblVehicleEF | OBUS | 3.0000e-003 | 3.0000e-003 |
| tblVehicleEF | OBUS | 8.5210e-003 | 0.04 |
| tblVehicleEF | OBUS | 7.6300e-004 | 1.7721e-004 |
| tblVehicleEF | OBUS | 1.2660e-003 | 1.4406e-003 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.04 | 0.06 |
| tblVehicleEF | OBUS | 5.8000e-004 | 6.6731e-004 |
| tblVehicleEF | OBUS | 0.08 | 0.16 |
| tblVehicleEF | OBUS | 0.04 | 0.26 |
| tblVehicleEF | OBUS | 0.40 | 0.12 |
| tblVehicleEF | OBUS | 1.1420e-003 | 8.3686e-004 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 7.8200e-004 | 2.0279e-004 |
| tblVehicleEF | OBUS | 1.2660e-003 | 1.4406e-003 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.06 | 0.08 |
| tblVehicleEF | OBUS | 5.8000e-004 | 6.6731e-004 |
| tblVehicleEF | OBUS | 0.10 | 0.19 |
| tblVehicleEF | OBUS | 0.04 | 0.26 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 0.44 | 0.14 |
| tblVehicleEF | OBUS | 0.01 | 9.0176e-003 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 0.03 | 0.02 |
| tblVehicleEF | OBUS | 0.27 | 0.54 |
| tblVehicleEF | OBUS | 0.78 | 1.36 |
| tblVehicleEF | OBUS | 5.90 | 2.42 |
| tblVehicleEF | OBUS | 124.53 | 88.55 |
| tblVehicleEF | OBUS | 1,314.57 | 1,544.24 |
| tblVehicleEF | OBUS | 66.78 | 20.05 |
| tblVehicleEF | OBUS | 0.65 | 0.56 |
| tblVehicleEF | OBUS | 1.84 | 2.06 |
| tblVehicleEF | OBUS | 3.13 | 0.61 |
| tblVehicleEF | OBUS | 1.8400e-004 | 1.8892e-003 |
| tblVehicleEF | OBUS | 0.13 | 0.13 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 8.9260e-003 | 0.05 |
| tblVehicleEF | OBUS | 8.3000e-004 | 1.9273e-004 |
| tblVehicleEF | OBUS | 1.7600e-004 | 1.8074e-003 |
| tblVehicleEF | OBUS | 0.06 | 0.06 |
| tblVehicleEF | OBUS | 3.0000e-003 | 3.0000e-003 |
| tblVehicleEF | OBUS | 8.5210e-003 | 0.04 |
| tblVehicleEF | OBUS | 7.6300e-004 | 1.7721e-004 |
| tblVehicleEF | OBUS | 3.0990e-003 | 3.4905e-003 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.04 | 0.06 |
| tblVehicleEF | OBUS | 1.2910e-003 | 1.4571e-003 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 0.08 | 0.16 |
| tblVehicleEF | OBUS | 0.04 | 0.25 |
| tblVehicleEF | OBUS | 0.37 | 0.12 |
| tblVehicleEF | OBUS | 1.2000e-003 | 8.4308e-004 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 7.7100e-004 | 1.9841e-004 |
| tblVehicleEF | OBUS | 3.0990e-003 | 3.4905e-003 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.05 | 0.08 |
| tblVehicleEF | OBUS | 1.2910e-003 | 1.4571e-003 |
| tblVehicleEF | OBUS | 0.10 | 0.20 |
| tblVehicleEF | OBUS | 0.04 | 0.25 |
| tblVehicleEF | OBUS | 0.41 | 0.13 |
| tblVehicleEF | OBUS | 0.01 | 8.9698e-003 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 0.03 | 0.03 |
| tblVehicleEF | OBUS | 0.31 | 0.60 |
| tblVehicleEF | OBUS | 0.74 | 1.30 |
| tblVehicleEF | OBUS | 7.04 | 2.88 |
| tblVehicleEF | OBUS | 110.09 | 86.98 |
| tblVehicleEF | OBUS | 1,314.57 | 1,544.12 |
| tblVehicleEF | OBUS | 66.78 | 20.84 |
| tblVehicleEF | OBUS | 0.60 | 0.56 |
| tblVehicleEF | OBUS | 1.97 | 2.22 |
| tblVehicleEF | OBUS | 3.28 | 0.64 |
| tblVehicleEF | OBUS | 2.6600e-004 | 2.7145e-003 |
| tblVehicleEF | OBUS | 0.13 | 0.13 |

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|---|---|---|---|
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 8.9260e-003 | 0.05 |
| tblVehicleEF | OBUS | 8.3000e-004 | 1.9273e-004 |
| tblVehicleEF | OBUS | 2.5400e-004 | 2.5971e-003 |
| tblVehicleEF | OBUS | 0.06 | 0.06 |
| tblVehicleEF | OBUS | 3.0000e-003 | 3.0000e-003 |
| tblVehicleEF | OBUS | 8.5210e-003 | 0.04 |
| tblVehicleEF | OBUS | 7.6300e-004 | 1.7721e-004 |
| tblVehicleEF | OBUS | 5.6700e-004 | 6.5282e-004 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.04 | 0.06 |
| tblVehicleEF | OBUS | 2.9300e-004 | 3.3897e-004 |
| tblVehicleEF | OBUS | 0.08 | 0.16 |
| tblVehicleEF | OBUS | 0.04 | 0.28 |
| tblVehicleEF | OBUS | 0.42 | 0.13 |
| tblVehicleEF | OBUS | 1.0620e-003 | 8.2826e-004 |
| tblVehicleEF | OBUS | 0.01 | 0.01 |
| tblVehicleEF | OBUS | 7.9100e-004 | 2.0620e-004 |
| tblVehicleEF | OBUS | 5.6700e-004 | 6.5282e-004 |
| tblVehicleEF | OBUS | 0.02 | 0.02 |
| tblVehicleEF | OBUS | 0.06 | 0.08 |
| tblVehicleEF | OBUS | 2.9300e-004 | 3.3897e-004 |
| tblVehicleEF | OBUS | 0.10 | 0.19 |
| tblVehicleEF | OBUS | 0.04 | 0.28 |
| tblVehicleEF | OBUS | 0.46 | 0.14 |
| tblVehicleEF | SBUS | 0.87 | 0.05 |
| tblVehicleEF | SBUS | 0.02 | 4.7039e-003 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 0.08 | 4.8564e-003 |
| tblVehicleEF | SBUS | 10.38 | 2.32 |
| tblVehicleEF | SBUS | 1.28 | 0.37 |
| tblVehicleEF | SBUS | 12.16 | 0.71 |
| tblVehicleEF | SBUS | 1,009.61 | 340.28 |
| tblVehicleEF | SBUS | 958.51 | 1,027.75 |
| tblVehicleEF | SBUS | 69.65 | 4.04 |
| tblVehicleEF | SBUS | 7.54 | 3.07 |
| tblVehicleEF | SBUS | 3.37 | 4.06 |
| tblVehicleEF | SBUS | 9.90 | 1.05 |
| tblVehicleEF | SBUS | 8.0770e-003 | 3.4065e-003 |
| tblVehicleEF | SBUS | 0.74 | 0.74 |
| tblVehicleEF | SBUS | 9.9090e-003 | 0.01 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 1.2190e-003 | 5.2308e-005 |
| tblVehicleEF | SBUS | 7.7280e-003 | 3.2591e-003 |
| tblVehicleEF | SBUS | 0.32 | 0.32 |
| tblVehicleEF | SBUS | 2.4770e-003 | 2.7007e-003 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 1.1200e-003 | 4.8096e-005 |
| tblVehicleEF | SBUS | 3.0530e-003 | 2.5129e-004 |
| tblVehicleEF | SBUS | 0.04 | 2.5442e-003 |
| tblVehicleEF | SBUS | 1.26 | 0.25 |
| tblVehicleEF | SBUS | 1.3650e-003 | 1.1878e-004 |
| tblVehicleEF | SBUS | 0.11 | 0.06 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 0.60 | 0.03 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 9.9930e-003 | 3.2390e-003 |
| tblVehicleEF | SBUS | 9.3140e-003 | 9.8225e-003 |
| tblVehicleEF | SBUS | 9.0600e-004 | 3.9941e-005 |
| tblVehicleEF | SBUS | 3.0530e-003 | 2.5129e-004 |
| tblVehicleEF | SBUS | 0.04 | 2.5442e-003 |
| tblVehicleEF | SBUS | 1.82 | 0.36 |
| tblVehicleEF | SBUS | 1.3650e-003 | 1.1878e-004 |
| tblVehicleEF | SBUS | 0.14 | 0.08 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 0.65 | 0.03 |
| tblVehicleEF | SBUS | 0.87 | 0.05 |
| tblVehicleEF | SBUS | 0.02 | 4.7843e-003 |
| tblVehicleEF | SBUS | 0.06 | 4.0137e-003 |
| tblVehicleEF | SBUS | 10.29 | 2.29 |
| tblVehicleEF | SBUS | 1.32 | 0.38 |
| tblVehicleEF | SBUS | 8.68 | 0.51 |
| tblVehicleEF | SBUS | 1,049.18 | 346.85 |
| tblVehicleEF | SBUS | 958.51 | 1,027.76 |
| tblVehicleEF | SBUS | 69.65 | 3.70 |
| tblVehicleEF | SBUS | 7.78 | 3.12 |
| tblVehicleEF | SBUS | 3.22 | 3.89 |
| tblVehicleEF | SBUS | 9.83 | 1.05 |
| tblVehicleEF | SBUS | 6.8090e-003 | 2.8803e-003 |
| tblVehicleEF | SBUS | 0.74 | 0.74 |
| tblVehicleEF | SBUS | 9.9090e-003 | 0.01 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 1.2190e-003 | 5.2308e-005 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 6.5150e-003 | 2.7557e-003 |
| tblVehicleEF | SBUS | 0.32 | 0.32 |
| tblVehicleEF | SBUS | 2.4770e-003 | 2.7007e-003 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 1.1200e-003 | 4.8096e-005 |
| tblVehicleEF | SBUS | 7.5040e-003 | 6.2684e-004 |
| tblVehicleEF | SBUS | 0.04 | 2.6828e-003 |
| tblVehicleEF | SBUS | 1.26 | 0.25 |
| tblVehicleEF | SBUS | 3.0720e-003 | 2.7690e-004 |
| tblVehicleEF | SBUS | 0.11 | 0.07 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 0.49 | 0.02 |
| tblVehicleEF | SBUS | 0.01 | 3.3010e-003 |
| tblVehicleEF | SBUS | 9.3150e-003 | 9.8226e-003 |
| tblVehicleEF | SBUS | 8.4800e-004 | 3.6592e-005 |
| tblVehicleEF | SBUS | 7.5040e-003 | 6.2684e-004 |
| tblVehicleEF | SBUS | 0.04 | 2.6828e-003 |
| tblVehicleEF | SBUS | 1.82 | 0.36 |
| tblVehicleEF | SBUS | 3.0720e-003 | 2.7690e-004 |
| tblVehicleEF | SBUS | 0.14 | 0.08 |
| tblVehicleEF | SBUS | 0.01 | 0.01 |
| tblVehicleEF | SBUS | 0.54 | 0.02 |
| tblVehicleEF | SBUS | 0.87 | 0.05 |
| tblVehicleEF | SBUS | 0.02 | 4.6472e-003 |
| tblVehicleEF | SBUS | 0.09 | 5.4973e-003 |
| tblVehicleEF | SBUS | 10.51 | 2.37 |
| tblVehicleEF | SBUS | 1.25 | 0.37 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 15.15 | 0.89 |
| tblVehicleEF | SBUS | 954.96 | 331.22 |
| tblVehicleEF | SBUS | 958.51 | 1,027.74 |
| tblVehicleEF | SBUS | 69.65 | 4.32 |
| tblVehicleEF | SBUS | 7.21 | 3.00 |
| tblVehicleEF | SBUS | 3.45 | 4.13 |
| tblVehicleEF | SBUS | 9.95 | 1.05 |
| tblVehicleEF | SBUS | 9.8280e-003 | 4.1332e-003 |
| tblVehicleEF | SBUS | 0.74 | 0.74 |
| tblVehicleEF | SBUS | 9.9090e-003 | 0.01 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 1.2190e-003 | 5.2308e-005 |
| tblVehicleEF | SBUS | 9.4030e-003 | 3.9544e-003 |
| tblVehicleEF | SBUS | 0.32 | 0.32 |
| tblVehicleEF | SBUS | 2.4770e-003 | 2.7007e-003 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 1.1200e-003 | 4.8096e-005 |
| tblVehicleEF | SBUS | 1.3560e-003 | 1.1191e-004 |
| tblVehicleEF | SBUS | 0.04 | 2.6044e-003 |
| tblVehicleEF | SBUS | 1.26 | 0.25 |
| tblVehicleEF | SBUS | 6.9700e-004 | 5.8670e-005 |
| tblVehicleEF | SBUS | 0.11 | 0.06 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 0.67 | 0.03 |
| tblVehicleEF | SBUS | 9.4720e-003 | 3.1533e-003 |
| tblVehicleEF | SBUS | 9.3140e-003 | 9.8224e-003 |
| tblVehicleEF | SBUS | 9.5500e-004 | 4.2798e-005 |

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|---|---|---|---|
| tblVehicleEF | SBUS | 1.3560e-003 | 1.1191e-004 |
| tblVehicleEF | SBUS | 0.04 | 2.6044e-003 |
| tblVehicleEF | SBUS | 1.83 | 0.36 |
| tblVehicleEF | SBUS | 6.9700e-004 | 5.8670e-005 |
| tblVehicleEF | SBUS | 0.14 | 0.08 |
| tblVehicleEF | SBUS | 0.02 | 0.02 |
| tblVehicleEF | SBUS | 0.74 | 0.03 |
| tblVehicleEF | UBUS | 0.27 | 0.97 |
| tblVehicleEF | UBUS | 0.04 | 1.0774e-003 |
| tblVehicleEF | UBUS | 6.86 | 6.83 |
| tblVehicleEF | UBUS | 7.11 | 0.08 |
| tblVehicleEF | UBUS | 2,250.71 | 1,683.31 |
| tblVehicleEF | UBUS | 66.08 | 0.87 |
| tblVehicleEF | UBUS | 16.97 | 1.44 |
| tblVehicleEF | UBUS | 17.26 | 9.1687e-003 |
| tblVehicleEF | UBUS | 0.69 | 0.07 |
| tblVehicleEF | UBUS | 0.01 | 0.03 |
| tblVehicleEF | UBUS | 0.36 | 6.0081e-003 |
| tblVehicleEF | UBUS | 7.6900e-004 | 5.4796e-006 |
| tblVehicleEF | UBUS | 0.29 | 0.03 |
| tblVehicleEF | UBUS | 3.0000e-003 | 7.8871e-003 |
| tblVehicleEF | UBUS | 0.34 | 5.7478e-003 |
| tblVehicleEF | UBUS | 7.0700e-004 | 5.0383e-006 |
| tblVehicleEF | UBUS | 2.2290e-003 | 4.2534e-005 |
| tblVehicleEF | UBUS | 0.05 | 6.1603e-004 |
| tblVehicleEF | UBUS | 1.0690e-003 | 2.7430e-005 |
| tblVehicleEF | UBUS | 0.87 | 0.01 |

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|---|---|---|---|
| tblVehicleEF | UBUS | 0.01 | 3.6658e-003 |
| tblVehicleEF | UBUS | 0.53 | 4.6816e-003 |
| tblVehicleEF | UBUS | 0.02 | 0.01 |
| tblVehicleEF | UBUS | 7.8900e-004 | 8.6268e-006 |
| tblVehicleEF | UBUS | 2.2290e-003 | 4.2534e-005 |
| tblVehicleEF | UBUS | 0.05 | 6.1603e-004 |
| tblVehicleEF | UBUS | 1.0690e-003 | 2.7430e-005 |
| tblVehicleEF | UBUS | 1.22 | 0.99 |
| tblVehicleEF | UBUS | 0.01 | 3.6658e-003 |
| tblVehicleEF | UBUS | 0.58 | 5.1257e-003 |
| tblVehicleEF | UBUS | 0.28 | 0.97 |
| tblVehicleEF | UBUS | 0.03 | 9.4808e-004 |
| tblVehicleEF | UBUS | 6.91 | 6.83 |
| tblVehicleEF | UBUS | 5.56 | 0.06 |
| tblVehicleEF | UBUS | 2,250.71 | 1,683.31 |
| tblVehicleEF | UBUS | 66.08 | 0.85 |
| tblVehicleEF | UBUS | 16.27 | 1.44 |
| tblVehicleEF | UBUS | 17.19 | 8.4651e-003 |
| tblVehicleEF | UBUS | 0.69 | 0.07 |
| tblVehicleEF | UBUS | 0.01 | 0.03 |
| tblVehicleEF | UBUS | 0.36 | 6.0081e-003 |
| tblVehicleEF | UBUS | 7.6900e-004 | 5.4796e-006 |
| tblVehicleEF | UBUS | 0.29 | 0.03 |
| tblVehicleEF | UBUS | 3.0000e-003 | 7.8871e-003 |
| tblVehicleEF | UBUS | 0.34 | 5.7478e-003 |
| tblVehicleEF | UBUS | 7.0700e-004 | 5.0383e-006 |
| tblVehicleEF | UBUS | 5.7080e-003 | 1.0442e-004 |

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|---|---|---|---|
| tblVehicleEF | UBUS | 0.06 | 6.9090e-004 |
| tblVehicleEF | UBUS | 2.3790e-003 | 5.9666e-005 |
| tblVehicleEF | UBUS | 0.88 | 0.01 |
| tblVehicleEF | UBUS | 0.01 | 3.2934e-003 |
| tblVehicleEF | UBUS | 0.45 | 4.0896e-003 |
| tblVehicleEF | UBUS | 0.02 | 0.01 |
| tblVehicleEF | UBUS | 7.6200e-004 | 8.3734e-006 |
| tblVehicleEF | UBUS | 5.7080e-003 | 1.0442e-004 |
| tblVehicleEF | UBUS | 0.06 | 6.9090e-004 |
| tblVehicleEF | UBUS | 2.3790e-003 | 5.9666e-005 |
| tblVehicleEF | UBUS | 1.23 | 0.99 |
| tblVehicleEF | UBUS | 0.01 | 3.2934e-003 |
| tblVehicleEF | UBUS | 0.50 | 4.4776e-003 |
| tblVehicleEF | UBUS | 0.27 | 0.97 |
| tblVehicleEF | UBUS | 0.04 | 1.1745e-003 |
| tblVehicleEF | UBUS | 6.82 | 6.83 |
| tblVehicleEF | UBUS | 8.44 | 0.09 |
| tblVehicleEF | UBUS | 2,250.71 | 1,683.31 |
| tblVehicleEF | UBUS | 66.08 | 0.89 |
| tblVehicleEF | UBUS | 17.24 | 1.44 |
| tblVehicleEF | UBUS | 17.32 | 9.6915e-003 |
| tblVehicleEF | UBUS | 0.69 | 0.07 |
| tblVehicleEF | UBUS | 0.01 | 0.03 |
| tblVehicleEF | UBUS | 0.36 | 6.0081e-003 |
| tblVehicleEF | UBUS | 7.6900e-004 | 5.4796e-006 |
| tblVehicleEF | UBUS | 0.29 | 0.03 |
| tblVehicleEF | UBUS | 3.0000e-003 | 7.8871e-003 |

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|---|---|---|---|
| tblVehicleEF | UBUS | 0.34 | 5.7478e-003 |
| tblVehicleEF | UBUS | 7.0700e-004 | 5.0383e-006 |
| tblVehicleEF | UBUS | 8.3900e-004 | 2.0551e-005 |
| tblVehicleEF | UBUS | 0.06 | 6.3953e-004 |
| tblVehicleEF | UBUS | 4.9500e-004 | 1.4379e-005 |
| tblVehicleEF | UBUS | 0.87 | 0.01 |
| tblVehicleEF | UBUS | 0.01 | 4.6115e-003 |
| tblVehicleEF | UBUS | 0.58 | 5.1309e-003 |
| tblVehicleEF | UBUS | 0.02 | 0.01 |
| tblVehicleEF | UBUS | 8.1100e-004 | 8.8369e-006 |
| tblVehicleEF | UBUS | 8.3900e-004 | 2.0551e-005 |
| tblVehicleEF | UBUS | 0.06 | 6.3953e-004 |
| tblVehicleEF | UBUS | 4.9500e-004 | 1.4379e-005 |
| tblVehicleEF | UBUS | 1.21 | 0.99 |
| tblVehicleEF | UBUS | 0.01 | 4.6115e-003 |
| tblVehicleEF | UBUS | 0.64 | 5.6177e-003 |
| tblVehicleTrips | ST_TR | 23.72 | 14.87 |
| tblVehicleTrips | ST_TR | 42.04 | 18.97 |
| tblVehicleTrips | SU_TR | 11.88 | 7.45 |
| tblVehicleTrips | SU_TR | 20.43 | 9.22 |
| tblVehicleTrips | WD_TR | 23.72 | 14.87 |
| tblVehicleTrips | WD_TR | 68.93 | 5.03 |
| tblVehicleTrips | WD_TR | 44.32 | 20.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 0.2038 | 0.4954 | 0.4531 | 8.0000e-004 | 7.5000e-003 | 0.0262 | 0.0337 | 2.2100e-003 | 0.0242 | 0.0264 | 0.0000 | 70.4055 | 70.4055 | 0.0187 | 0.0000 | 70.8724 |
| **Maximum** | **0.2038** | **0.4954** | **0.4531** | **8.0000e-004** | **7.5000e-003** | **0.0262** | **0.0337** | **2.2100e-003** | **0.0242** | **0.0264** | **0.0000** | **70.4055** | **70.4055** | **0.0187** | **0.0000** | **70.8724** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2021 | 0.2038 | 0.4954 | 0.4531 | 8.0000e-004 | 7.5000e-003 | 0.0262 | 0.0337 | 2.2100e-003 | 0.0242 | 0.0264 | 0.0000 | 70.4055 | 70.4055 | 0.0187 | 0.0000 | 70.8723 |
| **Maximum** | **0.2038** | **0.4954** | **0.4531** | **8.0000e-004** | **7.5000e-003** | **0.0262** | **0.0337** | **2.2100e-003** | **0.0242** | **0.0264** | **0.0000** | **70.4055** | **70.4055** | **0.0187** | **0.0000** | **70.8723** |

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

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| 1 | 3-1-2021 | 5-31-2021 | 0.3004 | 0.3004 |
| 2 | 6-1-2021 | 8-31-2021 | 0.3954 | 0.3954 |
| | | Highest | 0.3954 | 0.3954 |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.1315 | 0.0000 | 2.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 5.3000e-004 | 5.3000e-004 | 0.0000 | 0.0000 | 5.7000e-004 |
| Energy | 2.8500e-003 | 0.0259 | 0.0218 | 1.6000e-004 | | 1.9700e-003 | 1.9700e-003 | | 1.9700e-003 | 1.9700e-003 | 0.0000 | 67.3732 | 67.3732 | 4.4000e-003 | 1.3200e-003 | 67.8756 |
| Mobile | 0.1449 | 0.2519 | 0.8304 | 2.0200e-003 | 0.1666 | 3.2500e-003 | 0.1699 | 0.0447 | 3.0700e-003 | 0.0477 | 0.0000 | 187.8164 | 187.8164 | 0.0122 | 0.0000 | 188.1217 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 13.1295 | 0.0000 | 13.1295 | 0.7759 | 0.0000 | 32.5277 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 1.1528 | 3.6615 | 4.8143 | 0.1188 | 2.8700e-003 | 8.6387 |
| **Total** | **0.2793** | **0.2778** | **0.8524** | **2.1800e-003** | **0.1666** | **5.2200e-003** | **0.1719** | **0.0447** | **5.0400e-003** | **0.0497** | **14.2823** | **258.8516** | **273.1338** | **0.9113** | **4.1900e-003** | **297.1643** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.1315 | 0.0000 | 2.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 5.3000e-004 | 5.3000e-004 | 0.0000 | 0.0000 | 5.7000e-004 |
| Energy | 2.8500e-003 | 0.0259 | 0.0218 | 1.6000e-004 | | 1.9700e-003 | 1.9700e-003 | | 1.9700e-003 | 1.9700e-003 | 0.0000 | 67.3732 | 67.3732 | 4.4000e-003 | 1.3200e-003 | 67.8756 |
| Mobile | 0.1449 | 0.2519 | 0.8304 | 2.0200e-003 | 0.1666 | 3.2500e-003 | 0.1699 | 0.0447 | 3.0700e-003 | 0.0477 | 0.0000 | 187.8164 | 187.8164 | 0.0122 | 0.0000 | 188.1217 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 13.1295 | 0.0000 | 13.1295 | 0.7759 | 0.0000 | 32.5277 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 1.1528 | 3.6615 | 4.8143 | 0.1188 | 2.8700e-003 | 8.6387 |
| **Total** | **0.2793** | **0.2778** | **0.8524** | **2.1800e-003** | **0.1666** | **5.2200e-003** | **0.1719** | **0.0447** | **5.0400e-003** | **0.0497** | **14.2823** | **258.8516** | **273.1338** | **0.9113** | **4.1900e-003** | **297.1643** |

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

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Demolition | Demolition | 3/1/2021 | 3/12/2021 | 5 | 10 | |
| 2 | Site Preparation | Site Preparation | 3/13/2021 | 3/15/2021 | 5 | 1 | |
| 3 | Grading | Grading | 3/16/2021 | 3/17/2021 | 5 | 2 | |
| 4 | Building Construction | Building Construction | 3/18/2021 | 8/4/2021 | 5 | 100 | |
| 5 | Paving | Paving | 8/5/2021 | 8/11/2021 | 5 | 5 | |
| 6 | Architectural Coating | Architectural Coating | 8/12/2021 | 8/18/2021 | 5 | 5 | |

**Acres of Grading (Site Preparation Phase): 0.5**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 44,550; Non-Residential Outdoor: 14,850; Striped Parking Area: 0 (Architectural Coating – sqft)**

**<u>OffRoad Equipment</u>**

| 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 | 1.00 | 247 | 0.40 |
| Demolition | Tractors/Loaders/Backhoes | 2 | 6.00 | 97 | 0.37 |
| Site Preparation | Graders | 1 | 8.00 | 187 | 0.41 |
| Site Preparation | Tractors/Loaders/Backhoes | 1 | 8.00 | 97 | 0.37 |
| Grading | Concrete/Industrial Saws | 1 | 8.00 | 81 | 0.73 |
| Grading | Rubber Tired Dozers | 1 | 1.00 | 247 | 0.40 |
| Grading | Tractors/Loaders/Backhoes | 2 | 6.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 4.00 | 231 | 0.29 |
| Building Construction | Forklifts | 2 | 6.00 | 89 | 0.20 |
| Building Construction | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |
| Paving | Cement and Mortar Mixers | 4 | 6.00 | 9 | 0.56 |
| Paving | Pavers | 1 | 7.00 | 130 | 0.42 |
| Paving | Rollers | 1 | 7.00 | 80 | 0.38 |
| Paving | Tractors/Loaders/Backhoes | 1 | 7.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | 4 | 10.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Site Preparation | 2 | 5.00 | 0.00 | 0.00 | 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 | 5 | 10.00 | 5.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 2.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Demolition - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.9800e-003 | 0.0363 | 0.0379 | 6.0000e-005 | | 2.0400e-003 | 2.0400e-003 | | 1.9400e-003 | 1.9400e-003 | 0.0000 | 5.2047 | 5.2047 | 9.7000e-004 | 0.0000 | 5.2289 |
| **Total** | **3.9800e-003** | **0.0363** | **0.0379** | **6.0000e-005** | **0.0000** | **2.0400e-003** | **2.0400e-003** | **0.0000** | **1.9400e-003** | **1.9400e-003** | **0.0000** | **5.2047** | **5.2047** | **9.7000e-004** | **0.0000** | **5.2289** |

## 3.2 Demolition - 2021

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.6000e-004 | 1.1000e-004 | 1.1900e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3392 | 0.3392 | 1.0000e-005 | 0.0000 | 0.3394 |
| **Total** | **1.6000e-004** | **1.1000e-004** | **1.1900e-003** | **0.0000** | **4.0000e-004** | **0.0000** | **4.0000e-004** | **1.1000e-004** | **0.0000** | **1.1000e-004** | **0.0000** | **0.3392** | **0.3392** | **1.0000e-005** | **0.0000** | **0.3394** |

**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 | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.9800e-003 | 0.0363 | 0.0379 | 6.0000e-005 | | 2.0400e-003 | 2.0400e-003 | | 1.9400e-003 | 1.9400e-003 | 0.0000 | 5.2047 | 5.2047 | 9.7000e-004 | 0.0000 | 5.2289 |
| **Total** | **3.9800e-003** | **0.0363** | **0.0379** | **6.0000e-005** | **0.0000** | **2.0400e-003** | **2.0400e-003** | **0.0000** | **1.9400e-003** | **1.9400e-003** | **0.0000** | **5.2047** | **5.2047** | **9.7000e-004** | **0.0000** | **5.2289** |

## 3.2 Demolition - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.6000e-004 | 1.1000e-004 | 1.1900e-003 | 0.0000 | 4.0000e-004 | 0.0000 | 4.0000e-004 | 1.1000e-004 | 0.0000 | 1.1000e-004 | 0.0000 | 0.3392 | 0.3392 | 1.0000e-005 | 0.0000 | 0.3394 |
| **Total** | **1.6000e-004** | **1.1000e-004** | **1.1900e-003** | **0.0000** | **4.0000e-004** | **0.0000** | **4.0000e-004** | **1.1000e-004** | **0.0000** | **1.1000e-004** | **0.0000** | **0.3392** | **0.3392** | **1.0000e-005** | **0.0000** | **0.3394** |

## 3.3 Site Preparation - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 2.7000e-004 | 0.0000 | 2.7000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.2000e-004 | 3.9100e-003 | 2.0100e-003 | 0.0000 | | 1.5000e-004 | 1.5000e-004 | | 1.4000e-004 | 1.4000e-004 | 0.0000 | 0.4276 | 0.4276 | 1.4000e-004 | 0.0000 | 0.4310 |
| **Total** | **3.2000e-004** | **3.9100e-003** | **2.0100e-003** | **0.0000** | **2.7000e-004** | **1.5000e-004** | **4.2000e-004** | **3.0000e-005** | **1.4000e-004** | **1.7000e-004** | **0.0000** | **0.4276** | **0.4276** | **1.4000e-004** | **0.0000** | **0.4310** |

## 3.3 Site Preparation - 2021

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0000e-005 | 1.0000e-005 | 6.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0170 | 0.0170 | 0.0000 | 0.0000 | 0.0170 |
| **Total** | **1.0000e-005** | **1.0000e-005** | **6.0000e-005** | **0.0000** | **2.0000e-005** | **0.0000** | **2.0000e-005** | **1.0000e-005** | **0.0000** | **1.0000e-005** | **0.0000** | **0.0170** | **0.0170** | **0.0000** | **0.0000** | **0.0170** |

**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 | | | | | 2.7000e-004 | 0.0000 | 2.7000e-004 | 3.0000e-005 | 0.0000 | 3.0000e-005 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.2000e-004 | 3.9100e-003 | 2.0100e-003 | 0.0000 | | 1.5000e-004 | 1.5000e-004 | | 1.4000e-004 | 1.4000e-004 | 0.0000 | 0.4276 | 0.4276 | 1.4000e-004 | 0.0000 | 0.4310 |
| **Total** | **3.2000e-004** | **3.9100e-003** | **2.0100e-003** | **0.0000** | **2.7000e-004** | **1.5000e-004** | **4.2000e-004** | **3.0000e-005** | **1.4000e-004** | **1.7000e-004** | **0.0000** | **0.4276** | **0.4276** | **1.4000e-004** | **0.0000** | **0.4310** |

## 3.3 Site Preparation - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0000e-005 | 1.0000e-005 | 6.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0170 | 0.0170 | 0.0000 | 0.0000 | 0.0170 |
| **Total** | **1.0000e-005** | **1.0000e-005** | **6.0000e-005** | **0.0000** | **2.0000e-005** | **0.0000** | **2.0000e-005** | **1.0000e-005** | **0.0000** | **1.0000e-005** | **0.0000** | **0.0170** | **0.0170** | **0.0000** | **0.0000** | **0.0170** |

## 3.4 Grading - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 7.5000e-004 | 0.0000 | 7.5000e-004 | 4.1000e-004 | 0.0000 | 4.1000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 8.0000e-004 | 7.2500e-003 | 7.5700e-003 | 1.0000e-005 | | 4.1000e-004 | 4.1000e-004 | | 3.9000e-004 | 3.9000e-004 | 0.0000 | 1.0409 | 1.0409 | 1.9000e-004 | 0.0000 | 1.0458 |
| **Total** | **8.0000e-004** | **7.2500e-003** | **7.5700e-003** | **1.0000e-005** | **7.5000e-004** | **4.1000e-004** | **1.1600e-003** | **4.1000e-004** | **3.9000e-004** | **8.0000e-004** | **0.0000** | **1.0409** | **1.0409** | **1.9000e-004** | **0.0000** | **1.0458** |

## 3.4 Grading - 2021

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 3.0000e-005 | 2.0000e-005 | 2.4000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0679 | 0.0679 | 0.0000 | 0.0000 | 0.0679 |
| **Total** | **3.0000e-005** | **2.0000e-005** | **2.4000e-004** | **0.0000** | **8.0000e-005** | **0.0000** | **8.0000e-005** | **2.0000e-005** | **0.0000** | **2.0000e-005** | **0.0000** | **0.0679** | **0.0679** | **0.0000** | **0.0000** | **0.0679** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 7.5000e-004 | 0.0000 | 7.5000e-004 | 4.1000e-004 | 0.0000 | 4.1000e-004 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 8.0000e-004 | 7.2500e-003 | 7.5700e-003 | 1.0000e-005 | | 4.1000e-004 | 4.1000e-004 | | 3.9000e-004 | 3.9000e-004 | 0.0000 | 1.0409 | 1.0409 | 1.9000e-004 | 0.0000 | 1.0458 |
| **Total** | **8.0000e-004** | **7.2500e-003** | **7.5700e-003** | **1.0000e-005** | **7.5000e-004** | **4.1000e-004** | **1.1600e-003** | **4.1000e-004** | **3.9000e-004** | **8.0000e-004** | **0.0000** | **1.0409** | **1.0409** | **1.9000e-004** | **0.0000** | **1.0458** |

### 3.4 Grading - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 3.0000e-005 | 2.0000e-005 | 2.4000e-004 | 0.0000 | 8.0000e-005 | 0.0000 | 8.0000e-005 | 2.0000e-005 | 0.0000 | 2.0000e-005 | 0.0000 | 0.0679 | 0.0679 | 0.0000 | 0.0000 | 0.0679 |
| **Total** | **3.0000e-005** | **2.0000e-005** | **2.4000e-004** | **0.0000** | **8.0000e-005** | **0.0000** | **8.0000e-005** | **2.0000e-005** | **0.0000** | **2.0000e-005** | **0.0000** | **0.0679** | **0.0679** | **0.0000** | **0.0000** | **0.0679** |

### 3.5 Building Construction - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0388 | 0.3993 | 0.3632 | 5.7000e-004 | | 0.0224 | 0.0224 | | 0.0206 | 0.0206 | 0.0000 | 50.0410 | 50.0410 | 0.0162 | 0.0000 | 50.4456 |
| **Total** | **0.0388** | **0.3993** | **0.3632** | **5.7000e-004** | | **0.0224** | **0.0224** | | **0.0206** | **0.0206** | **0.0000** | **50.0410** | **50.0410** | **0.0162** | **0.0000** | **50.4456** |

## 3.5 Building Construction - 2021

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 7.7000e-004 | 0.0267 | 5.6600e-003 | 7.0000e-005 | 1.6400e-003 | 6.0000e-005 | 1.7000e-003 | 4.7000e-004 | 5.0000e-005 | 5.3000e-004 | 0.0000 | 6.5493 | 6.5493 | 3.6000e-004 | 0.0000 | 6.5583 |
| Worker | 1.6000e-003 | 1.1400e-003 | 0.0119 | 4.0000e-005 | 3.9500e-003 | 3.0000e-005 | 3.9800e-003 | 1.0500e-003 | 2.0000e-005 | 1.0800e-003 | 0.0000 | 3.3924 | 3.3924 | 8.0000e-005 | 0.0000 | 3.3944 |
| **Total** | **2.3700e-003** | **0.0279** | **0.0176** | **1.1000e-004** | **5.5900e-003** | **9.0000e-005** | **5.6800e-003** | **1.5200e-003** | **7.0000e-005** | **1.6100e-003** | **0.0000** | **9.9416** | **9.9416** | **4.4000e-004** | **0.0000** | **9.9527** |

### 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 | 0.0388 | 0.3993 | 0.3632 | 5.7000e-004 | | 0.0224 | 0.0224 | | 0.0206 | 0.0206 | 0.0000 | 50.0410 | 50.0410 | 0.0162 | 0.0000 | 50.4456 |
| **Total** | **0.0388** | **0.3993** | **0.3632** | **5.7000e-004** | | **0.0224** | **0.0224** | | **0.0206** | **0.0206** | **0.0000** | **50.0410** | **50.0410** | **0.0162** | **0.0000** | **50.4456** |

## 3.5 Building Construction - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 7.7000e-004 | 0.0267 | 5.6600e-003 | 7.0000e-005 | 1.6400e-003 | 6.0000e-005 | 1.7000e-003 | 4.7000e-004 | 5.0000e-005 | 5.3000e-004 | 0.0000 | 6.5493 | 6.5493 | 3.6000e-004 | 0.0000 | 6.5583 |
| Worker | 1.6000e-003 | 1.1400e-003 | 0.0119 | 4.0000e-005 | 3.9500e-003 | 3.0000e-005 | 3.9800e-003 | 1.0500e-003 | 2.0000e-005 | 1.0800e-003 | 0.0000 | 3.3924 | 3.3924 | 8.0000e-005 | 0.0000 | 3.3944 |
| **Total** | **2.3700e-003** | **0.0279** | **0.0176** | **1.1000e-004** | **5.5900e-003** | **9.0000e-005** | **5.6800e-003** | **1.5200e-003** | **7.0000e-005** | **1.6100e-003** | **0.0000** | **9.9416** | **9.9416** | **4.4000e-004** | **0.0000** | **9.9527** |

## 3.6 Paving - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 1.8000e-003 | 0.0168 | 0.0177 | 3.0000e-005 | | 8.8000e-004 | 8.8000e-004 | | 8.2000e-004 | 8.2000e-004 | 0.0000 | 2.3481 | 2.3481 | 6.8000e-004 | 0.0000 | 2.3652 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **1.8000e-003** | **0.0168** | **0.0177** | **3.0000e-005** | | **8.8000e-004** | **8.8000e-004** | | **8.2000e-004** | **8.2000e-004** | **0.0000** | **2.3481** | **2.3481** | **6.8000e-004** | **0.0000** | **2.3652** |

## 3.6 Paving - 2021

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 1.4000e-004 | 1.0000e-004 | 1.0700e-003 | 0.0000 | 3.6000e-004 | 0.0000 | 3.6000e-004 | 9.0000e-005 | 0.0000 | 1.0000e-004 | 0.0000 | 0.3053 | 0.3053 | 1.0000e-005 | 0.0000 | 0.3055 |
| **Total** | **1.4000e-004** | **1.0000e-004** | **1.0700e-003** | **0.0000** | **3.6000e-004** | **0.0000** | **3.6000e-004** | **9.0000e-005** | **0.0000** | **1.0000e-004** | **0.0000** | **0.3053** | **0.3053** | **1.0000e-005** | **0.0000** | **0.3055** |

**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 | 1.8000e-003 | 0.0168 | 0.0177 | 3.0000e-005 | | 8.8000e-004 | 8.8000e-004 | | 8.2000e-004 | 8.2000e-004 | 0.0000 | 2.3481 | 2.3481 | 6.8000e-004 | 0.0000 | 2.3652 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **1.8000e-003** | **0.0168** | **0.0177** | **3.0000e-005** | | **8.8000e-004** | **8.8000e-004** | | **8.2000e-004** | **8.2000e-004** | **0.0000** | **2.3481** | **2.3481** | **6.8000e-004** | **0.0000** | **2.3652** |

## 3.6 Paving - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 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 | 1.4000e-004 | 1.0000e-004 | 1.0700e-003 | 0.0000 | 3.6000e-004 | 0.0000 | 3.6000e-004 | 9.0000e-005 | 0.0000 | 1.0000e-004 | 0.0000 | 0.3053 | 0.3053 | 1.0000e-005 | 0.0000 | 0.3055 |
| **Total** | **1.4000e-004** | **1.0000e-004** | **1.0700e-003** | **0.0000** | **3.6000e-004** | **0.0000** | **3.6000e-004** | **9.0000e-005** | **0.0000** | **1.0000e-004** | **0.0000** | **0.3053** | **0.3053** | **1.0000e-005** | **0.0000** | **0.3055** |

## 3.7 Architectural Coating - 2021

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.1549 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.5000e-004 | 3.8200e-003 | 4.5400e-003 | 1.0000e-005 | | 2.4000e-004 | 2.4000e-004 | | 2.4000e-004 | 2.4000e-004 | 0.0000 | 0.6383 | 0.6383 | 4.0000e-005 | 0.0000 | 0.6394 |
| **Total** | **0.1554** | **3.8200e-003** | **4.5400e-003** | **1.0000e-005** | | **2.4000e-004** | **2.4000e-004** | | **2.4000e-004** | **2.4000e-004** | **0.0000** | **0.6383** | **0.6383** | **4.0000e-005** | **0.0000** | **0.6394** |

## 3.7 Architectural Coating - 2021

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.0000e-005 | 1.0000e-005 | 1.2000e-004 | 0.0000 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0339 | 0.0339 | 0.0000 | 0.0000 | 0.0339 |
| **Total** | **2.0000e-005** | **1.0000e-005** | **1.2000e-004** | **0.0000** | **4.0000e-005** | **0.0000** | **4.0000e-005** | **1.0000e-005** | **0.0000** | **1.0000e-005** | **0.0000** | **0.0339** | **0.0339** | **0.0000** | **0.0000** | **0.0339** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.1549 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 5.5000e-004 | 3.8200e-003 | 4.5400e-003 | 1.0000e-005 | | 2.4000e-004 | 2.4000e-004 | | 2.4000e-004 | 2.4000e-004 | 0.0000 | 0.6383 | 0.6383 | 4.0000e-005 | 0.0000 | 0.6394 |
| **Total** | **0.1554** | **3.8200e-003** | **4.5400e-003** | **1.0000e-005** | | **2.4000e-004** | **2.4000e-004** | | **2.4000e-004** | **2.4000e-004** | **0.0000** | **0.6383** | **0.6383** | **4.0000e-005** | **0.0000** | **0.6394** |

### 3.7 Architectural Coating - 2021

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.0000e-005 | 1.0000e-005 | 1.2000e-004 | 0.0000 | 4.0000e-005 | 0.0000 | 4.0000e-005 | 1.0000e-005 | 0.0000 | 1.0000e-005 | 0.0000 | 0.0339 | 0.0339 | 0.0000 | 0.0000 | 0.0339 |
| **Total** | **2.0000e-005** | **1.0000e-005** | **1.2000e-004** | **0.0000** | **4.0000e-005** | **0.0000** | **4.0000e-005** | **1.0000e-005** | **0.0000** | **1.0000e-005** | **0.0000** | **0.0339** | **0.0339** | **0.0000** | **0.0000** | **0.0339** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.1449 | 0.2519 | 0.8304 | 2.0200e-003 | 0.1666 | 3.2500e-003 | 0.1699 | 0.0447 | 3.0700e-003 | 0.0477 | 0.0000 | 187.8164 | 187.8164 | 0.0122 | 0.0000 | 188.1217 |
| Unmitigated | 0.1449 | 0.2519 | 0.8304 | 2.0200e-003 | 0.1666 | 3.2500e-003 | 0.1699 | 0.0447 | 3.0700e-003 | 0.0477 | 0.0000 | 187.8164 | 187.8164 | 0.0122 | 0.0000 | 188.1217 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Automobile Care Center | 185.88 | 185.88 | 93.13 | 171,967 | 171,967 |
| Government Office Building | 47.79 | 0.00 | 0.00 | 58,533 | 58,533 |
| Strip Mall | 154.00 | 146.07 | 70.99 | 217,159 | 217,159 |
| Total | 387.66 | 331.94 | 164.12 | 447,658 | 447,658 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Automobile Care Center | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 21 | 51 | 28 |
| Government Office Building | 9.50 | 7.30 | 7.30 | 33.00 | 62.00 | 5.00 | 50 | 34 | 16 |
| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Automobile Care Center | 0.558173 | 0.054343 | 0.178934 | 0.106656 | 0.021385 | 0.005089 | 0.022751 | 0.043313 | 0.001370 | 0.001842 | 0.005162 | 0.000310 | 0.000670 |
| Government Office Building | 0.558173 | 0.054343 | 0.178934 | 0.106656 | 0.021385 | 0.005089 | 0.022751 | 0.043313 | 0.001370 | 0.001842 | 0.005162 | 0.000310 | 0.000670 |
| Strip Mall | 0.558173 | 0.054343 | 0.178934 | 0.106656 | 0.021385 | 0.005089 | 0.022751 | 0.043313 | 0.001370 | 0.001842 | 0.005162 | 0.000310 | 0.000670 |

## 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 | 39.1742 | 39.1742 | 3.8600e-003 | 8.0000e-004 | 39.5090 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 39.1742 | 39.1742 | 3.8600e-003 | 8.0000e-004 | 39.5090 |
| NaturalGas Mitigated | 2.8500e-003 | 0.0259 | 0.0218 | 1.6000e-004 | | 1.9700e-003 | 1.9700e-003 | | 1.9700e-003 | 1.9700e-003 | 0.0000 | 28.1990 | 28.1990 | 5.4000e-004 | 5.2000e-004 | 28.3666 |
| NaturalGas Unmitigated | 2.8500e-003 | 0.0259 | 0.0218 | 1.6000e-004 | | 1.9700e-003 | 1.9700e-003 | | 1.9700e-003 | 1.9700e-003 | 0.0000 | 28.1990 | 28.1990 | 5.4000e-004 | 5.2000e-004 | 28.3666 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Automobile Care Center | 309375 | 1.6700e-003 | 0.0152 | 0.0127 | 9.0000e-005 | | 1.1500e-003 | 1.1500e-003 | | 1.1500e-003 | 1.1500e-003 | 0.0000 | 16.5094 | 16.5094 | 3.2000e-004 | 3.0000e-004 | 16.6075 |
| Government Office Building | 183635 | 9.9000e-004 | 9.0000e-003 | 7.5600e-003 | 5.0000e-005 | | 6.8000e-004 | 6.8000e-004 | | 6.8000e-004 | 6.8000e-004 | 0.0000 | 9.7995 | 9.7995 | 1.9000e-004 | 1.8000e-004 | 9.8577 |
| Strip Mall | 35420 | 1.9000e-004 | 1.7400e-003 | 1.4600e-003 | 1.0000e-005 | | 1.3000e-004 | 1.3000e-004 | | 1.3000e-004 | 1.3000e-004 | 0.0000 | 1.8902 | 1.8902 | 4.0000e-005 | 3.0000e-005 | 1.9014 |
| **Total** | | **2.8500e-003** | **0.0259** | **0.0218** | **1.5000e-004** | | **1.9600e-003** | **1.9600e-003** | | **1.9600e-003** | **1.9600e-003** | **0.0000** | **28.1990** | **28.1990** | **5.5000e-004** | **5.1000e-004** | **28.3666** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Automobile Care Center | 309375 | 1.6700e-003 | 0.0152 | 0.0127 | 9.0000e-005 | | 1.1500e-003 | 1.1500e-003 | | 1.1500e-003 | 1.1500e-003 | 0.0000 | 16.5094 | 16.5094 | 3.2000e-004 | 3.0000e-004 | 16.6075 |
| Government Office Building | 183635 | 9.9000e-004 | 9.0000e-003 | 7.5600e-003 | 5.0000e-005 | | 6.8000e-004 | 6.8000e-004 | | 6.8000e-004 | 6.8000e-004 | 0.0000 | 9.7995 | 9.7995 | 1.9000e-004 | 1.8000e-004 | 9.8577 |
| Strip Mall | 35420 | 1.9000e-004 | 1.7400e-003 | 1.4600e-003 | 1.0000e-005 | | 1.3000e-004 | 1.3000e-004 | | 1.3000e-004 | 1.3000e-004 | 0.0000 | 1.8902 | 1.8902 | 4.0000e-005 | 3.0000e-005 | 1.9014 |
| **Total** | | **2.8500e-003** | **0.0259** | **0.0218** | **1.5000e-004** | | **1.9600e-003** | **1.9600e-003** | | **1.9600e-003** | **1.9600e-003** | **0.0000** | **28.1990** | **28.1990** | **5.5000e-004** | **5.1000e-004** | **28.3666** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Automobile Care Center | 94500 | 12.6022 | 1.2400e-003 | 2.6000e-004 | 12.7099 |
| Government Office Building | 118560 | 15.8107 | 1.5600e-003 | 3.2000e-004 | 15.9459 |
| Strip Mall | 80696 | 10.7613 | 1.0600e-003 | 2.2000e-004 | 10.8533 |
| **Total** | | **39.1742** | **3.8600e-003** | **8.0000e-004** | **39.5090** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Automobile Care Center | 94500 | 12.6022 | 1.2400e-003 | 2.6000e-004 | 12.7099 |
| Government Office Building | 118560 | 15.8107 | 1.5600e-003 | 3.2000e-004 | 15.9459 |
| Strip Mall | 80696 | 10.7613 | 1.0600e-003 | 2.2000e-004 | 10.8533 |
| **Total** | | **39.1742** | **3.8600e-003** | **8.0000e-004** | **39.5090** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.1315 | 0.0000 | 2.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 5.3000e-004 | 5.3000e-004 | 0.0000 | 0.0000 | 5.7000e-004 |
| Unmitigated | 0.1315 | 0.0000 | 2.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 5.3000e-004 | 5.3000e-004 | 0.0000 | 0.0000 | 5.7000e-004 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0155 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.1160 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 3.0000e-005 | 0.0000 | 2.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 5.3000e-004 | 5.3000e-004 | 0.0000 | 0.0000 | 5.7000e-004 |
| **Total** | **0.1315** | **0.0000** | **2.7000e-004** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **5.3000e-004** | **5.3000e-004** | **0.0000** | **0.0000** | **5.7000e-004** |

## 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 | 0.0155 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.1160 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 3.0000e-005 | 0.0000 | 2.7000e-004 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 5.3000e-004 | 5.3000e-004 | 0.0000 | 0.0000 | 5.7000e-004 |
| **Total** | **0.1315** | **0.0000** | **2.7000e-004** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **5.3000e-004** | **5.3000e-004** | **0.0000** | **0.0000** | **5.7000e-004** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 4.8143 | 0.1188 | 2.8700e-003 | 8.6387 |
| Unmitigated | 4.8143 | 0.1188 | 2.8700e-003 | 8.6387 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Automobile Care Center | 1.17601 / 0.720783 | 1.5581 | 0.0384 | 9.3000e-004 | 2.7959 |
| Government Office Building | 1.88727 / 1.15671 | 2.5005 | 0.0617 | 1.4900e-003 | 4.4869 |
| Strip Mall | 0.570358 / 0.349575 | 0.7557 | 0.0186 | 4.5000e-004 | 1.3560 |
| **Total** | | **4.8143** | **0.1188** | **2.8700e-003** | **8.6387** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Automobile Care Center | 1.17601 / 0.720783 | 1.5581 | 0.0384 | 9.3000e-004 | 2.7959 |
| Government Office Building | 1.88727 / 1.15671 | 2.5005 | 0.0617 | 1.4900e-003 | 4.4869 |
| Strip Mall | 0.570358 / 0.349575 | 0.7557 | 0.0186 | 4.5000e-004 | 1.3560 |
| **Total** | | **4.8143** | **0.1188** | **2.8700e-003** | **8.6387** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 13.1295 | 0.7759 | 0.0000 | 32.5277 |
| Unmitigated | 13.1295 | 0.7759 | 0.0000 | 32.5277 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Automobile Care Center | 47.75 | 9.6928 | 0.5728 | 0.0000 | 24.0136 |
| Government Office Building | 8.84 | 1.7944 | 0.1061 | 0.0000 | 4.4457 |
| Strip Mall | 8.09 | 1.6422 | 0.0971 | 0.0000 | 4.0685 |
| **Total** | | **13.1295** | **0.7759** | **0.0000** | **32.5277** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Automobile Care Center | 47.75 | 9.6928 | 0.5728 | 0.0000 | 24.0136 |
| Government Office Building | 8.84 | 1.7944 | 0.1061 | 0.0000 | 4.4457 |
| Strip Mall | 8.09 | 1.6422 | 0.0971 | 0.0000 | 4.0685 |
| **Total** | | **13.1295** | **0.7759** | **0.0000** | **32.5277** |

# 9.0 Operational Offroad

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

# 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

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

**Boilers**

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

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

```
* AERMOD ( 19191): C:\Lakes\AERMOD View\2424 Webster Street,
Oakland\2424 Webster Stree     04/24/20
* AERMET ( 14134):
14:43:27
* MODELING OPTIONS USED:   RegDFAULT  CONC  ELEV  FLGPOL  URBAN
*         PLOT FILE OF PERIOD VALUES AVERAGED ACROSS   0 YEARS FOR
SOURCE GROUP: ALL
*         FOR A TOTAL OF   272 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 HRS   NET ID
* ____________  ____________  ____________   ______   ______   ______
______  ________  ________  ________
  564990.67000 4185377.52000       5.30810     8.04     8.04     1.50
PERIOD  ALL      00043872
  565010.67000 4185377.52000       4.57562     7.85    22.11     1.50
PERIOD  ALL      00043872
  564990.67000 4185397.52000       5.16760     8.66     8.66     1.50
PERIOD  ALL      00043872
  565010.67000 4185397.52000       4.44470     8.86     8.86     1.50
PERIOD  ALL      00043872
  565050.67000 4185397.52000       3.39314     5.56    30.69     1.50
PERIOD  ALL      00043872
  564990.67000 4185417.52000       4.85617     9.13     9.13     1.50
PERIOD  ALL      00043872
  565010.67000 4185417.52000       4.19464     9.10    10.77     1.50
PERIOD  ALL      00043872
  565030.67000 4185417.52000       3.66750     8.57    28.89     1.50
PERIOD  ALL      00043872
  565010.67000 4185477.52000       2.97246    12.03    12.03     1.50
PERIOD  ALL      00043872
  565030.67000 4185477.52000       2.66931    12.01    12.01     1.50
PERIOD  ALL      00043872
  565050.67000 4185477.52000       2.41179    11.69    11.69     1.50
PERIOD  ALL      00043872
  565070.67000 4185477.52000       2.19235    10.97    29.09     1.50
PERIOD  ALL      00043872
  564950.67000 4185497.52000       3.45135    11.82    12.83     1.50
PERIOD  ALL      00043872
  564970.67000 4185497.52000       2.95859    12.94    12.94     1.50
PERIOD  ALL      00043872
  564990.67000 4185497.52000       2.68690    12.83    12.83     1.50
PERIOD  ALL      00043872
  565010.67000 4185497.52000       2.44939    12.54    12.54     1.50
PERIOD  ALL      00043872
  565050.67000 4185497.52000       2.12394    11.98    11.98     1.50
PERIOD  ALL      00043872
  565070.67000 4185497.52000       1.94816    11.47    29.05     1.50
PERIOD  ALL      00043872
  565090.67000 4185497.52000       1.79677    10.39    30.81     1.50
PERIOD  ALL      00043872
```

| | | | | | |
|---|---|---|---|---|---|
| 564950.67000 | 4185517.52000 | 2.63948 | 12.88 | 12.88 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565030.67000 | 4185517.52000 | 1.92692 | 12.35 | 19.98 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565050.67000 | 4185517.52000 | 1.85175 | 12.00 | 19.98 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565070.67000 | 4185517.52000 | 1.71661 | 11.48 | 28.89 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565090.67000 | 4185517.52000 | 1.59551 | 10.71 | 30.69 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565050.67000 | 4185537.52000 | 1.54242 | 12.18 | 21.48 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565070.67000 | 4185537.52000 | 1.49831 | 11.68 | 22.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565030.67000 | 4185557.52000 | 1.38619 | 13.30 | 21.76 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565090.67000 | 4185557.52000 | 1.13454 | 16.08 | 16.64 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565070.67000 | 4185577.52000 | 1.01167 | 18.22 | 18.22 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564970.67000 | 4185597.52000 | 1.24037 | 8.11 | 22.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565030.67000 | 4185597.52000 | 0.91632 | 20.10 | 20.10 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565050.67000 | 4185597.52000 | 0.88570 | 20.03 | 20.03 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565090.67000 | 4185597.52000 | 0.83509 | 18.74 | 18.74 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564910.67000 | 4185617.52000 | 1.13488 | 7.10 | 21.69 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564930.67000 | 4185617.52000 | 1.10835 | 7.22 | 22.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564950.67000 | 4185617.52000 | 1.07977 | 7.14 | 22.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564990.67000 | 4185617.52000 | 0.99596 | 9.13 | 22.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565070.67000 | 4185617.52000 | 0.73322 | 20.60 | 20.60 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565090.67000 | 4185617.52000 | 0.71466 | 20.12 | 20.12 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564910.67000 | 4185637.52000 | 0.95007 | 7.42 | 21.19 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564930.67000 | 4185637.52000 | 0.93087 | 7.08 | 22.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565010.67000 | 4185637.52000 | 0.80897 | 11.35 | 22.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565030.67000 | 4185637.52000 | 0.68750 | 18.58 | 22.08 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565050.67000 | 4185637.52000 | 0.64763 | 21.28 | 21.28 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565070.67000 | 4185637.52000 | 0.62672 | 21.87 | 21.87 | 1.50 |
| PERIOD ALL | 00043872 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 565070.67000 | 4185657.52000 | 0.54676 | 21.93 | 21.93 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565090.67000 | 4185657.52000 | 0.53247 | 22.23 | 22.23 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564970.67000 | 4185677.52000 | 0.65657 | 6.74 | 23.00 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565070.67000 | 4185677.52000 | 0.48502 | 21.12 | 21.12 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564970.67000 | 4185697.52000 | 0.56597 | 8.57 | 22.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564990.67000 | 4185697.52000 | 0.55928 | 8.04 | 23.00 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564970.67000 | 4185717.52000 | 0.48978 | 10.56 | 21.24 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565010.67000 | 4185717.52000 | 0.47371 | 10.52 | 23.00 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565050.67000 | 4185717.52000 | 0.40798 | 17.14 | 22.30 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564911.79000 | 4185176.17000 | 1.83542 | 4.00 | 4.00 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564928.13000 | 4185173.59000 | 1.81451 | 3.46 | 3.46 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564874.66000 | 4185188.85000 | 1.96380 | 4.11 | 4.11 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564914.66000 | 4185188.85000 | 2.07809 | 4.39 | 4.39 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564934.66000 | 4185188.85000 | 2.09284 | 4.04 | 4.04 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564734.66000 | 4185208.85000 | 1.24758 | 7.94 | 7.94 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564754.66000 | 4185208.85000 | 1.45450 | 7.72 | 7.72 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564794.66000 | 4185208.85000 | 1.87341 | 7.69 | 7.69 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564814.66000 | 4185208.85000 | 2.06686 | 7.25 | 7.25 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564894.66000 | 4185208.85000 | 2.50556 | 4.55 | 4.55 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564914.66000 | 4185208.85000 | 2.53111 | 4.53 | 4.53 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564934.66000 | 4185208.85000 | 2.51921 | 4.20 | 4.20 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564694.66000 | 4185228.85000 | 1.13794 | 8.29 | 8.29 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564714.66000 | 4185228.85000 | 1.29142 | 8.75 | 8.75 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564734.66000 | 4185228.85000 | 1.51698 | 8.50 | 8.50 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564754.66000 | 4185228.85000 | 1.81198 | 8.01 | 8.01 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564794.66000 | 4185228.85000 | 2.38615 | 7.96 | 7.96 | 1.50 |
| PERIOD ALL | 00043872 | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 564814.66000 | 4185228.85000 | 2.63542 | 7.99 | 7.99 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564834.66000 | 4185228.85000 | 2.84627 | 5.48 | 8.04 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564854.66000 | 4185228.85000 | 2.98501 | 4.55 | 8.03 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564874.66000 | 4185228.85000 | 3.07542 | 4.16 | 4.16 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564894.66000 | 4185228.85000 | 3.12312 | 4.62 | 4.62 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564914.66000 | 4185228.85000 | 3.10566 | 4.38 | 4.38 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564934.66000 | 4185228.85000 | 3.04780 | 4.35 | 4.35 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564954.66000 | 4185228.85000 | 2.95195 | 3.98 | 3.98 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564694.66000 | 4185248.85000 | 1.38915 | 8.31 | 8.31 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564714.66000 | 4185248.85000 | 1.60039 | 8.72 | 8.72 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564734.66000 | 4185248.85000 | 1.90605 | 8.75 | 8.75 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564754.66000 | 4185248.85000 | 2.33297 | 8.22 | 8.22 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564794.66000 | 4185248.85000 | 3.18743 | 7.82 | 7.82 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564814.66000 | 4185248.85000 | 3.53922 | 7.05 | 7.05 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564834.66000 | 4185248.85000 | 3.76391 | 5.69 | 8.03 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564854.66000 | 4185248.85000 | 3.89863 | 4.74 | 4.74 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564894.66000 | 4185248.85000 | 3.93410 | 4.61 | 4.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564914.66000 | 4185248.85000 | 3.84086 | 4.64 | 4.64 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564934.66000 | 4185248.85000 | 3.69510 | 4.56 | 4.56 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564694.66000 | 4185268.85000 | 1.73467 | 8.32 | 8.32 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564714.66000 | 4185268.85000 | 2.04265 | 8.59 | 8.59 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564734.66000 | 4185268.85000 | 2.49909 | 8.67 | 8.67 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564754.66000 | 4185268.85000 | 3.15171 | 8.25 | 8.25 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564774.66000 | 4185268.85000 | 3.87461 | 7.74 | 7.74 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564794.66000 | 4185268.85000 | 4.43767 | 7.77 | 7.77 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564814.66000 | 4185268.85000 | 4.90193 | 7.17 | 7.17 | 1.50 |
| PERIOD ALL | 00043872 | | | | |

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|---|---|---|---|---|---|
| 564834.66000 | 4185268.85000 | 5.13819 | 5.81 | 7.31 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564854.66000 | 4185268.85000 | 5.19726 | 4.59 | 4.59 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564894.66000 | 4185268.85000 | 4.98368 | 4.42 | 4.42 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564914.66000 | 4185268.85000 | 4.75035 | 4.68 | 4.68 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564934.66000 | 4185268.85000 | 4.46236 | 4.58 | 4.58 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564954.66000 | 4185268.85000 | 4.15043 | 4.20 | 4.20 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564714.66000 | 4185288.85000 | 2.68361 | 8.71 | 8.71 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564734.66000 | 4185288.85000 | 3.42164 | 8.65 | 8.65 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564754.66000 | 4185288.85000 | 4.53177 | 8.19 | 8.19 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564774.66000 | 4185288.85000 | 5.72236 | 7.59 | 7.59 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564794.66000 | 4185288.85000 | 6.57651 | 7.25 | 7.25 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564814.66000 | 4185288.85000 | 7.12300 | 7.26 | 7.26 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564834.66000 | 4185288.85000 | 7.28464 | 6.56 | 6.56 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564854.66000 | 4185288.85000 | 7.06537 | 4.57 | 7.31 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564874.66000 | 4185288.85000 | 6.73385 | 4.15 | 4.15 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564894.66000 | 4185288.85000 | 6.30218 | 4.08 | 4.08 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564914.66000 | 4185288.85000 | 5.83366 | 4.52 | 4.52 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564934.66000 | 4185288.85000 | 5.33236 | 4.40 | 4.40 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564954.66000 | 4185288.85000 | 4.84172 | 3.97 | 3.97 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564974.66000 | 4185288.85000 | 4.39249 | 3.88 | 3.88 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564714.66000 | 4185308.85000 | 3.68273 | 8.87 | 8.87 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564734.66000 | 4185308.85000 | 4.95512 | 8.77 | 8.77 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564754.66000 | 4185308.85000 | 7.20958 | 7.90 | 7.90 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564774.66000 | 4185308.85000 | 9.22809 | 7.22 | 7.22 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564814.66000 | 4185308.85000 | 10.86991 | 6.81 | 6.81 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564834.66000 | 4185308.85000 | 10.47714 | 5.78 | 5.78 | 1.50 |
| PERIOD ALL | 00043872 | | | | |

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|---|---|---|---|---|---|
| 564854.66000 | 4185308.85000 | 9.70525 | 4.86 | 4.86 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564714.66000 | 4185328.85000 | 5.38084 | 8.81 | 8.81 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564734.66000 | 4185328.85000 | 7.97349 | 8.61 | 8.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564754.66000 | 4185328.85000 | 13.22260 | 7.70 | 7.70 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564774.66000 | 4185328.85000 | 17.24749 | 7.04 | 7.04 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564754.66000 | 4185368.85000 | 78.17952 | 8.09 | 8.09 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564774.66000 | 4185368.85000 | 80.51271 | 7.61 | 7.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564654.66000 | 4185408.85000 | 3.83349 | 8.30 | 8.30 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564774.66000 | 4185408.85000 | 129.73134 | 7.00 | 7.00 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564794.66000 | 4185408.85000 | 73.23646 | 5.54 | 5.54 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564974.66000 | 4185408.85000 | 5.70115 | 8.51 | 8.51 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564654.66000 | 4185428.85000 | 3.87003 | 8.54 | 8.54 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564774.66000 | 4185428.85000 | 86.71797 | 5.96 | 6.40 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 565034.66000 | 4185428.85000 | 3.42604 | 8.86 | 28.89 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564774.66000 | 4185448.85000 | 35.84793 | 5.88 | 5.88 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564794.66000 | 4185448.85000 | 29.33358 | 5.26 | 5.26 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564734.80000 | 4185460.87000 | 17.05275 | 8.44 | 8.44 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564752.76000 | 4185449.65000 | 35.98756 | 7.39 | 7.39 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564618.71000 | 4185354.75000 | 1.73610 | 7.97 | 7.97 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564506.51000 | 4185314.52000 | 0.55256 | 6.63 | 6.63 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564526.51000 | 4185314.52000 | 0.63663 | 6.85 | 6.85 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564546.51000 | 4185314.52000 | 0.74139 | 7.25 | 7.25 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564566.51000 | 4185314.52000 | 0.87237 | 7.51 | 7.51 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564586.51000 | 4185314.52000 | 1.03902 | 7.61 | 7.61 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564606.51000 | 4185314.52000 | 1.25285 | 7.71 | 7.71 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564506.51000 | 4185334.52000 | 0.57279 | 6.91 | 6.91 | 1.50 |
| PERIOD ALL | 00043872 | | | | |

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|---|---|---|---|---|---|
| 564546.51000 | 4185334.52000 | 0.77913 | 7.41 | 7.41 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564566.51000 | 4185334.52000 | 0.92699 | 7.38 | 7.38 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564586.51000 | 4185334.52000 | 1.12078 | 7.54 | 7.54 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564606.51000 | 4185334.52000 | 1.37837 | 7.81 | 7.81 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564506.51000 | 4185354.52000 | 0.59088 | 7.07 | 7.07 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564526.51000 | 4185354.52000 | 0.68836 | 7.21 | 7.21 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564546.51000 | 4185354.52000 | 0.81291 | 7.26 | 7.26 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564566.51000 | 4185354.52000 | 0.97587 | 7.39 | 7.39 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564586.51000 | 4185354.52000 | 1.19454 | 7.45 | 7.45 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564606.51000 | 4185354.52000 | 1.49464 | 7.76 | 7.76 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564506.51000 | 4185374.52000 | 0.60701 | 7.09 | 7.09 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564546.51000 | 4185374.52000 | 0.84317 | 7.24 | 7.24 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564566.51000 | 4185374.52000 | 1.01939 | 7.26 | 7.26 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564506.51000 | 4185394.52000 | 0.62121 | 7.06 | 7.06 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564526.51000 | 4185394.52000 | 0.72926 | 7.14 | 7.14 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564546.51000 | 4185394.52000 | 0.86962 | 7.30 | 7.30 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564566.51000 | 4185394.52000 | 1.05721 | 7.45 | 7.45 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564586.51000 | 4185394.52000 | 1.31430 | 7.72 | 7.72 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564606.51000 | 4185394.52000 | 1.66512 | 8.40 | 8.40 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564506.51000 | 4185414.52000 | 0.63301 | 7.35 | 7.35 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564526.51000 | 4185414.52000 | 0.74474 | 7.39 | 7.39 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564546.51000 | 4185414.52000 | 0.89065 | 7.38 | 7.38 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564566.51000 | 4185414.52000 | 1.08061 | 7.97 | 7.97 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564586.51000 | 4185414.52000 | 1.35504 | 7.78 | 7.78 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564606.51000 | 4185414.52000 | 1.71933 | 8.62 | 8.62 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564893.00000 | 4185708.31000 | 0.54795 | 10.47 | 10.47 | 1.50 |
| PERIOD ALL | 00043872 | | | | |

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  564889.37000 4185694.87000       0.60592     9.65     9.65     1.50
PERIOD  ALL       00043872
  564917.55000 4185703.62000       0.55596    10.76    10.76     1.50
PERIOD  ALL       00043872
  564916.91000 4185689.96000       0.61629     9.60     9.60     1.50
PERIOD  ALL       00043872
  564941.88000 4185698.07000       0.56904    10.25    10.25     1.50
PERIOD  ALL       00043872
  564940.17000 4185684.62000       0.63513     8.47    22.26     1.50
PERIOD  ALL       00043872
  564953.20000 4185697.85000       0.56712     9.73    22.08     1.50
PERIOD  ALL       00043872
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PERIOD  ALL       00043872
  564423.69000 4185199.20000       0.28111     6.11     6.11     1.50
PERIOD  ALL       00043872
  564427.38000 4185219.48000       0.29775     6.25     6.25     1.50
PERIOD  ALL       00043872
  564822.99000 4185351.86000      25.55996     5.78     5.78     1.50
PERIOD  ALL       00043872
  564842.99000 4185351.86000      20.10655     5.06     5.06     1.50
PERIOD  ALL       00043872
  564822.99000 4185371.86000      33.85290     5.32     5.32     1.50
PERIOD  ALL       00043872
  564842.99000 4185371.86000      24.70153     4.86     4.86     1.50
PERIOD  ALL       00043872
  564822.99000 4185391.86000      38.61272     4.86     4.86     1.50
PERIOD  ALL       00043872
  564842.99000 4185391.86000      26.97609     4.75     4.75     1.50
PERIOD  ALL       00043872
  564822.99000 4185411.86000      36.78498     4.55     4.55     1.50
PERIOD  ALL       00043872
  564842.99000 4185411.86000      25.52743     4.58     4.58     1.50
PERIOD  ALL       00043872
  564822.99000 4185431.86000      28.70554     4.50     4.50     1.50
PERIOD  ALL       00043872
  564842.99000 4185431.86000      20.82872     4.51     4.51     1.50
PERIOD  ALL       00043872
  564842.99000 4185451.86000      15.02398     4.49     4.49     1.50
PERIOD  ALL       00043872
  564862.99000 4185451.86000      12.08240     4.58     4.58     1.50
PERIOD  ALL       00043872
  564786.86000 4185351.29000      38.67789     6.79     6.79     1.50
PERIOD  ALL       00043872
  564416.37000 4185465.70000       0.35476     8.28     8.28     1.50
PERIOD  ALL       00043872
  564436.37000 4185465.70000       0.39775     8.34     8.34     1.50
PERIOD  ALL       00043872
  564456.37000 4185465.70000       0.44973     8.33     8.33     1.50
PERIOD  ALL       00043872
  564476.37000 4185465.70000       0.51458     8.02     8.02     1.50
PERIOD  ALL       00043872
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|---|---|---|---|---|---|
| 564496.37000 | 4185465.70000 | 0.59352 | 7.98 | 7.98 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564516.37000 | 4185465.70000 | 0.69203 | 8.03 | 8.03 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564536.37000 | 4185465.70000 | 0.82047 | 7.84 | 7.84 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564556.37000 | 4185465.70000 | 0.98687 | 7.79 | 7.79 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564436.37000 | 4185485.70000 | 0.39696 | 8.34 | 8.34 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564456.37000 | 4185485.70000 | 0.44832 | 8.32 | 8.32 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564436.37000 | 4185505.70000 | 0.39370 | 8.49 | 8.49 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564456.37000 | 4185505.70000 | 0.44379 | 8.44 | 8.44 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564476.37000 | 4185505.70000 | 0.50447 | 8.32 | 8.32 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564496.37000 | 4185505.70000 | 0.57768 | 8.35 | 8.35 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564516.37000 | 4185505.70000 | 0.66804 | 8.35 | 8.35 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564536.37000 | 4185505.70000 | 0.77832 | 8.67 | 8.67 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564556.37000 | 4185505.70000 | 0.92297 | 8.27 | 8.27 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564436.37000 | 4185525.70000 | 0.39000 | 8.08 | 8.08 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564456.37000 | 4185525.70000 | 0.43675 | 8.51 | 8.51 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564476.37000 | 4185525.70000 | 0.49260 | 8.90 | 8.90 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564496.37000 | 4185525.70000 | 0.56199 | 8.74 | 8.74 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564516.37000 | 4185525.70000 | 0.64543 | 8.75 | 8.75 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564536.37000 | 4185525.70000 | 0.74655 | 8.94 | 8.94 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564556.37000 | 4185525.70000 | 0.87145 | 9.04 | 9.04 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564436.37000 | 4185545.70000 | 0.38043 | 9.12 | 9.12 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564456.37000 | 4185545.70000 | 0.42514 | 9.35 | 9.35 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564476.37000 | 4185545.70000 | 0.47829 | 9.42 | 9.42 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564496.37000 | 4185545.70000 | 0.54221 | 9.25 | 9.25 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564516.37000 | 4185545.70000 | 0.61820 | 9.17 | 9.17 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564536.37000 | 4185545.70000 | 0.70928 | 9.08 | 9.08 | 1.50 |
| PERIOD ALL | 00043872 | | | | |

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|---|---|---|---|---|---|
| 564556.37000 | 4185545.70000 | 0.81872 | 8.90 | 8.90 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564436.37000 | 4185565.70000 | 0.37156 | 9.26 | 9.26 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564456.37000 | 4185565.70000 | 0.41368 | 9.32 | 9.32 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564476.37000 | 4185565.70000 | 0.46328 | 9.22 | 9.22 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564496.37000 | 4185565.70000 | 0.52152 | 9.00 | 9.00 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564476.37000 | 4185585.70000 | 0.44539 | 9.16 | 9.16 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564496.37000 | 4185585.70000 | 0.49699 | 9.23 | 9.23 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564516.37000 | 4185585.70000 | 0.55634 | 9.30 | 9.30 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564536.37000 | 4185585.70000 | 0.62466 | 9.18 | 9.18 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564556.37000 | 4185585.70000 | 0.70210 | 9.33 | 9.33 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564456.37000 | 4185605.70000 | 0.38451 | 9.71 | 9.71 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564476.37000 | 4185605.70000 | 0.42492 | 9.72 | 9.72 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564496.37000 | 4185605.70000 | 0.47079 | 9.66 | 9.66 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564536.37000 | 4185605.70000 | 0.58066 | 9.51 | 9.51 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564556.37000 | 4185605.70000 | 0.64524 | 9.46 | 9.46 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564476.37000 | 4185625.70000 | 0.40417 | 9.89 | 9.89 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564496.37000 | 4185625.70000 | 0.44456 | 9.64 | 9.64 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564536.37000 | 4185625.70000 | 0.53802 | 9.57 | 9.57 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564556.37000 | 4185625.70000 | 0.59122 | 9.50 | 9.50 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564476.37000 | 4185645.70000 | 0.38325 | 9.74 | 9.74 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564763.94000 | 4185520.26000 | 4.40107 | 7.38 | 7.38 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564783.94000 | 4185520.26000 | 4.46391 | 6.50 | 6.50 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564803.94000 | 4185520.26000 | 4.41372 | 5.60 | 5.60 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564823.94000 | 4185520.26000 | 4.29460 | 4.98 | 4.98 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564763.94000 | 4185540.26000 | 3.09556 | 7.86 | 7.86 | 1.50 |
| PERIOD ALL | 00043872 | | | | |
| 564783.94000 | 4185540.26000 | 3.17124 | 7.33 | 7.33 | 1.50 |
| PERIOD ALL | 00043872 | | | | |

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  564803.94000 4185540.26000       3.16356     6.77     6.77     1.50
PERIOD  ALL       00043872
  564823.94000 4185540.26000       3.10682     5.88     5.88     1.50
PERIOD  ALL       00043872
  564843.94000 4185540.26000       3.02049     5.24     5.24     1.50
PERIOD  ALL       00043872
  564763.94000 4185560.26000       2.27613     8.40     8.40     1.50
PERIOD  ALL       00043872
  564783.94000 4185560.26000       2.32569     8.22     8.22     1.50
PERIOD  ALL       00043872
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PERIOD  ALL       00043872
  564823.94000 4185560.26000       2.33744     6.53     6.53     1.50
PERIOD  ALL       00043872
  564783.94000 4185580.26000       1.79524     8.29     8.29     1.50
PERIOD  ALL       00043872
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PERIOD  ALL       00043872
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PERIOD  ALL       00043872
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PERIOD  ALL       00043872
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PERIOD  ALL       00043872
  564736.13000 4185066.08000       0.43410     8.08     8.08     1.50
PERIOD  ALL       00043872
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PERIOD  ALL       00043872
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PERIOD  ALL       00043872
  564716.13000 4185106.08000       0.50425     8.06     8.06     1.50
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PERIOD  ALL       00043872
  565010.85000 4185461.05000       3.32337    11.69    11.69     1.50
PERIOD  ALL       00043872
  564989.33000 4185461.05000       3.78847    12.09    12.09     1.50
PERIOD  ALL       00043872
** CONCUNIT ug/m^3
** DEPUNIT g/m^2
```

# Appendix C

## Construction Noise Management Plan

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ESA Community Development

180 Grand Avenue
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# Construction Noise Management Plan – 2424 Webster Street Office Project

## Introduction

This Construction Noise Management Plan ("CNMP") presents project-specific measures for construction contractors to include in the construction contacts to ensure that construction activities are conducted pursuant to City of Oakland Standard Conditions of Approval (SCA) NOI-3 identified in the 2424 Webster Street Office 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 demolish existing structures at the site and construct 150,240 square feet of office space and 11,332 square feet of retail uses. The Project construction period is estimated to begin in March 2021 and last approximately 22 months. Construction activities on the project site would consist of demolition of the existing structures onsite, site preparation, grading and excavation, building construction, paving and application of architectural coatings for finishing interiors and exteriors of the Project building. The Project would require the excavation and off haul of approximately 5,185 cubic yards of earth from the Project site, in addition to demolition rubble from 25,000 square feet of existing structures on the site. No soils are anticipated to be imported to the site.

The CEQA analysis for the Project concluded that, with implementation of SCA NOI-1, Construction Days/Hours; SCA NOI-2, Construction Noise; SCA NOI-3, Extreme Construction Noise; SCA NOI-4, Construction Noise Complaints; and SCA NOI-5, Operational Noise (see Attachment A to the CEQA Addendum) 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 located at 2424 Webster Street, on a 0.61-acre site located just east of Broadway on the block bounded by Webster, 26th, Valdez, and 24th Streets. Immediately north of the project site is MUA Oakland Bar and Restaurant, and to the south is a Hertz Car Rental store. Webster Street is located on the western side of the project site, and the adjoining properties to the east contain surface parking, multi-family residential, and single-family residential land uses as well as some commercial land uses along 24th Street. Existing sensitive receptors in the project vicinity include the Nook at Valdez Apartments at 2425 Valdez Street, adjacent to the eastern boundary of the Project site, and single family homes adjacent to the Project site and along 24th Street.

Residential uses currently under construction at 2500 Webster would be located approximately 100 feet from the Project's northern boundary.

# Project-specific Construction Noise Reduction Measures

Pursuant to SCA NOI-3, 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 does not propose 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-3 (City SCA 65) which addresses extreme construction noise, to the extent they may be appropriate to the Project and its context.

The Project shall implement to 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 and required for the Project:

1. Erect temporary plywood noise barriers around the construction site, particularly along the eastern boundary adjacent to residential buildings.
2. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site.
3. Monitor the effectiveness of noise attenuation measures by monitoring noise levels.
4. 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.
5. Use electric forklifts.
6. Minimize truck traffic idling along 24th Street.
7. Minimize drop height when loading excavated materials onto trucks. Minimize drop height when unloading or moving materials on-site.
8. Sequence the nosiest activities to coincide with the noisiest ambient hours.
9. Locate noisy equipment within the building structure once the exterior facade is installed.
10. Notify adjacent property owners within 300 feet of the project site, at least 10 days prior to commencement of activities.

11. **Project-Specific Complaint Response Mechanisms**

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**.

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# Attachment A: Example Signage for Noise Complaints

## SIGN REQUIREMENTS FOR POSTING CONSTRUCTION HOURS

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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: 8750 Mountain Boulevard**

**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: "Sean Lennan" "925-449-5764"**
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.

# CONSTRUCTION NOISE COMPLAINT LOG

| Complainant Name | Home Address | Phone Number | Disturbance Date/Time | Description of Complaint | Method and Date of Resoulution |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
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# Appendix D

## Non-CEQA Transportation Analysis/Transportation Tables

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FEHR & PEERS

# Draft Memorandum

Date: December 30, 2020

To: Elizabeth Kanner, ESA

From: Sam Tabibnia, Fehr & Peers

**Subject: 2424 Webster Street – Transportation Impact Review (Non-CEQA)**

*OK19-0345*

This memorandum discusses transportation-related topics for the proposed office development at 2424 Webster Street (the Project) that are not considerations under the California Environmental Quality Act (CEQA) but are evaluated to inform decision makers and the public. Some information in the CEQA document is repeated in this memorandum to provide context for the non-CEQA analysis. The information provided in this memorandum is based on the City of Oakland's Transportation Impact Review Guidelines (TIRG) published in April 2017. Sections in this memorandum include:



## Project Description

The Project is located on the east side of Webster Street between 24th and 25th Streets in the Broadway Valdez District of Oakland. The building would consist of approximately 150,240 square feet of office space and approximately 11,330 square feet of ground-level retail space.

Based on the project site plan dated August 21, 2020, the Project would include a basement-level parking garage with 172 automobile parking spaces, consisting of 156 mechanical lift spaces that would be operated by a valet, ten non-ADA surface spaces, and six ADA surface spaces. The parking garage would be accessed through a full access driveway on Webster Street. A two-space back-in ground-level loading bay would be accessed via 24th Street. Proposed bicycle parking would include 84 long-term bicycle parking stalls in a secure bicycle room on the ground floor.

The Project would demolish an existing 12,500 square-foot auto dealership at 2424 Webster Street, a 9,500 square-foot office building at 2410 Webster Street, and a 7,700 square-foot retail building at 2406 Webster Street.

# Trip Generation and Distribution

## Automobile Trip Generation

Trip generation is the process of estimating the number of vehicles that would likely access the Proposed Project on any given day. Since the Project site includes existing uses that would be demolished, the trip generation accounts for the trips generated by the current site that would be eliminated. **Table 1** summarizes the trip generation for the Project. Trip generation data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual* (Tenth Edition) was used as a starting point to estimate the vehicle trip generation.

ITE's *Trip Generation Manual* (Tenth Edition) is primarily based on data collected at single-use suburban sites where the automobile is often the only travel mode. However, the Project site is in a dense mixed-use urban environment where many trips are walk, bike, or transit trips. Since the Project is within 0.5 miles of the 19th Street BART Station, this analysis reduces the ITE based trip generation by about 47 percent to account for non-automobile trips. This reduction is consistent with the City of Oakland's TIRG and is based on US Census commute data for Alameda County from the 2014 5-Year Estimates of the American Community Survey (ACS), which shows that the non-automobile mode share for areas less than 0.5 miles from a BART Station is about 47 percent.

As summarized in Table 1, the net automobile trip generation for the Proposed Project is approximately 610 daily, 76 AM peak hour, and 78 PM peak hour automobile trips.

**Table 1: Vehicle Trip Generation**

| Land Use | Size | Units[1] | Daily | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | In | Out | Total | In | Out | Total |
| ***Proposed*** | | | | | | | | | |
| Retail[2] | 11.3 | KSF | 430 | 7 | 4 | 11 | 21 | 22 | 43 |
| Office[3] | 150.2 | KSF | 1460 | 150 | 24 | 174 | 28 | 145 | 173 |
| *Proposed Project Raw Trip Generation* | | | 1,890 | 157 | 28 | 185 | 49 | 167 | 216 |
| *City of Oakland Trip Generation Adjustment[4]* | | | -890 | -74 | -13 | -87 | -23 | -78 | -101 |
| ***Proposed Project Vehicle Trip Generation*** | | | **1,000** | **83** | **15** | **98** | **26** | **89** | **115** |
| ***Existing*** | | | | | | | | | |
| Auto Dealership[5] | 12.5 | KSF | 350 | 17 | 6 | 23 | 12 | 18 | 30 |
| Retail[2] | 7.7 | KSF | 290 | 4 | 3 | 7 | 14 | 15 | 29 |
| Office[3] | 9.5 | KSF | 90 | 9 | 2 | 11 | 2 | 9 | 11 |
| *Existing Raw Trip Generation* | | | 730 | 30 | 11 | 41 | 28 | 42 | 70 |
| *City of Oakland Trip Generation Adjustment[4]* | | | -340 | -14 | -5 | -19 | -13 | -20 | -33 |
| ***Total Existing*** | | | **390** | **16** | **6** | **22** | **15** | **22** | **37** |
| ***Net New Project Trips*** | | | **610** | **67** | **9** | **76** | **11** | **67** | **78** |

Notes:

1. KSF = 1,000 square feet
2. ITE *Trip Generation* (10th Edition) land use category 820 (Shopping Center):
   Daily: T = 37.75*(X)
   AM Peak Hour: T = 0.94*(X) (62% in, 38% out)
   PM Peak Hour: T = 3.81*(X) (48% in, 52% out)
3. ITE *Trip Generation* (10th Edition) land use category 710 (General Office Building):
   Daily: T = 9.74*(X)
   AM Peak Hour: T = 1.16*(X) (86% in, 14% out)
   PM Peak Hour: T = 1.15*(X) (16% in, 84% out)
4. The 46.9% reduction is based on the City of Oakland's *Transportation Impact Review Guidelines* for development in an urban environment than 0.5 miles from a BART Station.
5. ITE *Trip Generation* (10th Edition) land use category 840 (Automobile Sales):
   Daily: T = 27.84*(X)
   AM Peak Hour: T = 1.87*(X) (73% in, 27% out)
   PM Peak Hour: T = 2.43*(X) (40% in, 60% out)

Source: Fehr & Peers, 2020

## Non-Vehicular Trip Generation

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

**Table 2: Trip Generation by Travel Mode**

| Mode | Mode Share Adjustment Factors[1] | Daily | AM Peak Hour | PM Peak Hour |
|---|---|---|---|---|
| Automobile | 0.53 | 610 | 76 | 78 |
| Transit | 0.30 | 341 | 43 | 44 |
| Bike | 0.05 | 59 | 7 | 7 |
| Walk | 0.10 | 121 | 15 | 15 |
| | ***Total Trips*** | **1,131** | **141** | **144** |

Notes:

1. Based on the City of Oakland *Transportation Impact Review Guidelines* assuming project site is in an urban environment within 0.5 miles of a BART Station. Percentages do not add to 100%

Source: Fehr & Peers, 2020

## Trip Distribution and Study Intersection Selection

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

Trips generated by the Project, as shown in Table 1, were assigned to the roadway network according to the trip distribution shown on Figure 1. **Figure 2** shows the resulting trip assignment.

According to the City of Oakland's TIRG, the criteria for the intersections to be studied in a transportation impact study include the following:

- All intersection(s) of streets adjacent to project site;
- All signalized intersections, all-way stop-controlled intersections, or roundabouts where 100 or more peak hour trips are added by the project;
- All signalized intersections with 50 or more peak-hour trips and the existing intersection operations are at Level of Service D, E, or F; and

- Side-street stop-controlled intersection(s) where 50 or more peak hour trips are added by the project to any individual movement other than the major-street through movement.

Following these criteria, the following three study intersections are selected:

1. Broadway/24th Street (Project would add more than 10 peak hour trips to the stop-controlled approach of a side-street stop-controlled intersection)
2. Broadway/Webster Street/25th Street (Adjacent to the Project site)
3. Webster Street/24th Street (Adjacent to the Project site)

Fehr & Peers retained a traffic count firm to conduct the peak hour (7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM) intersection count data in February 2020. The counts include automobiles, trucks, and bicycles by turning movement and pedestrians by approach, and were collected on a clear day, while area schools were in normal session. **Appendix A** presents the existing traffic volume counts. For each study intersection, the peak hour (i.e., the hour with the highest traffic volumes) for the AM and PM peak periods were selected for evaluation.

## Intersection Operations

Field reconnaissance was performed at the three study intersections to identify intersection lane configuration. In addition, the City of Oakland provided signal timing data for the signalized study intersection.

The following scenarios were evaluated:

- **Existing Conditions**: Represents the existing conditions (February 2020).
- **Existing Plus Project Conditions**: Represents the existing conditions plus traffic generated after completion of the Project.

**Figure 3** presents the Existing and Existing plus Project intersection lane configurations, traffic control, and peak hour traffic volumes at the study intersections. Based on the volumes and roadway configurations presented on Figure 3, Fehr & Peers calculated the LOS at the study intersections using the 2010 *Highway Capacity Manual* (HCM) methodologies. **Appendix B** provides the detailed LOS calculation sheets.

**Table 3** summarizes the Existing and Existing Plus Project intersection analysis results. All intersections currently operate and would continue to operate at an overall LOS B or better during both weekday AM and PM peak hours.

**Table 3: Intersection Level of Service Summary**

| Intersection | Traffic Control[1] | Peak Hour | Existing Conditions | | Existing Plus Project | |
|---|---|---|---|---|---|---|
| | | | Delay[2] (seconds) | LOS | Delay[2] (seconds) | LOS |
| 1. Broadway/24th Street | SSSC | AM<br>PM | 3 (27)<br>3 (28) | A (D)<br>A (D) | 4 (30)<br>5 (47) | A (D)<br>A (E) |
| 2. Broadway/Webster Street/25th Street | Signal | AM<br>PM | 11<br>11 | B<br>B | 11<br>11 | B<br>B |
| 3. Webster Street/24th Street | AWSC | AM<br>PM | 8<br>8 | A<br>A | 8<br>9 | A<br>A |

Notes:

1. Signal = intersection controlled by traffic signal; SSSC = Intersection controlled by stop-sign on side-street approach; AWSC = Intersection controlled by stop-sign on all approaches.
2. Delay calculated using HCM 2010 methodologies. Average intersection delay presented for signalized and AWSC intersections. average intersection delay and worst approach delay presented in parenthesis for SSSC intersections.

Source: Fehr & Peers, 2020

The side-street stop-controlled eastbound and westbound approaches of the Broadway/24th Street intersection currently operate at LOS D during both the AM and PM peak hours. Under Existing Plus Project conditions, the westbound approach would degrade to LOS E during the PM peak hour. The Broadway/24th Street intersection would not meet the peak-hour volume traffic signal warrant (Warrant 3B) in the *Manual on Uniform Traffic Control Devices* (MUTCD) under Existing or Existing Plus Project conditions. **Appendix C** provides the signal warrant calculations.

# Site Plan Review

An evaluation of access and circulation for all travel modes, based on the site plan dated August 21, 2020, is summarized below.

## Vehicle Access and Circulation

Office tenants and building visitors would access the Project's parking through a driveway on Webster Street, about 60 feet north of 24th Street. The driveway would provide access to the basement-level parking garage, which would provide 172 automobile parking spaces. The garage would include 156 spaces accommodated in five-level mechanical lifts, which would be used as valet spaces. The remaining 16 automobile parking spaces would be surface stalls and include six ADA-accessible spaces.

The parking garage would generally provide adequate internal circulation for vehicles. However, the entrance/exit ramp may not provide adequate space for two large automobiles to simultaneously pass in opposing directions. Considering that the parking level would be restricted to office tenants and valet parking attendants, who would be familiar with the garage, installation of mirrors in the curve ramp would allow drivers to see oncoming vehicles and minimize potential conflicts.

In addition, the Project's parking driveway on Webster Street would not provide adequate sight distance between exiting motorists and pedestrians on the adjacent sidewalk. Adequate sight distance is defined as a clear line-of-sight between a motorist ten feet back from the sidewalk and a pedestrian 10 feet away on each side of the driveway. The Project driveway should be redesigned to provide adequate sight distance. If adequate sight distance cannot be achieved, audio and visual warnings devices should be installed at the driveway.

Webster Street, between 24th and 25th Street, currently designates seven metered parking spaces (two-hour time limit) and a 55-foot yellow loading zone. The proposed Project driveway location on Webster Street and the need for adequate sight distance between vehicles exiting the driveway and vehicles on both direction of Webster Street would require the elimination of two parking spaces and a portion of the yellow loading zone, and reconfiguration of curb space along the project frontage.

> **Recommendation 1:** While not required to address a CEQA impact, the following should be considered as part of the final design for the Project at the discretion of the City of Oakland Planning staff:
>
> - Install mirrors on the ramp in the parking garage to ensure that motorists can see on-coming vehicles.
> - Provide adequate sight distance between exiting vehicles and pedestrians on the adjacent sidewalk at the Project driveway on Webster Street. If adequate sight distance cannot be achieved, provide audio and visual warning devices at the driveway.
> - Designate 40 feet of passenger loading space near the lobby on Webster Street for passenger pick-up/drop off.
> - Designate 20 feet of red curb on either side of the Project driveway on Webster Street to ensure adequate sight distance between vehicles exiting the driveway and vehicles in both direction of Webster Street.

## Bicycle Access and Bicycle Parking

Adjacent to the Project site, existing bicycle facilities include a Class 2 bicycle lane on southbound Webster Street and a Class 3 bicycle route on northbound Webster Street. Broadway, between 22nd and Webster Streets, is designated as a Class 3 arterial bicycle route. North of Webster

Street, Broadway provides Class 2 bicycle lanes in both directions. The nearest bikeshare station is located two blocks south of the project site on Grand Avenue just east of Webster Street.

The City's 2019 Oakland Bike Plan (*Let's Bike Oakland*, May 2019) proposes the following in the vicinity of the project:

- Protected Class 2 bicycle lanes on Broadway, 27th Street, and Grand Avenue
- Neighborhood Bike Route on 24th Street

Existing bicycle parking along the Project frontage consists of two U-shaped bike racks on Webster Street, accommodating four bicycles. The nearest Bay Wheels bike-share station to the project is about 500 feet south of the project site on the south side of Grand Avenue, just east of Webster Street.

The Project would provide long-term bicycle parking for 84 bicycles in a secure bicycle room on the ground floor accessed through the building lobby. Short-term bicycle parking would be provided through bicycle racks for 16 bicycles along the Project frontage on Webster Street sidewalk.

Chapter 17.117 of the Oakland Planning 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. **Table 4** compares the required and provided quantity of bicycle parking spaces for the Project. The Project is required to provide a minimum of 21 long-term and 14 short-term bicycle parking spaces. The Project would exceed the minimum required quantity of long-term and short-term bicycle parking.

**Table 4: Bicycle Parking**

| Land Use | Size | Unit [1] | Long-Term Bicycle Parking | | | Short-Term Bicycle Parking | | |
|---|---|---|---|---|---|---|---|---|
| | | | Supply | Required [2] | Difference | Supply | Required [2] | Difference |
| Office | 150.2 | KSF | - | 19 | - | - | 10 | - |
| Retail | 11.3 | KSF | - | 2 | - | - | 4 | - |
| ***Total*** | ***154.1*** | ***KSF*** | ***84*** | ***21*** | ***+63*** | ***16*** | ***14*** | ***+2*** |

Notes:
1. KSF = 1,000 square-feet
2. Per Oakland Planning Code Section 17.117.110; For D-BV zone, Office: 1 long-term space per 8 KSF (min 2 spaces), 1 short-term space per 15 KSF (min 2 spaces); Retail: 1 long-term space per 8 KSF (min 2 spaces), 1 short-term space per 3 KSF (min 2 spaces).

Source: Fehr & Peers, 2020.

## Pedestrian Access and Circulation

Primary pedestrian access for the office-use component of the Project would be through a main lobby on the west side of the building on Webster Street, which would connect to the basement garage and office levels through elevators and a stairwell. A secondary stairwell connecting the basement parking level to the ground floor and office levels would be provided at the northwest corner of the building. The retail component of the Project would be along Webster Street on the west side of the building.

Pedestrian facilities on the streets adjacent to the Project are described below:

- Webster Street currently provides a 11-foot sidewalk along the west side of the Project site. Occasional tree wells, signposts, and parking meters adjacent to the street narrow the sidewalk to a minimum of 7.5 feet. The Project proposes additional tree wells and bicycle racks on the sidewalks along the project frontage. The sidewalk would continue to provide a 7.5 feet pedestrian clear width.
- 15th Street currently provides a 10-foot sidewalk along the south side of the Project site. Occasional signposts adjacent to the street narrow the sidewalk to a minimum of nine feet. The Project would not modify the sidewalk along 15th Street.

Pedestrian facilities at the intersections nearest to the site include:

- The Broadway/Webster Street/25th Street intersection is signalized and provides diagonal curb ramps on all four corners and standard crosswalk markings on all but the north approach. Pedestrian signal heads and audible signals are provided in all directions of marked crossings, with pedestrian countdown signal heads and push-button on the south approach across Broadway. The east approach includes a right-turn slip lane and a pork chop island. Only the diagonal curb ramp in the northwest corner of the intersection provides truncated domes. Although the north approach of the intersection does not provide a marked crosswalk or pedestrian signal heads, there are no signs prohibiting pedestrian crossings.
- The Broadway/24th Street intersection is side-street stop controlled and provides diagonal curb ramps with truncated domes at three corners and one directional curb ramp without truncated domes at the northwest corner. The south approach provides Rectangular Rapid Flashing Beacons, a high visibility crosswalk, and advanced yield markings on the northbound and southbound approaches. The east approach provides a standard crosswalk, while the west and north approaches are unmarked.
- The Webster Street/24th Street intersection is all-way stop-controlled and provides high visibility crosswalks on the south and east approaches. There are no crosswalk markings

on the north and west approaches. A bulbout with directional curb ramps and truncated domes extends the curb at the southeast corner. All other corners provide diagonal curb ramps without truncated domes.

The *Broadway Valdez District Specific Plan* (2014) identifies the following improvements at the Broadway/Webster Street/25th Street intersection:

- Alteration of existing intersection geometry to provide improved alignment and allow westbound vehicle through movement
- Installation of curb extensions at all but the northwest corner
- Removal of the channelized island on Webster Street
- Installation of crosswalk marking at the north approach of Broadway

**Recommendation 2:** While not required to address a CEQA impact, the following should be considered as part of the final design for the Project at the discretion of the City of Oakland Planning staff:

- Explore the feasibility and, if determined feasible by City of Oakland staff, install a curb extension (bulbout) with directional curb ramps on the northeast corner of the Webster/24th Street intersection.
- Install high visibility crosswalk markings across the north and west approaches of the Webster/24th Street intersection.
- Explore the feasibility and, if determined feasible by City of Oakland staff, contribute to the proposed improvements at the Broadway/Webster Street/25th Street intersection identified in the *Broadway Valdez District Specific Plan*.

## Transit Access

Transit service providers in the project vicinity include BART and AC Transit. BART provides regional rail service throughout the East Bay and across the Bay. The Project is located approximately 0.4 miles from the 19th Street BART Station. The nearest station portal is on the north side of Thomas L Berkeley Way, just east of Broadway.

AC Transit is the primary bus service provider in the City of Oakland. The City of Oakland Free Broadway Shuttle (“Free B”) also operates in the vicinity of the Project. **Table 5** summarizes the AC Transit and Broadway Shuttle stops nearest to the Project site.

Improvements proposed by the *Broadway Valdez District Specific Plan* include relocation of the northbound bus stop on Broadway at 25th Street from near-side (south of 25th Street) to far-side (north of 25th Street). However, the relocation is not recommended at this time because the existing bus stop is currently used by the Broadway Shuttle (night service) and the Shuttle would not be able to use the relocated bus stop.

**Recommendation 3:** While not required to address a CEQA impact, the following should be considered as part of the final design for the Project at the discretion of the City of Oakland Planning staff:

- Coordinate with City of Oakland and AC Transit to explore the feasibility and, if determined feasible by City of Oakland staff, install bus stop amenities such as benches, shelters, and/or trash receptacles at the northbound and southbound bus stops on Broadway at 25th Street.

**Table 5: AC Transit and Broadway Shuttle Stops**

| Stop Location | Distance to Project Site[1] | Lines Served | Stop Amenities |
|---|---|---|---|
| Broadway at 25th Street | <0.1 miles | 51A, 851, Broadway Shuttle (night service only) | Southbound: no amenities<br>Northbound: trash receptacle |
| Broadway at 27th Street | 0.1 miles | 51A, 851, Broadway Shuttle (night service only) | No amenities |
| Broadway at Grand Avenue | 0.2 miles | 51A, 851, Broadway Shuttle (night service only) | Southbound: bench, trash receptacle<br>Northbound: shelter, bench, trash receptacle |
| Grand Avenue at Webster Street | 0.2 miles | 12, Oakland Free Broadway Shuttle (day service only) | Near-side: no amenities<br>Far-side: Bench |
| Grand Avenue at Valdez Street | 0.2 miles | 12 | No amenities |
| Harrison Street at Bay Place | 0.2 miles | 33 | No amenities |
| Telegraph Avenue at 24th Street | 0.2 miles | 6, 800 | Bus boarding island |

Notes:
1. Distance shown is walking distance between bus stop and Project site.

Source: Fehr & Peers, 2020.

### Automobile Parking Requirements

The City of Oakland Municipal Code establishes minimum parking requirements for commercial activities. According to Section 17.116.080, the Project is required to provide a minimum of one automobile parking space for each 600 square feet of ground floor retail space and one automobile parking space for each 1,000 square feet of non-ground floor space. **Table 6** presents the off-street automobile parking requirements for the Project per City Code. The Project proposes 172 net new parking spaces, which exceeds the City of Oakland Municipal Code minimum requirements. No maximum requirements apply to the Project.

**Table 6: Automobile Parking Requirements**

| Land Use | Size | Unit [1] | Minimum Required Parking [2] | Parking Supply | Meets Requirement? |
|---|---|---|---|---|---|
| Non-Ground Level | 146.8 | KSF | 147 | -- | -- |
| Ground Level | 9.0 | KSF | 15 | -- | -- |
| ***Total*** | ***156.2*** | ***KSF*** | ***162*** | ***172*** | ***Yes*** |

Notes:
1. KSF = 1,000 square-feet
2. Per Oakland Planning Code Section 17.116.080 for D-BV zone; Commercial: minimum 1 space per 0.6 ksf ground floor area, 1 space per 1.0 ksf non-ground floor.

Source: Fehr & Peers, 2020.

### Loading Requirements

City Municipal Code Section 17.116.140 requires two off-street loading docks for commercial uses larger than 60,000 square feet but less than 160,000 square feet. The Project would include two commercial loading spaces, which satisfies the City's loading requirements. The loading spaces would be accessed through a driveway on 24th Street and trucks would back into and head out of the loading berths.

## Collision History

A five-year history (January 1, 2015 to December 31, 2019) of collision data in the Project vicinity was obtained from the Statewide Integrated Traffic Records System (SWITRS) and was evaluated for this collision analysis. **Table 7** summarizes the collision data by type and location and **Table 8** summarizes the collision data by severity and location.

As shown in Table 7, approximately 12 collisions were reported during this five-year timeframe at the study intersections and along Webster Street between 24th and 25th Streets. The top two collision types were broadside (33 percent) and pedestrian-involved (25 percent) collisions. Of the 12 reported collisions, nine (75 percent) resulted in injuries and none resulted in fatalities.

**Table 7: Collisions by Type**

| Location | Head-on | Sideswipe | Rear-End | Broadside | Hit Object | Pedestrian-Involved | Bicycle-Involved | Total |
|---|---|---|---|---|---|---|---|---|
| **Intersection** | | | | | | | | |
| Broadway/Webster Street/25th Street | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 3 |
| Broadway/24th Street | 0 | 0 | 0 | 3 | 0 | 3 | 2 | 8 |
| Webster Street/24th Street | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| **Roadway Segment** | | | | | | | | |
| Webster Street (between 24th Street and 25th Street/Broadway) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | **0** | **1** | **1** | **4** | **1** | **3** | **2** | **12** |

Notes:

1. Based on SWITRS five-year collision data reported from January 1, 2015 to January 1, 2020

Source: Fehr & Peers, 2020

**Table 8: Summary of Injuries**

| Location | Property Damage Only Collisions | Injury Collisions | Fatality Collisions | Total | Person-Injuries | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Bike | Ped | Driver/ Passenger | Total |
| **Intersection** | | | | | | | | |
| Broadway/Webster Street/25th Street | 1 | 2 | 0 | 3 | 0 | 0 | 4 | 4 |
| Broadway/24th Street | 2 | 6 | 0 | 8 | 1 | 3 | 2 | 6 |
| Webster Street/24th Street | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| **Roadway Segment** | | | | | | | | |
| Webster Street (between 24th Street and 25th Street/Broadway) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | 3 | 9 | 0 | 12 | 1 | 3 | 7 | 11 |

Notes:
1. Based on SWITRS five-year collision data reported from January 1, 2015 to January 1, 2020

Source: Fehr & Peers, 2020

At the Broadway/Webster Street/25th Street intersection, two of three collisions were due to unsafe speed. At the Broadway/24th Street, 50 percent of reported collisions were related to automobile right-of-way or pedestrian right-of-way violations.

The Highway Safety Manual (HSM, Predictive Method - Volume 2, Part C) provides a methodology to predict the number of collisions for intersections and street segments based on their specific characteristics, such as vehicle and pedestrian volume, number of lanes, signal phasing, on-street parking, and number of driveways. **Table 9** presents the predicted collision frequencies for the three study intersections and one study segment using the HSM Predictive Method for Urban and Suburban Arterials and compares the predicted collision frequencies with the actual reported collision frequencies. **Appendix D** provides the detailed predicted collision frequency calculation sheets based on the HSM methodology. Intersections or roadway segments with collision frequencies greater than the predicted frequency are identified as locations that should be evaluated in greater detail for collision trends and potential modifications.

As shown in Table 9, all study locations have a lower reported collision frequency than predicted by the HSM.

### Table 9: Predicted and Actual Crash Frequencies

| Location | Predicted Crash Frequency[1] (per year) | Actual Crash Frequency[2] (per year) | Difference | Higher Than Predicted? |
|---|---|---|---|---|
| **Intersection** | | | | |
| Broadway/Webster Street/25th Street | 2.4 | 0.6 | -1.8 | No |
| Broadway/24th Street | 1.7 | 1.6 | -0.1 | No |
| Webster Street/24th Street | 0.8 | 0.2 | -0.6 | No |
| **Roadway Segment** | | | | |
| Webster Street (between 24th Street and 25th Street/ Broadway) | 0.1 | 0.0 | -0.1 | 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, 2015 to January 1, 2020

Source: Fehr & Peers, 2020

Please contact Sam Tabibnia (stabibnia@fehrandpeers.com or 510-835-1943) with questions or comments.

## ATTACHMENTS

Figure 1 – Project Vehicle Trip Distribution

Figure 2 – Project Vehicle Trip Assignment

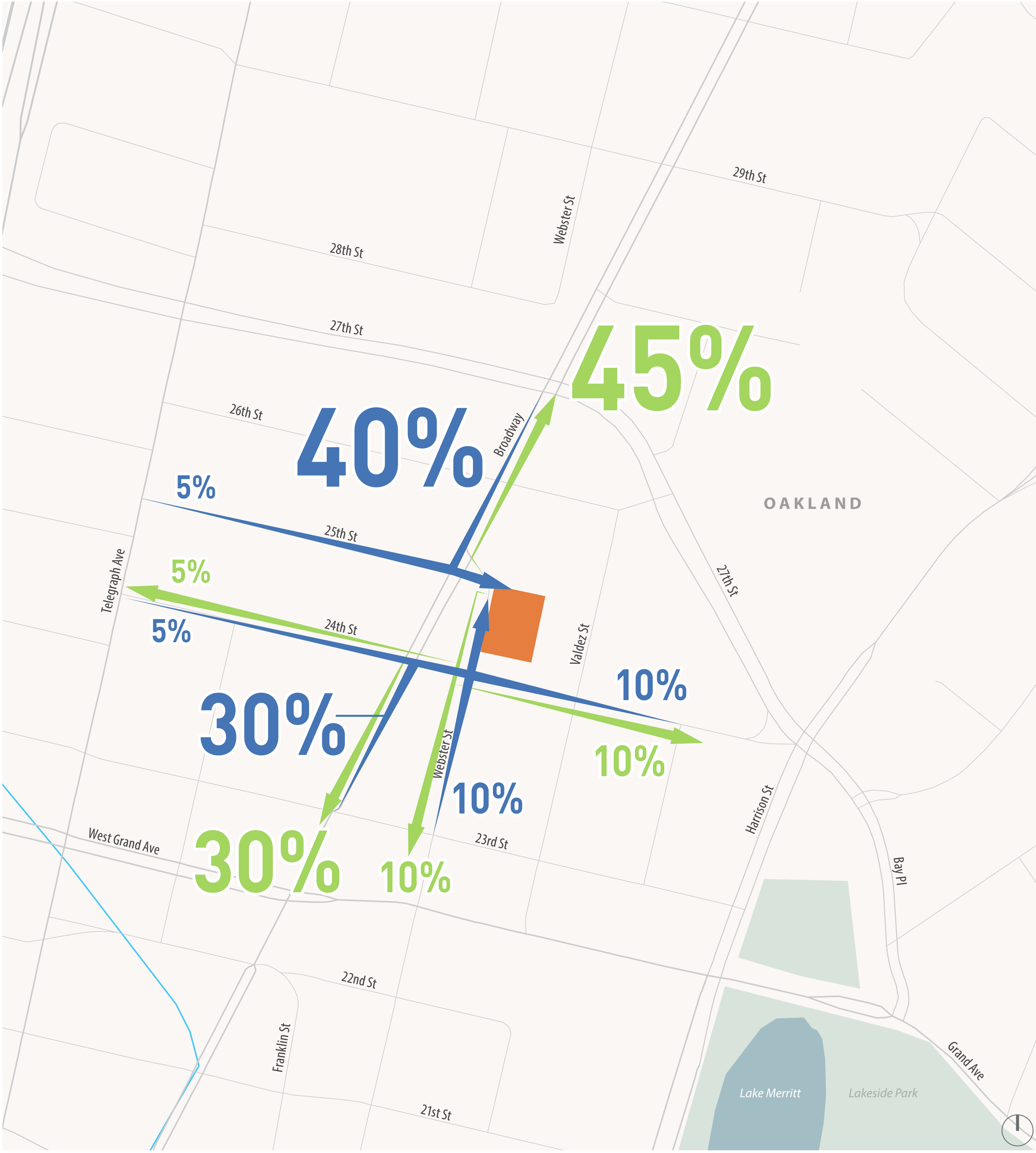
Figure 3 – Existing and Existing Plus Project Peak Hour Intersection Volumes, Lane Configurations, and Traffic Controls

Appendix A – Existing Traffic Volume Counts

Appendix B – Intersection LOS Calculation Sheets

Appendix C - Signal Warrant Calculations

Appendix D – Predicted Crash Frequency Calculation Sheets




Project Site

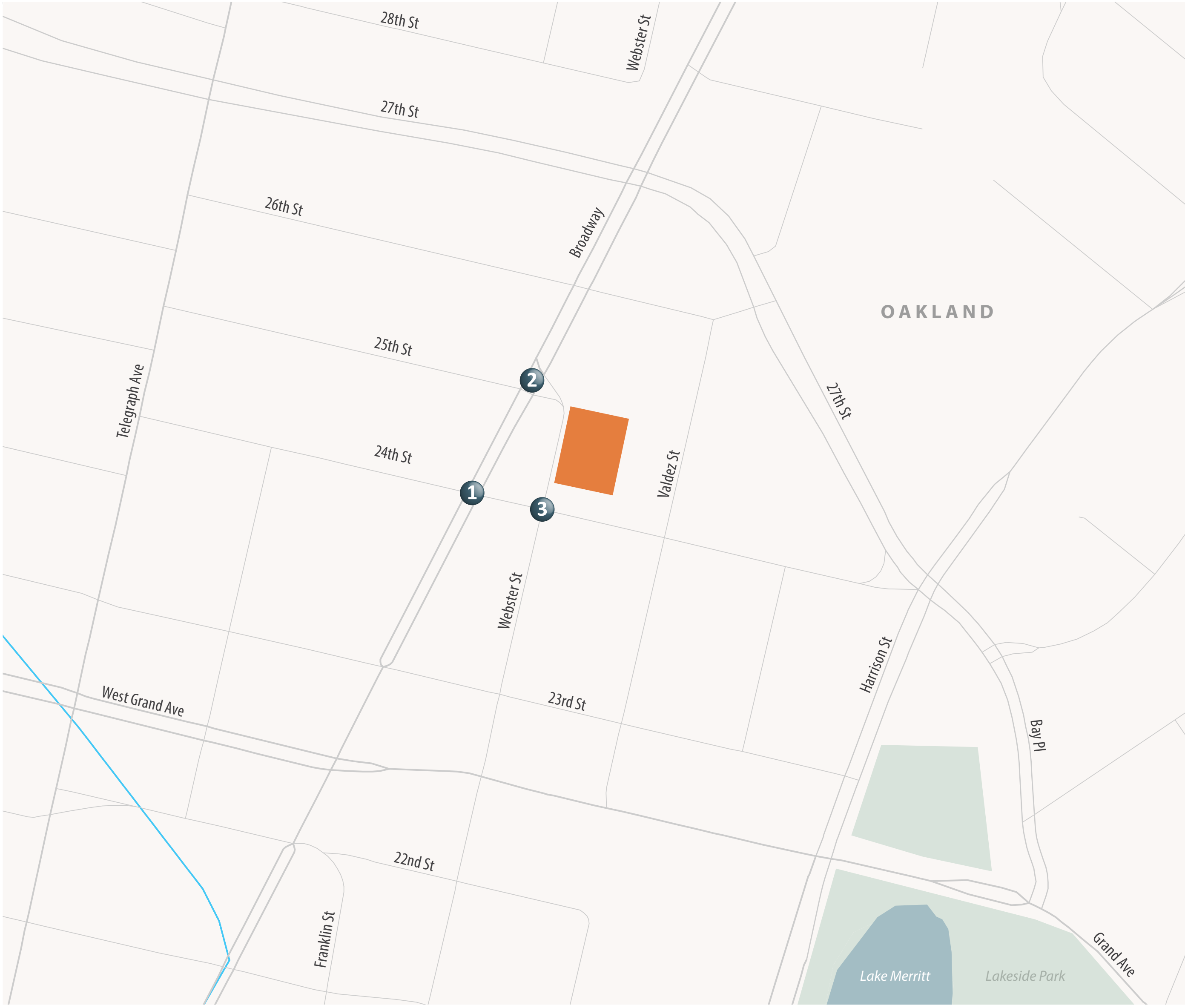
#%

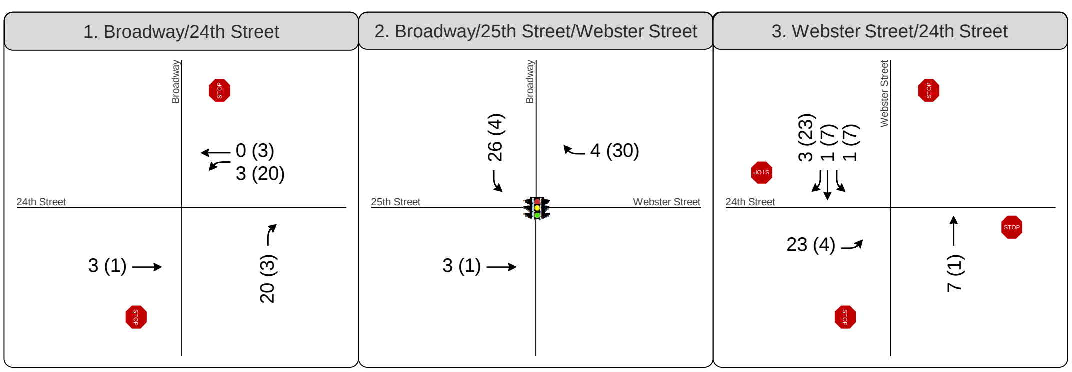
Project Trip Distribution

Figure 1

## Project Vehicle Trip Distribution

OK19-0345_1_TripDistro




XX (YY) AM (PM) Peak Hour Traffic Volumes — Signalized Intersection — Stop Sign

Project Site — # Study Intersection

Figure 2

# Project Vehicle Trip Assignment


Figure 3

Existing and Existing Plus Project
Peak Hour Intersection Volumes, Lane Configurations, and Traffic Controls

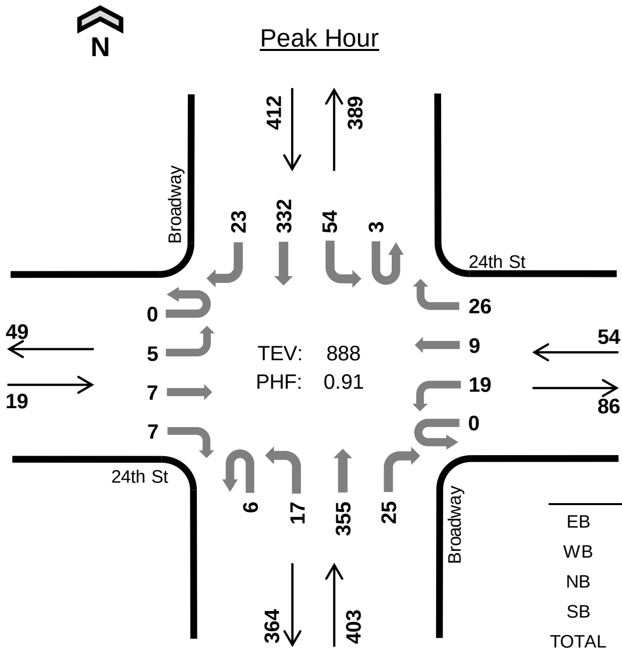
OK19-0345_3_Vol-EX-EXPP

# Appendix A:
# Existing Traffic Volume Counts

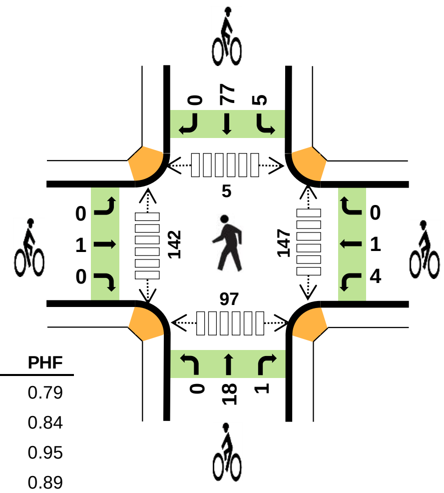
# Broadway
# 24th St

Date: 02/25/2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour




| | HV %: | PHF |
|---|---|---|
| EB | 15.8% | 0.79 |
| WB | 11.1% | 0.84 |
| NB | 6.0% | 0.95 |
| SB | 2.9% | 0.89 |
| TOTAL | 5.1% | 0.91 |




## Two-Hour Count Summaries

| Interval Start | 24th St Eastbound UT | 24th St Eastbound LT | 24th St Eastbound TH | 24th St Eastbound RT | 24th St Westbound UT | 24th St Westbound LT | 24th St Westbound TH | 24th St Westbound RT | Broadway Northbound UT | Broadway Northbound LT | Broadway Northbound TH | Broadway Northbound RT | Broadway Southbound UT | Broadway Southbound LT | Broadway Southbound TH | Broadway Southbound RT | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 0 | 2 | 0 | 2 | 0 | 4 | 3 | 3 | 1 | 2 | 49 | 10 | 0 | 5 | 42 | 4 | 127 | 0 |
| 7:15 AM | 0 | 1 | 1 | 3 | 0 | 2 | 6 | 4 | 3 | 4 | 44 | 7 | 2 | 10 | 41 | 2 | 130 | 0 |
| 7:30 AM | 0 | 1 | 0 | 3 | 0 | 6 | 3 | 5 | 4 | 3 | 61 | 13 | 1 | 12 | 55 | 4 | 171 | 0 |
| 7:45 AM | 0 | 0 | 2 | 6 | 0 | 3 | 3 | 7 | 4 | 0 | 71 | 14 | 0 | 7 | 76 | 4 | 197 | 625 |
| **8:00 AM** | **0** | **1** | **0** | **3** | **0** | **4** | **2** | **10** | **0** | **2** | **82** | **7** | **0** | **15** | **71** | **4** | **201** | 699 |
| **8:15 AM** | **0** | **2** | **1** | **1** | **0** | **5** | **1** | **1** | **2** | **4** | **90** | **6** | **1** | **13** | **78** | **6** | **211** | 780 |
| **8:30 AM** | **0** | **1** | **2** | **2** | **0** | **6** | **2** | **8** | **1** | **6** | **93** | **4** | **2** | **13** | **87** | **6** | **233** | 842 |
| **8:45 AM** | **0** | **1** | **4** | **1** | **0** | **4** | **4** | **7** | **3** | **5** | **90** | **8** | **0** | **13** | **96** | **7** | **243** | **888** |
| Count Total | 0 | 9 | 10 | 21 | 0 | 34 | 24 | 45 | 18 | 26 | 580 | 69 | 6 | 88 | 546 | 37 | 1,513 | 0 |
| **Peak Hour All** | **0** | **5** | **7** | **7** | **0** | **19** | **9** | **26** | **6** | **17** | **355** | **25** | **3** | **54** | **332** | **23** | **888** | **0** |
| **Peak Hour HV** | **0** | **1** | **2** | **0** | **0** | **1** | **2** | **3** | **1** | **1** | **22** | **0** | **0** | **0** | **11** | **1** | **45** | **0** |
| **Peak Hour HV%** | **-** | **20%** | **29%** | **0%** | **-** | **5%** | **22%** | **12%** | **17%** | **6%** | **6%** | **0%** | **0%** | **0%** | **3%** | **4%** | **5%** | **0** |

*Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals EB | Heavy Vehicle Totals WB | Heavy Vehicle Totals NB | Heavy Vehicle Totals SB | Heavy Vehicle Totals Total | Bicycles EB | Bicycles WB | Bicycles NB | Bicycles SB | Bicycles Total | Pedestrians (Crossing Leg) East | Pedestrians (Crossing Leg) West | Pedestrians (Crossing Leg) North | Pedestrians (Crossing Leg) South | Pedestrians (Crossing Leg) Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 0 | 1 | 9 | 6 | *16* | 0 | 2 | 3 | 11 | *16* | 23 | 12 | 0 | 16 | *51* |
| 7:15 AM | 1 | 2 | 4 | 3 | *10* | 0 | 2 | 2 | 7 | *11* | 22 | 19 | 0 | 6 | *47* |
| 7:30 AM | 0 | 2 | 6 | 5 | *13* | 0 | 1 | 0 | 11 | *12* | 28 | 23 | 0 | 19 | *70* |
| 7:45 AM | 0 | 2 | 4 | 5 | *11* | 0 | 1 | 3 | 21 | *25* | 37 | 34 | 0 | 30 | *101* |
| **8:00 AM** | **0** | **1** | **6** | **4** | ***11*** | **0** | **0** | **8** | **13** | ***21*** | **36** | **43** | **0** | **22** | *101* |
| **8:15 AM** | **2** | **0** | **4** | **3** | ***9*** | **0** | **1** | **4** | **28** | ***33*** | **32** | **49** | **2** | **22** | *105* |
| **8:30 AM** | **1** | **2** | **9** | **2** | ***14*** | **1** | **2** | **3** | **21** | ***27*** | **44** | **31** | **3** | **25** | *103* |
| **8:45 AM** | **0** | **3** | **5** | **3** | ***11*** | **0** | **2** | **4** | **20** | ***26*** | **35** | **19** | **0** | **28** | *82* |
| Count Total | 4 | 13 | 47 | 31 | *95* | 1 | 11 | 27 | 132 | *171* | 257 | 230 | 5 | 168 | *660* |
| **Peak Hour** | **3** | **6** | **24** | **12** | ***45*** | **1** | **5** | **19** | **82** | ***107*** | **147** | **142** | **5** | **97** | ***391*** |

**Two-Hour Count Summaries - Heavy Vehicles**

| Interval Start | 24th St Eastbound | | | | 24th St Westbound | | | | Broadway Northbound | | | | Broadway Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 6 | 2 | 0 | 1 | 5 | 0 | 16 | 0 |
| 7:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 10 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 1 | 4 | 0 | 13 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 0 | 0 | 0 | 3 | 2 | 11 | 50 |
| **8:00 AM** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **6** | **0** | **0** | **0** | **4** | **0** | **11** | 45 |
| **8:15 AM** | **0** | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **3** | **0** | **0** | **0** | **2** | **1** | **9** | 44 |
| **8:30 AM** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **2** | **1** | **0** | **8** | **0** | **0** | **0** | **2** | **0** | **14** | 45 |
| **8:45 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **1** | **0** | **0** | **5** | **0** | **0** | **0** | **3** | **0** | **11** | **45** |
| Count Total | 0 | 2 | 2 | 0 | 0 | 1 | 4 | 8 | 1 | 2 | 42 | 2 | 0 | 2 | 26 | 3 | 95 | 0 |
| **Peak Hour** | **0** | **1** | **2** | **0** | **0** | **1** | **2** | **3** | **1** | **1** | **22** | **0** | **0** | **0** | **11** | **1** | **45** | **0** |

**Two-Hour Count Summaries - Bikes**

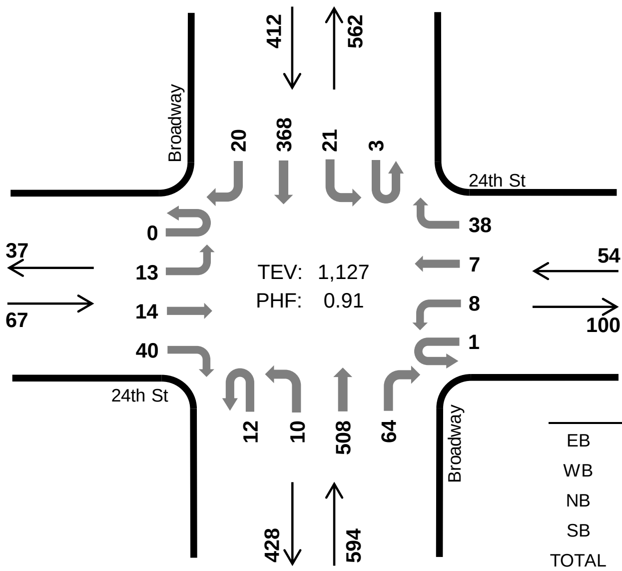
| Interval Start | 24th St Eastbound | | | 24th St Westbound | | | Broadway Northbound | | | Broadway Southbound | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | |
| 7:00 AM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 11 | 0 | 16 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 7 | 0 | 11 | 0 |
| 7:30 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 12 | 0 |
| 7:45 AM | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 20 | 0 | 25 | 64 |
| **8:00 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **7** | **1** | **1** | **12** | **0** | **21** | 69 |
| **8:15 AM** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **4** | **0** | **3** | **25** | **0** | **33** | 91 |
| **8:30 AM** | **0** | **1** | **0** | **2** | **0** | **0** | **0** | **3** | **0** | **1** | **20** | **0** | **27** | 106 |
| **8:45 AM** | **0** | **0** | **0** | **1** | **1** | **0** | **0** | **4** | **0** | **0** | **20** | **0** | **26** | **107** |
| Count Total | 0 | 1 | 0 | 8 | 3 | 0 | 2 | 24 | 1 | 6 | 126 | 0 | 171 | 0 |
| **Peak Hour** | **0** | **1** | **0** | **4** | **1** | **0** | **0** | **18** | **1** | **5** | **77** | **0** | **107** | **0** |

*Note: U-Turn volumes for bikes are included in Left-Turn, if any.*

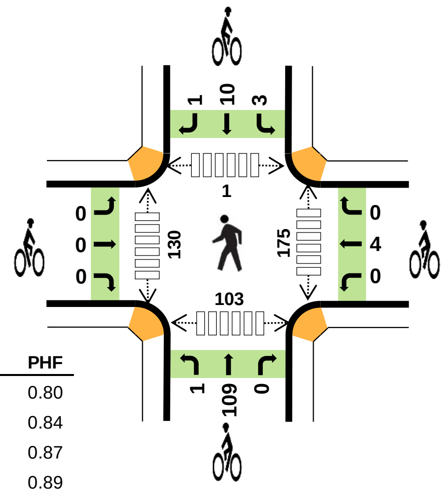
# Broadway
# 24th St

Date: 02/25/2020
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM

Peak Hour




| | HV %: | PHF |
|---|---|---|
| EB | 4.5% | 0.80 |
| WB | 0.0% | 0.84 |
| NB | 1.0% | 0.87 |
| SB | 2.2% | 0.89 |
| TOTAL | 1.6% | 0.91 |




## Two-Hour Count Summaries

| Interval Start | 24th St Eastbound UT | LT | TH | RT | 24th St Westbound UT | LT | TH | RT | Broadway Northbound UT | LT | TH | RT | Broadway Southbound UT | LT | TH | RT | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4:00 PM | 0 | 5 | 1 | 4 | 0 | 3 | 3 | 7 | 1 | 4 | 98 | 8 | 0 | 3 | 100 | 2 | 239 | 0 |
| 4:15 PM | 0 | 2 | 5 | 7 | 0 | 6 | 2 | 11 | 4 | 3 | 124 | 10 | 0 | 13 | 90 | 6 | 283 | 0 |
| 4:30 PM | 0 | 4 | 2 | 7 | 0 | 2 | 3 | 9 | 3 | 1 | 120 | 9 | 1 | 11 | 72 | 3 | 247 | 0 |
| 4:45 PM | 0 | 4 | 4 | 5 | 0 | 3 | 4 | 12 | 2 | 6 | 106 | 15 | 1 | 7 | 92 | 5 | 266 | 1,035 |
| **5:00 PM** | **0** | **3** | **4** | **9** | **1** | **3** | **1** | **6** | **4** | **2** | **132** | **14** | **0** | **2** | **82** | **3** | **266** | 1,062 |
| **5:15 PM** | **0** | **5** | **2** | **9** | **0** | **2** | **2** | **9** | **1** | **3** | **156** | **11** | **2** | **8** | **97** | **4** | **311** | 1,090 |
| **5:30 PM** | **0** | **4** | **2** | **15** | **0** | **1** | **1** | **14** | **5** | **1** | **104** | **10** | **0** | **4** | **105** | **7** | **273** | 1,116 |
| **5:45 PM** | **0** | **1** | **6** | **7** | **0** | **2** | **3** | **9** | **2** | **4** | **116** | **29** | **1** | **7** | **84** | **6** | **277** | **1,127** |
| Count Total | 0 | 28 | 26 | 63 | 1 | 22 | 19 | 77 | 22 | 24 | 956 | 106 | 5 | 55 | 722 | 36 | 2,162 | 0 |
| **Peak Hour All** | **0** | **13** | **14** | **40** | **1** | **8** | **7** | **38** | **12** | **10** | **508** | **64** | **3** | **21** | **368** | **20** | **1,127** | **0** |
| **Peak Hour HV** | **0** | **0** | **1** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **6** | **0** | **0** | **1** | **8** | **0** | **18** | **0** |
| **Peak Hour HV%** | **-** | **0%** | **7%** | **5%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **1%** | **0%** | **0%** | **5%** | **2%** | **0%** | **2%** | **0** |

*Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals EB | WB | NB | SB | Total | Bicycles EB | WB | NB | SB | Total | Pedestrians (Crossing Leg) East | West | North | South | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4:00 PM | 1 | 1 | 0 | 4 | *6* | 0 | 1 | 2 | 1 | *4* | 42 | 9 | 0 | 26 | *77* |
| 4:15 PM | 0 | 0 | 1 | 1 | *2* | 0 | 1 | 21 | 3 | *25* | 22 | 23 | 1 | 18 | *64* |
| 4:30 PM | 0 | 0 | 1 | 3 | *4* | 0 | 0 | 13 | 4 | *17* | 21 | 29 | 0 | 35 | *85* |
| 4:45 PM | 0 | 0 | 3 | 0 | *3* | 0 | 1 | 21 | 2 | *24* | 24 | 28 | 1 | 28 | *81* |
| **5:00 PM** | **1** | **0** | **1** | **3** | ***5*** | **0** | **0** | **31** | **6** | ***37*** | **42** | **35** | **1** | **15** | *93* |
| **5:15 PM** | **0** | **0** | **1** | **1** | ***2*** | **0** | **3** | **31** | **4** | ***38*** | **42** | **38** | **0** | **31** | *111* |
| **5:30 PM** | **1** | **0** | **2** | **4** | ***7*** | **0** | **1** | **26** | **3** | ***30*** | **44** | **33** | **0** | **23** | *100* |
| **5:45 PM** | **1** | **0** | **2** | **1** | ***4*** | **0** | **0** | **22** | **1** | ***23*** | **47** | **24** | **0** | **34** | *105* |
| Count Total | 4 | 1 | 11 | 17 | *33* | 0 | 7 | 167 | 24 | *198* | 284 | 219 | 3 | 210 | *716* |
| **Peak Hour** | **3** | **0** | **6** | **9** | ***18*** | **0** | **4** | **110** | **14** | ***128*** | **175** | **130** | **1** | **103** | ***409*** |

## Two-Hour Count Summaries - Heavy Vehicles

| Interval Start | 24th St Eastbound | | | | 24th St Westbound | | | | Broadway Northbound | | | | Broadway Southbound | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | UT | LT | TH | RT | | |
| 4:00 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 6 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 4 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 15 |
| **5:00 PM** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **3** | **0** | **5** | 14 |
| **5:15 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **0** | **2** | 14 |
| **5:30 PM** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **1** | **3** | **0** | **7** | 17 |
| **5:45 PM** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **1** | **0** | **4** | **18** |
| Count Total | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 11 | 0 | 0 | 1 | 16 | 0 | 33 | 0 |
| **Peak Hour** | **0** | **0** | **1** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **6** | **0** | **0** | **1** | **8** | **0** | **18** | **0** |

## Two-Hour Count Summaries - Bikes

| Interval Start | 24th St Eastbound | | | 24th St Westbound | | | Broadway Northbound | | | Broadway Southbound | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 4 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 19 | 1 | 0 | 2 | 1 | 25 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 1 | 3 | 0 | 17 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 20 | 0 | 0 | 2 | 0 | 24 | 70 |
| **5:00 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **31** | **0** | **1** | **5** | **0** | **37** | 103 |
| **5:15 PM** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **31** | **0** | **0** | **4** | **0** | **38** | 116 |
| **5:30 PM** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **26** | **0** | **2** | **0** | **1** | **30** | 129 |
| **5:45 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **21** | **0** | **0** | **1** | **0** | **23** | **128** |
| Count Total | 0 | 0 | 0 | 0 | 6 | 1 | 3 | 163 | 1 | 4 | 18 | 2 | 198 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **0** | **4** | **0** | **1** | **109** | **0** | **3** | **10** | **1** | **128** | **0** |

*Note: U-Turn volumes for bikes are included in Left-Turn, if any.*

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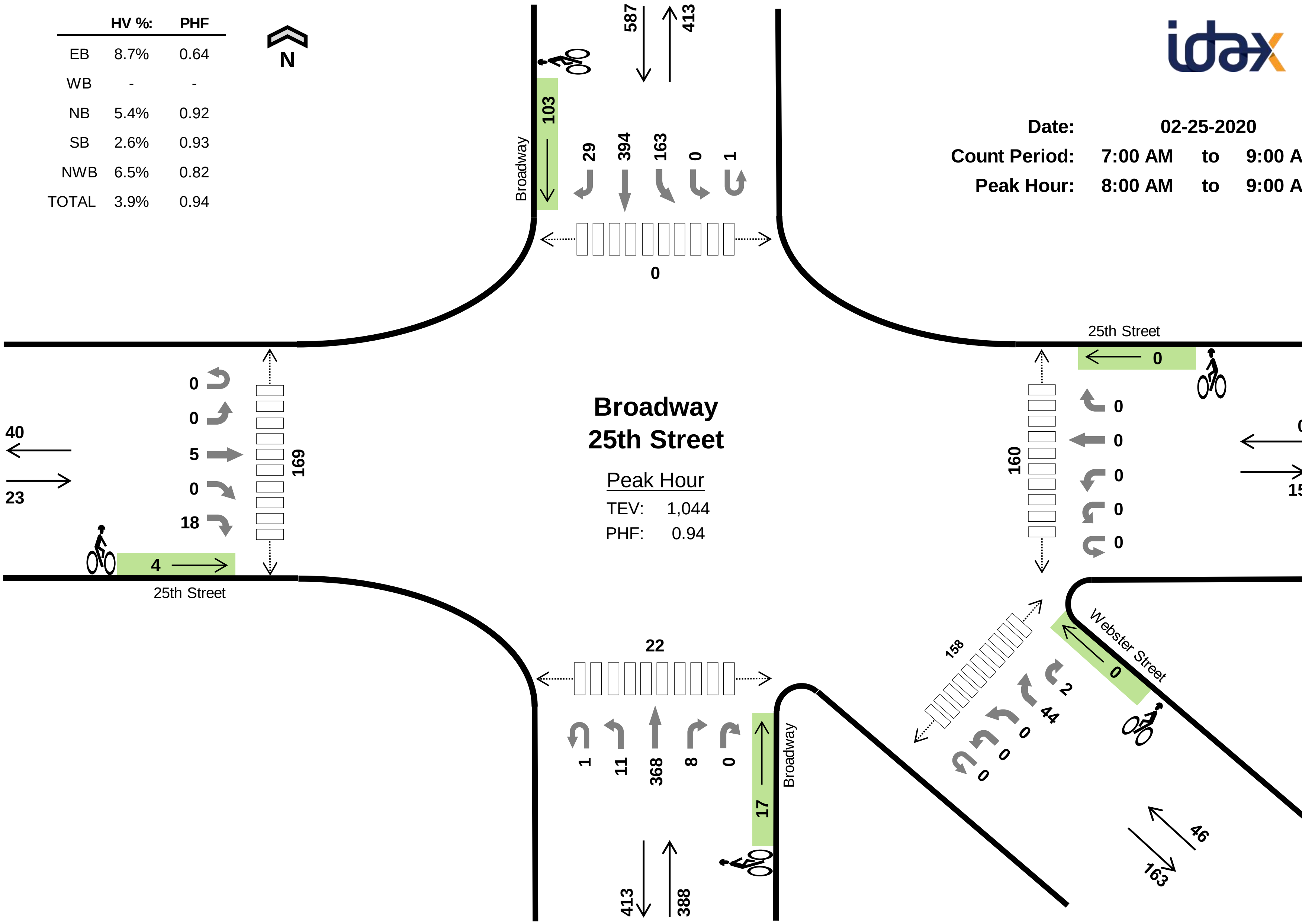
| | HV %: | PHF |
|---|---|---|
| EB | 8.7% | 0.64 |
| WB | - | - |
| NB | 5.4% | 0.92 |
| SB | 2.6% | 0.93 |
| NWB | 6.5% | 0.82 |
| TOTAL | 3.9% | 0.94 |

**Date:** 02-25-2020

**Count Period:** 7:00 AM to 9:00 AM

**Peak Hour:** 8:00 AM to 9:00 AM




**Project Manager:** (415) 310-6469

project.manager.ca@idaxdata.com

**Two-Hour Count Summaries**

| Interval Start | 25th Street | | | | | 25th Street | | | | | Broadway | | | | | Broadway | | | | | Webster Street | | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Eastbound | | | | | Westbound | | | | | Northbound | | | | | Southbound | | | | | Northwestbound | | | | | | |
| | UT | LT | TH | BR | RT | UT | HL | LT | TH | RT | UT | LT | TH | RT | HR | UT | LT | BL | TH | RT | UT | HL | BL | BR | HR | | |
| 7:00 AM | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 52 | 1 | 0 | 0 | 0 | 13 | 51 | 4 | 0 | 0 | 0 | 6 | 0 | 132 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 51 | 2 | 0 | 0 | 0 | 20 | 52 | 3 | 0 | 0 | 0 | 6 | 0 | 141 | 0 |
| 7:30 AM | 0 | 0 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 60 | 1 | 0 | 0 | 0 | 23 | 63 | 2 | 0 | 0 | 0 | 7 | 0 | 167 | 0 |
| 7:45 AM | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 76 | 1 | 0 | 0 | 0 | 24 | 84 | 4 | 0 | 0 | 0 | 5 | 0 | 199 | 639 |
| **8:00 AM** | **0** | **0** | **2** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **6** | **87** | **1** | **0** | **1** | **0** | **40** | **88** | **7** | **0** | **0** | **0** | **10** | **0** | **243** | 750 |
| **8:15 AM** | **0** | **0** | **1** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **93** | **1** | **0** | **0** | **0** | **33** | **98** | **10** | **0** | **0** | **0** | **14** | **0** | **253** | 862 |
| **8:30 AM** | **0** | **0** | **0** | **0** | **8** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **101** | **3** | **0** | **0** | **0** | **42** | **102** | **9** | **0** | **0** | **0** | **10** | **1** | **278** | 973 |
| **8:45 AM** | **0** | **0** | **2** | **0** | **7** | **0** | **0** | **0** | **0** | **0** | **1** | **2** | **87** | **3** | **0** | **0** | **0** | **48** | **106** | **3** | **0** | **0** | **0** | **10** | **1** | **270** | **1,044** |
| Count Total | 0 | 1 | 8 | 0 | 36 | 1 | 0 | 0 | 0 | 0 | 3 | 14 | 607 | 13 | 0 | 1 | 0 | 243 | 644 | 42 | 0 | 0 | 0 | 68 | 2 | 1,683 | 0 |
| **Peak Hour All** | **0** | **0** | **5** | **0** | **18** | **0** | **0** | **0** | **0** | **0** | **1** | **11** | **368** | **8** | **0** | **1** | **0** | **163** | **394** | **29** | **0** | **0** | **0** | **44** | **2** | **1,044** | **0** |
| **HV** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **18** | **1** | **0** | **0** | **0** | **4** | **10** | **1** | **0** | **0** | **0** | **3** | **0** | **41** | **0** |
| **HV%** | **-** | **-** | **0%** | **-** | **11%** | **-** | **-** | **-** | **-** | **-** | **0%** | **18%** | **5%** | **13%** | **-** | **0%** | **-** | **2%** | **3%** | **3%** | **-** | **-** | **-** | **7%** | **0%** | **4%** | **0** |

*Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals | | | | | | Bicycles | | | | | | Pedestrians (Crossing Leg) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | NWB | Total | EB | WB | NB | SB | NWB | Total | East | West | North | South | Southeast | Total |
| 7:00 AM | 1 | 0 | 6 | 5 | 0 | *12* | 0 | 0 | 3 | 13 | 1 | *17* | 24 | 18 | 0 | 1 | 15 | *58* |
| 7:15 AM | 1 | 0 | 5 | 2 | 0 | *8* | 0 | 0 | 0 | 7 | 0 | *7* | 16 | 22 | 0 | 3 | 16 | *57* |
| 7:30 AM | 4 | 0 | 5 | 2 | 1 | *12* | 0 | 0 | 1 | 10 | 0 | *11* | 6 | 28 | 0 | 3 | 8 | *45* |
| 7:45 AM | 1 | 0 | 3 | 4 | 0 | *8* | 0 | 0 | 1 | 16 | 0 | *17* | 14 | 46 | 0 | 4 | 12 | *76* |
| **8:00 AM** | **1** | **0** | **6** | **3** | **2** | ***12*** | **1** | **0** | **7** | **17** | **0** | ***25*** | **38** | **32** | **0** | **1** | **36** | ***107*** |
| **8:15 AM** | **0** | **0** | **4** | **5** | **1** | ***10*** | **2** | **0** | **2** | **32** | **0** | ***36*** | **31** | **56** | **0** | **8** | **31** | ***126*** |
| **8:30 AM** | **0** | **0** | **6** | **2** | **0** | ***8*** | **0** | **0** | **3** | **27** | **0** | ***30*** | **52** | **39** | **0** | **8** | **52** | ***151*** |
| **8:45 AM** | **1** | **0** | **5** | **5** | **0** | ***11*** | **1** | **0** | **5** | **27** | **0** | ***33*** | **39** | **42** | **0** | **5** | **39** | ***125*** |
| Count Total | 9 | 0 | 40 | 28 | 4 | *81* | 4 | 0 | 22 | 149 | 1 | *176* | 220 | 283 | 0 | 33 | 209 | *745* |
| **Peak Hr** | **2** | **0** | **21** | **15** | **3** | ***41*** | **4** | **0** | **17** | **103** | **0** | ***124*** | **160** | **169** | **0** | **22** | **158** | *509* |

**Two-Hour Count Summaries - Heavy Vehicles**

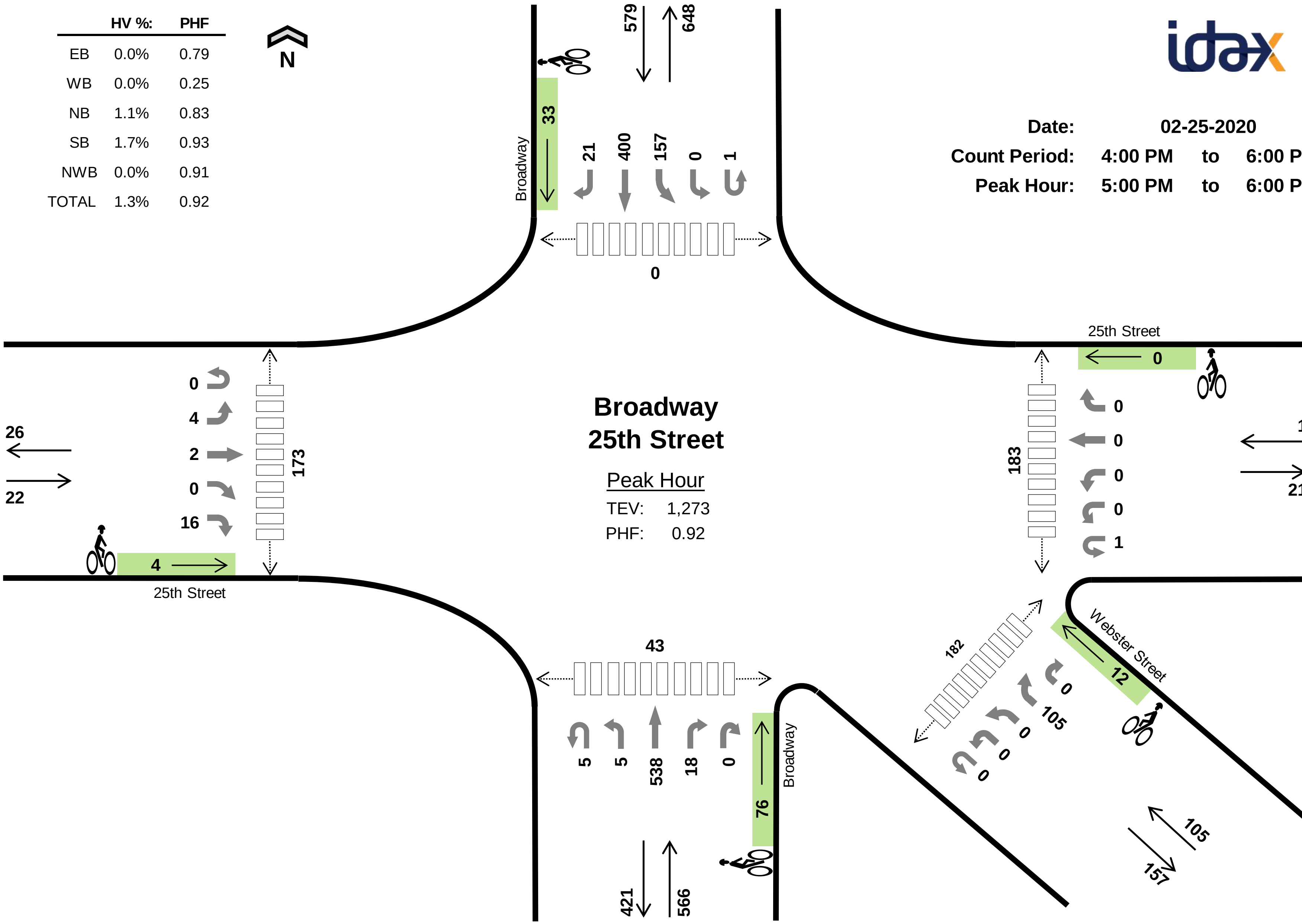
| Interval Start | 25th Street Eastbound | | | | | 25th Street Westbound | | | | | Broadway Northbound | | | | | Broadway Southbound | | | | | Webster Street Northwestbound | | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | BR | RT | UT | HL | LT | TH | RT | UT | LT | TH | RT | HR | UT | LT | BL | TH | RT | UT | HL | BL | BR | HR | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 |
| 7:30 AM | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 12 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 40 |
| **8:00 AM** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **5** | **0** | **0** | **0** | **0** | **0** | **2** | **1** | **0** | **0** | **0** | **2** | **0** | **12** | 40 |
| **8:15 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **3** | **0** | **0** | **0** | **0** | **2** | **3** | **0** | **0** | **0** | **0** | **1** | **0** | **10** | 42 |
| **8:30 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **5** | **1** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **8** | 38 |
| **8:45 AM** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **5** | **0** | **0** | **0** | **0** | **2** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **11** | **41** |
| Count Total | 0 | 0 | 1 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 36 | 2 | 0 | 0 | 0 | 4 | 22 | 2 | 0 | 0 | 0 | 4 | 0 | 81 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **18** | **1** | **0** | **0** | **0** | **4** | **10** | **1** | **0** | **0** | **0** | **3** | **0** | 41 | **0** |

**Two-Hour Count Summaries - Bikes**

| Interval Start | 25th Street Eastbound | | | | | 25th Street Westbound | | | | | Broadway Northbound | | | | | Broadway Southbound | | | | | Webster Street Northwestbound | | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | BR | RT | UT | HL | LT | TH | RT | UT | LT | TH | RT | HR | UT | LT | BL | TH | RT | UT | HL | BL | BR | HR | | |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 12 | 0 | 0 | 0 | 0 | 1 | 0 | 17 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 52 |
| **8:00 AM** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **7** | **0** | **0** | **0** | **0** | **1** | **16** | **0** | **0** | **0** | **0** | **0** | **0** | **25** | 60 |
| **8:15 AM** | **0** | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **6** | **26** | **0** | **0** | **0** | **0** | **0** | **0** | **36** | 89 |
| **8:30 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **7** | **20** | **0** | **0** | **0** | **0** | **0** | **0** | **30** | 108 |
| **8:45 AM** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **5** | **0** | **0** | **0** | **0** | **10** | **16** | **1** | **0** | **0** | **0** | **0** | **0** | **33** | **124** |
| Count Total | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 21 | 0 | 0 | 0 | 0 | 26 | 122 | 1 | 0 | 0 | 0 | 1 | 0 | 176 | 0 |
| **Peak Hour** | **0** | **1** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **17** | **0** | **0** | **0** | **0** | **24** | **78** | **1** | **0** | **0** | **0** | **0** | **0** | 124 | **0** |

| | HV %: | PHF |
|---|---|---|
| EB | 0.0% | 0.79 |
| WB | 0.0% | 0.25 |
| NB | 1.1% | 0.83 |
| SB | 1.7% | 0.93 |
| NWB | 0.0% | 0.91 |
| TOTAL | 1.3% | 0.92 |

| | | | |
|---|---|---|---|
| Date: | 02-25-2020 | | |
| Count Period: | 4:00 PM | to | 6:00 PM |
| Peak Hour: | 5:00 PM | to | 6:00 PM |



**Two-Hour Count Summaries**

| Interval Start | 25th Street Eastbound | | | | | 25th Street Westbound | | | | | Broadway Northbound | | | | | Broadway Southbound | | | | | Webster Street Northwestbound | | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | UT | LT | TH | BR | RT | UT | HL | LT | TH | RT | UT | LT | TH | RT | HR | UT | LT | BL | TH | RT | UT | HL | BL | BR | HR | | |
| 4:00 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 102 | 1 | 0 | 0 | 0 | 35 | 107 | 3 | 0 | 0 | 0 | 14 | 0 | 267 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 135 | 2 | 0 | 0 | 0 | 37 | 106 | 2 | 0 | 0 | 0 | 18 | 1 | 307 | 0 |
| 4:30 PM | 0 | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 124 | 7 | 0 | 0 | 0 | 38 | 89 | 4 | 0 | 0 | 0 | 20 | 0 | 290 | 0 |
| 4:45 PM | 0 | 0 | 2 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 114 | 1 | 0 | 1 | 2 | 38 | 100 | 4 | 0 | 0 | 0 | 18 | 0 | 290 | 1,154 |
| **5:00 PM** | **0** | **2** | **0** | **0** | **4** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **135** | **4** | **0** | **0** | **0** | **48** | **89** | **5** | **0** | **0** | **0** | **24** | **0** | **314** | 1,201 |
| **5:15 PM** | **0** | **1** | **0** | **0** | **6** | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **162** | **6** | **0** | **1** | **0** | **33** | **99** | **7** | **0** | **0** | **0** | **29** | **0** | **346** | 1,240 |
| **5:30 PM** | **0** | **1** | **2** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **122** | **3** | **0** | **0** | **0** | **40** | **111** | **4** | **0** | **0** | **0** | **29** | **0** | **317** | 1,267 |
| **5:45 PM** | **0** | **0** | **0** | **0** | **3** | **1** | **0** | **0** | **0** | **0** | **0** | **3** | **119** | **5** | **0** | **0** | **0** | **36** | **101** | **5** | **0** | **0** | **0** | **23** | **0** | **296** | **1,273** |
| Count Total | 0 | 5 | 5 | 0 | 32 | 1 | 0 | 0 | 0 | 0 | 6 | 15 | 1,013 | 29 | 0 | 2 | 2 | 305 | 802 | 34 | 0 | 0 | 0 | 175 | 1 | 2,427 | 0 |
| **Peak Hour All** | **0** | **4** | **2** | **0** | **16** | **1** | **0** | **0** | **0** | **0** | **5** | **5** | **538** | **18** | **0** | **1** | **0** | **157** | **400** | **21** | **0** | **0** | **0** | **105** | **0** | **1,273** | **0** |
| **HV** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **6** | **0** | **0** | **0** | **0** | **1** | **9** | **0** | **0** | **0** | **0** | **0** | **0** | **16** | **0** |
| **HV%** | **-** | **0%** | **0%** | **-** | **0%** | **0%** | **-** | **-** | **-** | **-** | **0%** | **0%** | **1%** | **0%** | **-** | **0%** | **-** | **1%** | **2%** | **0%** | **-** | **-** | **-** | **0%** | **-** | **1%** | **0** |

*Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals | | | | | | Bicycles | | | | | | Pedestrians (Crossing Leg) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | EB | WB | NB | SB | NWB | Total | EB | WB | NB | SB | NWB | Total | East | West | North | South | Southeast | Total |
| 4:00 PM | 0 | 0 | 1 | 3 | 0 | *4* | 0 | 0 | 7 | 3 | 1 | *11* | 27 | 21 | 0 | 8 | 27 | *83* |
| 4:15 PM | 0 | 0 | 2 | 1 | 0 | *3* | 0 | 0 | 17 | 6 | 2 | *25* | 20 | 24 | 0 | 4 | 19 | *67* |
| 4:30 PM | 0 | 0 | 2 | 3 | 0 | *5* | 0 | 0 | 10 | 1 | 2 | *13* | 19 | 39 | 0 | 10 | 19 | *87* |
| 4:45 PM | 0 | 0 | 2 | 0 | 0 | *2* | 2 | 0 | 16 | 1 | 1 | *20* | 30 | 41 | 0 | 6 | 30 | *107* |
| **5:00 PM** | **0** | **0** | **1** | **3** | **0** | ***4*** | **3** | **0** | **24** | **8** | **1** | ***36*** | **42** | **40** | **0** | **12** | **42** | ***136*** |
| **5:15 PM** | **0** | **0** | **1** | **1** | **0** | ***2*** | **0** | **0** | **20** | **8** | **1** | ***29*** | **36** | **37** | **0** | **13** | **36** | ***122*** |
| **5:30 PM** | **0** | **0** | **2** | **5** | **0** | ***7*** | **1** | **0** | **17** | **8** | **4** | ***30*** | **56** | **37** | **0** | **5** | **55** | ***153*** |
| **5:45 PM** | **0** | **0** | **2** | **1** | **0** | ***3*** | **0** | **0** | **15** | **9** | **6** | ***30*** | **49** | **59** | **0** | **13** | **49** | ***170*** |
| Count Total | 0 | 0 | 13 | 17 | 0 | *30* | 6 | 0 | 126 | 44 | 18 | *194* | 279 | 298 | 0 | 71 | 277 | *925* |
| **Peak Hr** | **0** | **0** | **6** | **10** | **0** | ***16*** | **4** | **0** | **76** | **33** | **12** | ***125*** | **183** | **173** | **0** | **43** | **182** | *581* |

**Two-Hour Count Summaries - Heavy Vehicles**

| Interval Start | 25th Street | | | | | 25th Street | | | | | Broadway | | | | | Broadway | | | | | Webster Street | | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Eastbound | | | | | Westbound | | | | | Northbound | | | | | Southbound | | | | | Northwestbound | | | | | | |
| | UT | LT | TH | BR | RT | UT | HL | LT | TH | RT | UT | LT | TH | RT | HR | UT | LT | BL | TH | RT | UT | HL | BL | BR | HR | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 14 |
| **5:00 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **4** | 14 |
| **5:15 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | 13 |
| **5:30 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **1** | **4** | **0** | **0** | **0** | **0** | **0** | **0** | **7** | 15 |
| **5:45 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **3** | **16** |
| Count Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 1 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **6** | **0** | **0** | **0** | **0** | **1** | **9** | **0** | **0** | **0** | **0** | **0** | **0** | 16 | **0** |

**Two-Hour Count Summaries - Bikes**

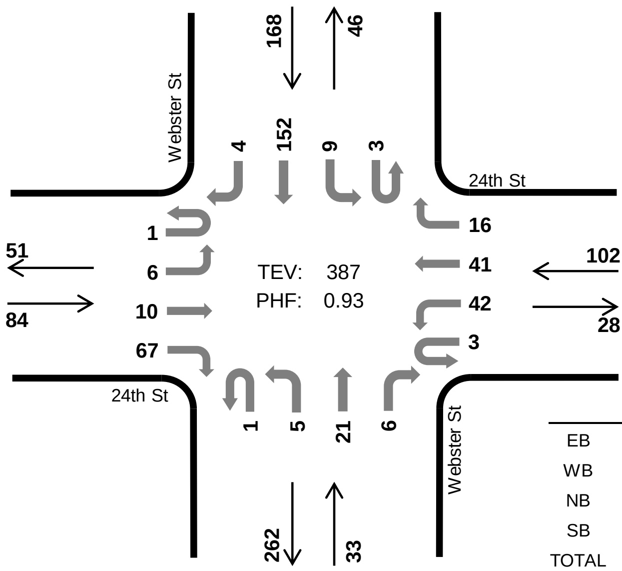
| Interval Start | 25th Street | | | | | 25th Street | | | | | Broadway | | | | | Broadway | | | | | Webster Street | | | | | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Eastbound | | | | | Westbound | | | | | Northbound | | | | | Southbound | | | | | Northwestbound | | | | | | |
| | UT | LT | TH | BR | RT | UT | HL | LT | TH | RT | UT | LT | TH | RT | HR | UT | LT | BL | TH | RT | UT | HL | BL | BR | HR | | |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 11 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 2 | 0 | 25 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 13 | 0 |
| 4:45 PM | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 20 | 69 |
| **5:00 PM** | **0** | **0** | **0** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **24** | **0** | **0** | **0** | **0** | **0** | **8** | **0** | **0** | **0** | **0** | **1** | **0** | **36** | 94 |
| **5:15 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **19** | **0** | **0** | **0** | **0** | **1** | **7** | **0** | **0** | **0** | **0** | **1** | **0** | **29** | 98 |
| **5:30 PM** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **17** | **0** | **0** | **0** | **0** | **2** | **6** | **0** | **0** | **0** | **0** | **4** | **0** | **30** | 115 |
| **5:45 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **15** | **0** | **0** | **0** | **0** | **2** | **7** | **0** | **0** | **0** | **0** | **6** | **0** | **30** | **125** |
| Count Total | 0 | 0 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 125 | 0 | 0 | 0 | 0 | 10 | 34 | 0 | 0 | 0 | 0 | 18 | 0 | 194 | 0 |
| **Peak Hour** | **0** | **0** | **1** | **0** | **3** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **75** | **0** | **0** | **0** | **0** | **5** | **28** | **0** | **0** | **0** | **0** | **12** | **0** | 125 | **0** |

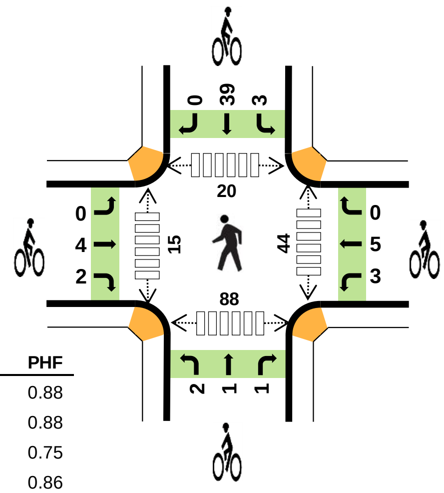
# Webster St
# 24th St

Date: 02/25/2020
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

N

Peak Hour




| | HV %: | PHF |
|---|---|---|
| EB | 3.6% | 0.88 |
| WB | 5.9% | 0.88 |
| NB | 6.1% | 0.75 |
| SB | 4.8% | 0.86 |
| TOTAL | 4.9% | 0.93 |

## Two-Hour Count Summaries

| Interval Start | | 24th St Eastbound UT | LT | TH | RT | 24th St Westbound UT | LT | TH | RT | Webster St Northbound UT | LT | TH | RT | Webster St Southbound UT | LT | TH | RT | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | | 0 | 1 | 2 | 10 | 0 | 13 | 7 | 1 | 0 | 2 | 5 | 1 | 0 | 3 | 15 | 2 | 62 | 0 |
| 7:15 AM | | 0 | 2 | 3 | 14 | 1 | 20 | 10 | 3 | 0 | 2 | 3 | 2 | 0 | 3 | 15 | 0 | 78 | 0 |
| 7:30 AM | | 0 | 3 | 1 | 21 | 1 | 13 | 13 | 0 | 0 | 3 | 3 | 3 | 0 | 3 | 19 | 0 | 83 | 0 |
| 7:45 AM | | 0 | 1 | 2 | 17 | 0 | 14 | 11 | 4 | 0 | 1 | 5 | 3 | 0 | 1 | 23 | 1 | 83 | 306 |
| **8:00 AM** | | **1** | **1** | **2** | **16** | **1** | **6** | **9** | **4** | **0** | **1** | **5** | **1** | **0** | **2** | **33** | **3** | **85** | 329 |
| **8:15 AM** | | **0** | **3** | **2** | **18** | **0** | **17** | **7** | **5** | **0** | **1** | **6** | **1** | **0** | **4** | **37** | **0** | **101** | 352 |
| **8:30 AM** | | **0** | **0** | **3** | **14** | **2** | **8** | **13** | **6** | **1** | **1** | **7** | **2** | **1** | **1** | **37** | **1** | **97** | 366 |
| **8:45 AM** | | **0** | **2** | **3** | **19** | **0** | **11** | **12** | **1** | **0** | **2** | **3** | **2** | **2** | **2** | **45** | **0** | **104** | **387** |
| Count Total | | 1 | 13 | 18 | 129 | 5 | 102 | 82 | 24 | 1 | 13 | 37 | 15 | 3 | 19 | 224 | 7 | 693 | 0 |
| **Peak Hour** | **All** | **1** | **6** | **10** | **67** | **3** | **42** | **41** | **16** | **1** | **5** | **21** | **6** | **3** | **9** | **152** | **4** | **387** | **0** |
| | **HV** | **0** | **0** | **2** | **1** | **0** | **0** | **4** | **2** | **0** | **1** | **0** | **1** | **0** | **2** | **6** | **0** | **19** | **0** |
| | **HV%** | **0%** | **0%** | **20%** | **1%** | **0%** | **0%** | **10%** | **13%** | **0%** | **20%** | **0%** | **17%** | **0%** | **22%** | **4%** | **0%** | **5%** | **0** |

*Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals EB | WB | NB | SB | Total | Bicycles EB | WB | NB | SB | Total | Pedestrians (Crossing Leg) East | West | North | South | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 2 | 2 | 0 | 1 | *5* | 0 | 2 | 0 | 1 | *3* | 6 | 3 | 1 | 9 | *19* |
| 7:15 AM | 0 | 0 | 1 | 0 | *1* | 0 | 2 | 0 | 2 | *4* | 7 | 0 | 5 | 14 | *26* |
| 7:30 AM | 1 | 0 | 1 | 1 | *3* | 0 | 1 | 2 | 6 | *9* | 6 | 0 | 2 | 23 | *31* |
| 7:45 AM | 0 | 4 | 0 | 0 | *4* | 1 | 2 | 1 | 5 | *9* | 12 | 4 | 5 | 31 | *52* |
| **8:00 AM** | **0** | **2** | **0** | **1** | ***3*** | **2** | **0** | **0** | **7** | ***9*** | **14** | **2** | **6** | **21** | *43* |
| **8:15 AM** | **2** | **0** | **0** | **1** | ***3*** | **2** | **3** | **0** | **8** | ***13*** | **12** | **7** | **6** | **31** | *56* |
| **8:30 AM** | **1** | **2** | **2** | **2** | ***7*** | **1** | **2** | **2** | **12** | ***17*** | **8** | **2** | **5** | **16** | *31* |
| **8:45 AM** | **0** | **2** | **0** | **4** | ***6*** | **1** | **3** | **2** | **15** | ***21*** | **10** | **4** | **3** | **20** | *37* |
| Count Total | 6 | 12 | 4 | 10 | *32* | 7 | 15 | 7 | 56 | *85* | 75 | 22 | 33 | 165 | *295* |
| **Peak Hour** | **3** | **6** | **2** | **8** | ***19*** | **6** | **8** | **4** | **42** | ***60*** | **44** | **15** | **20** | **88** | ***167*** |

**Project Manager:** (415) 310-6469
project.manager.ca@idaxdata.com

## Two-Hour Count Summaries - Heavy Vehicles

| Interval Start | 24th St Eastbound UT | LT | TH | RT | 24th St Westbound UT | LT | TH | RT | Webster St Northbound UT | LT | TH | RT | Webster St Southbound UT | LT | TH | RT | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 7:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 13 |
| **8:00 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **3** | 11 |
| **8:15 AM** | **0** | **0** | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **3** | 13 |
| **8:30 AM** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **1** | **0** | **1** | **0** | **1** | **0** | **0** | **2** | **0** | **7** | 17 |
| **8:45 AM** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **3** | **0** | **6** | **19** |
| Count Total | 0 | 1 | 3 | 2 | 0 | 1 | 8 | 3 | 0 | 3 | 0 | 1 | 0 | 3 | 6 | 1 | 32 | 0 |
| **Peak Hour** | **0** | **0** | **2** | **1** | **0** | **0** | **4** | **2** | **0** | **1** | **0** | **1** | **0** | **2** | **6** | **0** | **19** | **0** |

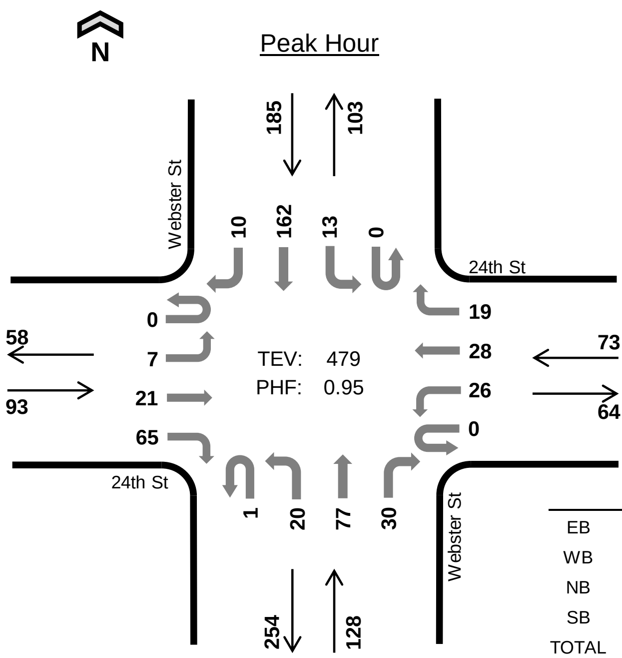
## Two-Hour Count Summaries - Bikes

| Interval Start | 24th St Eastbound LT | TH | RT | 24th St Westbound LT | TH | RT | Webster St Northbound LT | TH | RT | Webster St Southbound LT | TH | RT | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7:00 AM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 6 | 0 | 9 | 0 |
| 7:45 AM | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 0 | 9 | 25 |
| **8:00 AM** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **7** | **0** | **9** | 31 |
| **8:15 AM** | **0** | **1** | **1** | **1** | **2** | **0** | **0** | **0** | **0** | **2** | **6** | **0** | **13** | 40 |
| **8:30 AM** | **0** | **0** | **1** | **1** | **1** | **0** | **1** | **1** | **0** | **0** | **12** | **0** | **17** | 48 |
| **8:45 AM** | **0** | **1** | **0** | **1** | **2** | **0** | **1** | **0** | **1** | **1** | **14** | **0** | **21** | **60** |
| Count Total | 0 | 4 | 3 | 4 | 11 | 0 | 2 | 1 | 4 | 3 | 53 | 0 | 85 | 0 |
| **Peak Hour** | **0** | **4** | **2** | **3** | **5** | **0** | **2** | **1** | **1** | **3** | **39** | **0** | **60** | **0** |

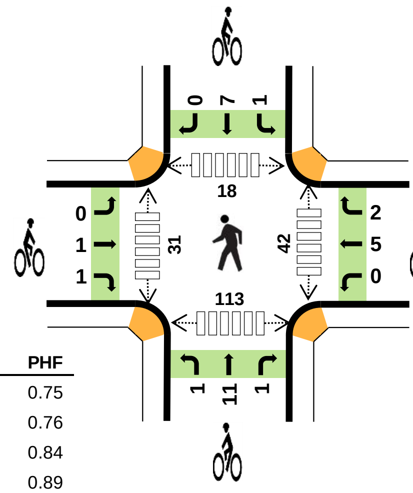
*Note: U-Turn volumes for bikes are included in Left-Turn, if any.*

# Webster St
# 24th St

**Date:** 02/25/2020
**Count Period:** 4:00 PM to 6:00 PM
**Peak Hour:** 4:45 PM to 5:45 PM




| | HV %: | PHF |
|---|---|---|
| EB | 2.2% | 0.75 |
| WB | 0.0% | 0.76 |
| NB | 0.0% | 0.84 |
| SB | 0.0% | 0.89 |
| TOTAL | 0.4% | 0.95 |




## Two-Hour Count Summaries

| Interval Start | 24th St Eastbound UT | LT | TH | RT | 24th St Westbound UT | LT | TH | RT | Webster St Northbound UT | LT | TH | RT | Webster St Southbound UT | LT | TH | RT | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4:00 PM | 0 | 0 | 4 | 7 | 0 | 5 | 11 | 1 | 0 | 3 | 12 | 7 | 0 | 3 | 32 | 1 | 86 | 0 |
| 4:15 PM | 0 | 5 | 6 | 19 | 0 | 5 | 8 | 4 | 0 | 2 | 16 | 2 | 0 | 1 | 33 | 7 | 108 | 0 |
| 4:30 PM | 0 | 0 | 2 | 19 | 0 | 9 | 7 | 2 | 0 | 5 | 14 | 4 | 0 | 4 | 34 | 3 | 103 | 0 |
| **4:45 PM** | **0** | **3** | **5** | **23** | **0** | **11** | **8** | **4** | **1** | **5** | **14** | **5** | **0** | **3** | **40** | **4** | **126** | 423 |
| **5:00 PM** | **0** | **0** | **7** | **15** | **0** | **4** | **7** | **4** | **0** | **2** | **23** | **8** | **0** | **2** | **49** | **1** | **122** | 459 |
| **5:15 PM** | **0** | **3** | **5** | **13** | **0** | **3** | **6** | **2** | **0** | **5** | **22** | **11** | **0** | **3** | **32** | **2** | **107** | 458 |
| **5:30 PM** | **0** | **1** | **4** | **14** | **0** | **8** | **7** | **9** | **0** | **8** | **18** | **6** | **0** | **5** | **41** | **3** | **124** | **479** |
| 5:45 PM | 0 | 2 | 7 | 29 | 2 | 11 | 11 | 4 | 0 | 1 | 18 | 7 | 0 | 0 | 31 | 2 | 125 | 478 |
| Count Total | 0 | 14 | 40 | 139 | 2 | 56 | 65 | 30 | 1 | 31 | 137 | 50 | 0 | 21 | 292 | 23 | 901 | 0 |
| **Peak Hour All** | **0** | **7** | **21** | **65** | **0** | **26** | **28** | **19** | **1** | **20** | **77** | **30** | **0** | **13** | **162** | **10** | **479** | **0** |
| **Peak Hour HV** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** |
| **Peak Hour HV%** | **-** | **0%** | **0%** | **3%** | **-** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **0%** | **-** | **0%** | **0%** | **0%** | **0%** | **0** |

*Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.*

| Interval Start | Heavy Vehicle Totals EB | WB | NB | SB | Total | Bicycles EB | WB | NB | SB | Total | Pedestrians (Crossing Leg) East | West | North | South | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4:00 PM | 0 | 2 | 0 | 0 | *2* | 0 | 1 | 3 | 1 | *5* | 12 | 6 | 6 | 20 | *44* |
| 4:15 PM | 0 | 0 | 0 | 0 | *0* | 1 | 2 | 2 | 3 | *8* | 7 | 3 | 3 | 17 | *30* |
| 4:30 PM | 0 | 0 | 0 | 0 | *0* | 0 | 1 | 2 | 2 | *5* | 8 | 7 | 1 | 24 | *40* |
| **4:45 PM** | **0** | **0** | **0** | **0** | ***0*** | **0** | **1** | **3** | **3** | ***7*** | **13** | **7** | **2** | **23** | ***45*** |
| **5:00 PM** | **0** | **0** | **0** | **0** | ***0*** | **1** | **1** | **5** | **0** | ***7*** | **10** | **9** | **7** | **32** | ***58*** |
| **5:15 PM** | **1** | **0** | **0** | **0** | ***1*** | **0** | **2** | **3** | **1** | ***6*** | **6** | **10** | **7** | **23** | ***46*** |
| **5:30 PM** | **1** | **0** | **0** | **0** | ***1*** | **1** | **3** | **2** | **4** | ***10*** | **13** | **5** | **2** | **35** | ***55*** |
| 5:45 PM | 1 | 0 | 0 | 1 | *2* | 0 | 0 | 6 | 1 | *7* | 18 | 7 | 8 | 39 | *72* |
| Count Total | 3 | 2 | 0 | 1 | *6* | 3 | 11 | 26 | 15 | *55* | 87 | 54 | 36 | 213 | *390* |
| **Peak Hour** | **2** | **0** | **0** | **0** | ***2*** | **2** | **7** | **13** | **8** | ***30*** | **42** | **31** | **18** | **113** | ***204*** |

## Two-Hour Count Summaries - Heavy Vehicles

| Interval Start | 24th St Eastbound UT | LT | TH | RT | 24th St Westbound UT | LT | TH | RT | Webster St Northbound UT | LT | TH | RT | Webster St Southbound UT | LT | TH | RT | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **4:45 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 2 |
| **5:00 PM** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | 0 |
| **5:15 PM** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | 1 |
| **5:30 PM** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **2** |
| 5:45 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 4 |
| Count Total | 0 | 0 | 1 | 2 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 0 |
| **Peak Hour** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** |

## Two-Hour Count Summaries - Bikes

| Interval Start | 24th St Eastbound LT | TH | RT | 24th St Westbound LT | TH | RT | Webster St Northbound LT | TH | RT | Webster St Southbound LT | TH | RT | 15-min Total | Rolling One Hour |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4:00 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 5 | 0 |
| 4:15 PM | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 3 | 0 | 8 | 0 |
| 4:30 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 5 | 0 |
| **4:45 PM** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **2** | **0** | **0** | **3** | **0** | **7** | 25 |
| **5:00 PM** | **0** | **1** | **0** | **0** | **1** | **0** | **0** | **5** | **0** | **0** | **0** | **0** | **7** | 27 |
| **5:15 PM** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **3** | **0** | **0** | **1** | **0** | **6** | 25 |
| **5:30 PM** | **0** | **0** | **1** | **0** | **1** | **2** | **0** | **1** | **1** | **1** | **3** | **0** | **10** | **30** |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 7 | 30 |
| Count Total | 0 | 2 | 1 | 1 | 8 | 2 | 1 | 24 | 1 | 1 | 14 | 0 | 55 | 0 |
| **Peak Hour** | **0** | **1** | **1** | **0** | **5** | **2** | **1** | **11** | **1** | **1** | **7** | **0** | **30** | **0** |

*Note: U-Turn volumes for bikes are included in Left-Turn, if any.*

# Appendix B:
# Intersection LOS Calculation Sheets

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 5 | 7 | 7 | 19 | 9 | 26 | 23 | 355 | 25 | 57 | 332 | 23 |
| Future Vol, veh/h | 5 | 7 | 7 | 19 | 9 | 26 | 23 | 355 | 25 | 57 | 332 | 23 |
| Conflicting Peds, #/hr | 5 | 0 | 97 | 97 | 0 | 5 | 142 | 0 | 147 | 147 | 0 | 142 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 5 | 7 | 7 | 19 | 9 | 26 | 23 | 355 | 25 | 57 | 332 | 23 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 833 | 1173 | 417 | 942 | 1172 | 342 | 497 | 0 | 0 | 527 | 0 | 0 |
| Stage 1 | 600 | 600 | - | 561 | 561 | - | - | - | - | - | - | - |
| Stage 2 | 233 | 573 | - | 381 | 611 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.6 | 6.6 | 7 | 7.6 | 6.6 | 7 | 4.2 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.6 | 5.6 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.6 | 5.6 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.55 | 4.05 | 3.35 | 3.55 | 4.05 | 3.35 | 2.25 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver | 256 | 186 | 576 | 213 | 187 | 645 | 1042 | - | - | 1015 | - | - |
| Stage 1 | 447 | 481 | - | 472 | 501 | - | - | - | - | - | - | - |
| Stage 2 | 740 | 495 | - | 605 | 475 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 182 | 123 | 452 | 143 | 124 | 552 | 901 | - | - | 873 | - | - |
| Mov Cap-2 Maneuver | 182 | 123 | - | 143 | 124 | - | - | - | - | - | - | - |
| Stage 1 | 374 | 382 | - | 393 | 417 | - | - | - | - | - | - | - |
| Stage 2 | 665 | 412 | - | 487 | 377 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 26 | 27.4 | 0.6 | 1.5 |
| HCM LOS | D | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 901 | - | - | 190 | 214 | 873 | - | - |
| HCM Lane V/C Ratio | 0.026 | - | - | 0.1 | 0.252 | 0.065 | - | - |
| HCM Control Delay (s) | 9.1 | 0.1 | - | 26 | 27.4 | 9.4 | 0.3 | - |
| HCM Lane LOS | A | A | - | D | D | A | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.3 | 1 | 0.2 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 5 | 18 | 0 | 0 | 46 | 12 | 368 | 8 | 164 | 394 | 29 |
| Future Volume (vph) | 0 | 5 | 18 | 0 | 0 | 46 | 12 | 368 | 8 | 164 | 394 | 29 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | | 4.5 | | 5.0 | | 4.5 | 5.0 | |
| Lane Util. Factor | | 1.00 | | | | 1.00 | | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 0.97 | | | | 1.00 | | 0.99 | | 1.00 | 0.97 | |
| Flpb, ped/bikes | | 1.00 | | | | 1.00 | | 0.99 | | 1.00 | 1.00 | |
| Frt | | 0.89 | | | | 0.86 | | 1.00 | | 1.00 | 0.99 | |
| Flt Protected | | 1.00 | | | | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1428 | | | | 1422 | | 3071 | | 1562 | 3014 | |
| Flt Permitted | | 1.00 | | | | 1.00 | | 0.94 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1428 | | | | 1422 | | 2894 | | 1562 | 3014 | |
| Peak-hour factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 0 | 5 | 18 | 0 | 0 | 46 | 12 | 368 | 8 | 164 | 394 | 29 |
| RTOR Reduction (vph) | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 8 | 0 | 0 | 0 | 46 | 0 | 387 | 0 | 164 | 419 | 0 |
| Confl. Peds. (#/hr) | | | 22 | 22 | | | 169 | | 160 | | | 169 |
| Confl. Bikes (#/hr) | | | 3 | | | | | | 17 | | | 78 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% |
| Turn Type | | NA | | | | Prot | Perm | NA | | Prot | NA | |
| Protected Phases | | 4! | | | | 8 | | 2 | | 4! | 6 | |
| Permitted Phases | | | | | | | 2 | | | | | |
| Actuated Green, G (s) | | 16.5 | | | | 16.5 | | 59.0 | | 16.5 | 59.0 | |
| Effective Green, g (s) | | 16.5 | | | | 16.5 | | 59.0 | | 16.5 | 59.0 | |
| Actuated g/C Ratio | | 0.19 | | | | 0.19 | | 0.69 | | 0.19 | 0.69 | |
| Clearance Time (s) | | 4.5 | | | | 4.5 | | 5.0 | | 4.5 | 5.0 | |
| Vehicle Extension (s) | | 2.0 | | | | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | | 277 | | | | 276 | | 2008 | | 303 | 2092 | |
| v/s Ratio Prot | | 0.01 | | | | 0.03 | | | | c0.10 | c0.14 | |
| v/s Ratio Perm | | | | | | | | 0.13 | | | | |
| v/c Ratio | | 0.03 | | | | 0.17 | | 0.19 | | 0.54 | 0.20 | |
| Uniform Delay, d1 | | 27.8 | | | | 28.5 | | 4.6 | | 30.8 | 4.6 | |
| Progression Factor | | 1.00 | | | | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | | 0.1 | | 0.2 | | 1.1 | 0.2 | |
| Delay (s) | | 27.8 | | | | 28.6 | | 4.8 | | 31.9 | 4.8 | |
| Level of Service | | C | | | | C | | A | | C | A | |
| Approach Delay (s) | | 27.8 | | | 28.6 | | | 4.8 | | | 12.4 | |
| Approach LOS | | C | | | C | | | A | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 10.6 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.27 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 9.5 |
| Intersection Capacity Utilization | 62.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.2 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 7 | 10 | 67 | 45 | 41 | 16 | 6 | 21 | 6 | 12 | 152 | 4 |
| Future Vol, veh/h | 7 | 10 | 67 | 45 | 41 | 16 | 6 | 21 | 6 | 12 | 152 | 4 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 7 | 10 | 67 | 45 | 41 | 16 | 6 | 21 | 6 | 12 | 152 | 4 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.6 | 8.2 | 7.7 | 8.6 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 18% | 8% | 44% | 7% |
| Vol Thru, % | 64% | 12% | 40% | 90% |
| Vol Right, % | 18% | 80% | 16% | 2% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 33 | 84 | 102 | 168 |
| LT Vol | 6 | 7 | 45 | 12 |
| Through Vol | 21 | 10 | 41 | 152 |
| RT Vol | 6 | 67 | 16 | 4 |
| Lane Flow Rate | 33 | 84 | 102 | 168 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.041 | 0.096 | 0.128 | 0.207 |
| Departure Headway (Hd) | 4.517 | 4.107 | 4.535 | 4.438 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 794 | 874 | 793 | 811 |
| Service Time | 2.538 | 2.123 | 2.551 | 2.455 |
| HCM Lane V/C Ratio | 0.042 | 0.096 | 0.129 | 0.207 |
| HCM Control Delay | 7.7 | 7.6 | 8.2 | 8.6 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.1 | 0.3 | 0.4 | 0.8 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 13 | 14 | 40 | 9 | 7 | 38 | 22 | 508 | 64 | 24 | 368 | 20 |
| Future Vol, veh/h | 13 | 14 | 40 | 9 | 7 | 38 | 22 | 508 | 64 | 24 | 368 | 20 |
| Conflicting Peds, #/hr | 1 | 0 | 103 | 103 | 0 | 1 | 130 | 0 | 175 | 175 | 0 | 130 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 13 | 14 | 40 | 9 | 7 | 38 | 22 | 508 | 64 | 24 | 368 | 20 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 859 | 1347 | 427 | 1101 | 1325 | 462 | 518 | 0 | 0 | 747 | 0 | 0 |
| Stage 1 | 556 | 556 | - | 759 | 759 | - | - | - | - | - | - | - |
| Stage 2 | 303 | 791 | - | 342 | 566 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 250 | 150 | 576 | 166 | 155 | 547 | 1044 | - | - | 857 | - | - |
| Stage 1 | 483 | 511 | - | 365 | 413 | - | - | - | - | - | - | - |
| Stage 2 | 681 | 399 | - | 646 | 506 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 179 | 101 | 455 | 96 | 104 | 455 | 915 | - | - | 714 | - | - |
| Mov Cap-2 Maneuver | 179 | 101 | - | 96 | 104 | - | - | - | - | - | - | - |
| Stage 1 | 408 | 428 | - | 293 | 332 | - | - | - | - | - | - | - |
| Stage 2 | 588 | 320 | - | 492 | 424 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 27.8 | 26.5 | 0.4 | 0.8 |
| HCM LOS | D | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 915 | - | - | 224 | 221 | 714 | - | - |
| HCM Lane V/C Ratio | 0.024 | - | - | 0.299 | 0.244 | 0.034 | - | - |
| HCM Control Delay (s) | 9 | 0.1 | - | 27.8 | 26.5 | 10.2 | 0.2 | - |
| HCM Lane LOS | A | A | - | D | D | B | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 1.2 | 0.9 | 0.1 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 4 | 2 | 16 | 0 | 0 | 105 | 10 | 538 | 18 | 158 | 400 | 21 |
| Future Volume (vph) | 4 | 2 | 16 | 0 | 0 | 105 | 10 | 538 | 18 | 158 | 400 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.5 | | | | 4.5 | | 5.0 | | 4.5 | 5.0 | |
| Lane Util. Factor | | 1.00 | | | | 1.00 | | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | | 1.00 | | 0.99 | | 1.00 | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.90 | | | | 0.86 | | 1.00 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | | | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1452 | | | | 1465 | | 3148 | | 1608 | 3136 | |
| Flt Permitted | | 0.99 | | | | 1.00 | | 0.95 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1452 | | | | 1465 | | 2985 | | 1608 | 3136 | |
| Peak-hour factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 4 | 2 | 16 | 0 | 0 | 105 | 10 | 538 | 18 | 158 | 400 | 21 |
| RTOR Reduction (vph) | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 0 | 10 | 0 | 0 | 0 | 105 | 0 | 564 | 0 | 158 | 418 | 0 |
| Confl. Peds. (#/hr) | | | 43 | | | | 173 | | 183 | | | 173 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 75 | | | 28 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% |
| Turn Type | Perm | NA | | | | Prot | Perm | NA | | Prot | NA | |
| Protected Phases | | 4! | | | | 8 | | 2 | | 4! | 6 | |
| Permitted Phases | 4! | | | | | | 2 | | | | | |
| Actuated Green, G (s) | | 18.7 | | | | 18.7 | | 56.8 | | 18.7 | 56.8 | |
| Effective Green, g (s) | | 18.7 | | | | 18.7 | | 56.8 | | 18.7 | 56.8 | |
| Actuated g/C Ratio | | 0.22 | | | | 0.22 | | 0.67 | | 0.22 | 0.67 | |
| Clearance Time (s) | | 4.5 | | | | 4.5 | | 5.0 | | 4.5 | 5.0 | |
| Vehicle Extension (s) | | 2.0 | | | | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | | 319 | | | | 322 | | 1994 | | 353 | 2095 | |
| v/s Ratio Prot | | | | | | 0.07 | | | | c0.10 | 0.13 | |
| v/s Ratio Perm | | 0.01 | | | | | | c0.19 | | | | |
| v/c Ratio | | 0.03 | | | | 0.33 | | 0.28 | | 0.45 | 0.20 | |
| Uniform Delay, d1 | | 26.0 | | | | 27.9 | | 5.8 | | 28.7 | 5.4 | |
| Progression Factor | | 1.00 | | | | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | | 0.2 | | 0.4 | | 0.3 | 0.2 | |
| Delay (s) | | 26.0 | | | | 28.1 | | 6.1 | | 29.0 | 5.6 | |
| Level of Service | | C | | | | C | | A | | C | A | |
| Approach Delay (s) | | 26.0 | | | 28.1 | | | 6.1 | | | 12.0 | |
| Approach LOS | | C | | | C | | | A | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.0 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.32 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 9.5 |
| Intersection Capacity Utilization | 66.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.
c Critical Lane Group

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.3 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 7 | 21 | 65 | 26 | 28 | 19 | 21 | 77 | 30 | 13 | 162 | 10 |
| Future Vol, veh/h | 7 | 21 | 65 | 26 | 28 | 19 | 21 | 77 | 30 | 13 | 162 | 10 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 7 | 21 | 65 | 26 | 28 | 19 | 21 | 77 | 30 | 13 | 162 | 10 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.8 | 8.1 | 8.2 | 8.7 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 16% | 8% | 36% | 7% |
| Vol Thru, % | 60% | 23% | 38% | 88% |
| Vol Right, % | 23% | 70% | 26% | 5% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 128 | 93 | 73 | 185 |
| LT Vol | 21 | 7 | 26 | 13 |
| Through Vol | 77 | 21 | 28 | 162 |
| RT Vol | 30 | 65 | 19 | 10 |
| Lane Flow Rate | 128 | 93 | 73 | 185 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.155 | 0.111 | 0.094 | 0.226 |
| Departure Headway (Hd) | 4.372 | 4.286 | 4.624 | 4.398 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 820 | 836 | 775 | 818 |
| Service Time | 2.397 | 2.312 | 2.652 | 2.421 |
| HCM Lane V/C Ratio | 0.156 | 0.111 | 0.094 | 0.226 |
| HCM Control Delay | 8.2 | 7.8 | 8.1 | 8.7 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.5 | 0.4 | 0.3 | 0.9 |

| Intersection | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Int Delay, s/veh | 3.5 | | | | | | | | | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 5 | 10 | 7 | 22 | 9 | 26 | 23 | 355 | 45 | 57 | 332 | 23 |
| Future Vol, veh/h | 5 | 10 | 7 | 22 | 9 | 26 | 23 | 355 | 45 | 57 | 332 | 23 |
| Conflicting Peds, #/hr | 5 | 0 | 97 | 97 | 0 | 5 | 142 | 0 | 147 | 147 | 0 | 142 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 5 | 10 | 7 | 22 | 9 | 26 | 23 | 355 | 45 | 57 | 332 | 23 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 833 | 1193 | 417 | 953 | 1182 | 352 | 497 | 0 | 0 | 547 | 0 | 0 |
| Stage 1 | 600 | 600 | - | 571 | 571 | - | - | - | - | - | - | - |
| Stage 2 | 233 | 593 | - | 382 | 611 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.6 | 6.6 | 7 | 7.6 | 6.6 | 7 | 4.2 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.6 | 5.6 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.6 | 5.6 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.55 | 4.05 | 3.35 | 3.55 | 4.05 | 3.35 | 2.25 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver | 256 | 181 | 576 | 209 | 184 | 636 | 1042 | - | - | 998 | - | - |
| Stage 1 | 447 | 481 | - | 466 | 496 | - | - | - | - | - | - | - |
| Stage 2 | 740 | 484 | - | 604 | 475 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 181 | 119 | 452 | 138 | 121 | 544 | 901 | - | - | 858 | - | - |
| Mov Cap-2 Maneuver | 181 | 119 | - | 138 | 121 | - | - | - | - | - | - | - |
| Stage 1 | 374 | 381 | - | 388 | 413 | - | - | - | - | - | - | - |
| Stage 2 | 663 | 403 | - | 482 | 377 | - | - | - | - | - | - | - |

| Approach | EB | | | WB | | | NB | | | SB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HCM Control Delay, s | 28.8 | | | 29.7 | | | 0.6 | | | 1.6 | | |
| HCM LOS | D | | | D | | | | | | | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 901 | - | - | 173 | 202 | 858 | - | - |
| HCM Lane V/C Ratio | 0.026 | - | - | 0.127 | 0.282 | 0.066 | - | - |
| HCM Control Delay (s) | 9.1 | 0.1 | - | 28.8 | 29.7 | 9.5 | 0.3 | - |
| HCM Lane LOS | A | A | - | D | D | A | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.4 | 1.1 | 0.2 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 8 | 18 | 0 | 0 | 50 | 12 | 368 | 8 | 190 | 394 | 29 |
| Future Volume (vph) | 0 | 8 | 18 | 0 | 0 | 50 | 12 | 368 | 8 | 190 | 394 | 29 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.0 | | | | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | | 1.00 | | | | 1.00 | | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 0.97 | | | | 1.00 | | 0.99 | | 1.00 | 0.97 | |
| Flpb, ped/bikes | | 1.00 | | | | 1.00 | | 0.99 | | 1.00 | 1.00 | |
| Frt | | 0.91 | | | | 0.86 | | 1.00 | | 1.00 | 0.99 | |
| Flt Protected | | 1.00 | | | | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1452 | | | | 1422 | | 3071 | | 1562 | 3014 | |
| Flt Permitted | | 1.00 | | | | 1.00 | | 0.94 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1452 | | | | 1422 | | 2895 | | 1562 | 3014 | |
| Peak-hour factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 0 | 8 | 18 | 0 | 0 | 50 | 12 | 368 | 8 | 190 | 394 | 29 |
| RTOR Reduction (vph) | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 12 | 0 | 0 | 0 | 50 | 0 | 387 | 0 | 190 | 419 | 0 |
| Confl. Peds. (#/hr) | | | 22 | 22 | | | 169 | | 160 | | | 169 |
| Confl. Bikes (#/hr) | | | 3 | | | | | | 17 | | | 78 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% |
| Turn Type | | NA | | | | Prot | Perm | NA | | Prot | NA | |
| Protected Phases | | 4! | | | | 8 | | 2 | | 4! | 6 | |
| Permitted Phases | | | | | | | 2 | | | | | |
| Actuated Green, G (s) | | 17.1 | | | | 17.1 | | 58.4 | | 17.1 | 58.4 | |
| Effective Green, g (s) | | 17.6 | | | | 17.6 | | 59.4 | | 17.6 | 59.4 | |
| Actuated g/C Ratio | | 0.21 | | | | 0.21 | | 0.70 | | 0.21 | 0.70 | |
| Clearance Time (s) | | 4.5 | | | | 4.5 | | 5.0 | | 4.5 | 5.0 | |
| Vehicle Extension (s) | | 2.0 | | | | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | | 300 | | | | 294 | | 2023 | | 323 | 2106 | |
| v/s Ratio Prot | | 0.01 | | | | 0.04 | | | | c0.12 | c0.14 | |
| v/s Ratio Perm | | | | | | | | 0.13 | | | | |
| v/c Ratio | | 0.04 | | | | 0.17 | | 0.19 | | 0.59 | 0.20 | |
| Uniform Delay, d1 | | 26.9 | | | | 27.7 | | 4.4 | | 30.4 | 4.5 | |
| Progression Factor | | 1.00 | | | | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | | 0.1 | | 0.2 | | 1.8 | 0.2 | |
| Delay (s) | | 27.0 | | | | 27.8 | | 4.7 | | 32.2 | 4.7 | |
| Level of Service | | C | | | | C | | A | | C | A | |
| Approach Delay (s) | | 27.0 | | | 27.8 | | | 4.7 | | | 13.2 | |
| Approach LOS | | C | | | C | | | A | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.1 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.29 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 60.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

! Phase conflict between lane groups.

c Critical Lane Group

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.4 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 10 | 67 | 45 | 41 | 23 | 6 | 28 | 6 | 13 | 153 | 7 |
| Future Vol, veh/h | 30 | 10 | 67 | 45 | 41 | 23 | 6 | 28 | 6 | 13 | 153 | 7 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 30 | 10 | 67 | 45 | 41 | 23 | 6 | 28 | 6 | 13 | 153 | 7 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 7.9 | 8.3 | 7.9 | 8.8 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 15% | 28% | 41% | 8% |
| Vol Thru, % | 70% | 9% | 38% | 88% |
| Vol Right, % | 15% | 63% | 21% | 4% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 40 | 107 | 109 | 173 |
| LT Vol | 6 | 30 | 45 | 13 |
| Through Vol | 28 | 10 | 41 | 153 |
| RT Vol | 6 | 67 | 23 | 7 |
| Lane Flow Rate | 40 | 107 | 109 | 173 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.051 | 0.128 | 0.138 | 0.217 |
| Departure Headway (Hd) | 4.617 | 4.292 | 4.559 | 4.514 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 776 | 836 | 787 | 796 |
| Service Time | 2.644 | 2.314 | 2.582 | 2.535 |
| HCM Lane V/C Ratio | 0.052 | 0.128 | 0.139 | 0.217 |
| HCM Control Delay | 7.9 | 7.9 | 8.3 | 8.8 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.2 | 0.4 | 0.5 | 0.8 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 13 | 15 | 40 | 29 | 10 | 38 | 22 | 508 | 67 | 24 | 368 | 20 |
| Future Vol, veh/h | 13 | 15 | 40 | 29 | 10 | 38 | 22 | 508 | 67 | 24 | 368 | 20 |
| Conflicting Peds, #/hr | 1 | 0 | 103 | 103 | 0 | 1 | 130 | 0 | 175 | 175 | 0 | 130 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 13 | 15 | 40 | 29 | 10 | 38 | 22 | 508 | 67 | 24 | 368 | 20 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 860 | 1350 | 427 | 1104 | 1327 | 464 | 518 | 0 | 0 | 750 | 0 | 0 |
| Stage 1 | 556 | 556 | - | 761 | 761 | - | - | - | - | - | - | - |
| Stage 2 | 304 | 794 | - | 343 | 566 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 250 | 149 | 576 | 166 | 154 | 545 | 1044 | - | - | 855 | - | - |
| Stage 1 | 483 | 511 | - | 364 | 412 | - | - | - | - | - | - | - |
| Stage 2 | 681 | 398 | - | 646 | 506 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 175 | 100 | 455 | 95 | 104 | 454 | 915 | - | - | 713 | - | - |
| Mov Cap-2 Maneuver | 175 | 100 | - | 95 | 104 | - | - | - | - | - | - | - |
| Stage 1 | 408 | 428 | - | 292 | 331 | - | - | - | - | - | - | - |
| Stage 2 | 583 | 320 | - | 491 | 424 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 28.8 | 47.2 | 0.4 | 0.8 |
| HCM LOS | D | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 915 | - | - | 218 | 159 | 713 | - | - |
| HCM Lane V/C Ratio | 0.024 | - | - | 0.312 | 0.484 | 0.034 | - | - |
| HCM Control Delay (s) | 9 | 0.1 | - | 28.8 | 47.2 | 10.2 | 0.2 | - |
| HCM Lane LOS | A | A | - | D | E | B | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 1.3 | 2.3 | 0.1 | - | - |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 4 | 3 | 16 | 0 | 0 | 135 | 10 | 538 | 18 | 162 | 400 | 21 |
| Future Volume (vph) | 4 | 3 | 16 | 0 | 0 | 135 | 10 | 538 | 18 | 162 | 400 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 4.0 | | | | 4.0 | | 4.0 | | 4.0 | 4.0 | |
| Lane Util. Factor | | 1.00 | | | | 1.00 | | 0.95 | | 1.00 | 0.95 | |
| Frpb, ped/bikes | | 0.96 | | | | 1.00 | | 0.99 | | 1.00 | 0.98 | |
| Flpb, ped/bikes | | 1.00 | | | | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Frt | | 0.91 | | | | 0.86 | | 1.00 | | 1.00 | 0.99 | |
| Flt Protected | | 0.99 | | | | 1.00 | | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | | 1462 | | | | 1465 | | 3148 | | 1608 | 3136 | |
| Flt Permitted | | 0.99 | | | | 1.00 | | 0.95 | | 0.95 | 1.00 | |
| Satd. Flow (perm) | | 1462 | | | | 1465 | | 2986 | | 1608 | 3136 | |
| Peak-hour factor, PHF | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph) | 4 | 3 | 16 | 0 | 0 | 135 | 10 | 538 | 18 | 162 | 400 | 21 |
| RTOR Reduction (vph) | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 0 | 11 | 0 | 0 | 0 | 135 | 0 | 564 | 0 | 162 | 417 | 0 |
| Confl. Peds. (#/hr) | | | 43 | | | | 173 | | 183 | | | 173 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 75 | | | 28 |
| Heavy Vehicles (%) | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% | 1% |
| Turn Type | Perm | NA | | | | Prot | Perm | NA | | Prot | NA | |
| Protected Phases | | 4! | | | | 8 | | 2 | | 4! | 6 | |
| Permitted Phases | 4! | | | | | | 2 | | | | | |
| Actuated Green, G (s) | | 18.7 | | | | 18.7 | | 56.8 | | 18.7 | 56.8 | |
| Effective Green, g (s) | | 19.2 | | | | 19.2 | | 57.8 | | 19.2 | 57.8 | |
| Actuated g/C Ratio | | 0.23 | | | | 0.23 | | 0.68 | | 0.23 | 0.68 | |
| Clearance Time (s) | | 4.5 | | | | 4.5 | | 5.0 | | 4.5 | 5.0 | |
| Vehicle Extension (s) | | 2.0 | | | | 2.0 | | 2.0 | | 2.0 | 2.0 | |
| Lane Grp Cap (vph) | | 330 | | | | 330 | | 2030 | | 363 | 2132 | |
| v/s Ratio Prot | | | | | | 0.09 | | | | c0.10 | 0.13 | |
| v/s Ratio Perm | | 0.01 | | | | | | c0.19 | | | | |
| v/c Ratio | | 0.03 | | | | 0.41 | | 0.28 | | 0.45 | 0.20 | |
| Uniform Delay, d1 | | 25.7 | | | | 28.1 | | 5.4 | | 28.3 | 5.0 | |
| Progression Factor | | 1.00 | | | | 1.00 | | 1.00 | | 1.00 | 1.00 | |
| Incremental Delay, d2 | | 0.0 | | | | 0.3 | | 0.3 | | 0.3 | 0.2 | |
| Delay (s) | | 25.7 | | | | 28.4 | | 5.7 | | 28.6 | 5.2 | |
| Level of Service | | C | | | | C | | A | | C | A | |
| Approach Delay (s) | | 25.7 | | | 28.4 | | | 5.7 | | | 11.7 | |
| Approach LOS | | C | | | C | | | A | | | B | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 11.1 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.32 | | |
| Actuated Cycle Length (s) | 85.0 | Sum of lost time (s) | 8.0 |
| Intersection Capacity Utilization | 64.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |
| ! Phase conflict between lane groups. | | | |
| c Critical Lane Group | | | |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 8.5 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 11 | 21 | 65 | 26 | 28 | 20 | 21 | 78 | 30 | 20 | 169 | 33 |
| Future Vol, veh/h | 11 | 21 | 65 | 26 | 28 | 20 | 21 | 78 | 30 | 20 | 169 | 33 |
| Peak Hour Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Heavy Vehicles, % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 11 | 21 | 65 | 26 | 28 | 20 | 21 | 78 | 30 | 20 | 169 | 33 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 8 | 8.3 | 8.3 | 9 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 16% | 11% | 35% | 9% |
| Vol Thru, % | 60% | 22% | 38% | 76% |
| Vol Right, % | 23% | 67% | 27% | 15% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 129 | 97 | 74 | 222 |
| LT Vol | 21 | 11 | 26 | 20 |
| Through Vol | 78 | 21 | 28 | 169 |
| RT Vol | 30 | 65 | 20 | 33 |
| Lane Flow Rate | 129 | 97 | 74 | 222 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.159 | 0.119 | 0.097 | 0.269 |
| Departure Headway (Hd) | 4.43 | 4.398 | 4.71 | 4.366 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 809 | 814 | 760 | 824 |
| Service Time | 2.46 | 2.43 | 2.743 | 2.393 |
| HCM Lane V/C Ratio | 0.159 | 0.119 | 0.097 | 0.269 |
| HCM Control Delay | 8.3 | 8 | 8.3 | 9 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 0.6 | 0.4 | 0.3 | 1.1 |

# Appendix C:

# Signal Warrant Calculations

FEHR PEERS

| | | | |
|---|---|---|---|
| | | Project | 2424 Webster |
| Major Street | Broadway | Scenario | PP PM |
| Minor Street | 24th Street | Peak Hour | 0 |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 22 | 24 | 13 | 29 |
| Through | 508 | 368 | 15 | 10 |
| Right | 67 | 20 | 40 | 38 |
| Total | 597 | 412 | 68 | 77 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |

Intersection Geometry

| | |
|---|---|
| Number of Approach Lanes for Minor Street | 1 |
| Total Approaches | 4 |

Worst Case Delay for Minor Street

| | |
|---|---|
| Stopped Delay (seconds per vehicle) | 47.2 |
| Approach with Worst Case Delay | WB |
| Total Vehicles on Approach | 77 |

**Warrant 3A, Peak Hour**

| | Peak Hour Delay on Minor Approach (vehicle-hours) | Peak Hour Volume on Minor Approach (vph) | Peak Hour Entering Volume Serviced (vph) |
|---|---|---|---|
| **PP PM** | **1** | **77** | **1,154** |
| **Limiting Value** | **4** | **100** | **800** |
| **Condition Satisfied?** | **Not Met** | **Not Met** | **Met** |
| **Warrant Met** | **NO** | | |

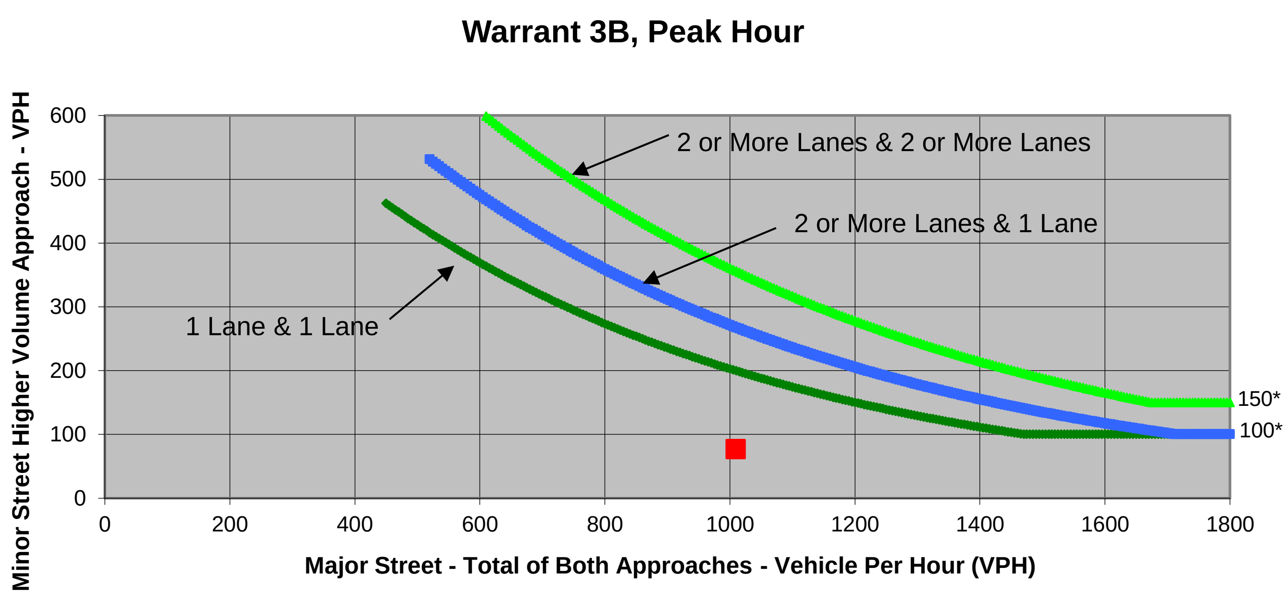
| | | | | |
|---|---|---|---|---|
| Major Street | Broadway | | Project | 2424 Webster |
| Minor Street | 24th Street | | Scenario | PP PM |
| | | | Peak Hour | 0 |

Turn Movement Volumes

| | NB | SB | EB | WB |
|---|---|---|---|---|
| Left | 22 | 24 | 13 | 29 |
| Through | 508 | 368 | 15 | 10 |
| Right | 67 | 20 | 40 | 38 |
| Total | 597 | 412 | 68 | 77 |

Major Street Direction

| | |
|---|---|
| X | North/South |
| | East/West |




* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

| | Major Street | Minor Street | Warrant Met |
|---|---|---|---|
| | Broadway | 24th Street | |
| **Number of Approach Lanes** | **2** | **1** | **NO** |
| **Traffic Volume (VPH) *** | **1,009** | **77** | |

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

# Appendix D:
# Predicted Crash Frequency
# Calculation Sheets

| Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections | | | |
|---|---|---|---|
| **General Information** | | **Location Information** | |
| Analyst | Sam Inoue-Alexander | Roadway | |
| Agency or Company | Fehr & Peers | Intersection | Broadway/25th Street/Webster Street |
| Date Performed | 03/03/20 | Jurisdiction | Oakland, CA |
| | | Analysis Year | 2020 |

| **Input Data** | | **Base Conditions** | **Site Conditions** |
|---|---|---|---|
| Intersection type (3ST, 3SG, 4ST, 4SG) | | -- | 4SG |
| AADT $_{major}$ (veh/day) | $AADT_{MAX}$ = 67,700 (veh/day) | -- | 11,450 |
| AADT $_{minor}$ (veh/day) | $AADT_{MAX}$ = 33,400 (veh/day) | -- | 1,270 |
| 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 | 1 |
| 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] | | -- | 1 |
| Type of left-turn signal phasing for Leg #1 | | Permissive | Protected |
| Type of left-turn signal phasing for Leg #2 | | -- | Not Applicable |
| Type of left-turn signal phasing for Leg #3 | | -- | Not Applicable |
| Type of left-turn signal phasing for Leg #4 (if applicable) | | -- | Not Applicable |
| Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3] | | 0 | 0 |
| Intersection red light cameras (present/not present) | | Not Present | Not Present |
| Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only | | | 3,990 |
| 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 | 3 |
| Schools within 300 m (1,000 ft) of the intersection (present/not present) | | Not Present | Present |
| Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection | | 0 | 9 |

| Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections | | | | | | |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| CMF for Left-Turn Lanes | CMF for Left-Turn Signal Phasing | CMF for Right-Turn Lanes | CMF for Right Turn on Red | CMF for Lighting | CMF for Red Light Cameras | Combined CMF |
| *CMF 1i* | *CMF 2i* | *CMF 3i* | *CMF 4i* | *CMF 5i* | *CMF 6i* | *CMF* $_{COMB}$ |
| from Table 12-24 | from Table 12-25 | from Table 12-26 | from Equation 12-35 | from Equation 12-36 | from Equation 12-37 | (1)*(2)*(3)*(4)*(5)*(6) |
| 0.90 | 0.93 | 1.00 | 1.00 | 0.91 | 1.00 | 0.76 |

| 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 | 1.923 | 1.000 | 1.923 | 0.76 | 1.00 | 1.466 |
| Fatal and Injury (FI) | -13.14 | 1.18 | 0.22 | 0.33 | 0.583 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.317 | 0.609 | 0.76 | 1.00 | 0.465 |
| Property Damage Only (PDO) | -11.02 | 1.02 | 0.24 | 0.44 | 1.256 | $(5)_{TOTAL}-(5)_{FI}$ 0.683 | 1.313 | 0.76 | 1.00 | 1.002 |

| 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 | 0.465 | 1.000 | 1.002 | 1.466 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (3)+(5) |
| Rear-end collision | 0.450 | 0.209 | 0.483 | 0.484 | 0.693 |
| Head-on collision | 0.049 | 0.023 | 0.030 | 0.030 | 0.053 |
| Angle collision | 0.347 | 0.161 | 0.244 | 0.244 | 0.406 |
| Sideswipe | 0.099 | 0.046 | 0.032 | 0.032 | 0.078 |
| Other multiple-vehicle collision | 0.055 | 0.026 | 0.211 | 0.211 | 0.237 |

| Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| **Crash Severity Level** | **SPF Coefficients** | | | **Overdispersion Parameter, k** | **Initial $N_{bisv}$** | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** | **Combined CMFs** | **Calibration Factor, $C_i$** | **Predicted $N_{bisv}$** |
| | from Table 12-12 | | | from Table 12-12 | from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | (6)*(7)*(8) |
| | a | b | c | | | | | | | |
| Total | -10.21 | 0.68 | 0.27 | 0.36 | 0.146 | 1.000 | 0.146 | 0.76 | 1.00 | 0.111 |
| Fatal and Injury (FI) | -9.25 | 0.43 | 0.29 | 0.09 | 0.042 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$ 0.290 | 0.042 | 0.76 | 1.00 | 0.032 |
| Property Damage Only (PDO) | -11.34 | 0.78 | 0.25 | 0.44 | 0.104 | $(5)_{TOTAL}-(5)_{FI}$ 0.710 | 0.104 | 0.76 | 1.00 | 0.079 |

| 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 | 0.032 | 1.000 | 0.079 | 0.111 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (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 | 0.024 | 0.870 | 0.069 | 0.093 |
| Collision with other object | 0.072 | 0.002 | 0.070 | 0.006 | 0.008 |
| Other single-vehicle collision | 0.040 | 0.001 | 0.023 | 0.002 | 0.003 |
| Single-vehicle noncollision | 0.141 | 0.005 | 0.034 | 0.003 | 0.007 |

| Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections | | | | | | |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{pedi}$** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-16 | | (4)*(5)*(6) |
| Total | -- | -- | -- | -- | 1.00 | -- |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | -- |

| Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections | | | |
|---|---|---|---|
| (1) | (2) | (3) | (4) |
| CMF for Bus Stops | CMF for Schools | CMF for Alcohol Sales Establishments | Combined CMF |
| $CMF_{1p}$ | $CMF_{2p}$ | $CMF_{3p}$ | |
| from Table 12-28 | from Table 12-29 | from Table 12-30 | (1)*(2)*(3) |
| 4.15 | 1.35 | 1.56 | 8.74 |

| Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | | | | | (3) | (4) | (5) | (6) | (7) |
| **Crash Severity Level** | **SPF Coefficients** | | | | | **Overdispersion Parameter, k** | **$N_{pedbase}$** | **Combined CMF** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | from Table 12-14 | | | | | | from Equation 12-29 | (4) from Worksheet 2H | | (4)*(5)*(6) |
| | a | b | c | d | e | | | | | |
| Total | -9.53 | 0.40 | 0.26 | 0.45 | 0.04 | 0.24 | 0.088 | 8.74 | 1.00 | 0.769 |
| Fatal and Injury (FI) | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | 0.769 |

| Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections | | | | | | |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{bikei}$** | **Calibration factor, $C_i$** | **Predicted $N_{bikei}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-17 | | (4)*(5)*(6) |
| Total | 1.466 | 0.111 | 1.578 | 0.015 | 1.00 | 0.024 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.024 |

| 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) | 0.209 | 0.484 | 0.693 |
| Head-on collisions (from Worksheet 2D) | 0.023 | 0.030 | 0.053 |
| Angle collisions (from Worksheet 2D) | 0.161 | 0.244 | 0.406 |
| Sideswipe (from Worksheet 2D) | 0.046 | 0.032 | 0.078 |
| Other multiple-vehicle collision (from Worksheet 2D) | 0.026 | 0.211 | 0.237 |
| Subtotal | 0.465 | 1.002 | 1.466 |
| **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) | 0.024 | 0.069 | 0.093 |
| Collision with other object (from Worksheet 2F) | 0.002 | 0.006 | 0.008 |
| Other single-vehicle collision (from Worksheet 2F) | 0.001 | 0.002 | 0.003 |
| Single-vehicle noncollision (from Worksheet 2F) | 0.005 | 0.003 | 0.007 |
| Collision with pedestrian (from Worksheet 2G or 2I) | 0.769 | 0.000 | 0.769 |
| Collision with bicycle (from Worksheet 2J) | 0.024 | 0.000 | 0.024 |
| Subtotal | 0.825 | 0.079 | 0.904 |
| Total | 1.290 | 1.081 | 2.371 |

| 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 | 2.4 |
| Fatal and injury (FI) | 1.3 |
| Property damage only (PDO) | 1.1 |

| Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections | | | |
|---|---|---|---|
| **General Information** | | **Location Information** | |
| Analyst | Sam Inoue-Alexander | Roadway | |
| Agency or Company | Fehr & Peers | Intersection | Broadway/24th Street |
| Date Performed | 03/03/20 | Jurisdiction | Oakland, CA |
| | | Analysis Year | 2020 |

| **Input Data** | | **Base Conditions** | **Site Conditions** |
|---|---|---|---|
| Intersection type (3ST, 3SG, 4ST, 4SG) | | -- | 4ST |
| AADT $_{major}$ (veh/day) | $AADT_{MAX}$ = 46,800 (veh/day) | -- | 10,060 |
| AADT $_{minor}$ (veh/day) | $AADT_{MAX}$ = 5,900 (veh/day) | -- | 1,210 |
| 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 | 3 |
| Schools within 300 m (1,000 ft) of the intersection (present/not present) | | Not Present | Present |
| Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection | | 0 | 9 |

| Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections | | | | | | |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| CMF for Left-Turn Lanes | CMF for Left-Turn Signal Phasing | CMF for Right-Turn Lanes | CMF for Right Turn on Red | CMF for Lighting | CMF for Red Light Cameras | Combined CMF |
| *CMF 1i* | *CMF 2i* | *CMF 3i* | *CMF 4i* | *CMF 5i* | *CMF 6i* | *CMF* $_{COMB}$ |
| from Table 12-24 | from Table 12-25 | from Table 12-26 | from Equation 12-35 | from Equation 12-36 | from Equation 12-37 | (1)*(2)*(3)*(4)*(5)*(6) |
| 1.00 | 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 | -8.90 | 0.82 | 0.25 | 0.40 | 1.540 | 1.000 | 1.540 | 0.91 | 1.00 | 1.406 |
| Fatal and Injury (FI) | -11.13 | 0.93 | 0.28 | 0.48 | 0.565 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$<br>0.363 | 0.560 | 0.91 | 1.00 | 0.511 |
| Property Damage Only (PDO) | -8.74 | 0.77 | 0.23 | 0.40 | 0.989 | $(5)_{TOTAL}-(5)_{FI}$<br>0.637 | 0.980 | 0.91 | 1.00 | 0.895 |

**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 | 0.511 | 1.000 | 0.895 | 1.406 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (3)+(5) |
| Rear-end collision | 0.338 | 0.173 | 0.374 | 0.335 | 0.508 |
| Head-on collision | 0.041 | 0.021 | 0.030 | 0.027 | 0.048 |
| Angle collision | 0.440 | 0.225 | 0.335 | 0.300 | 0.525 |
| Sideswipe | 0.121 | 0.062 | 0.044 | 0.039 | 0.101 |
| Other multiple-vehicle collision | 0.060 | 0.031 | 0.217 | 0.194 | 0.225 |

**Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections**

| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Crash Severity Level** | **SPF Coefficients** | | | **Overdispersion Parameter, k** | **Initial $N_{bisv}$** | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** | **Combined CMFs** | **Calibration Factor, $C_i$** | **Predicted $N_{bisv}$** |
| | from Table 12-12 | | | from Table 12-12 | from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | (6)*(7)*(8) |
| | a | b | c | | | | | | | |
| Total | -5.33 | 0.33 | 0.12 | 0.65 | 0.238 | 1.000 | 0.238 | 0.91 | 1.00 | 0.217 |
| Fatal and Injury (FI) | -- | -- | -- | -- | 0.067 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$<br>0.318 | 0.076 | 0.91 | 1.00 | 0.069 |
| Property Damage Only (PDO) | -7.04 | 0.36 | 0.25 | 0.54 | 0.143 | $(5)_{TOTAL}-(5)_{FI}$<br>0.682 | 0.162 | 0.91 | 1.00 | 0.148 |

| 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 | 0.069 | 1.000 | 0.148 | 0.217 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (3)+(5) |
| Collision with parked vehicle | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| Collision with animal | 0.001 | 0.000 | 0.026 | 0.004 | 0.004 |
| Collision with fixed object | 0.679 | 0.047 | 0.847 | 0.125 | 0.172 |
| Collision with other object | 0.089 | 0.006 | 0.070 | 0.010 | 0.017 |
| Other single-vehicle collision | 0.051 | 0.004 | 0.007 | 0.001 | 0.005 |
| Single-vehicle noncollision | 0.179 | 0.012 | 0.049 | 0.007 | 0.020 |

| Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections | | | | | | |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{pedi}$** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-16 | | (4)*(5)*(6) |
| Total | 1.406 | 0.217 | 1.623 | 0.022 | 1.00 | 0.036 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.036 |

| 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** | **$N_{pedbase}$** | **Combined CMF** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | from Table 12-14 | | | | | | from Equation 12-29 | (4) from Worksheet 2H | | (4)*(5)*(6) |
| | a | b | c | d | e | | | | | |
| Total | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |
| Fatal and Injury (FI) | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |

| Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections | | | | | | |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{bikei}$** | **Calibration factor, $C_i$** | **Predicted $N_{bikei}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-17 | | (4)*(5)*(6) |
| Total | 1.406 | 0.217 | 1.623 | 0.018 | 1.00 | 0.029 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.029 |

| 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 | 0.335 | 0.508 |
| Head-on collisions (from Worksheet 2D) | 0.021 | 0.027 | 0.048 |
| Angle collisions (from Worksheet 2D) | 0.225 | 0.300 | 0.525 |
| Sideswipe (from Worksheet 2D) | 0.062 | 0.039 | 0.101 |
| Other multiple-vehicle collision (from Worksheet 2D) | 0.031 | 0.194 | 0.225 |
| Subtotal | 0.511 | 0.895 | 1.406 |
| **SINGLE-VEHICLE** | | | |
| Collision with parked vehicle (from Worksheet 2F) | 0.000 | 0.000 | 0.000 |
| Collision with animal (from Worksheet 2F) | 0.000 | 0.004 | 0.004 |
| Collision with fixed object (from Worksheet 2F) | 0.047 | 0.125 | 0.172 |
| Collision with other object (from Worksheet 2F) | 0.006 | 0.010 | 0.017 |
| Other single-vehicle collision (from Worksheet 2F) | 0.004 | 0.001 | 0.005 |
| Single-vehicle noncollision (from Worksheet 2F) | 0.012 | 0.007 | 0.020 |
| Collision with pedestrian (from Worksheet 2G or 2I) | 0.036 | 0.000 | 0.036 |
| Collision with bicycle (from Worksheet 2J) | 0.029 | 0.000 | 0.029 |
| Subtotal | 0.134 | 0.148 | 0.282 |
| Total | 0.645 | 1.043 | 1.688 |

| 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 | 1.7 |
| Fatal and injury (FI) | 0.6 |
| Property damage only (PDO) | 1.0 |

| Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections | | | |
|---|---|---|---|
| **General Information** | | **Location Information** | |
| Analyst | Sam Inoue-Alexander | Roadway | |
| Agency or Company | Fehr & Peers | Intersection | 24th Street/Webster Street |
| Date Performed | 03/03/20 | Jurisdiction | Oakland, CA |
| | | Analysis Year | 2020 |

| Input Data | | Base Conditions | Site Conditions |
|---|---|---|---|
| Intersection type (3ST, 3SG, 4ST, 4SG) | | -- | 4ST |
| AADT $_{major}$ (veh/day) | $AADT_{MAX}$ = 46,800 (veh/day) | -- | 3,130 |
| AADT $_{minor}$ (veh/day) | $AADT_{MAX}$ = 5,900 (veh/day) | -- | 1,660 |
| Intersection lighting (present/not present) | | Not Present | Not 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 ($n_{lanesx}$) | | -- | 2 |
| Number of bus stops within 300 m (1,000 ft) of the intersection | | 0 | 3 |
| Schools within 300 m (1,000 ft) of the intersection (present/not present) | | Not Present | Present |
| Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection | | 0 | 9 |

| Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections | | | | | | |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| CMF for Left-Turn Lanes | CMF for Left-Turn Signal Phasing | CMF for Right-Turn Lanes | CMF for Right Turn on Red | CMF for Lighting | CMF for Red Light Cameras | Combined CMF |
| *CMF 1i* | *CMF 2i* | *CMF 3i* | *CMF 4i* | *CMF 5i* | *CMF 6i* | *$CMF_{COMB}$* |
| from Table 12-24 | from Table 12-25 | from Table 12-26 | from Equation 12-35 | from Equation 12-36 | from Equation 12-37 | (1)*(2)*(3)*(4)*(5)*(6) |
| 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

| 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 | -8.90 | 0.82 | 0.25 | 0.40 | 0.640 | 1.000 | 0.640 | 1.00 | 1.00 | 0.640 |
| Fatal and Injury (FI) | -11.13 | 0.93 | 0.28 | 0.48 | 0.208 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$<br>0.325 | 0.208 | 1.00 | 1.00 | 0.208 |
| Property Damage Only (PDO) | -8.74 | 0.77 | 0.23 | 0.40 | 0.433 | $(5)_{TOTAL}-(5)_{FI}$<br>0.675 | 0.432 | 1.00 | 1.00 | 0.432 |

| 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 | 0.208 | 1.000 | 0.432 | 0.640 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (3)+(5) |
| Rear-end collision | 0.338 | 0.070 | 0.374 | 0.162 | 0.232 |
| Head-on collision | 0.041 | 0.009 | 0.030 | 0.013 | 0.021 |
| Angle collision | 0.440 | 0.091 | 0.335 | 0.145 | 0.236 |
| Sideswipe | 0.121 | 0.025 | 0.044 | 0.019 | 0.044 |
| Other multiple-vehicle collision | 0.060 | 0.012 | 0.217 | 0.094 | 0.106 |

| Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | | | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| **Crash Severity Level** | **SPF Coefficients** | | | **Overdispersion Parameter, k** | **Initial $N_{bisv}$** | **Proportion of Total Crashes** | **Adjusted $N_{bimv}$** | **Combined CMFs** | **Calibration Factor, $C_i$** | **Predicted $N_{bisv}$** |
| | from Table 12-12 | | | from Table 12-12 | from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27 | | $(4)_{TOTAL}$*(5) | (7) from Worksheet 2B | | (6)*(7)*(8) |
| | a | b | c | | | | | | | |
| Total | -5.33 | 0.33 | 0.12 | 0.65 | 0.168 | 1.000 | 0.168 | 1.00 | 1.00 | 0.168 |
| Fatal and Injury (FI) | -- | -- | -- | -- | 0.047 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$<br>0.317 | 0.053 | 1.00 | 1.00 | 0.053 |
| Property Damage Only (PDO) | -7.04 | 0.36 | 0.25 | 0.54 | 0.101 | $(5)_{TOTAL}-(5)_{FI}$<br>0.683 | 0.115 | 1.00 | 1.00 | 0.115 |

**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 | 0.053 | 1.000 | 0.115 | 0.168 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (3)+(5) |
| Collision with parked vehicle | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| Collision with animal | 0.001 | 0.000 | 0.026 | 0.003 | 0.003 |
| Collision with fixed object | 0.679 | 0.036 | 0.847 | 0.097 | 0.133 |
| Collision with other object | 0.089 | 0.005 | 0.070 | 0.008 | 0.013 |
| Other single-vehicle collision | 0.051 | 0.003 | 0.007 | 0.001 | 0.004 |
| Single-vehicle noncollision | 0.179 | 0.010 | 0.049 | 0.006 | 0.015 |

**Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections**

| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{pedi}$** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-16 | | (4)*(5)*(6) |
| Total | 0.640 | 0.168 | 0.808 | 0.022 | 1.00 | 0.018 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.018 |

**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** | **$N_{pedbase}$** | **Combined CMF** | **Calibration factor, $C_i$** | **Predicted $N_{pedi}$** |
| | from Table 12-14 | | | | | | from Equation 12-29 | (4) from Worksheet 2H | | (4)*(5)*(6) |
| | a | b | c | d | e | | | | | |
| Total | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |
| Fatal and Injury (FI) | -- | -- | -- | -- | -- | -- | -- | -- | 1.00 | -- |

| Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections | | | | | | |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| **Crash Severity Level** | **Predicted $N_{bimv}$** | **Predicted $N_{bisv}$** | **Predicted $N_{bi}$** | **$f_{bikei}$** | **Calibration factor, $C_i$** | **Predicted $N_{bikei}$** |
| | (9) from Worksheet 2C | (9) from Worksheet 2E | (2) + (3) | from Table 12-17 | | (4)*(5)*(6) |
| Total | 0.640 | 0.168 | 0.808 | 0.018 | 1.00 | 0.015 |
| Fatal and injury (FI) | -- | -- | -- | -- | 1.00 | 0.015 |

| 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) | 0.070 | 0.162 | 0.232 |
| Head-on collisions (from Worksheet 2D) | 0.009 | 0.013 | 0.021 |
| Angle collisions (from Worksheet 2D) | 0.091 | 0.145 | 0.236 |
| Sideswipe (from Worksheet 2D) | 0.025 | 0.019 | 0.044 |
| Other multiple-vehicle collision (from Worksheet 2D) | 0.012 | 0.094 | 0.106 |
| Subtotal | 0.208 | 0.432 | 0.640 |
| **SINGLE-VEHICLE** | | | |
| Collision with parked vehicle (from Worksheet 2F) | 0.000 | 0.000 | 0.000 |
| Collision with animal (from Worksheet 2F) | 0.000 | 0.003 | 0.003 |
| Collision with fixed object (from Worksheet 2F) | 0.036 | 0.097 | 0.133 |
| Collision with other object (from Worksheet 2F) | 0.005 | 0.008 | 0.013 |
| Other single-vehicle collision (from Worksheet 2F) | 0.003 | 0.001 | 0.004 |
| Single-vehicle noncollision (from Worksheet 2F) | 0.010 | 0.006 | 0.015 |
| Collision with pedestrian (from Worksheet 2G or 2I) | 0.018 | 0.000 | 0.018 |
| Collision with bicycle (from Worksheet 2J) | 0.015 | 0.000 | 0.015 |
| Subtotal | 0.086 | 0.115 | 0.200 |
| Total | 0.293 | 0.547 | 0.840 |

| 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 | 0.8 |
| Fatal and injury (FI) | 0.3 |
| Property damage only (PDO) | 0.5 |

| Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments | | | |
|---|---|---|---|
| **General Information** | | **Location Information** | |
| Analyst | Sam Inoue-Alexander | Roadway | Webster Street |
| Agency or Company | Fehr & Peers | Roadway Section | 24th Street to 25th Street |
| Date Performed | 03/03/20 | Jurisdiction | Oakland, CA |
| | | Analysis Year | 2020 |

| **Input Data** | | **Base Conditions** | **Site Conditions** |
|---|---|---|---|
| Roadway type (2U, 3T, 4U, 4D, ST) | | -- | 2U |
| Length of segment, L (mi) | | -- | 0.057 |
| AADT (veh/day) | $AADT_{MAX}$ = 32,600 (veh/day) | -- | 2,880 |
| Type of on-street parking (none/parallel/angle) | | None | Parallel (Comm/Ind) |
| Proportion of curb length with on-street parking | | -- | 0.66 |
| 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) | | -- | 0 |
| Minor commercial driveways (number) | | -- | 5 |
| 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 | 18 |
| Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30] | | 30 | 3 |
| Calibration Factor, Cr | | 1.00 | 1.00 |

| Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments | | | | | |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |
| CMF for On-Street Parking | CMF for Roadside Fixed Objects | CMF for Median Width | CMF for Lighting | CMF for Automated Speed Enforcement | Combined CMF |
| *CMF 1r* | *CMF 2r* | *CMF 3r* | *CMF 4r* | *CMF 5r* | *CMF comb* |
| from Equation 12-32 | from Equation 12-33 | from Table 12-22 | from Equation 12-34 | from Section 12.7.1 | (1)*(2)*(3)*(4)*(5) |
| 1.71 | 1.13 | 1.00 | 0.93 | 1.00 | 1.81 |

| 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 | -15.22 | 1.68 | 0.84 | 0.009 | 1.000 | 0.009 | 1.81 | 1.00 | 0.016 |
| Fatal and Injury (FI) | -16.22 | 1.66 | 0.65 | 0.003 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$<br>0.302 | 0.003 | 1.81 | 1.00 | 0.005 |
| Property Damage Only (PDO) | -15.62 | 1.69 | 0.87 | 0.007 | $(5)_{TOTAL}-(5)_{FI}$<br>0.698 | 0.006 | 1.81 | 1.00 | 0.011 |

**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 | 0.005 | 1.000 | 0.011 | 0.016 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (3)+(5) |
| Rear-end collision | 0.730 | 0.004 | 0.778 | 0.009 | 0.013 |
| Head-on collision | 0.068 | 0.000 | 0.004 | 0.000 | 0.000 |
| Angle collision | 0.085 | 0.000 | 0.079 | 0.001 | 0.001 |
| Sideswipe, same direction | 0.015 | 0.000 | 0.031 | 0.000 | 0.000 |
| Sideswipe, opposite direction | 0.073 | 0.000 | 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 | | from Table 12-5 | from Equation 12-13 | | $(4)_{TOTAL}*(5)$ | (6) from Worksheet 1B | | (6)*(7)*(8) |
| | a | b | | | | | | | |
| Total | -5.47 | 0.56 | 0.81 | 0.021 | 1.000 | 0.021 | 1.81 | 1.00 | 0.037 |
| Fatal and Injury (FI) | -3.96 | 0.23 | 0.50 | 0.007 | $(4)_{FI}/((4)_{FI}+(4)_{PDO})$<br>0.328 | 0.007 | 1.81 | 1.00 | 0.012 |
| Property Damage Only (PDO) | -6.51 | 0.64 | 0.87 | 0.014 | $(5)_{TOTAL}-(5)_{FI}$<br>0.672 | 0.014 | 1.81 | 1.00 | 0.025 |

**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 | 0.025 | 0.037 |
| | | $(2)*(3)_{FI}$ | | $(4)*(5)_{PDO}$ | (3)+(5) |
| Collision with animal | 0.026 | 0.000 | 0.066 | 0.002 | 0.002 |
| Collision with fixed object | 0.723 | 0.009 | 0.759 | 0.019 | 0.028 |
| Collision with other object | 0.010 | 0.000 | 0.013 | 0.000 | 0.000 |
| Other single-vehicle collision | 0.241 | 0.003 | 0.162 | 0.004 | 0.007 |

| Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments | | | | | |
|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) |
| **Driveway Type** | **Number of driveways, $n_j$** | **Crashes per driveway per year, $N_j$** | **Coefficient for traffic adjustment, t** | **Initial $N_{brdwy}$** | **Overdispersion parameter, k** |
| | | from Table 12-7 | from Table 12-7 | Equation 12-16<br>$n_j$ * $N_j$ * $(AADT/15,000)^t$ | from Table 12-7 |
| Major commercial | 0 | 0.158 | 1.000 | 0.000 | -- |
| Minor commercial | 5 | 0.050 | 1.000 | 0.048 | |
| 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 | -- | -- | -- | 0.048 | 0.81 |

| 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 | 0.048 | 1.000 | 0.048 | 1.81 | 1.00 | 0.087 |
| Fatal and injury (FI) | -- | 0.323 | 0.016 | 1.81 | 1.00 | 0.028 |
| Property damage only (PDO) | -- | 0.677 | 0.032 | 1.81 | 1.00 | 0.059 |

| Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments | | | | | | | |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Crash Severity Level** | **Predicted $N_{brmv}$** | **Predicted $N_{brsv}$** | **Predicted $N_{brdwy}$** | **Predicted $N_{br}$** | **$f_{pedr}$** | **Calibration factor, $C_r$** | **Predicted $N_{pedr}$** |
| | (9) from Worksheet 1C | (9) from Worksheet 1E | (7) from Worksheet 1H | (2)+(3)+(4) | from Table 12-8 | | (5)*(6)*(7) |
| Total | 0.016 | 0.037 | 0.087 | 0.141 | 0.036 | 1.00 | 0.005 |
| Fatal and injury (FI) | -- | -- | -- | -- | -- | 1.00 | 0.005 |

| Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments | | | | | | | |
|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Crash Severity Level** | **Predicted $N_{brmv}$** | **Predicted $N_{brsv}$** | **Predicted $N_{brdwy}$** | **Predicted $N_{br}$** | **$f_{biker}$** | **Calibration factor, $C_r$** | **Predicted $N_{biker}$** |
| | (9) from Worksheet 1C | (9) from Worksheet 1E | (7) from Worksheet 1H | (2)+(3)+(4) | from Table 12-9 | | (5)*(6)*(7) |
| Total | 0.016 | 0.037 | 0.087 | 0.141 | 0.018 | 1.00 | 0.003 |
| Fatal and injury (FI) | -- | -- | -- | -- | -- | 1.00 | 0.003 |

| 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) | 0.004 | 0.009 | 0.013 |
| Head-on collisions (from Worksheet 1D) | 0.000 | 0.000 | 0.000 |
| Angle collisions (from Worksheet 1D) | 0.000 | 0.001 | 0.001 |
| Sideswipe, same direction (from Worksheet 1D) | 0.000 | 0.000 | 0.000 |
| Sideswipe, opposite direction (from Worksheet 1D) | 0.000 | 0.001 | 0.001 |
| Driveway-related collisions (from Worksheet 1H) | 0.028 | 0.059 | 0.087 |
| Other multiple-vehicle collision (from Worksheet 1D) | 0.000 | 0.001 | 0.001 |
| Subtotal | 0.033 | 0.070 | 0.103 |
| **SINGLE-VEHICLE** | | | |
| Collision with animal (from Worksheet 1F) | 0.000 | 0.002 | 0.002 |
| Collision with fixed object (from Worksheet 1F) | 0.009 | 0.019 | 0.028 |
| Collision with other object (from Worksheet 1F) | 0.000 | 0.000 | 0.000 |
| Other single-vehicle collision (from Worksheet 1F) | 0.003 | 0.004 | 0.007 |
| Collision with pedestrian (from Worksheet 1I) | 0.005 | 0.000 | 0.005 |
| Collision with bicycle (from Worksheet 1J) | 0.003 | 0.000 | 0.003 |
| Subtotal | 0.020 | 0.025 | 0.045 |
| Total | 0.053 | 0.095 | 0.148 |

| Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments | | | |
|---|---|---|---|
| (1) | (2) | (3) | (4) |
| **Crash Severity Level** | **Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)** | **Roadway segment length, L (mi)** | **Crash rate (crashes/mi/year)** |
| | (Total) from Worksheet 1K | | (2) / (3) |
| Total | 0.1 | 0.06 | 2.6 |
| Fatal and injury (FI) | 0.1 | 0.06 | 0.9 |
| Property damage only (PDO) | 0.1 | 0.06 | 1.7 |

# Appendix E
## Transportation and Parking Demand Management Plan

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# Draft Memorandum

Date: December 30, 2020

To: Elizabeth Kanner, ESA

From: Sam Tabibnia, Fehr & Peers

**Subject: 2424 Webster Street – Transportation and Parking Demand Management Plan**

*OK19-0345*

Transportation and Parking Demand Management (TDM) plans are a requirement of the City of Oakland's Standard Conditions of Approval (Department of Planning and Building, Bureau of Planning, Revised January 24, 2020 – Section 77) for all land use projects generating more than 50 net new peak hour vehicle trips as described in the City of Oakland's *Transportation Impact Study Guidelines* (TIRG) dated April 2017.

The proposed 2424 Webster Street Project (the Project) is required to prepare a (TDM) Plan because it would generate more than 50 peak hour trips. Since the Project would generate more than 50 peak hour trips, but less than 100 peak hour trips, the TDM Plan goal is to achieve a 10 percent vehicle trip reduction (VTR).

## Project Transportation Characteristics

The Project is located on the east side of Webster Street between 24th and 25th Streets in the Broadway Valdez District of Oakland. The block is currently occupied by various commercial uses such as a car dealership, restaurant, and vehicle repair shop. The proposed Project would consist of approximately 150,240 square feet of office space and approximately 11,330 square feet of ground-level retail space, as well as a basement parking garage with 172 parking spaces.

The Project is in the Broadway Valdez District of Oakland and adjacent to Downtown Oakland. Pedestrian, bicycle, and transit access between the site and nearby commercial areas is good: there are continuous sidewalks throughout the area, and bikeways connect the Project site to adjacent commercial areas. Four local and two nighttime AC Transit routes operate in the vicinity of the Project site (within about 1,100 feet of the site). The Oakland Free Broadway shuttle ("Free B") also operates along Broadway with the nearest stop at 25th Street. The nearest BART station to the Project site is the 19th Street BART Station, about 0.4 miles south of the Project site, providing access to the Richmond-Daly City, Richmond-Warm Springs/South Fremont, and Antioch-SFO lines.

Per the Transportation Impact Review (Non-CEQA) Memorandum, the Project's location is expected to result in a relatively high rate of pedestrian, bicycle, and transit trips. Based on the City's TIRG, the commute mode split is assumed to be 53 percent motor vehicle trips, 30 percent transit trips, and about 16 percent bicycle or walking trips. **Table 1** summarizes the trip generation by mode for the Project Study per the City's TIRG. The motor vehicle trips are estimated to be slightly more than half of the trips generated by typical suburban office space.

**Table 1: Trip Generation by Travel Mode**

| Mode | Mode Share Adjustment Factors[1] | Daily | AM Peak Hour | PM Peak Hour |
|---|---|---|---|---|
| Automobile | 0.53 | 610 | 76 | 78 |
| Transit | 0.30 | 341 | 43 | 44 |
| Bike | 0.05 | 59 | 7 | 7 |
| Walk | 0.10 | 121 | 15 | 15 |
| | ***Total Trips*** | **1,131** | **141** | **144** |

Notes:

1. Based on the City of Oakland *Transportation Impact Review Guidelines* assuming project site is in an urban environment within 0.5 miles of a BART Station. Percentages do not add to 100%

Source: Fehr & Peers, 2020

## Mandatory TDM Strategies

This section describes the mandatory TDM strategies that shall be implemented at the Project. Some of these strategies shall be directly implemented by the building management and others shall be implemented by individual tenants. **Table 2** lists the mandatory strategies that are part of the City's *TIRG*.

**Table 3** lists additional mandatory TDM strategies, the responsible party for implementation, and the effectiveness of each strategy based on research compiled in *Quantifying Greenhouse Gas Mitigation Measures* (California Air Pollution Control Officers Association (CAPCOA), August 2010). This report is a resource for local agencies to quantify the benefit, in terms of reduced travel demand, of implementing various TDM strategies.

**Table 2: Mandatory TDM Program Components (Oakland TIRG)**

| TDM Strategy | Consideration |
|---|---|
| Bus boarding islands, concrete pad | Not applicable – there is no bus stop on the Project frontage. |
| Bus shelter | To be established through design and permit review. Recommendation 3 in the Transportation Impact Review (Non-CEQA) Memorandum requires the Project to explore the feasibility, and if feasible, install bus shelters at both the northbound and southbound AC Transit stops on Broadway at 25th Street. |
| Curb extensions and bulb-outs | To be established through design and permit review. Recommendation 2 in the Transportation Impact Review (Non-CEQA) Memorandum requires the Project to explore the feasibility, and if feasible, install a bulb-out at the northeast corner of the Wester/24th Street intersection. |
| Corridor-level bikeway improvements | Not applicable – the Project generates fewer than 500 daily bicycle trips. |
| Corridor-level transit improvements | Not applicable – the Project generates fewer than 400 peak period transit trips. |
| Amenities such as: lighting, pedestrian-oriented green infrastructure, trees /greening, trash receptacles per the Pedestrian Master Plan and applicable streetscape plans | To be established through design and permit review. Proposed landscape design to be approved by City during building permit review process will include pedestrian street amenities. |
| Safety improvements identified in the Pedestrian Master Plan (such as crosswalk striping, ramps, countdown signals, bus bulbs, etc.) | Not applicable – no improvements are identified in the Pedestrian Master Plan along project frontage or at adjacent intersections. |
| In-street bicycle corral | Not applicable – the Project is not located along a Tier 1 bikeway. |
| Intersection improvements | To be established through design and permit review. Recommendation 2 in the Transportation Impact Review (Non-CEQA) Memorandum requires the Project to contribute to the proposed improvements at the Broadway/Webster Street/25th Street intersection identified in the *Broadway Valdez District Specific Plan*. |
| New sidewalk, curb ramps, curb and gutter meeting current City and ADA standards | To be established through design and permit review. Project will construct new sidewalk, curb ramps, curb and gutter to City and ADA standards along Project frontage. |
| Prohibit monthly parking permits and establish minimum price floor for public parking | To be established by building management after project completion. |
| Parking garage is designed with retrofit capability | To be established through design and permit review. |

| TDM Strategy | Consideration |
|---|---|
| Parking space reserved for car share | To be established through design and permit review. Project will offer to provide parking spaces reserved for car-share free of charge. |
| Paving, lane striping, or restriping (vehicle and bicycle) and signs to midpoint of street section | To be established through design and permit review. Repaving, striping, new crosswalks of the streets along the Project frontage to mid-point of streets to be accomplished. |
| Pedestrian crossing improvements, pedestrian-supportive signal changes. | Not applicable |
| Real-time transit information system. | Not applicable – the Project frontage does not include a bus stop or BART station. |
| Relocating bus stops to far side | Not applicable – Although the northbound bus stop on Broadway at 25th Street is currently near-side, it cannot be relocated. |
| Signal upgrades | Not applicable – the Project frontage does not abut a signalized intersection. |
| Transit queue jump lanes | Not applicable – the Project frontage is not along a transit route. |
| Trenching and placing conduit for traffic signal interconnect | Not applicable – the Project frontage block is not identified for signal interconnect improvements. |
| Unbundled parking | Not applicable – the Project does not include any residential units |

Sources: Fehr & Peers, 2020.

The mandatory strategies in Table 3 are generally targeted at office workers. Retail employees, customers, and office visitors are not directly targeted because the retail component of the project is small and would have few employees. In addition, many retail customers would be residents and workers in the Project area who would mostly walk or bike to the site, and office visitors would visit the Project too infrequently to be aware of the TDM benefits or to make them cost-effective. Limited parking will be provided for Project retail or the public.  Even so, some mandatory strategies could benefit retail employees, customers, and office visitors.

The Vehicle Trip Reduction (VTR) ranges in Table 3 represent conservative assumptions about potential trip reduction at the low end of the range. Due to the location of the project in an area that has good transit, bicycle, and pedestrian access, it is expected that the high end of the VTR range would be achieved with this TDM program.

The TDM strategies include on-going operational strategies. 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.

**Table 3: Mandatory TDM Program Components**

| TDM Strategy | Responsible Party | Estimated Trip Reduction[1] |
|---|---|---|
| A. Infrastructure Improvements | Building Management | NA [2] |
| B. Alternative Work Schedule/ Flexible Hours/Telecommuting | Project Tenants | 1% |
| C. Pre-Tax Commuter Benefits | Project Tenants | 1% |
| D. Transit Fare Subsidy | Project Tenants | 3-6%[3] |
| E. Parking Management | Building Management | 1-5% |
| F. Carpool and Ride-Matching Assistance | Building Management | 1-3% |
| G. Preferential Parking for Carpools | Building Management | |
| H. Designate On-Site Car-Share Spaces | Building Management | 1% |
| I. Bicycle Facility Monitoring | Building Management | NA [2] |
| J. Guaranteed Ride Home | Project Tenants | NA [2] |
| K. TDM Coordinator | Building Management | NA [2] |
| L. TDM Marketing and Employee Education | Building Management and Project Tenants | 2% |
| ***Estimated Vehicle Trip Reduction*** | | ***10-19%*** |

Notes:

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

Sources: Fehr & Peers, 2020.

A more detailed description of the TDM measures that comprise the mandatory TDM program shown in Table 3 is provided below:

A. *Infrastructure Improvements* – the following infrastructure improvements in the Project vicinity, which were identified in the Transportation Impact Review (Non-CEQA) Memorandum or required by the City's TIRG, would improve the bicycling, walking, and transit systems in the area and further encourage the use of these modes:

1. Explore the feasibility and, if determined feasible by City of Oakland staff, install a curb extension (bulb-out) with directional curb ramps on the northeast corner of the Webster Street/24th Street intersection.
2. Install high visibility crosswalk markings across the north and west approaches of the Webster Street/24th Street intersection.
3. Explore the feasibility and, if determined feasible by City of Oakland staff, contribute to the proposed improvements at the Broadway/Webster Street/25th Street intersection identified in the *Broadway Valdez District Specific Plan*.
4. Coordinate with City of Oakland and AC Transit to explore the feasibility and, if determined feasible by City of Oakland staff, install bus stop amenities such as benches, shelters, and/or trash receptacles at the northbound and southbound bus stops on Broadway at 25th Street.

B. *Alternative Work Schedule/Flexible Hours/Telecommuting* – Encourage project employees to offer alternative work schedules, flexible hours, and/or telecommuting, which can eliminate employee trips or shift them to non-peak periods.

C. *Pre-tax Commuter Benefits* – Encourage project tenants to enroll in WageWorks or other service to help with pre-tax commuter savings. This strategy allows employees to deduct monthly transit passes or other amount using pre-tax dollars. This can help to lower payroll taxes and allows employees to save on transit.

D. *Transit Fare Subsidy* – Building management shall either provide or require project tenants to provide free or reduced cost transit for their employees in order to increase transit mode share. Options include:

- Employers can offer a monthly commuter check (or alternatively Clipper Card, which is accepted by BART, AC Transit, and other major transit providers in the Bay Area) to employees to use public transit. Note that as of 2020, IRS allows up to $270 per employee per month.
- Employers can participate in AC Transit's EasyPass program, which enables employers to purchase annual bus passes for their employees in bulk at a deep discount. The passes allow unlimited rides on all AC Transit buses for all employees. For more information, see www.actransit.org/rider-info/easypass.

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

E. *Parking Management* – Building management shall charge for all parking spaces in the Project garage unless noted in other strategies, remove the cost of parking from the lease agreements, and set the fee for monthly, daily, and/or hourly parking to be same as or higher than other nearby garages.

F. *Carpool and Ride-Matching Assistance Program* – The building management shall offer personalized ride-matching assistance to pair employees interested in forming commute carpools. As an enhancement, building management may consider using specific services such as ZimRide, ComoVee, or 511.org RideShare.

G. *Preferential Parking for Carpoolers* – The building management shall offer free or discounted preferential carpool parking for eligible commuters. To be eligible for carpool parking, the carpool shall consist of three or more people. The building management shall monitor and provide adequate carpool spaces to meet and exceed potential demand. Considering the limited parking supply in Downtown Oakland, all or some of the unoccupied parking spaces designated for carpool shall be available for general use after 10:00 AM.

H. *Car-Share Spaces* – Offer to designate at least two on-site parking spaces for car-sharing (such as Getaround, Zip Car, etc.) for free. Monitor the usage of the car sharing spaces and adjust if necessary. As an additional strategy, encourage project tenants to provide free/subsidized car-share membership to their employees.

I. *Bicycle Facility Monitoring* – The project would provide 64 long-term and 16 short-term bicycle parking spaces, which would exceed the City of Oakland Planning Code requirements. Building management shall monitor the usage of these facilities and provide additional bicycle parking if necessary.

J. *Guaranteed Ride Home* – Encourage project employees to register for the Guaranteed Ride Home (GRH) program. Employees may be hesitant to commute by any other means besides driving alone since they lose the flexibility of leaving work in case of an emergency. GRH programs encourage alternative modes of transportation by offering free rides home in the case of an illness or crisis, if the employee is required to work unscheduled overtime, if a carpool or vanpool is unexpectedly unavailable, or if a bicycle problem arises. The Alameda County Transportation Commission offers a GRH service for all registered permanent employees who are employed within Alameda County, live within 100 miles of their worksite, and do not drive alone to work. The GRH program is offered at no cost to the employer, and employers are not required to register for their employees to enroll in and use the program.

K. *TDM Coordinator* – Each tenant shall designate a staff person as their TDM coordinator to coordinate, monitor, and publicize TDM activities. Building management shall also designate a "Building TDM coordinator."

L. *TDM Marketing and Tenant/workers Education* - Building management shall provide tenants and employees information about various transportation options in the project area and the TDM strategies provided by the building. This information would also be posted at central location(s) and be provided to each building employee. The information shall be updated as necessary. Marketing strategies can promote alternative trips by making commuters aware of the options and incentives of using non-automobile transportation. Implementing commute trip reduction strategies with a complementary marketing strategy can increase the overall effectiveness of the program. This information shall include:

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

- Transit Routes – Promote the use of transit by providing user-focused maps. These maps provide employees with wayfinding to nearby transit stops and transit-accessible destinations and are particularly useful for those without access to portable mapping applications. The project should consider installing TransitScreen real-time transit information in a visible location in the building lobby to provide employees 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.
- Ridesharing – Provide employees with phone numbers and contact information for ride sharing options including Uber, Lyft, and Oakland taxicab services.
- Carpooling – Provide employees with phone numbers and contact information for carpool matching services such as the Metropolitan Transportation Commission's 511 RideMatching.
- Walking and Biking Events – Provide information about local biking and walking events, such as Bike to Work Day, as events are planned.
- Bikeshare – Educate employees about nearby bike sharing station locations and membership information. The nearest bikeshare station is located two blocks south of the project site on Grand Avenue at Webster Street.

## TDM Compliance Monitoring

Since the Project is not anticipated to generate more than 100 net new peak hour vehicle trips, annual compliance reporting is not required.

Please contact Sam Tabibnia (stabibnia@fehrandpeers.com or 510-835-1943) with questions or comments.