

# Appendix A

## Notice of Preparation and Initial Study (NOP)







# Notice of Preparation

**Date:** January 19, 2018

**To:** Office of Planning and Research, Responsible and Trustee Agencies, and Interested Parties

**From:** City of Fremont, Planning Division

**Subject: Notice of Preparation of a Draft Environmental Impact Report and Public Scoping Meeting for Niles Gateway Mixed-Use Project**

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Pursuant to Section 21165 of the *California Public Resources Code* and Section 15050 of the California Environmental Quality Act (CEQA) Guidelines, the City of Fremont (City) will be the Lead Agency and will prepare an Environmental Impact Report (EIR) to address the potential impacts of the project described below. The purpose of this notice is to: (1) serve as a Notice of Preparation (NOP) of an EIR pursuant to CEQA Guidelines Section 15082; (2) solicit comments and suggestions regarding the scope and content of the EIR to be prepared for the proposed project; and (3) serve as a notice for a public scoping meeting.

We request comments from your agency regarding the scope and content of the EIR, which are germane to your agency's statutory responsibilities in connection with the proposed project. The EIR may be used by your agency when considering subsequent permits or approvals necessary for the project.

An Initial Study (Environmental Checklist) has been prepared for the project to evaluate the potentially significant effects the project may have on the environment. The Initial Study is available for review at the City of Fremont Development Services Center at 39550 Liberty Street, Fremont, CA or on the City's website at: <http://www.fremont.gov/ceqa>.

Due to the time limits mandated by state law, your response must be sent at the earliest possible date but no later than 30 days from receipt of this notice.

**Project Title:** Niles Gateway Mixed-Use (PLN2014-00338)

**Project Applicant:** Valley Oak Partners, 734 The Alameda, San Jose, CA 95126

**Project Location (include county):** 37899 Niles Boulevard, Fremont, CA  
Alameda County, Assessor's Parcel Number 501-1700-010-03  
(see attached vicinity map and site plan)

**Existing Conditions:** The project site is located at 37899 Niles Boulevard in the northeastern portion of the City of Fremont. The parcel is generally triangular in shape and flat in topography. The frontage of the northeastern part of the site is on the west side of Niles Boulevard before it makes a 90-degree turn eastward towards Mission Boulevard. A dead-end 0.73-acre segment of Niles Boulevard continues southward from the 90-degree turn along the remainder of the site's eastern edge. The project site contains remnants of the former Henkel/Shuckl Cannery and was used for a variety of industrial land use activities including a foundry, cannery, herbicide manufacturing, metal treatment, and chemical manufacturing between the early 1900s and 2002. All structures associated with the previous industrial uses were demolished in 2009 and remnants of the building foundations are all that remain. Debris piles containing soil, broken paving materials, and discarded items still remain throughout the site. Vehicular access to the site is currently from Niles Boulevard. Curb, gutter, and sidewalk are located along the northern portion of the project frontage with Niles Boulevard. The project site south of the 90-degree turn of Niles Boulevard is accessed from the roadway that continues south from Niles Boulevard and dead-

ends at the Alameda Creek Trail. Vegetation on the site generally consists of ornamental trees and shrubs located around the perimeter and weedy vegetation within the center of the site.

**Project Description:** The proposed project includes the development of a vacant 6.07-acre parcel with two types of buildings consisting of 95 dwelling units and 7,333 square feet of non-residential uses. The 95 dwelling units would consist of 82 townhomes and 13 “Creative-Retail-Artist-Flex-Tenancy” (CRAFT) units. The 7,333 square feet of non-residential uses would consist of 5,883 square feet of retail/restaurant uses and 1,450 square feet of community center space. In total, 187,773 square feet of building floor area is proposed to be developed on the site. Northbound Niles Boulevard would be re-stripped to accommodate a new left turn pocket lane at a new project driveway. A second new driveway with one inbound and one outbound lane would be constructed at the north end of the site on Niles Boulevard, which would connect to a private street (Street A) that would encircle the project site.

A total of 92 new surface parking spaces would be established, including 28 new diagonal parking spaces on Niles Boulevard along the frontage of the CRAFT building, 57 parallel parking spaces on the west and east side of the project site along Street A, and seven off-street spaces in a parking lot in the townhome area. Each CRAFT unit and townhome would have enclosed parking spaces (one to two spaces in each unit’s garage). Collectively, 271 new parking spaces would be provided throughout the project site and along Niles Boulevard (including the 92 spaces noted above).

The project would include a General Plan Amendment to change the land use designation from Industrial - Service (Special Study Area) to Town Center and Medium Density Residential and a Rezoning of the existing parcel from Service Industrial (I-S) with an Historical Overlay District (HOD) to Planned District P-2014-0338 (HOD). The proposed project would also require the following entitlements: a Vesting Tentative Tract Map, Private Street, General Conformity Finding for a General Street Vacation, Tree Removal Permit, and Preliminary Grading Plan.

**Potential Environmental Effects:** Upon initial review, as described in the Initial Study, the Draft EIR will address the following potential environmental effects:

- Aesthetics
- Transportation/Traffic

**Responding to the Notice:** Pursuant to CEQA Guidelines Section 15082, responsible and trustee agencies and other interested parties, including members of the public, must submit any comments in response to this notice no later than 30 days after receipt. Comments and suggestions should, at a minimum: (1) identify the significant environmental issues, reasonable alternatives, and mitigation measures that should be explored in the EIR; (2) whether the responding agency will be a responsible or trustee agency for the proposed project; and (3) any related issues raised by organizations and/or interested parties other than potential responsible or trustee agencies, including interested or affected members of the public. We will need the name for a contact person in your agency. The NOP and accompanying Initial Study are available for a 30-day public review period beginning **January 23, 2018, and ending February 22, 2018**. Please send your response to:

David Wage, Associate Planner – Current Development  
City of Fremont, Planning Division  
39550 Liberty Street  
Fremont, CA 94537  
E-mail: [dwage@fremont.gov](mailto:dwage@fremont.gov)

**Notice of Scoping Meeting:** A public scoping meeting will be held on **Monday, February 12, 2018, at 7:00 p.m.** in the City Council Chambers at 3300 Capitol Avenue, Fremont, CA 94538.

If you have any questions regarding the project or information in the NOP, please contact David Wage at (510) 494-4447.

Signature (Lead Agency): Kristie Wheeler Title: Planning Manager

Attachments:

Figure 1: Vicinity Map

Figure 2: Site Plan





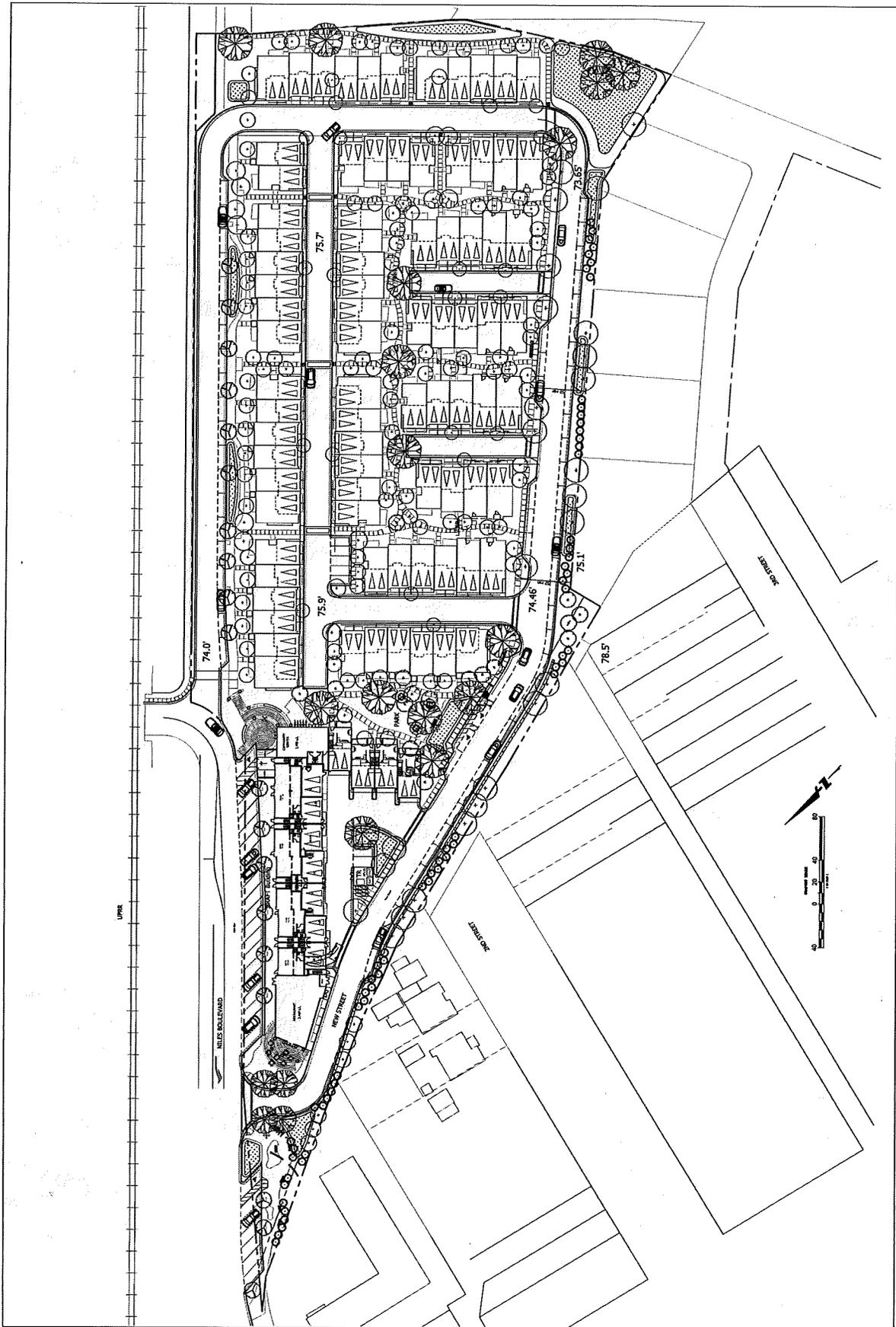
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SOURCE: ESRI Imagery; FirstCarbon Solutions

Fremont Niles Gateway

**Figure 1**  
Vicinity Map





Fremont Nilles Gateway

Figure 2  
Site Plan

SOURCE: Vally Oak Partners, LLC, 2017



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# NILES GATEWAY MIXED-USE PROJECT

## Initial Study

Prepared for  
City of Fremont

January 2018





# NILES GATEWAY MIXED-USE PROJECT

## Initial Study

Prepared for  
City of Fremont

January 2018

550 Kearny Street  
Suite 800  
San Francisco, CA 94108  
415.896.5900  
[www.esassoc.com](http://www.esassoc.com)



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# ENVIRONMENTAL CHECKLIST

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## Initial Study

### 1. Introduction

This draft Initial Study evaluates the potential environmental effects of the proposed Niles Gateway Mixed-Use Project (proposed project). The proposed project includes the development of up to 82 townhomes, small-scale retail/restaurant space, 13 “Creative-Retail-Artist-Flex-Tenancy” (CRAFT) units, and a community center. A more detailed description of the proposed project is provided in *Section 2, Project Description*.

This document is an Initial Study (IS) prepared pursuant to the California Environmental Quality Act (CEQA). As provided in Section 15063 of the CEQA Guidelines, a Lead Agency shall prepare an IS to determine if the project may have a significant effect on the environment. This document will assist the Lead Agency in determining whether additional environmental review is necessary.

The organization and format of this document is stipulated by the CEQA Guidelines. Section 4 of this IS, the “Environmental Checklist,” includes 18 specific elements (e.g., air quality, cultural resources, transportation and traffic, etc.), which must be addressed. The four levels of impact are: “Potentially Significant Impact,” “Less Than Significant with Mitigation Incorporation,” “Less than Significant Impact,” and “No Impact.” A discussion relating the anticipated impacts to each of the CEQA issues then follows. If a significant impact is identified, mitigation is presented to offset any potentially significant impacts. Each checklist item includes a reference section, which lists technical studies, agencies, and other resources consulted in this evaluation.

- 1. Project Title:** Niles Gateway Mixed-Use Project
- 2. Lead Agency Name and Address:** City of Fremont  
Planning Division  
39550 Liberty Street  
Fremont, CA 94538
- 3. Contact Person and Phone Number:** David Wage, Associate Planner  
Phone: (510) 494-4447  
Email: dwage@fremont.gov
- 4. Project Location:** 37899 Niles Boulevard, Fremont, CA
- 5. Assessor's Parcel Number** 501-1700-010-03
- 6. Project Sponsor's Name and Address:** Doug Rich  
Valley Oak Partners, LLC  
734 The Alameda  
San Jose, CA 95126
- 7. Existing General Plan Designation(s):** Service Industrial (Special Study Area)
- 8. Proposed General Plan Designation(s):** Town Center and Medium Density Residential
- 9. Existing Zoning:** I-S (Service Industrial) with an Historical Overlay District (HOD)
- 10. Proposed Zoning:** Planned District P-2014-338(HOD)
- 11. Description of Project:**

The proposed project includes the development of a vacant 6.07-acre parcel with two types of buildings consisting of 95 dwelling units and 7,333 square feet of non-residential uses. The 95 dwelling units would consist of 82 townhomes and 13 "Creative-Retail-Artist-Flex-Tenancy" (CRAFT) units. The 7,333 square feet of non-residential uses would consist of 5,883 square feet of retail/restaurant uses and 1,450 square feet of community center space. In total, 187,773 square feet of building floor area is proposed to be developed on the site. Northbound Niles Boulevard would be re-striped to accommodate a new left turn pocket lane at a new project driveway. A second new driveway with one inbound and one outbound lane would be constructed at the north end of the site on Niles Boulevard, which would connect to a private street (Street A) which would encircle the project site.

A total of 92 new surface parking spaces would be established, including 28 new diagonal parking spaces on Niles Boulevard along the frontage of the CRAFT building, 57 parallel parking spaces on the west and east side of the project site along Street A, and seven off-street spaces in a parking lot in the townhome area. Each CRAFT unit and townhome would have enclosed parking spaces (one to two spaces in each unit's garage). Collectively, 271 new parking spaces would be provided throughout the project site and along Niles Boulevard (including the 92 spaces noted above).

The project would include a General Plan Amendment to change the land use designation from Service Industrial (Special Study Area) to Town Center and Medium Density Residential and a Rezoning of the existing parcel from I-S (Service Industrial) with an Historical Overlay District (HOD) to Planned District P-2014-0338 (HOD). The proposed project would also require the following entitlements: a Vesting Tentative Tract Map, Private Street, General Conformity Finding for a General Street Vacation, Tree Removal Permit, and Preliminary Grading Plan.

**11. Other public agencies whose approval is required** (e.g., permits, financing approval, or participation agreement.)

- San Francisco Bay Area Regional Water Quality Control Board (RWQCB)
- Alameda County Water District (ACWD)
- Union Sanitary District (USD)

## 2. Project Description

The Niles Gateway Mixed-Use Project (proposed project) would change the General Plan land use designation and rezone a vacant 6.07-acre industrial parcel to enable development of residential units, small-scale retail/restaurant space, and “Creative-Retail-Artist-Flex-Tenancy” (CRAFT) units and a community center. The project would include a General Plan Amendment to change the land use designation from Service Industrial (Special Study Area) to Town Center and Medium Density Residential and a Rezoning of the existing parcel from I-S (Service Industrial) with an Historical Overlay District (HOD) to Planned District P-2014-338 (HOD).

A very similar project was proposed in 2014 and approved by the City Council in March 2015. The project approval included a General Plan Amendment to change the land use designation of the 6.07-acre site from Service Industrial (Special Study Area) to Town Center Commercial and Medium Density Residential, Rezoning from I-L (Light Industrial) with an Historical Overlay District (I-L) (HOD) to Preliminary and Precise Planned District with Historical Overlay District P-2014-338(HOD), Vesting Tentative Tract Map, Private Street, Tree Removal Permit, and Preliminary Grading Plan. A Mitigated Negative Declaration (MND) was prepared and adopted for that project. A group of local opponents to the project called Protect Niles filed a timely lawsuit in the Alameda County Superior Court (*Protect Niles v. City of Fremont*, Case No. RG15-765052) challenging the MND and arguing that an Environmental Impact Report (EIR) should have been prepared. On March 15, 2017, the Alameda County Superior Court granted the petitioner’s request for a writ of mandate and directed the City to invalidate its prior approval and prepare an EIR for any further discretionary review of a project at this site. The court found that the administrative record contained substantial evidence to support a fair argument that the project may cause a significant effect on the environment with respect to aesthetics and traffic impacts. The project applicant has appealed the decision to the court of appeal and has also submitted revised plans for review pending consideration of the appeal. The City has undertaken preparation of an EIR for the revised project in case the Court of Appeal upholds the decision of the Superior Court.

### 2.1 Project Location and Setting

The project site is located at 37899 Niles Boulevard in the northeastern portion of the City of Fremont (**Figure 1**). The parcel is generally triangular in shape and flat in topography. The frontage of the northeastern part of the site is on the west side of Niles Boulevard before it makes a 90 degree turn eastward towards Mission Boulevard.<sup>1</sup> A dead-end 0.73-acre segment of Niles Boulevard continues southward from the 90-degree turn along the remainder of the site’s eastern edge (**Figure 2**).

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<sup>1</sup> Niles Boulevard is oriented in a northwest-southeast direction, but will be referred to as a north-south street in this document. This convention will be used to describe the locations of other buildings and uses in relation to the project site. Along the project frontage, Niles Boulevard turns 90 degrees from north-south to east-west and continues east under the Union Pacific Railroad tracks towards Mission Boulevard. A dead-end segment of roadway continues south at the 90-degree curve and is also referred to as “Niles Boulevard.”



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SOURCE: ESRI Imagery; FirstCarbon Solutions

Fremont Niles Gateway

**Figure 1**  
Location Map





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SOURCE: Valley Oak Partners, LLC, 2017

Fremont Niles Gateway

**Figure 2**  
Aerial View of Project Site

The project site contains remnants of the former Henkel/Schuckl Cannery and was used for a variety of industrial land use activities including a foundry, cannery, herbicide manufacturing, metal treatment, and chemical manufacturing between the early 1900s and 2002. All structures associated with the previous industrial uses were demolished in 2009<sup>2</sup> and remnants of the building foundations are all that remain. Debris piles containing soil, broken paving materials, and discarded items still remain throughout the site.

Vehicular access to the site is currently from Niles Boulevard. Curb, gutter, and sidewalk are located along the northern portion of the project frontage with Niles Boulevard. The project site south of the 90 degree turn of Niles Boulevard is accessed from the roadway that continues south from Niles Boulevard and dead-ends at the Alameda Creek Trail (Figure 2).

Vegetation on the site generally consists of ornamental trees and shrubs located around the perimeter and weedy vegetation within the center of the site.

The project site is designated Service Industrial (Special Study Area) in the Land Use Element of the General Plan, is zoned Limited Industrial (I-L) (HOD), and is located within the Niles Community Plan Area.

## 2.2 Surrounding Land Uses

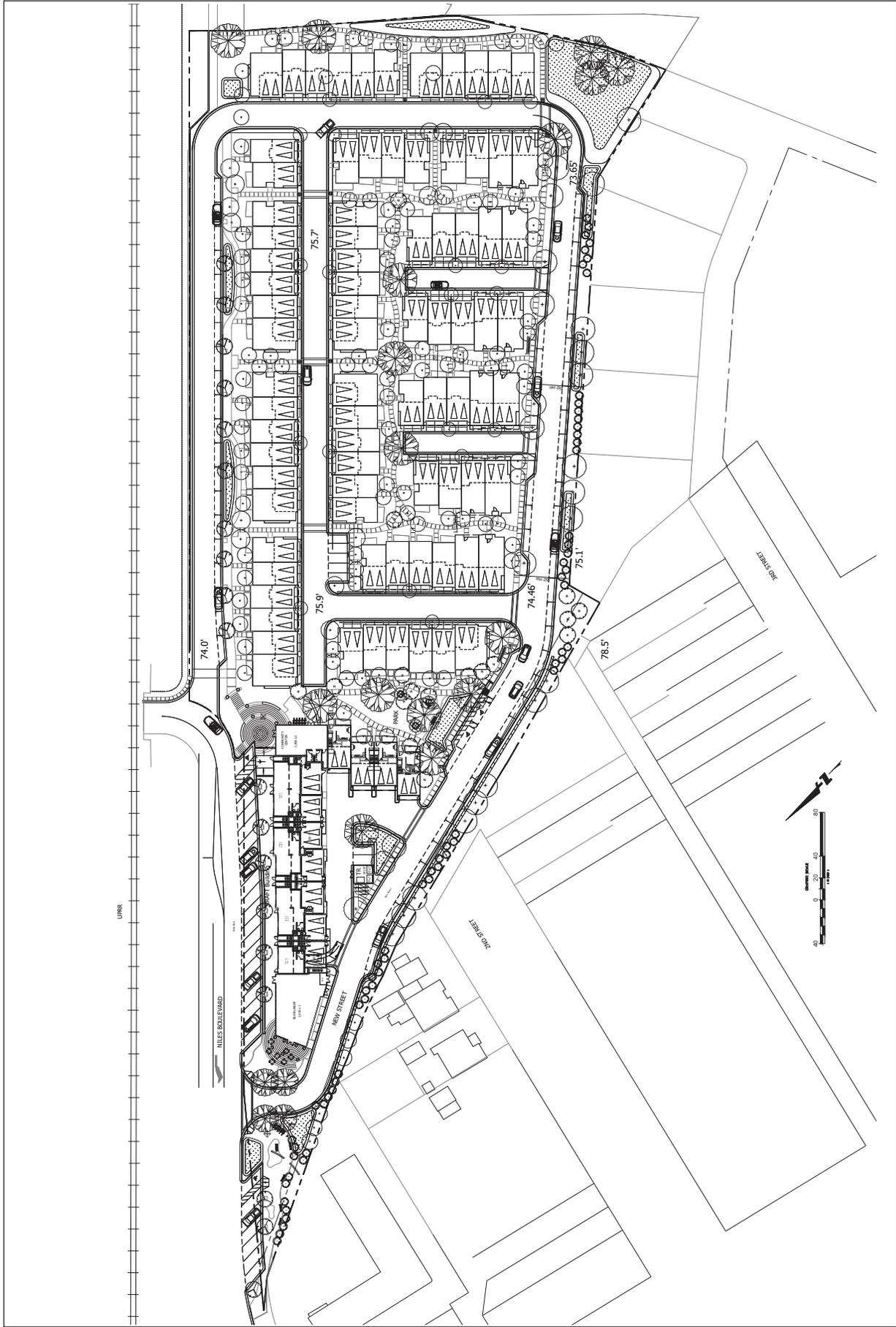
As shown in Figure 2, the immediate surrounding area consists of existing single-family residences to the west and Alameda Creek (and the associated Alameda Creek Trail) to the south. The Union Pacific Railroad (UPRR) tracks sit atop a raised embankment on the east side of Niles Boulevard. The area east of the UPRR tracks consists of single-family residences.

## 2.3 Project Characteristics

The project applicant (Valley Oak Partners, LLC) is proposing to develop two types of buildings consisting of 95 dwelling units and 7,333 square feet of non-residential uses (**Figure 3**). The 95 dwelling units would consist of 82 townhomes and 13 “Creative-Retail-Artist-Flex-Tenancy” (CRAFT) units. The 7,333 square feet of non-residential uses would consist of 5,883 square feet of retail/restaurant uses and 1,450 square feet of community center space. In total, 187,773 square feet of buildings are proposed to be developed on the site. The proposed buildings would be constructed to exceed 2016 Title 24 building energy efficiency requirements by 25 percent. All buildings would install water saving features including low flow bathroom faucets, low flow kitchen faucets, low flow toilets, and low flow showers, as required by California Building Code Sections 4303.1.1 through 4303.1.4.4 (for residential use) and Sections 5.303.3.1 through 5.303.4 (for commercial uses). **Table 2-1** summarizes the project characteristics.

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<sup>2</sup> The effects of demolishing the buildings were evaluated in an EIR (SCH# 200804249) in 2009.



Fremont Niles Gateway

**Figure 3**  
Site Plan

SOURCE: Vally Oak Partners, LLC, 2017



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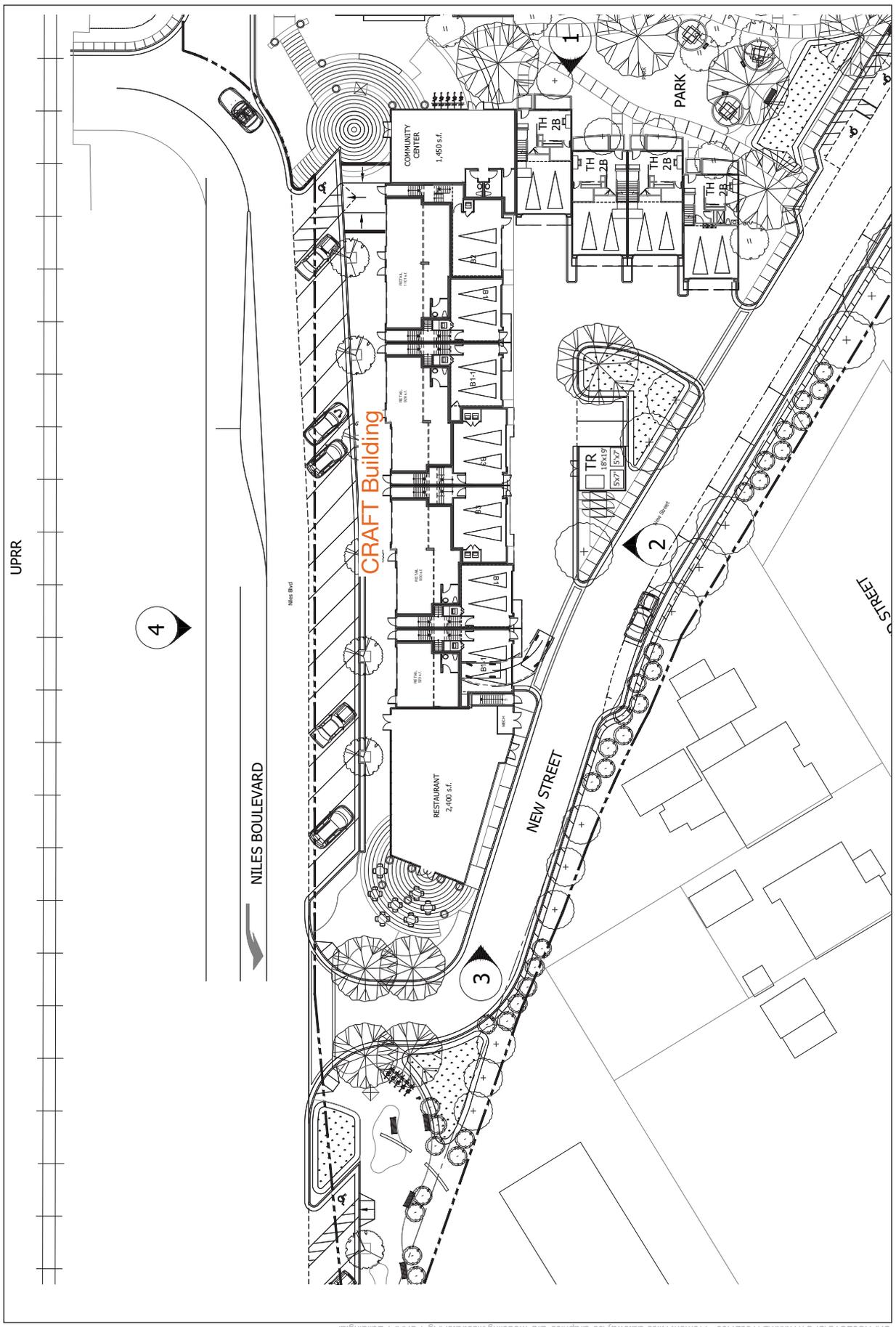
**TABLE 2-1  
NILES GATEWAY MIXED-USE PROJECT SUMMARY**

Use	Concept Plan Type	Quantity	Square Feet
CRAFT Units	A1	1	775
	A2	1	709
	B1	2	2,098
	B1-1	2	2,372
	B2	1	1,318
	B3	2	2,338
	2B	4	8,228
	<i>Subtotal</i>	<i>13</i>	<i>17,838</i>
Townhomes	1	28	53,536
	2B	22	45,254
	3	15	31,530
	3X	11	22,616
	4	6	9,666
	<i>Subtotal</i>	<i>82</i>	<i>162,602</i>
Non-Residential	Retail/Restaurant	-	5,883
	Community Center	-	1,450
	<i>Subtotal</i>		<i>7,333</i>
	<b>TOTAL</b>	<b>95 units</b>	<b>187,773</b>
Parking	-	271 spaces	

SOURCE: Valley Oak Partners, LLC, 2017

## Non-Residential Uses and Creative-Retail-Artist-Flex-Tenancy (CRAFT) Units

An “L”-shaped building totaling approximately 25,171 square feet would be constructed on the northern portion of the site (**Figure 4**). This building would contain non-residential uses and CRAFT units (CRAFT building). The CRAFT units are intended to function as live-work spaces: retail space with approximately 20-foot ceiling heights would front Niles Boulevard and would provide active ground floor space, and open air “shopkeepers” style living space would be located above. The floor areas of the 13 CRAFT units would range between 775 to 2,057 square feet. The building would also contain 5,883 square feet of retail/restaurant and 1,450 square feet of community center space on the ground level along the Niles Boulevard frontage. The CRAFT building would consist of two and 2.5-story elements with a maximum height of approximately 30 feet. Building sections and elevations of the CRAFT building are shown in **Figures 5** and **6**. As shown in **Figure 6**, the façade of the CRAFT building would generally feature stucco, brick, and metal. The roofs would consist of metal standing seam or corrugated metal. The retail/restaurant storefronts would generally feature roll-up doors, metal, and glass. A trellis/awning would extend over the sidewalk along the retail/restaurant frontage. An approximately 340-square-foot, 10-foot-high stand-alone trash enclosure structure would be located west of the CRAFT building and adjacent to the internal roadway. The trash enclosure structure would feature metal and wood siding and a corrugated metal roof.

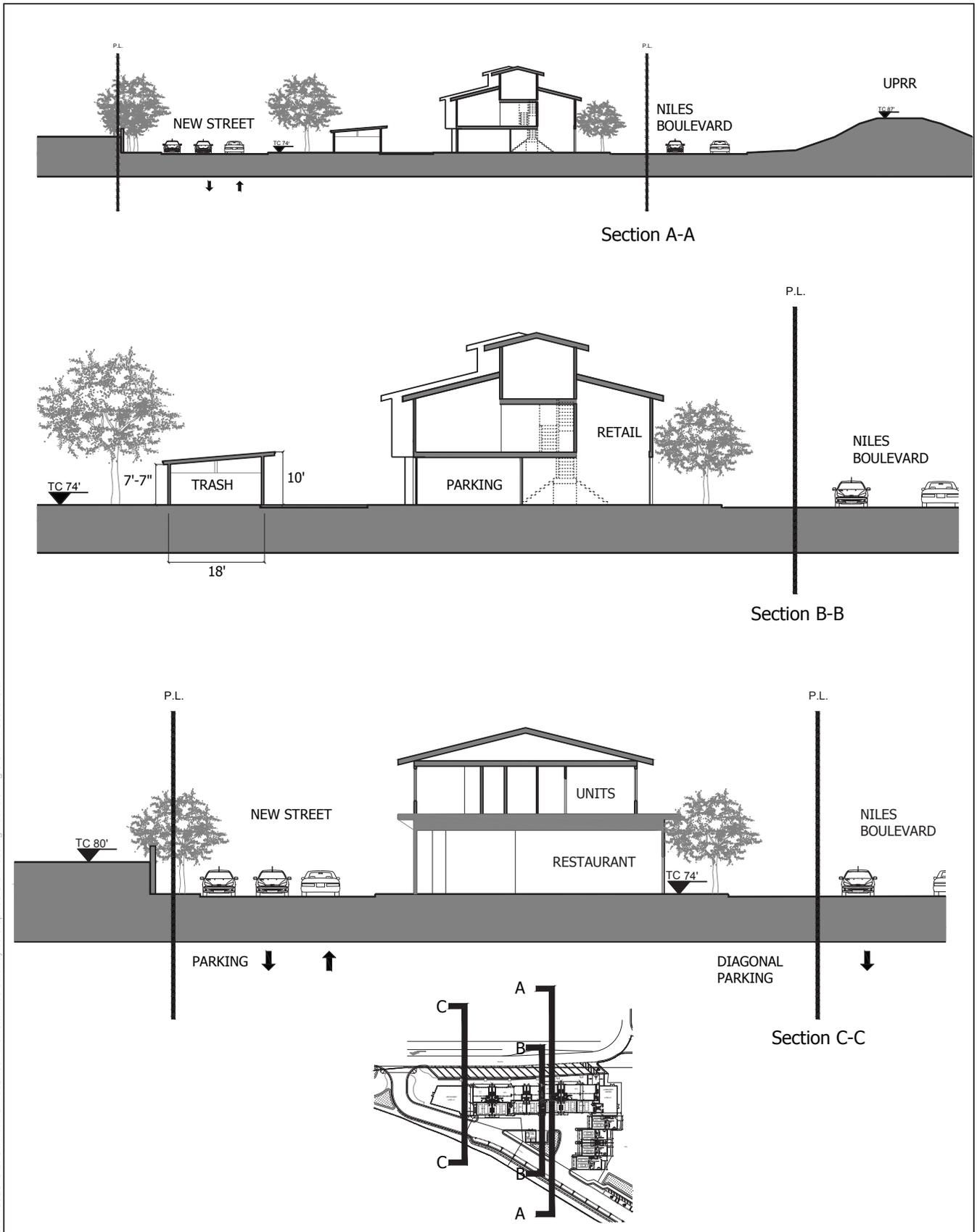


Fremont Niles Gateway  
**Figure 4**  
 CRAFT Building

SOURCE: Vally Oak Partners, LLC, 2017



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SOURCE: Valley Oak Partners, LLC, 2017

Fremont Niles Gateway

**Figure 5**  
CRAFT Building Sections





North Elevation - Niles Boulevard 4



West Elevation - Restaurant 3



South Elevation - New Street 2



East Elevation - Community Center 1



CRAFT Building with Retail



CRAFT Building with Retail / Restaurant Corner

SOURCE: Vally Oak Partners, LLC, 2017

Fremont Niles Gateway

**Figure 6**  
CRAFT Building Elevations



A “Gateway Palm Court” entry feature would face westbound/northbound Niles Boulevard where it emerges from the railroad underpass and serves to divide the non-residential uses/CRAFT units from the townhome uses.

## Townhomes

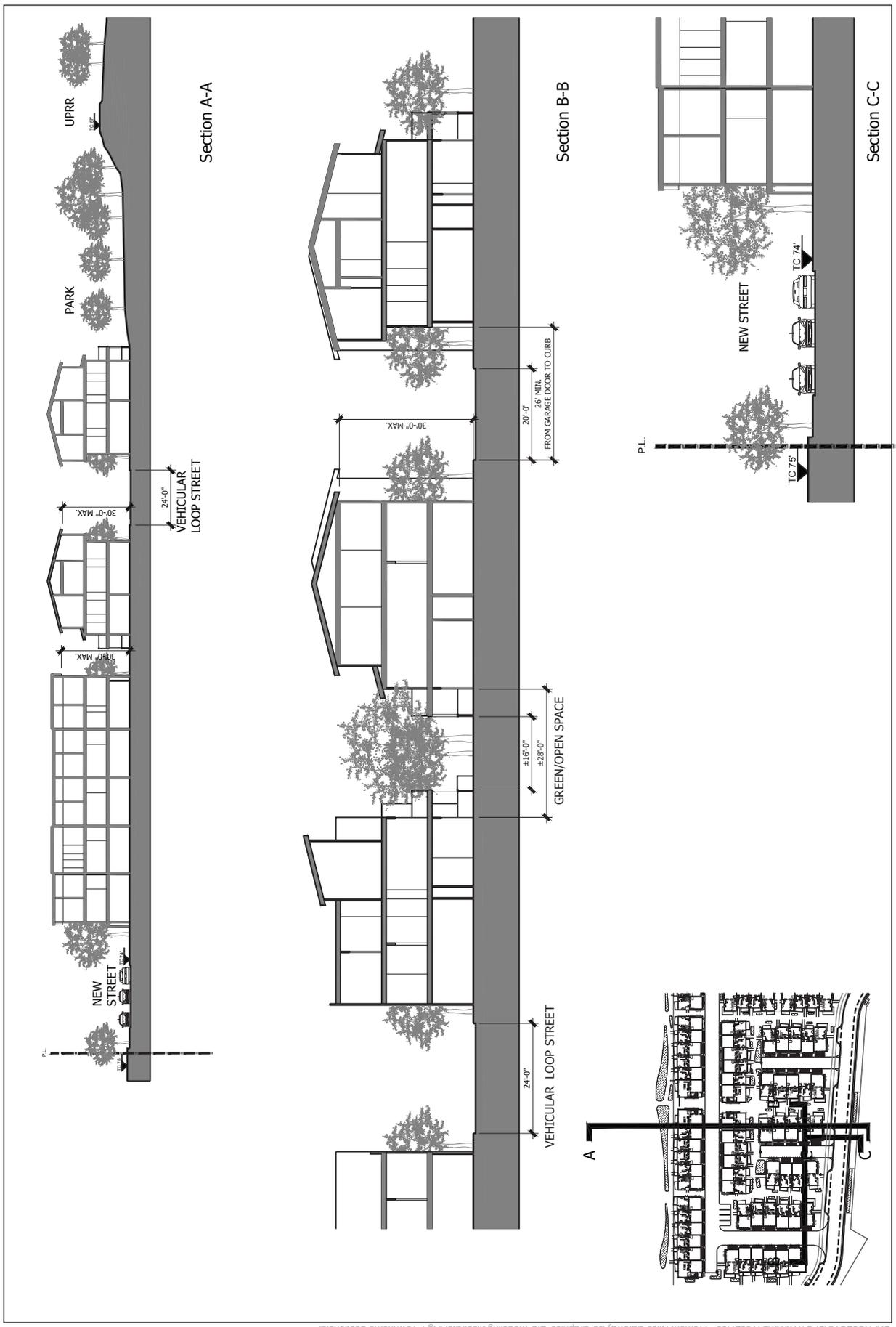
The proposed project would construct 82 townhomes in the southern portion of the site south of the 90-degree turn of Niles Boulevard towards Mission Boulevard (see **Figure 3**). The floor areas of the two and three-bedroom townhome units would range between 1,912 to 2,102 square feet. Maximum building height would be up to 30 feet. Typical townhome building sections and elevations of the townhomes are shown in **Figures 7 and 8**, respectively. As shown in **Figure 8**, the façade of the townhomes would generally feature stucco and both horizontal and vertical siding. The roofs would generally consist of asphalt shingles.

## Access and Circulation

The project is currently accessible from Niles Boulevard. As part of the proposed project a new driveway with one inbound and one outbound lane would be constructed at the north end of the site on Niles Boulevard, which would connect to a private street (Street A) (see **Figure 9**). The 0.73-acre segment of Niles Boulevard that continues southward from the 90-degree turn along the site’s eastern edge is proposed for a street vacation. This portion of Niles Boulevard would be vacated as public right-of-way and converted to a private street (Street A) completing the perimeter roadway around the project site. Northbound Niles Boulevard would be re-striped to accommodate a new left turn pocket lane at the new driveway. The left turn lane would provide approximately 160 feet of queuing space for vehicles making a left turn into the new driveway. Private street circulation accommodating two-way travel would encircle the project site (Street A), and also connect to other internal private streets (Streets B through E) to permit direct vehicle access to each planned residential unit. The new internal roadway system would be built consistent with California Fire Code. Street A would range in width between 24 and 39 feet depending on whether there are parking lanes. Streets B and C would be approximately 25 feet wide, and Streets D and E would be approximately 21 feet wide; these streets would not provide on-street parking.

A total of 110 new surface parking spaces would be established, including 27 new diagonal parking spaces on Niles Boulevard along the frontage of the CRAFT building, 76 parallel parking spaces on the west and east side of the project site along Street A, and seven off-street spaces in a parking lot in the townhome area (see **Figure 3**). Two of the CRAFT units would have one parking space in each unit’s garage, while the remaining CRAFT units and townhomes would have two parking spaces each, totaling 188 parking spaces. Collectively, 298 new parking spaces would be provided throughout the project site and along Niles Boulevard (including the 110 spaces noted above).

As shown in **Figure 9**, a 12-foot-wide sidewalk would be provided along the frontage of the CRAFT building. Sidewalks would also be provided along Streets A, B, and C and would be approximately five feet wide. Pedestrian pathways (residential paseos) would be provided throughout the site such as from Niles Boulevard through the “Gateway Palm Court” and throughout the townhome area.



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SOURCE: Vally Oak Partners, LLC, 2017

Fremont Niles Gateway

**Figure 7**  
Townhome Building Sections





North Elevation 8



South Elevation 6



West Elevation 7



East Elevation 5



North Elevation 4



South Elevation 2



West Elevation 3



East Elevation 1



The Cannery District



The Foundry District



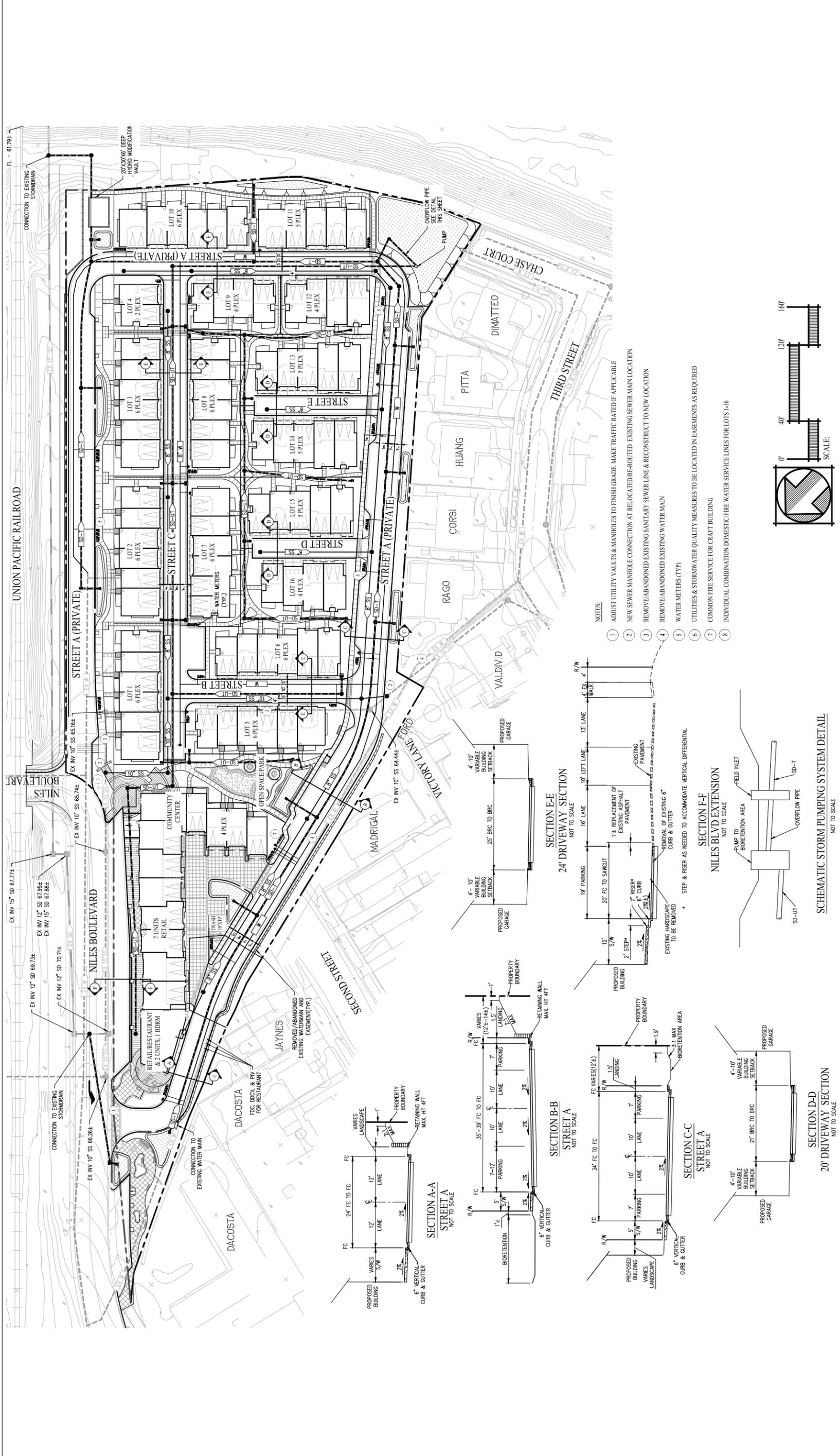
SOURCE: Vally Oak Partners, LLC, 2017

Fremont Niles Gateway

# Figure 8 Townhome Building Elevations



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SOURCE: Carlson, Barbee & Gibson, Inc. 2014, revised 2017

Fremont Niles Gateway

Figure 9  
Street Cross Sections and Utility Plan



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## Utilities and Infrastructure

The project area is currently served by water, sanitary sewer, stormwater, and other infrastructure. The proposed project would include connections to the existing storm drain and sewer in Niles Boulevard, and the existing water main at the north end of the site. Abandoned sanitary sewer and water lines in the project site would be removed and new sanitary sewer lines, water lines, and fire service water mains would be installed to accommodate the project's demand.

The proposed project would install an onsite stormwater drainage system consisting of a network of bioretention areas, inlets, and underground piping (see **Figure 10**). Runoff would be conveyed via a new storm drain extension to the City's existing storm drainage system located east of the project site and adjacent to the UPRR. The proposed project would meet the requirements of the National Pollution Discharge Elimination System (NPDES) permit, Alameda Countywide Clean Water Program, as well as other local, State, and federal requirements for stormwater quantity and quality. Approximately 12 bioretention areas would be located throughout the project site and are proposed to satisfy the stormwater treatment requirements, as described further below.

## Landscaping and Other Improvements

There are approximately 44 trees on the project site including eucalyptus, Tree-of-Heaven, Italian stone pine, almond, and black walnut. As part of the project, approximately 40 would be removed. Four of the trees located at the south end of the parcel would remain. Tree removal activities and mitigation for trees removed would be conducted in accordance with the City's Tree Preservation Ordinance and tree removal permit(s) would be obtained for removal of protected trees.

The proposed project would install landscaping throughout the site including new trees, shrubs, and ornamental landscaping along the Niles Boulevard and internal street frontages (**Figure 11**). Landscaping, hardscape treatments, and site furnishings would create passive park space at the north end of the site, outdoor space at the community center, and a resident's picnic park. The pedestrian walkways between the townhomes would include bollard lighting and landscaping to provide a buffer between pedestrians and townhome porches.

**Bioretention Areas.** The Alameda Countywide Clean Water Program oversees the implementation of the Municipal Regional Stormwater NPDES Permit (MRP) that was issued for urban stormwater discharges from Alameda County, including Fremont. The MRP outlines a number of regulatory goals and requirements for stormwater management for new development and redevelopment sites. The permit provisions require the implementation of Low Impact Development (LID) measures as described in Section C.3 of the MRP. These measures include source control, site design, and treatment requirements to reduce the amount of stormwater runoff and improve the quality of the stormwater runoff.

The MRP identifies appropriate LID stormwater measures such as rainwater harvesting and reuse, infiltration, evapotranspiration, and biotreatment, while emphasizing that biotreatment systems are only to be used where it is practically infeasible to utilize the other cited measures.

The project applicant has determined that biotreatment would be the primary method of accomplishing stormwater treatment within the project site. As shown in Figure 10, bioretention areas would be located throughout the site. A total of 9,175 square feet of bioretention areas would be established. The upper layer of the bioretention areas would typically consist of 18 inches of filter media/planting soil mix underlain by permeable rock and a four-inch perforated pipe subdrain system.

## 2.4 Construction Activities and Schedule

### **General Construction Activities**

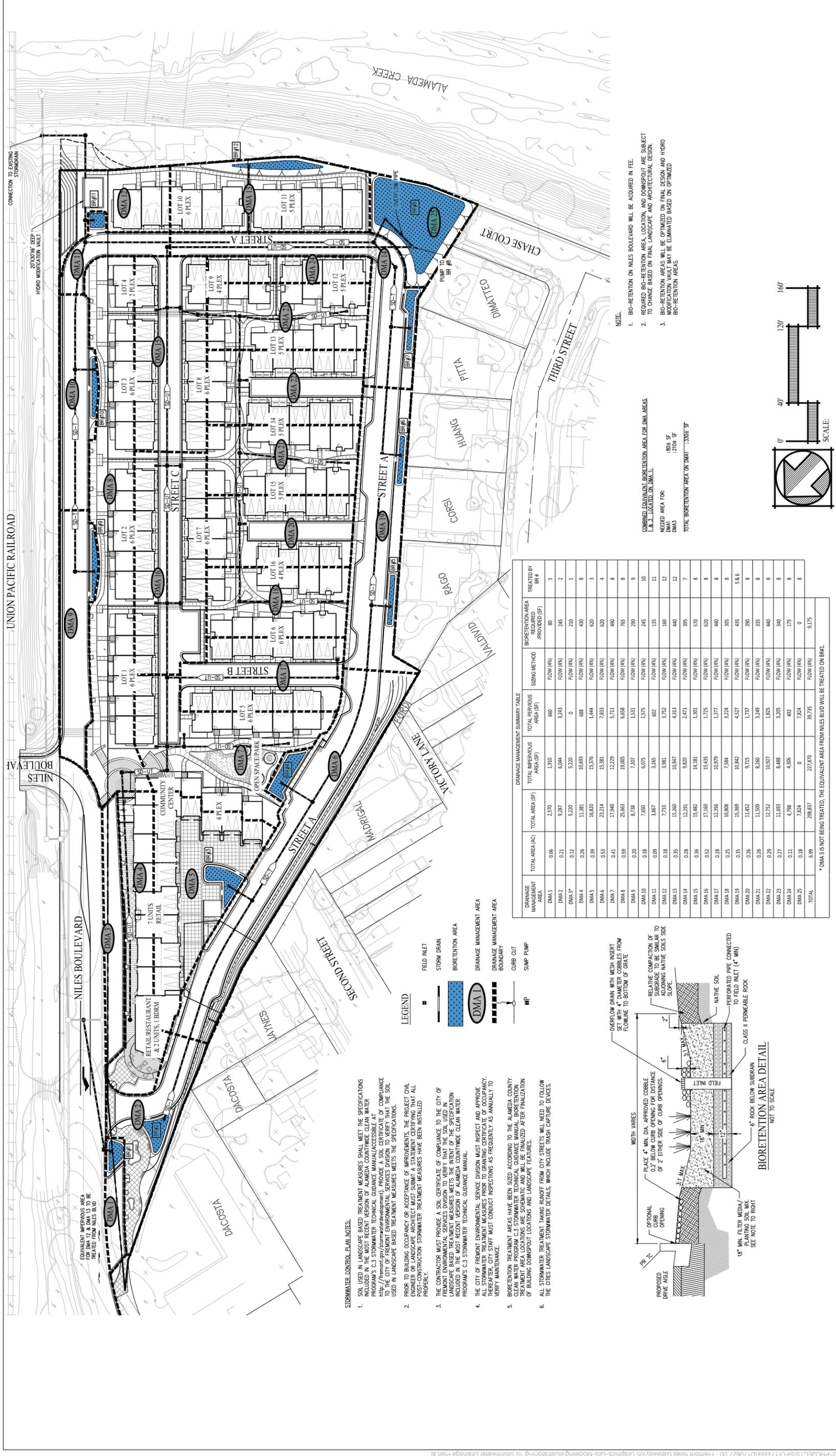
Construction-related activities could include disruptions to the circulation system in and around the project site and surroundings. Heavy vehicles (i.e., haul [tractor-trailer] trucks, machinery) would access the project site and surroundings; equipment and materials would be staged for construction within established work areas that would be fenced off from surrounding uses. The proposed project would require approximately 3,810 cubic yards of cut and 3,060 cubic yards of fill. In total, approximately 750 cubic yards of excavated soils would be exported from the site throughout the entire construction period.

In addition to on-haul and off-haul trips, vehicular trips would be generated by an estimated maximum of 63 construction employees on the site at any one time. Parking for construction workers would be located onsite; there would be no staging of vehicles or equipment on or along existing roadways.

### **Construction Schedule and Phasing**

Construction activities would typically occur during the work week, Monday through Friday, between the hours of 7:00 a.m. and 7:00 p.m. in accordance with the construction hour limitations established in the Fremont Municipal Code Section 18.160.010. If weekend work is necessary, construction would occur on Saturdays from 9:00 a.m. to 6:00 p.m. and, in most cases, construction would end by 4:00 p.m. There would likely be multiple destinations for off-haul materials. Construction workers would also be arriving from different directions.

Construction would include site preparation work, tree removal, excavation, grading, installation of access roads and utility infrastructure. The CRAFT building and townhomes would follow and overlap with some of the site work. Project construction is expected to last approximately 30 months, commencing in March 2019 with completion in August 2021. The project schedule is dependent on market conditions and regulatory approvals among several factors and, therefore, is subject to change.



STORMWATER CONTROL PLAN NOTES:

- SOIL USED IN LANDSCAPE BASED TREATMENT MEASURES SHALL MEET THE SPECIFICATIONS IN THE ALAMEDA COUNTY CLEAN WATER PROGRAM C3 STORMWATER TECHNICAL GUIDANCE MANUAL ACCESSIBLE AT <http://fremont.gov/stormwaterdevelopment>. PROVIDE A SOIL CERTIFICATE OF COMPLIANCE TO THE CITY OF FREMONT ENVIRONMENTAL SERVICES DIVISION TO VERIFY THAT THE SOIL USED IN LANDSCAPE BASED TREATMENT MEASURES MEETS THE SPECIFICATIONS.
- PRIOR TO BUILDING OCCUPANCY OR ACCEPTANCE OF IMPROVEMENTS, THE PROJECT CIVIL ENGINEER OR LANDSCAPE ARCHITECT MUST SUBMIT A STATEMENT CERTIFYING THAT ALL POST-CONSTRUCTION STORMWATER TREATMENT MEASURES HAVE BEEN INSTALLED PROPERLY.
- THE CONTRACTOR MUST PROVIDE A SOIL CERTIFICATE OF COMPLIANCE TO THE CITY OF FREMONT ENVIRONMENTAL SERVICES DIVISION TO VERIFY THAT THE SOIL USED IN LANDSCAPE BASED TREATMENT MEASURES MEETS THE INTENT OF THE SPECIFICATION AND THE MOST RECENT EDITION OF THE ALAMEDA COUNTY CLEAN WATER PROGRAM'S C3 STORMWATER TECHNICAL GUIDANCE MANUAL.
- THE CITY OF FREMONT ENVIRONMENTAL SERVICES DIVISION MUST INSPECT AND APPROVE ALL STORMWATER TREATMENT MEASURES PRIOR TO GRANTING CERTIFICATE OF OCCUPANCY. STAFF MUST CONDUCT INSPECTIONS AS FREQUENTLY AS ANNUALLY TO VERIFY MAINTENANCE.
- BIORETENTION TREATMENT AREAS HAVE BEEN SIZED ACCORDING TO THE ALAMEDA COUNTY CLEAN WATER PROGRAM C3 STORMWATER TECHNICAL GUIDANCE MANUAL. BIORETENTION TREATMENT AREAS WILL BE SIZED AS FREQUENTLY AS ANNUALLY TO VERIFY MAINTENANCE.
- ALL STORMWATER TREATMENT TAKING RUNOFF FROM CITY STREETS WILL NEED TO FOLLOW THE CITIES LANDSCAPE STORMWATER DETAILS, WHICH INCLUDE TRASH CAPTURE DEVICES.

STORMWATER CONTROL PLAN NOTES (continued):

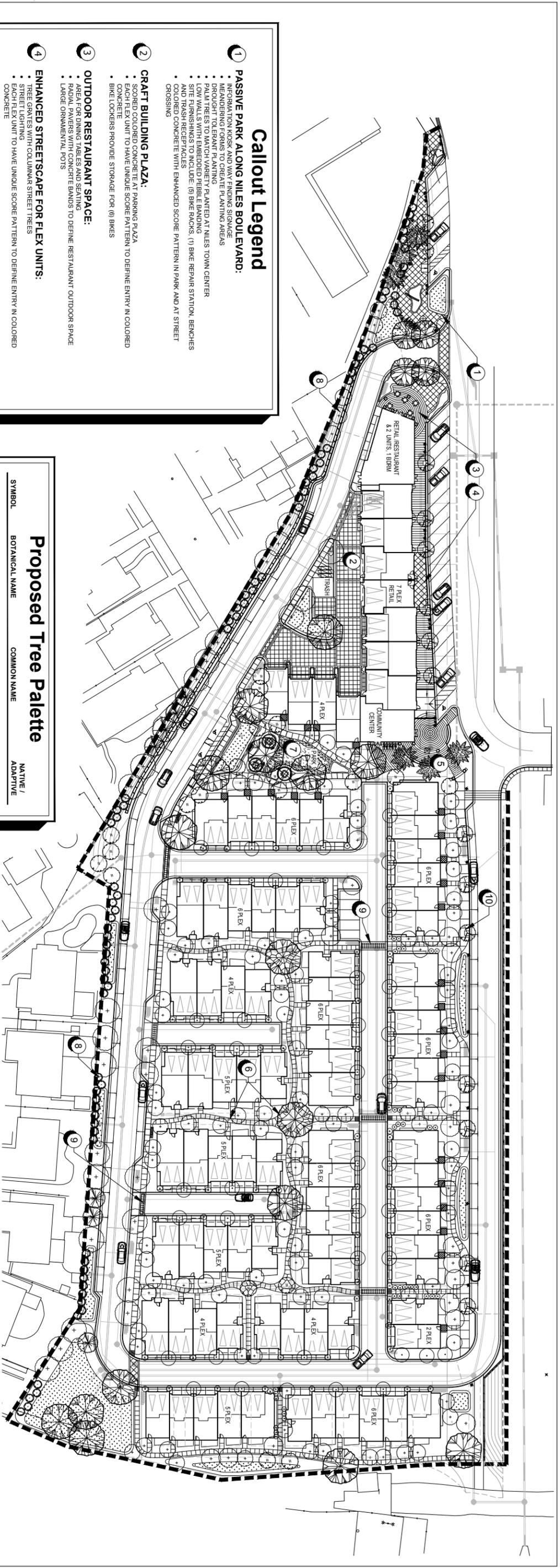
- BIORETENTION ON NILES BOULEVARD WILL BE ACCURED IN FEE.
- REQUIRED BIORETENTION AREA, LOCATION, AND DOWNSPOUT ARE SUBJECT TO CHANGE BASED ON FINAL LANDSCAPE AND ARCHITECTURAL DESIGN.
- BIORETENTION AREAS WILL BE OPTIMIZED ON FINAL DESIGN AND HYDRO MODIFICATION VAULT MAY BE ELIMINATED BASED ON OPTIMIZED BIORETENTION AREAS.

NOTE:

COMBINED EQUIVALENT BIORETENTION AREA FOR DMA AREAS L.A. 3 LOCATED ON D.M.A. 11.

NEEDED AREA FOR:  
 DMA 1 : 804 SF  
 DMA 2 : 204 SF  
 TOTAL BIORETENTION AREA ON D.M.A. 11 : 3,008 SF

SCALE: 0' 40' 120' 160'



### Callout Legend

- 1 PASSIVE PARK ALONG NILES BOULEVARD:**
  - INFORMATION KIOSK AND WAY FINDING SIGNAGE
  - MENDING FORMS TO CREATE PLANTING AREAS
  - DROUGHT TOLERANT PLANTING
  - PALM TREES TO MATCH VARIETY PLANTED AT NILES TOWN CENTER
  - FOLI TREES WITH EMBEDDED PEBBLE BANDING
  - SITE FURNISHINGS TO INCLUDE: (8) BIKE REPAIR STATION, BENCHES AND TRASH RECEPTACLES
  - COLORED CONCRETE WITH ENHANCED SCORE PATTERN IN PARK AND AT STREET CROSSING
- 2 CRAFT BUILDING PLAZA:**
  - SCORED COLORED CONCRETE AT PARKING PLAZA
  - EACH FLEX UNIT TO HAVE UNIQUE SCORE PATTERN TO DEFINE ENTRY IN COLORED CONCRETE
  - BIKE LOCKERS PROVIDE STORAGE FOR (6) BIKES
- 3 OUTDOOR RESTAURANT SPACE:**
  - AREA FOR DINING TABLES AND SEATING
  - RADIAL PAVERS WITH CONCRETE BANDS TO DEFINE RESTAURANT OUTDOOR SPACE
  - LARGE ORNAMENTAL POTS
- 4 ENHANCED STREETSCAPE FOR FLEX UNITS:**
  - TREE GRATES WITH COLUMNAR STREET TREES
  - STREET LIGHTING
  - EACH FLEX UNIT TO HAVE UNIQUE SCORE PATTERN TO DEFINE ENTRY IN COLORED CONCRETE
- 5 OUTDOOR SPACE AT COMMUNITY CENTER:**
  - LOW SEATWALLS WITH EMBEDDED PEBBLE BANDING
  - SITE FURNISHINGS TO INCLUDE: TABLES, (6) BIKE RACKS AND TRASH RECEPTACLES
  - FLAG POLE
  - INFORMATION KIOSK
  - RADIAL PAVERS AT COMMUNITY CENTER ENTRY WITH CONCRETE BANDS
  - PALM TREES TO MATCH VARIETY PLANTED AT NILES TOWN CENTER
- 6 WALKWAYS TO TOWNHOME UNITS:**
  - PLANTING TO PROVIDE BUFFER BETWEEN WALKS AND PORCHES
  - BOLLARD LIGHTING ALONG WALKWAYS
  - CREATE OPPORTUNITY FOR LARGE SPECIMEN TREES WHERE APPROPRIATE
- 7 RESIDENT'S PICNIC PARK:**
  - PICNIC TABLES ((1) ADA ACCESSIBLE TABLE PROVIDED) AND BARBECUE GRILLS
  - SITE FURNISHINGS TO INCLUDE: BENCHES, TRASH RECEPTACLES AND DOG PICK-UP
  - LOW SEATWALLS WITH EMBEDDED PEBBLE BANDING
  - TURF AREA
  - SHADE TREES
- 8 PLANTING AREA ADJACENT THE EXISTING NEIGHBORHOOD:**
  - RETAINING WALLS AND LATTICE TOP WOOD FENCE AS NEEDED ALONG PROPERTY EDGE
  - COORDINATE TREE LOCATIONS WITH NEIGHBORS TO SCREEN OR FRAME VIEWS TO THE PROJECT AND HILLS BEYOND
- 9 ENHANCED PAVING AT CROSSWALKS:**
  - SCORED COLORED CONCRETE
- 10 STREETSCAPE:**
  - TREE GRATES WITH COLUMNAR STREET TREES
  - STREET LIGHTING

### Proposed Tree Palette

SYMBOL	BOTANICAL NAME	COMMON NAME	NATIVE / ADAPTIVE
<b>TREES</b>			
	LOPHOSTEMON CONFERTUS		A
	ACER PALMATUM	JAPANESE MAPLE	A
	CERCIS OCCIDENTALIS	WESTERN REDBUD	A
	ERIBOTRYA DEFLEXA	BROUZE LOQUAT	A
	LAGERSTROEMIA SP.	CRABE WYRTLE	A
	RHUS LANCEA	ARFACA SUMAC	A
	ACER RUBRUM	RED MAPLE	A
	QUERCUS AGRIFOLIA	JACARANDA	A
	ROBINIA AMBIGUA TYLANDENSIS	COAST LIVE OAK	A
	ARBUTUS MARINA	IDANGE LOCUST	A
	LAURUS NOBILIS SARATOGA	JACARANDA	A
	SOPHORA JAPONICA REGENT	BAY LAUREL	A
	CALCEOLARIA DECURRENS	JAPANESE PAGODA	A
	METALEUCA QUINQUECOLORATA	JAPANESE PAGODA	N
	PLATANUS ACERIFOLIA	INCENSE CEDAR	A
	MYOPORUM L. COMPACTUM	GALEPUT TREE	A
	PODOCARPUS GRACILIOR	NEW ZEALAND CHRISTMAS TREE	A
	<b>PALM TREES</b>	CALIFORNIA SYCAMORE	A
	PHOENIX CANARIENSIS	MYOPORUM	A
	<b>FRUIT TREES</b>	FERN PINE	A
	<b>APPLE TREES</b>	CANARY ISLAND DATE PALM	A
	<b>ALLEY TREES</b>	GRAVENSTEIN APPLE TREE	A
	CALLISTEMON STD.	BARTLETT PEAR TREE	A
	RHIPIDOLISS STD.	SANTA ROSA PLUM TREE	A
	PODOCARPUS M. MAKI	BOTTLE BRUSH STANDARD	A
		INDIAN HAWTHORN STANDARD	A
		YEW PINE	A



SOURCE: vanderToolen Associates Landscape Architects, 2015



Fremont Niles Gateway  
**Figure 11**  
 Conceptual Landscape Plan

## Standard Development Requirements

The City of Fremont has established standard development requirements to address resource protection for development projects.<sup>3</sup> These requirements apply to air quality (construction-related air quality emissions), biological resources (special-status species), and cultural resources (notification of affiliated California Native American Tribes and accidental discovery of cultural resources) (Fremont Municipal Code Chapter 18.218). The proposed project would be required to comply with these standard development requirements, and discussed in greater detail in *Sections 4.3, Air Quality, 4.4, Biological Resources, and 4.5, Cultural Resources.*

## 2.5 Project Approvals

The project would require the following approvals and discretionary actions from the City:

- General Plan Amendment
- Preliminary and Precise Planned District Rezoning
- Vesting Tentative Tract Map
- Private Street
- General Plan Conformity Finding for a General Street Vacation
- Tree Removal Permit
- Preliminary Grading Plan

The project would require Historical Architectural Review Board (HARB) and Planning Commission consideration and recommendation to the City Council for final approval.

Other approvals may be required from the following agencies:

- San Francisco Bay Area Regional Water Quality Control Board (RWQCB)
- Alameda County Water District (ACWD)
- Union Sanitary District (USD)

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<sup>3</sup> “Development project” shall mean the placement or erection of any solid material or structure; discharge or disposal of any dredged material or any gaseous, liquid, solid or thermal waste; grading, removing, dredging, mining or extraction of any soil or materials; change in the density or intensity of use of land including, but not limited to, amendments to the general plan and zoning ordinance or subdivision pursuant to the State Subdivision Map Act (commencing with Cal. Gov’t Code § 66410), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition or alteration of the size of any structure, including any facility of any private, public or municipal utility; and the removal of any major vegetation. As used in the municipal code, “structure” includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line. A project, as defined in Cal. Gov’t Code § 65931, is included within this definition.

### 3. Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- |  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> Aesthetics                         | <input type="checkbox"/> Agriculture and Forestry Resources       | <input checked="" type="checkbox"/> Air Quality    |
| <input type="checkbox"/> Biological Resources                          | <input type="checkbox"/> Cultural Resources                       | <input type="checkbox"/> Geology/Soils             |
| <input type="checkbox"/> Greenhouse Gas Emissions                      | <input checked="" type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality   |
| <input type="checkbox"/> Land Use/Planning                             | <input type="checkbox"/> Mineral Resources                        | <input checked="" type="checkbox"/> Noise          |
| <input type="checkbox"/> Population/Housing                            | <input type="checkbox"/> Public Services                          | <input type="checkbox"/> Recreation                |
| <input checked="" type="checkbox"/> Transportation/Traffic             | <input type="checkbox"/> Tribal Cultural Resources                | <input type="checkbox"/> Utilities/Service Systems |
| <input checked="" type="checkbox"/> Mandatory Findings of Significance |   |  |

**DETERMINATION:**

On the basis of this initial study:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

David Wage  
 Signature  
David Wage  
 Printed Name

January 22, 2018  
 Date

## 4. Environmental Checklist

### 4.1 Aesthetics

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>1. AESTHETICS — Would the project:</b>				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

- a, b) **Less than Significant Impact.** Fremont is located on the east side of San Francisco Bay with the Fremont Hills to the east, Union City to the north, and City of Milpitas to the south. The project site is located in the northeastern portion of the City with the Niles hillside approximately 0.5 mile to the east, with Mission Peak Regional Preserve visible in the distance.

Scenic resources of Fremont as defined in the City’s General Plan, include the backdrop to the east of the East Bay Hills rising up above the City, and the wide expansive view to the west of the San Francisco Bay and across the Bay to the Peninsula (City of Fremont, 2011). Mission Peak Regional Preserve is located over six miles southeast of the project site, however, due to the distance and nature of the proposed project, redevelopment of the site would not affect views from Mission Peak.

The Niles hillside 0.5 mile to the east extends to an elevation of roughly 700 feet above sea level, and provides distant panoramic views of urban development and the Bay to the west. Views from the Niles hillside overlook urban development consisting of residential, commercial, and industrial areas. Because of the distance from Niles hillside and the development density in the project area, the proposed buildings would not preclude or block scenic vistas from the Niles hillside. The Niles hillside is visible from publicly accessible areas west of the project site. Portions of the Niles hillside are visible from the terminus of 2<sup>nd</sup> Street looking east through the project site, however, a large portion is blocked by the existing residences and trees. Views from 3<sup>rd</sup> Street, Chase Court, and the Alameda Creek Trail are less obstructed, but partially blocked by existing residences and trees. At 30 feet, the proposed buildings would be approximately 10 to 15 feet taller than the adjacent residences to the west and the top of the buildings could be visible from public areas looking east. The proposed buildings would be set back approximately 50 feet from the western border of the site due to the proposed private street. The height of

the proposed buildings would be less prominent given this setback and views to the Niles hillside would not be fully obscured because the proposed project would include east-west view corridors through the site in the form of private streets and pedestrian pathways.

The California Department of Transportation (Caltrans) administers the California Scenic Highways Program. To the east of the project site, the 7.1-mile segment of State Route 84 (SR 84)/Niles Canyon Road, from Mission Boulevard to Interstate 680 in Sunol, is an officially designated State Scenic Highway (Caltrans, 2017). The Fremont General Plan identifies Mission Boulevard and the same portion of Niles Canyon Road designated by Caltrans as a scenic corridor (City of Fremont, 2011). SR 84/Niles Canyon Road and Mission Boulevard are more than 900 feet east of the project site. Public views of the site are not available from SR 84/Niles Canyon Road or Mission Boulevard due to topography, intervening UPRR embankment, and trees east of the project site.

The project site is vacant and does not contain unusual resources such as rock outcroppings or historic parcels. As such, impacts to scenic vistas and scenic resources would be less than significant, and this impact will not be further addressed in the EIR.

- c) **Potentially Significant Impact.** The project site is a vacant, remnant industrial site with debris piles containing soil, broken paving materials, and discarded items throughout the site. The proposed project would develop residential units, small-scale retail/restaurant space, CRAFT units, and a community center, which would change views of the project site and alter the visual character of the site. New landscaping would be installed throughout the site including new trees, shrubs, and ornamental landscaping along the Niles Boulevard and internal street frontages.

The project is located within the Niles Historic Overlay District (HOD). The *Niles Design Guidelines and Regulations* were adopted by the Fremont City Council in 2002. The design guidelines explicitly apply to the “commercial properties within the core of the Niles Historic Overlay District” (the commercial core area) within the HOD (City of Fremont, 2002). The purpose of these guidelines and regulations is to assist in conservation and revitalization of commercial properties in the Niles HOD and to provide a consistent framework for reviewing both modifications to existing structures and for infill buildings, consistent in scale and materials with the character of the Niles HOD. While the proposed project is located outside the boundaries of the commercial core area, and the *Niles Design Guidelines and Regulations* are, therefore, not expressly applicable, the City of Fremont has requested that that project design be analyzed in a broader contextual sense with regard to site and architectural design, scale/size, materials, textures, and colors for compliance with the guidelines.

The *Niles Design Guidelines and Regulations* provide designers with direction on features such as building massing, color, roofline, fenestration, materials, and landscaping. In accordance with Fremont Municipal Code Section 18.135.050, Historical Architectural Review Board (HARB) review is required for new development and

adoption of a Planned District within an HOD. Projects are reviewed for compatibility with the character and existing resources within the HOD in terms of siting, massing, scale, size, material, texture, and color. Given that the proposed project would alter the visual character of the project site, it could have potentially significant impacts to the existing visual character or quality of the site and its surroundings if the project design conflicts with the HOD design guidelines. Further detailed analysis will be conducted as part of the EIR to determine if the proposed project would substantially degrade the existing visual character or quality of the site and surrounding area.

- d) **Less than Significant Impact.** The project site is currently vacant, and located in an urban environment that includes existing sources of light and glare associated with nearby land uses and streets. These sources of light and glare include motor vehicle and train headlights, exterior lighting associated with surrounding residential uses, and street lighting along the segment of Niles Boulevard adjacent to the site.

The proposed project would result in new sources of light and glare on a site that is currently vacant. Street lights would be provided along the private streets and guest parking area within the site, and along Niles Boulevard. The proposed buildings, pedestrian walkways, and outdoor spaces would include exterior lighting fixtures. The light and glare created by the project would be consistent with the levels of light and glare currently emitted by development surrounding the project site, which are typical of a developed, urban area. Proposed features at the project site would not be considered substantial relative to existing light and glare conditions in and around the project site.

The proposed project would be required to comply with the development standards and requirements in the City's Zoning Ordinance (Chapter 18.45.030(c) for all commercial and mixed-use districts and Chapter 18.90.030(c) for all residential districts), which requires that all exterior light sources be designed so as not to create significant glare on adjacent properties through the use of concealed source and/or downcast light fixtures. Compliance with the lighting requirements of the Zoning Ordinance would ensure that the project would not create new sources of substantial light and glare on adjacent properties. As such, impacts would be less than significant, and this impact will not be discussed further in the EIR.

## References

- California Department of Transportation (Caltrans), 2017. Officially Designated State Scenic Highways and Historic Parkways. Available at: [www.dot.ca.gov/hq/LandArch/16\\_livability/scenic\\_highways/](http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/). Accessed October 24, 2017.
- City of Fremont, 2002. *Niles Design Guidelines and Regulations, Niles Historic Overlay District*. Adopted June 11, 2002.
- City of Fremont, 2011. *City of Fremont General Plan, Community Character Element*. Adopted December 2011.

## 4.2 Agricultural and Forest Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>2. AGRICULTURAL AND FOREST RESOURCES —</b>				
<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.</p> <p><b>Would the project:</b></p>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

a - e) **No Impact.** The project site is a vacant, remnant industrial site and is designated by the California Department of Conservation as urban and built-up land as shown on the Important Farmland Map for Alameda County. Urban and built-up land is defined as land “occupied by structures with a building density of at least 1 unit to 1.5 acres,” and commonly includes residential, industrial, commercial or institutional facilities (CDC, 2016). The project site is not subject to any Williamson Act contracts (CDC, 2015). The proposed project would not include nor promote the modification to any existing active agricultural uses, and the site is not zoned for agricultural uses (City of Fremont, 2017). Furthermore, the proposed project would not result in the loss or conversion of forest land to non-forest use. For these reasons, the proposed project would result in no impact to agricultural and forest resources, and this impact will not be further addressed in the EIR.

## References

- California Department of Conservation (CDC), 2015. *Alameda County Williamson Act FY 2014/2015*. Available at: [ftp.consrv.ca.gov/pub/dlrp/wa/Alameda\\_14\\_15\\_WA.pdf](ftp.consrv.ca.gov/pub/dlrp/wa/Alameda_14_15_WA.pdf). Accessed October 14, 2017.
- California Department of Conservation (CDC), 2016. *Alameda County Important Farmland Map 2014*. Available at: <ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2014/ala14.pdf>. Accessed October 14, 2017.
- City of Fremont, 2017. General Plan Land Use Diagram, amended October 3, 2017. Available at: [fremont.gov/DocumentCenter/Home/View/6446](http://fremont.gov/DocumentCenter/Home/View/6446). Accessed October 14, 2017.
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## 4.3 Air Quality

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>3. AIR QUALITY —</b>				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.				
<b>Would the project:</b>				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Setting

Under amendments to the federal Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has classified air basins or portions thereof as either “attainment” or “non-attainment” for each criteria air pollutant, based on whether or not the national standards have been achieved. The California CAA, which is patterned after the federal CAA, also requires areas to be designated as “attainment” or “non-attainment” for the state standards. Thus, areas in California have two sets of attainment/non-attainment designations: one set with respect to the national standards and one set with respect to the state standards. The San Francisco Bay Area Air Basin (SFBAAB) is currently designated as a nonattainment area for state and national ozone standards, state particulate matter (PM10 and PM2.5) standards, and federal PM2.5 (24-hour) standard.

The Bay Area Air Quality Management District (BAAQMD) is the regional air quality authority in the project area. The most recently adopted air quality plan for the San Francisco Bay Area is the *Bay Area 2017 Clean Air Plan* (BAAQMD, 2017a). The 2017 Clean Air Plan (2017 CAP) is an update to the 2010 Clean Air Plan to comply with State air quality planning requirements. This plan provides a regional strategy to attain state and federal air quality standards by reducing ozone, particulate matter (PM), and toxic air contaminants (TACs). The 2017 CAP also serves as a multi-pollutant air quality plan to protect public health and the climate.

### Sensitive Receptors

For purposes of this air quality analysis, sensitive receptors are defined as facilities and land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and daycare centers. Residential areas are also considered sensitive to poor air quality

because people usually stay home for extended periods of time, which results in greater exposure to ambient air quality.

The project site is located at 37899 Niles Boulevard in the northeastern portion of the City of Fremont. The surrounding properties are mainly residential, with commercial and institutional uses also present. The 6.07-acre project site is bounded by Niles Boulevard to the northeast, single-family housing to the west, and Alameda Creek to the south (nearest home in each direction about 25 feet from project site). The nearest schools are the Corpus Christi Religious School to the west (about 285 feet from the project site) and the Safari Kids Childcare and Preschool across Alameda Creek to the south (about 1,500 feet from the project site). There are no other sensitive receptors within 1,000 feet of the project site. In addition, residents would occupy certain dwelling units onsite starting in 2020 while construction is continuing on other portions of the site through 2021. Therefore, there would be onsite sensitive receptors exposed to construction emissions occurring from 2020-2021.

### ***Approach to Analysis***

Potential impacts are assessed by modeling the estimated daily emissions generated by construction and operation of the project using the CalEEMod land use emissions model version 2016.3.2. Project emissions are then compared to the BAAQMD 2017 significance criteria, which include the following:

- Result in total construction emissions of reactive organic gases (ROG), nitrogen oxides (NO<sub>x</sub>), or fine particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) (exhaust) of 10 tons per year or greater or 54 pounds per day or greater.
- Exceed a construction emission threshold for respirable particulate matter less than 10 microns in diameter (PM<sub>10</sub>) (exhaust) of 15 tons per year or greater, or 82 pounds per day or greater.
- For PM<sub>10</sub> and PM<sub>2.5</sub> as part of fugitive dust generated during construction, the BAAQMD Guidelines specify compliance with best management practices (BMPs) as the threshold.
- Result in total operational emissions of ROG, NO<sub>x</sub>, or PM<sub>2.5</sub> of 10 tons per year or greater, or 54 pounds per day or greater.
- Exceed an operational emission threshold for PM<sub>10</sub> of 15 tons per year or greater, or 82 pounds per day.
- Result in CO concentrations of 9.0 ppm (8-hour average) and 20.0 ppm (1-hour average) as estimated by roadway vehicle volumes exceeding 44,000 vehicles per hour at any intersection.
- For risks and hazards during construction and operations, the BAAQMD Guidelines specify an increase in cancer risk exposure by 10 in one million, contribute hazard indices by a ratio of 1.0, or increase local concentrations of PM<sub>2.5</sub> by 0.3 micrograms per cubic meter.
- For cumulative risks and hazards for all local sources during operations, the BAAQMD Guidelines specify an increase in cancer risk exposure by 100 in one million, contribute hazard indices by a ratio of 10.0, or increase local concentrations of PM<sub>2.5</sub> by 0.8 micrograms per cubic meter.

A project's contribution to cumulative impacts for criteria pollutants are considered significant if the project's impact individually would be significant (i.e., if it exceeds the BAAQMD's quantitative thresholds).

## Discussion

- a) **Less than Significant.** The project would be located within SFBAAB and would, therefore, come under the jurisdiction of BAAQMD. BAAQMD enforces rules and regulations regarding air pollution sources and is the primary agency in the local area preparing the regional air quality plans mandated under state and federal law.

The BAAQMD prepared and adopted the Bay Area 2017 Clean Air Plan (CAP) (BAAQMD 2017a). The Bay Area 2017 CAP addresses ground-level ozone (O<sub>3</sub>) and ozone precursors, particulate matter, TACs, and greenhouse gases (GHGs). BAAQMD recommends that the agency approving a project where an air quality plan consistency determination is required, analyze the project with respect to the following questions: 1) does the project support the primary goals of the air quality plan; 2) does the project include applicable control measures from the air quality plan; and 3) does the project not disrupt or hinder implementation of any 2017 CAP control measures? If all the questions are concluded in the affirmative, BAAQMD considers the project to be consistent with air quality plans prepared for the Bay Area (BAAQMD, 2017b). Any project that would not support the 2017 CAP goals would not be considered consistent with the 2017 CAP, and if approval of the project would not result in significant and unavoidable air quality impacts after the application of mitigation, then the project would be considered consistent with the 2017 CAP.

As presented in the subsequent impact discussions, project-related construction, operation, and maintenance emissions would not exceed applicable BAAQMD significance thresholds; therefore, the project would support the primary goals of the 2017 CAP. Projects that incorporate all feasible air quality plan control measures are considered consistent with the 2017 CAP.

While there are no 2017 CAP control measures that would be directly applicable to the project, compliance with the City of Fremont's standard development requirements (Chapter 18.218 of the Fremont Municipal Code) include the implementation of measures relating to construction-related emissions (see the discussion of criterion b), below) would ensure that BAAQMD basic construction control measures would be implemented. As described below under criteria b), c), d), and e), the project (with mitigation incorporated) would be consistent with BAAQMD air quality plans. It would not violate any air quality standards or contribute substantially to a projected air quality violation, result in a cumulatively considerable net increase of any non-attainment criteria pollutant, expose sensitive receptors to substantial pollutant concentrations, or create objectionable odors affecting a substantial number of people. Consequently, the project would not conflict with or obstruct implementation of the Bay Area 2017 CAP.

Therefore, the impact of the project would be less than significant and this impact will not be further addressed in the EIR.

- b) **Less than Significant with Mitigation.** As stated in CEQA Guidelines Appendix G, significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. BAAQMD's board of directors adopted thresholds of significance on June 2, 2010, to assist local jurisdictions in their review of projects that are subject to CEQA, and made minor revisions to the thresholds in 2017 (BAAQMD, 2017b). BAAQMD considers these thresholds of significance the level at which air pollution emissions associated with proposed projects that are subject to CEQA could cause significant environmental impacts to human health and welfare. BAAQMD's 2017 *CEQA Air Quality Guidelines* are relied upon for this analysis (BAAQMD 2017b).

The assessment of impacts to air quality was conducted in accordance with BAAQMD recommended methodologies. Emissions generated during the construction and operation/maintenance phases were considered separately.

### **Construction**

**Criteria Air Pollutants.** As described in the Project Description under Section 2.4, *Construction Activities and Schedule*, construction would typically occur during the work week, Monday through Friday, between the hours of 7:00 a.m. and 7:00 p.m. in accordance with the construction hour limitations established in the Fremont Municipal Code Section 18.160.010. If weekend work is necessary, construction would occur on Saturdays from 9:00 a.m. to 6:00 p.m. and, in most cases, construction would end by 4:00 p.m. Project construction is expected to last approximately 30 months, commencing in March 2019 with completion in August 2021.

Construction of the proposed project would generate criteria pollutant and precursor exhaust emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> from construction equipment, vehicles, and fugitive dust.

Project related demolition, soil transport, grading, and other construction activities at the project site may cause wind-blown dust. Fugitive dust includes not only PM<sub>10</sub> and PM<sub>2.5</sub> but also larger particles that can represent a nuisance impact. For mitigation of fugitive dust emissions, BAAQMD recommends using specific BMPs, which has been a practical and effective approach to control fugitive dust emissions. The guidelines note that individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to more than 90 percent and conclude that projects that implement construction BMPs will reduce fugitive dust emissions to a less than significant level.

Project-related construction would generate air emissions through the use of heavy-duty construction equipment, from vehicle trips hauling materials, and from construction workers traveling to and from the project site. Mobile source emissions, primarily NO<sub>x</sub>, would be generated from the use of construction equipment such as excavators,

bulldozers, wheeled loaders, and fork lifts. During the finishing phase, paving operations and the application of asphalt, architectural coatings (i.e., paints) and other building materials would release ROG. The assessment of construction air quality impacts considers each of these sources, and recognizes that construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions.

Construction workers would arrive from different directions and there would likely be multiple destinations for off-haul materials. In addition to on-haul and off-haul trips, vehicular trips would be generated by an estimated maximum of 63 construction employees on the site at any one time. The proposed project would require approximately 3,810 cubic yards of cut and 3,060 cubic yards of fill. In total, approximately 750 cubic yards of excavated soils would be exported from the site throughout the entire construction period, requiring 50 total truck trips.

Project construction emissions were calculated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2); EMFAC2014 emission factors were used to estimate emissions for onsite truck operation (including onroad truck idling and water truck operation). Emission modeling was conducted for each of the primary construction phases based on default parameters contained in the model for the BAAQMD region and on construction data and activity schedule durations identified for the proposed project. **Table 4.3-1** presents the construction emissions in average pounds per day by year.

**TABLE 4.3-1  
 AVERAGE DAILY CONSTRUCTION EMISSIONS (POUNDS PER DAY)<sup>A</sup>**

Construction Year	ROG	NOx	Exhaust PM10 <sup>b,c</sup>	Exhaust PM2.5 <sup>b</sup>
2019	1.6	15.0	0.8	0.7
2020	2.9	20.3	1.0	1.0
2021	2.7	18.4	0.9	0.8
Maximum	2.9	20.3	1.0	1.0
<i>Significance Threshold</i>	54	54	82	54
<i>Threshold Exceedance?</i>	No	No	No	No

NOTES:

- <sup>a</sup> Emissions include results modeled with CalEEMod. Additional data and assumptions are described in Appendix A.
- <sup>b</sup> BAAQMD's construction-related significance thresholds for PM<sub>10</sub> and PM<sub>2.5</sub> apply to exhaust emissions only and not to fugitive dust.
- <sup>c</sup> The BAAQMD has not established numeric thresholds for fugitive dust emissions. Instead, BAAQMD requires that Best Management Practices (BMPs) be used to control PM<sub>10</sub> and PM<sub>2.5</sub> fugitive dust.

SOURCE: ESA 2017

Impacts related to the project contributing to an existing or projected air quality violation were assessed by comparing estimated direct and indirect project exhaust emissions to the BAAQMD significance thresholds. As shown in Table 4.3-1, construction emissions of ROG, NO<sub>x</sub>, exhaust PM10, and exhaust PM2.5 would be below the applicable CEQA significance thresholds and no mitigation would be required. However, the BAAQMD

considers any emissions of fugitive dust (PM10/PM2.5) as significant if BAAQMD-recommended BMPs to control dust emissions have not been incorporated as part of the project. As described in *Section 2, Project Description*, the proposed project would comply with the standard development requirements (Fremont Municipal Code Chapter 18.218), including the following requirements relating to construction emissions, which are based on BAAQMD's Basic Construction Measures, and would reduce construction-related fugitive dust emissions:

*“Construction Related Emissions. The following construction measures, as periodically amended by BAAQMD, are required for all proposed development projects to reduce construction-related fugitive dust and exhaust emissions:*

- (A) All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times daily.*
- (B) All haul trucks transporting soil, sand, or other loose material off site shall be covered.*
- (C) All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.*
- (D) All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.*
- (E) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.*
- (F) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations (CCR)). Clear signage shall be provided for construction workers at all access points.*
- (G) All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.*
- (H) A publicly visible sign shall be posted with the telephone number and person to contact regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.”*

Because the above standard development requirements apply to the project per Chapter 18.218(a)(1) of the Fremont Municipal Code, emissions of fugitive PM10 and PM2.5 would be less than significant. This impact will not be further addressed in the EIR.

**Toxic Air Contaminants and PM2.5.** Project construction activities would produce diesel particulate matter (DPM) and PM2.5 emissions due to combustion equipment such as loaders, backhoes, and haul truck trips. These emissions could result in elevated concentrations of DPM and PM2.5 at nearby receptors. These elevated concentrations could lead to an increase in the risk of cancer or other health impacts. Consequently, a screening-level health risk assessment was performed to determine the extent of increased cancer risks and hazard indices at the maximally exposed receptors. The health risk assessment was based on recommended methodology of the California Office of Environmental Health Hazard Assessment (OEHHA) and adopted by BAAQMD (OEEHA 2015; BAAQMD 2016). The cancer risk to residential receptors assumes exposure would occur eight hours per day, five days per week, to account for the active construction duration. Additionally, cancer risk estimates also incorporate age sensitivity factors and daily breathing rates recommended by OEHHA (2015). This approach includes updated BAAQMD calculation procedures that factor in the increased susceptibility of infants and children to carcinogens as compared to adults (BAAQMD 2016).

Due to local meteorology and the phasing of construction, the maximally exposed receptors would likely be residences directly east of the project site.<sup>4</sup> This assessment could apply to new residences proposed under the project as well, which could occur near the assumed development as it progresses. The AERSCREEN model was used to estimate maximum downwind concentrations and potential health risk at sensitive receptors resulting from construction activities, which are shown in **Table 4.3-2** below.

**TABLE 4.3-2  
 CONSTRUCTION-RELATED HEALTH IMPACTS<sup>a</sup>**

<b>Sensitive Receptor</b>	<b>Cancer Risk (persons per million)</b>	<b>Chronic Hazard Index</b>	<b>Maximum Annual Average PM2.5 Concentration (µg/m<sup>3</sup>)<sup>b</sup></b>
<b>Unmitigated Construction</b>			
Residential - offsite	140.8	0.081	0.45
Residential - onsite	103.2	0.087	0.45
School	14.1	0.077	0.43
Maximum Cancer Risk	140.8	0.087	0.45
<i>BAAQMD Significance Criteria</i>	10	1	0.3
<i>Significant Impact?</i>	Yes	No	Yes

<sup>4</sup> The AERSCREEN model assumes worst-case meteorology and does not calculate maximum concentrations based on local meteorology or site characteristics. However, because the prevailing winds at the project site are from the northwest, the highest concentrations and associated health risks are most likely to occur east of the site.

Sensitive Receptor	Cancer Risk (persons per million)	Chronic Hazard Index	Maximum Annual Average PM2.5 Concentration ( $\mu\text{g}/\text{m}^3$ ) <sup>b</sup>
<b>Mitigated Construction</b>			
Residential - offsite	5.4	0.003	0.03
Residential - onsite	4.1	0.003	0.03
School	0.5	0.003	0.03
Maximum Cancer Risk	5.4	0.003	0.03
<i>BAAQMD Significance Criteria</i>	10	1	0.3
<i>Significant Impact?</i>	No	No	No

NOTES:

$\mu\text{g}/\text{m}^3$  = micrograms per cubic meter;

<sup>a</sup> Detailed assumptions and methodology of the screening HRA are included in Appendix A. Notably, mitigation includes incorporation of Tier 4 Final engines for all construction equipment, which would reduce diesel particulate emissions by at least 90 percent.

<sup>a</sup> Represents maximum annual PM2.5 concentrations for all years of construction from 2019-2021 for each receptor location.

SOURCE: ESA 2017

As shown in Table 4.3-2, the incremental cancer risk at the maximum exposed residential receptor of 140.8 in one million would exceed the BAAQMD threshold of 10 in a million without mitigation. With incorporation of **Mitigation Measure AIR-1**, the project would result in incremental cancer risk of 5.4 in one million, which would be below the BAAQMD threshold of 10. The unmitigated and mitigated chronic hazard index (HI) would be 0.087 and 0.003 at the maximally exposed individual (MEI), respectively, which would be below the BAAQMD threshold of 1. Finally, the maximum annual PM2.5 concentration at the maximum exposed residential receptor of  $0.45 \mu\text{g}/\text{m}^3$  would exceed the BAAQMD threshold of  $0.3 \mu\text{g}/\text{m}^3$  without mitigation and is, therefore, a potentially significant impact. Implementation of Mitigation Measure AIR-1 would require diesel-powered construction equipment greater than 50 horsepower to meet United States Environmental Protection Agency Tier 4 Final off-road emissions standards. With incorporation of mitigation, the project would result in a maximum annual PM2.5 concentration of  $0.03 \mu\text{g}/\text{m}^3$  for the MEI, which is below the BAAQMD threshold of  $0.3 \mu\text{g}/\text{m}^3$ . Health risk impacts would, thus, be less than significant after mitigation and this impact will not be further addressed in the EIR.

**Mitigation Measure AIR-1: Toxic Air Contaminants and PM2.5.** During construction activities, the project applicant shall require that all off-road diesel-powered construction equipment greater than 50 horsepower meet United States Environmental Protection Agency Tier 4 Final off-road emissions standards. A copy of each unit's certified tier specification shall be provided to the City of Fremont at the time of grading permit issuance. During all construction activities, off-road diesel-powered equipment may be in the "on" position not more than eight hours per day. There are no time restrictions for non-diesel equipment.

## Operations

**Criteria Air Pollutants.** Project site development would increase criteria air pollutant and precursor emissions, including ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> from a variety of emissions sources, including onsite area and energy sources and mobile on-road sources. Exhaust emissions from on-road vehicle traffic associated with the existing land uses on the project site as well as the proposed project development were calculated using the latest version of the CalEEMod program, which includes the updated EMFAC2014 emission factors for on-road vehicles.

As provided by W-Trans for the project, the net increase in estimated daily traffic generated by the proposed project would be 1,027 weekday trips. Emissions from operation of the proposed project include area, energy, and mobile sources. **Table 4.3-3** presents the project’s daily emissions and compares them to the applicable BAAQMD CEQA thresholds of significance. Emissions presented in Table 4.3-3 include the following two project design features: 1) all buildings would exceed 2016 Title 24 building energy efficiency requirements by 25 percent; and 2) all buildings would install water saving features including low flow bathroom faucets, low flow kitchen faucets, low flow toilets, and low flow showers. All buildings would also comply with the City of Fremont’s residential solar requirements, which stipulate that all residential buildings must have a solar photovoltaic system installed. However, this requirement only affects GHG emissions and not criteria pollutant emissions, and is not reflected in Table 4.3-3 (see Section 4.7 *Greenhouse Gas Emissions* for discussion).

Operational emissions exceeding 54 pounds per day for NO<sub>x</sub> or ROG, and/or 82 pounds per day of exhaust PM<sub>10</sub> or exhaust PM<sub>2.5</sub>, would be considered to have a potentially significant impact (BAAQMD, 2017b).

**TABLE 4.3-3  
 AVERAGE DAILY EMISSIONS FROM PROJECT OPERATION (POUNDS PER DAY)<sup>a</sup>**

Source	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Area	4.9	<0.1	<0.1	<0.1
Energy	<0.1	0.5	<0.1	<0.1
Mobile	1.4	9.1	2.0	0.6
Total	6.4	9.7	2.0	0.7
<i>BAAQMD CEQA Threshold</i>	54	54	82	54
<i>Exceed threshold?</i>	No	No	No	No

NOTES:

<sup>a</sup> Includes project design features as discussed above.

SOURCE: ESA 2017

With respect to annual emissions, potentially significant impacts can occur when NO<sub>x</sub>, ROG, and/or exhaust PM<sub>2.5</sub> exceed 10 tons per year, or exhaust PM<sub>10</sub> exceeds 15 tons per year. **Table 4.3-4** presents the annual operational emissions from the project compared to the applicable BAAQMD CEQA thresholds of significance.

**TABLE 4.3-4  
AVERAGE ANNUAL EMISSIONS FROM PROJECT OPERATION (TONS PER YEAR)<sup>a</sup>**

Source	ROG	NOx	PM10	PM2.5
Area	0.9	<0.1	<0.1	<0.1
Energy	<0.1	<0.1	<0.1	<0.1
Mobile	0.3	1.7	0.4	0.1
Total	1.2	1.8	0.4	0.1
BAAQMD CEQA Threshold	10	10	15	10
Exceed threshold?	No	No	No	No

NOTE:

<sup>a</sup> Includes project design features as discussed above.

SOURCE: ESA 2017

Emissions of NO<sub>x</sub>, ROG, PM<sub>10</sub>, and PM<sub>2.5</sub> would be below the applicable annual BAAQMD threshold of significance. Therefore, because operational emissions would be below both daily and annual BAAQMD CEQA thresholds of significance, operational emissions would have a less than significant impact. This impact will not be further addressed in the EIR.

**CO Emissions – Project Operation (Mobile Sources).** Vehicle traffic generated by the project has the potential to increase localized CO concentrations. Based on BAAQMD CEQA guidance, projects meeting all of the following screening criteria would be considered to have a less-than-significant impact to localized CO concentrations:

1. Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. Project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. Project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour at locations where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The project would not exceed the standards established by the Alameda County Congestion Management Agency (ACCMA) and, therefore, would be consistent with ACCMA standards. In regards to the second and third criteria, traffic is expected to increase with the proposed project. However, the projected increase would be substantially less than the screening criteria of 44,000 vehicles per hour (the project would not be in an area where vertical and/or horizontal mixing is substantially limited). Based on BAAQMD's criteria, project-related traffic would not exceed CO standards and, therefore, no further analysis was conducted for CO impacts. This impact would be considered less than significant on a project-level and cumulative basis. Implementation of the above mitigation measures would ensure that fugitive dust and exhaust (criteria

pollutant and TACs) would be reduced to a less than significant level. Operational emissions would be less than significant without mitigation, and this impact will not be further addressed in the EIR.

**Toxic Air Contaminants and PM<sub>2.5</sub>.** Operation of the project would not attract high numbers of diesel-powered on-road trucks or use off-road diesel equipment onsite, and would not expose existing or future planned receptors to substantial risk levels and/or health hazards. Therefore, operation of the proposed project with respect to TAC emissions would be considered less than significant. This impact will not be further addressed in the EIR.

- c) **Less than Significant with Mitigation.** According to BAAQMD, no single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions are considered to contribute to existing cumulatively significant adverse air quality impacts. In addition, according to the BAAQMD's 2017 *CEQA Air Quality Guidelines*, if a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Alternatively, if a project does not exceed the identified significance thresholds, then the project would not be considered to make a cumulatively considerable contribution to significant cumulative air quality impacts.

### **Construction**

Average daily emissions of construction-related criteria air pollutants or precursors would be short-term and temporary and would not exceed any applicable BAAQMD threshold of significance (see the analysis of criterion b) above). Impacts to air quality resulting from construction of the project would be less than significant with mitigation incorporated and would not result in a contribution to cumulative air quality impacts that would be cumulatively considerable. This impact will not be further addressed in the EIR.

### **Operation**

As shown in the discussion of b) above, operational emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> are not expected to exceed any of BAAQMD's thresholds of significance. Therefore, operational emissions would not result in a significant contribution to cumulative nonattainment pollutants (and precursors) that would be cumulatively considerable. In addition, project-related traffic would not exceed CO standards and would result in a less than significant cumulative impact in relation to localized CO and would not contribute considerably to CO concentrations at local intersections. Thus, cumulative CO effects would likewise be less than significant.

Once construction is complete, the proposed project would not include any stationary sources of TACs, such as diesel-powered backup generators. Moreover, the proposed project would not generate substantial volumes of diesel truck traffic, given its very small non-residential component. Project motor vehicle traffic would not be a substantial source of TACs. Existing nearby sources (e.g., within 1,000 feet of the project) of TACs

include the Union Pacific Railroad, Mission Boulevard, and miscellaneous emergency generators. According to BAAQMD, existing health risks for these sources at the closest onsite residential sensitive receptor are as follows (Martien pers. comm.; BAAQMD 2011; BAAQMD 2012):

1. Union Pacific Railroad: 32.0 per million cancer risk, 0.06  $\mu\text{g}/\text{m}^3$  annual average PM2.5 concentration, and 0.011 chronic hazard index (link 332 [6 foot elevation] at 75 feet west);
2. Mission Boulevard: 4.8 per million cancer risk, 0.03  $\mu\text{g}/\text{m}^3$  annual average PM2.5 concentration, and 0.004 chronic hazard index (link 478 [20 foot elevation] at 750 feet south);
3. Emergency generator ID G9168: 0.2 per million cancer risk (no data available for annual average PM2.5 concentration and chronic hazard index)<sup>5</sup>; and
4. Emergency generator ID 15973: 14.3 per million cancer risk, 0.03  $\mu\text{g}/\text{m}^3$  annual average PM2.5 concentration, and 0.005 chronic hazard index.

Total risk from all four sources listed above are 51.1 per million cancer, 0.11  $\mu\text{g}/\text{m}^3$  annual average PM2.5 concentration, and 0.02 chronic hazard index. These values would not exceed any of BAAQMD's thresholds of significance for cumulative health risks and hazards (BAAQMD 2017b). Therefore, the proposed project would not combine with other projects to result in a substantial cumulative effect with respect to health risk from exposure to TACs. This impact will not be further addressed in the EIR.

- d) **Less than Significant with Mitigation.** As indicated in the discussion of b) and c) above, the project would not result in significant and unavoidable localized air quality impacts associated with TACs, CO, or fugitive dust. Impacts associated with construction TAC and fugitive dust emissions would be less than significant through implementation of the City's standard development requirements for construction-related emissions (Fremont Municipal Code Chapter 18.218.050(a)(1) and implementation of **Mitigation Measures AIR-1**. Impacts associated with long-term operational emissions of TACs and CO would be less than significant without mitigation. These impacts will not be further addressed in the EIR.
- e) **Less than Significant Impact.** The BAAQMD CEQA threshold of significance for operational-related odors is five confirmed complaints per year, averaged over three years (BAAQMD 2017a). BAAQMD has developed recommended odor screening distances for projects that would site a new odor source or a new receptor. The proposed land uses associated with the project are not identified as having an odor screening distance and are not anticipated to create substantial odors. In addition, the project would not locate new

<sup>5</sup> Note that the health risk values presented for the generators are for receptors located at the generator site, not at the closest onsite project sensitive receptor. Therefore, the use of these values presents a highly conservative estimate of health risk at project receptor locations.

sensitive receptors in close proximity to substantial odor generating sources. Therefore, operation of the proposed project is not expected to result in a substantial number of odor complaints and the impact would be less than significant.

During construction, minor sources of odors would be present. Diesel engines are typically used for construction equipment. Exhaust odors from diesel engines and fuel, as well as emissions associated with asphalt paving may be considered offensive to some individuals. However, because odors would be temporary and would disperse rapidly with distance from the source, construction-generated odors are not anticipated to result in the frequent exposure of receptors to objectionable odors. Therefore, the impact from construction of the project would be less than significant. This impact will not be further addressed in the EIR.

## References

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- Environmental Science Associates (ESA), 2017. Construction and Operational Emissions Estimated Using CalEEMod 2016.3.2.
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## 4.4 Biological Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>4. BIOLOGICAL RESOURCES — Would the project:</b>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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 Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

Information used in preparation of this section includes a biological reconnaissance survey by an ESA biologist on October 18, 2017, and database queries from the California Natural Diversity Database (CNDDB) (CDFW, 2017), California Native Plant Society (CNPS) Electronic Inventory (CNPS, 2017), and the U.S. Fish and Wildlife Service (USFWS, 2017). The field reconnaissance consisted of a visual encounter survey of the project site and observations of adjacent areas. This analysis describes the project footprint shown in Figure 2 as the “project site” and the immediate surrounding areas as the project “study area.” The larger regional context is referred to as “regional project area”. The field survey was focused on identifying habitat for special-status plant and animal species, potential jurisdictional wetlands and other waters, and other regulated biological resources. General habitat conditions were noted and species observations were recorded.

The findings of the reconnaissance survey and the database queries were used to compile the list of special-status species that may occur within the project study area and to characterize the local project setting, which is described below. Habitat quality and species distribution were considered in evaluating the likelihood of special-status species occurrence. The list of special-status plant and animal species that may occur in the project study area is included in **Appendix B**.

## **Vegetation Communities and Wildlife Habitats**

Past and ongoing development and other human activities have altered natural vegetation communities in the project area. The project footprint has previously been developed and, thus, the majority of the site consists of developed or ruderal (i.e., disturbed) habitat, with a small area of non-native grassland habitat on the southeast portion of the property. Vegetation communities that occur on the project site are described below.

### **Developed/Ruderal**

This vegetation community type within the proposed project site includes areas previously occupied by buildings, roads, parking lots, and other developed facilities. Following site demolition activities in 2009, only building foundations, associated rubble, and concrete or asphalt surfaces remain in ruderal areas. Ruderal species grow among the concrete and debris piles. Ruderal vegetation describes an assemblage of opportunistic and weedy species, typically non-native to California or considered invasive, which provide minimal habitat value. Within the project footprint, ruderal vegetation consists primarily of the non-native, invasive species stinkwort (*Dittrichia graveolens*) and tree of heaven (*Ailanthus altissima*). Several native coyote bush (*Baccharis pilularis*) shrubs and coast live oak (*Quercus agrifolia*) saplings occur among Himalayan blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*), and a variety of non-native grasses including smilo grass, (*Stipa miliacea*), slender oat (*Avena barbata*), Italian rye grass (*Festuca perennis*), ripgut brome (*Bromus murinum*), and others. Remnant landscaping from former development consists of mature trees generally located around the perimeter of the site, including native coast redwood (*Sequoia sempervirens*) and California black walnut (*Juglans hindsii*) with non-native olive (*Olea europaea*), almond (*Prunus dulcis*), Italian stone pine (*Pinus pinea*), red gum (*Eucalyptus camaldulensis*), red ironbark (*E. sideroxylon*), Nichol's willow-leaved peppermint (*E. nicholii*), silver dollar gum (*E. polyanthemus*), Lombardi poplar (*Populus nigra* 'Italica'), blackwood acacia (*Acacia melanoxylon*), and American sweetgum (*Liquidambar styraciflua*).

Due to the extent of previous development within the project site and presence of remnant concrete pads, foundations, and rubble throughout much of the site, few wildlife species are expected to use the area; however, developed landscaping and ruderal vegetation provide habitat for wildlife species adapted to human habitation, such as striped skunk (*Mephitis mephitis*), opossum (*Didelphis marsupialis*), raccoon (*Procyon lotor*), domestic cat (*Felis catus*), European starling (*Sturnus vulgaris*), and mourning dove (*Zenaida macroura*).

### **Non-native Grassland**

Non-native grassland exists in southeast portion of the project site and is dominated by the non-native species smilo grass, with slender wild oat, ripgut brome (*Bromus diandrus*), pampas grass (*Cortaderia jubata*), fennel (*Foeniculum vulgare*), milk thistle (*Silybum marianum*), cultivated radish (*Raphanus sativus*), and black mustard (*Brassica nigra*). Few native species were also observed including fireweed (*Epilobium* sp.) and telegraph weed (*Heterotheca grandiflora*). A portion of this area adjacent to the southern boundary fence and the Alameda Creek trail has been recently mowed. Wildlife species that are expected in high quality grasslands and may occasionally occur in the remnant grassland of the study area include gopher snake (*Pituophis*

*melanoleucus*), Botta's pocket gopher (*Thomomys bottae*), and western harvest mouse (*Reithrodontomys megalotis*), all of which regularly forage or nest in this habitat. Numerous bird species forage or breed in high quality grassland habitats and could occasionally occur in this area. Such species include red-tailed hawk (*Buteo jamaicensis*), American crow (*Corvus brachyrhynchos*), white-crowned sparrow (*Zonotrichia leucophrys*), California towhee (*Pipilo crissalis*), northern mockingbird (*Mimus polyglottos*), and house finch (*Haemorhous mexicanus*).

### **Wetlands and Other Waters**

Wetlands are ecologically complex habitats that support a variety of both plant and animal life. The federal government defines and regulates other waters, including wetlands, in Section 404 of the Clean Water Act (CWA). Wetlands are “areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b] and 40 CFR 230.3). The U.S. Army Corps of Engineers (Corps) has primary federal responsibility for administering regulations that concern waters of the U.S. and requires a permit under CWA Section 404 if a project proposes the discharge of fill and/or the placement of structures within waters of the U.S.

Under normal circumstances, the federal definition of wetlands requires the presence of three identification parameters: wetland hydrology, hydric soils, and hydrophytic vegetation. Examples of wetlands include seasonal wetlands, freshwater marsh, and vernal pool complexes that have a hydrologic link to Traditional Navigable Waters (TNWs). No wetlands or evidence thereof (standing water, assemblages of hydrophytic vegetation, etc.) were observed within the project site during the reconnaissance survey.

Other waters of the U.S. include unvegetated waters of streams, lakes, and ponds that are connected to TNWs. The project site is located adjacent to Alameda Creek, which ultimately flows into San Francisco Bay, a TNW under the jurisdiction of the Corps and would be considered waters of the U.S. An unpaved trail (Alameda Creek Trail) is located immediately adjacent to the chain link fence that bounds the southern portion of the project site. This trail runs along the top of the north bank of Alameda Creek. Both banks of the creek are armored with rock or concrete to prevent erosion in this reach and are primarily unvegetated except for a narrow band adjacent to and within the creek. Alameda Creek and its banks are located outside of the project site. No other potentially jurisdictional waters occur within the project site.

### **Wildlife Movement Corridors**

Wildlife movement corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or by areas of human disturbance or urban development. Topography and other natural factors in combination with urbanization have fragmented or separated large open-space areas. The fragmentation of natural habitat can create isolated “islands” of vegetation that may not provide sufficient area to accommodate sustainable populations and can adversely affect genetic and species diversity. Movement corridors mitigate the effects of this fragmentation by allowing animals to move between remaining habitats, which

in turn allows depleted populations to be replenished and promotes genetic exchange between separate populations.

Adjacent to the project site, the Alameda Creek corridor facilitates wildlife movement through the City of Fremont for common urban species such as striped skunk, opossum, and raccoon along the trail or within the channel when the water level is low. Wading birds such as great egret and great blue heron may also forage within the channel and may easily fly to nearby feeding locations. The project site's current state among other development along the north side of Alameda Creek does not create a barrier to wildlife movement through the Alameda Creek corridor.

### **Special-Status Species**

The potential for the project site to support special-status plant or animal species was assessed using database results, previous studies of biological resources in the regional vicinity, and observations during the October 18, 2017 reconnaissance survey. Special-status species distribution information was obtained from the California Natural Diversity Database (CDFW, 2017), U.S. Fish and Wildlife Service (USFWS, 2017), and California Native Plant Society (CNPS) (CNPS, 2017) for the regional project vicinity. Table B-1 in Appendix B identifies regionally-occurring special-status plants and animals, their preferred habitats and plant blooming periods, and their potential to occur in the study area.

To support the biological resources impact discussion, the above data were examined to create a focused list of special-status species that could be encountered in the study area, and also on the project site. Each species was determined to have a low, moderate, or high potential for occurrence in the study area based on previous location data, species' range, and current site conditions. Species with a moderate or high potential for occurrence are discussed in detail, below. Several species that require specialized habitat not found within the project site, including large areas of annual grassland, oak woodland, freshwater marsh, tidal marsh, or coastal scrubland, were also eliminated from further discussion.

### **Special-Status Plants**

Several special-status plant species are documented in the regional vicinity of the proposed project; however, none were determined to have at least a moderate potential to occur in the project study area. This is generally due to the history of site disturbance and the lack of suitable supportive habitat and documented local occurrences in the project study area.

### **Special-Status Animals**

**Special Status Birds.** Several special-status birds have potential to nest or forage within the vegetation of the project study area. White-tailed kite (*Elanus leucurus*; a California Department of Fish and Wildlife (CDFW) fully protected species), Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*A. striatus*) (CDFW Watchlist species) could nest in mature eucalyptus or pine trees in the project area and forage within the non-native annual grassland of the project area or in riparian habitat of Alameda Creek.

**Other Breeding and Migratory Birds.** Mature trees and dense shrubs of the project area provide nesting and foraging habitat for a variety of resident and migratory birds. Tree nesting raptors such as red-tailed hawk (*Buteo jamaicensis*) or great horned owl (*Bubo virginianus*) could nest in the mature eucalyptus or pine trees of the project site and surrounding vicinity. Passerine species which could nest in the area include but are not limited to Anna's hummingbird (*Calypte anna*), Bewick's wren (*Thryomanes bewickii*), American crow, California towhee and northern mockingbird, among others. The federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code protect raptors, most native migratory birds, and breeding birds that would occur at the project site and/or nest in the surrounding vicinity.

**Alameda Creek.** A few special-status animals are known to occur or have a moderate or high potential to occur in Alameda Creek and associated habitats of the creek corridor southeast of the project site; however, habitat for these species does not occur on the project site. For example, California coastal steelhead (*Oncorhynchus mykiss*) is known to seasonally occur in Alameda Creek. Great blue heron (*Ardea herodias*) are expected to forage in Alameda Creek and could nest in mature eucalyptus trees on the banks of Alameda Creek. As the proposed project would not directly disturb Alameda Creek, the banks, corridor or its associated habitats, species with potential to occur in those environments are not discussed further in this analysis. Table B-1 in Appendix B describes these species' potential for occurrence in Alameda Creek within the project study area in detail.

### **Special-Status Natural Communities**

The CDFW's Natural Heritage Division identifies special-status natural communities, which are those that are naturally rare and those whose extent has been greatly diminished through changes in land use. The CNDDDB tracks 135 such natural communities in the same way that it tracks occurrences of special-status species. Information is maintained on each site for the natural community's location, extent, habitat quality, level of disturbance, and current protection measures. The CDFW is mandated to seek the long-term perpetuation of the areas in which these communities occur. While there is no statewide law that requires protection of special-status natural communities, CEQA requires consideration of the potential impacts of a project on biological resources of statewide or regional significance. Several special-status natural communities are designated within the regional project area; however, no designated special-status natural communities occur within the development footprint on the project site.

### **Critical Habitat**

Critical habitat is defined as the specific areas that are essential to the conservation of a federally listed species and that may require special management consideration or protection. There is no federally designated critical habitat within the proposed project site.

#### **a) Less than Significant Impact.**

##### **Special Status Plants**

All special-status plant species with potential to occur in the regional project area were determined to have either a low potential to occur or determined to be absent from the project site, generally due to the site history of disturbance and the related lack of suitable

habitat, and the lack of local species occurrences. The proposed project would not impact special-status plants.

### **Special Status Animals**

The proposed project could have a significant impact either directly or indirectly through habitat modifications on protected nesting birds, but would not otherwise impact special status animals. This potential impact is discussed below.

***Special-Status and Migratory Birds.*** Construction activities associated with vegetation and tree removal, demolition of existing building foundations, removal of rubble, new construction and a general increase in noise and visual disturbance in the vicinity of the project site during these activities may adversely affect nesting birds within 0.25 mile of the project site during the nesting season (February 1 – August 31). Suitable foraging and nesting habitat is present within the project site and vicinity for special-status birds including white-tailed kite, Cooper’s hawk, and sharp shinned hawk. Other migratory and resident passerine species such as mourning dove, house finch, California towhee, northern mockingbird, and white-crowned sparrow could forage and/or nest in the mature trees and shrubs of the project site.

The proposed project would develop non-native grassland within the site which currently provides limited foraging habitat for resident and migratory birds. Onsite annual grassland habitat is relatively small in size at approximately 0.016 acres (701 square feet) and largely composed of non-native species, generally understood to support a lower diversity of wildlife than native grassland communities. Loss of this resource for resident and migratory birds would not result in a significant impact due to the quantity of similar and higher quality annual grassland habitat within the project vicinity. The foothills within a quarter mile east of the project site provide expansive grasslands for foraging and nesting passerines and raptors away from the developed areas of the City. In addition, CDFW and USFWS regulate impacts to birds and their nests. However, with exceptions for a few special-status birds that do not occur on the project site, CDFW and USFWS do not regulate the loss of avian foraging habitat. Finally, the foraging habitat along Alameda Creek, adjacent to the project site, would not be disturbed by project construction or implementation, and existing trees there would remain. Impacts of proposed project construction on avian foraging habitat would be less than significant. This impact will not be further addressed in the EIR.

Removal of existing vegetation and trimming or removal of trees at the project site during construction could destroy active bird nests. In addition, an increase in noise and visual disturbance associated with demolition activities and new construction could disrupt nesting efforts in the habitat surrounding the project site. The loss of an active nest would be considered a significant impact under CEQA. Moreover, disruption of nesting migratory or native birds is not permitted under the federal MBTA or the California Fish and Game Code, as it could constitute unauthorized take. The loss of any active nest by, for example, trimming or removing a tree or shrub containing a nest, must be avoided under federal and California law. As described in *Section 2, Project Description*, the

proposed project would comply with the standard development requirements (Fremont Municipal Code Chapter 18.218), which includes the following requirements related to nesting birds:

*“Nesting Birds. New development projects with the potential to impact nesting birds through tree or shrub removal shall implement the following measures prior to removal of any trees/shrubs, grading, or ground disturbing activities:*

*(A) Avoidance. Proposed projects shall avoid construction activities during the bird nesting season (February 1st through August 31st).*

*(B) Preconstruction Surveys. If construction activities are scheduled during the nesting season, a qualified biologist shall conduct a preconstruction survey to identify any potential nesting activity. The biologist shall determine the number and time frame (prior to construction) of surveys to be conducted.*

*(C) Protective Buffer Zone(s). If the survey indicates the presence of nesting birds, protective buffer zones shall be established around the nests. The size of the buffer zone shall be recommended by the biologist in consultation with the CDFW depending on the species of nesting bird and level of potential disturbance.*

*(D) Initiation of Construction Activities. The buffer zones shall remain in place until the young have fledged and are foraging independently. A qualified biologist shall monitor the nests closely until it is determined the nests are no longer active, at which time construction activities may commence within the buffer area.”*

Compliance with the City’s standard development requirements per Chapter 18.218 of the Fremont Municipal Code would prevent nesting birds from being adversely affected by project construction and impacts would be less than significant. Once constructed, operation of the proposed project would have no impact on nesting birds because nests are not expected to be destroyed or adversely affected by ordinary operational activities. Impacts of proposed project construction on nesting birds would be less than significant. This impact will not be further addressed in the EIR.

- b) **No Impact.** Riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or U.S. Fish and Wildlife Service (USFWS) does not occur within the project site; therefore, the proposed project would not impact these resources. The proposed project would remove three Nichol’s willow-leaved peppermint (eucalyptus) trees located along the southeastern site boundary adjacent to the Alameda Creek trail and corridor. While these trees are located near the northern bank of Alameda Creek they do not function as riparian habitat. Project impacts associated with tree removal are discussed under criterion e) below. This impact will not be further addressed in the EIR.
- c) **No Impact.** There are no potentially jurisdictional wetlands or other waters of the U.S. or waters of the state within the project site; therefore, the proposed project would not impact federal or state-protected wetlands or other waters as defined by the federal CCWA or California CWA. As discussed previously, the north bank of the Alameda

Creek is located adjacent to the southeast boundary of the project site; project development does not propose any impacts to this jurisdictional other water or associated wetlands. This impact will not be further addressed in the EIR.

- d) **No Impact.** Given the current condition of the site and surrounding built environment, the proposed project does not have the potential to significantly interfere with the movement of native resident or migratory avian and mammal species or impede use of wildlife nursery sites with site redevelopment. The project site is highly disturbed, contains remnants of previous development (concrete foundations, rubble, debris), and provides low quality habitat for wildlife adapted to developed/ruderal or non-native grassland vegetation communities. Urban uses and infrastructure surround the project site on three sides precluding the site from serving as an effective movement corridor. Alameda Creek abuts the project site to the south. The creek channel serves as a major corridor for wildlife movement through the larger developed region from the southeast bay shoreline to open space east of Fremont. The proposed project would not affect wildlife use of this corridor. Therefore, no impact would occur, and this impact will not be further addressed in the EIR.
- e) **Less than Significant Impact.** The City of Fremont regulates tree removal under the Tree Preservation Ordinance (Fremont Municipal Code Chapter 18.215), which requires that a permit be obtained prior to the removal of any City-protected tree. A permit is required to remove, damage or relocate a private tree if it is: 1) a tree having a trunk diameter of six inches or more (when measured at 54 inches above grade, the diameter at breast height, or DBH) and located on a vacant or underdeveloped lot; 2) a tree having a trunk DBH of six inches or more and located on a developed lot which is the subject of a contemplated or pending application for a development project; 3) a native tree or tree of exceptional adaptability to the Fremont area having a DBH of 10 inches or larger; 4) a tree having a DBH of 18 inches or larger (any tree species); 5) a tree that was required by the City to be planted or retained as mitigation for the removal of a tree; 6) a tree planted or retained as a condition of any City-conferred development project approval, including approvals conferred prior to adoption of this chapter; or 7) one of six trees of the same species that are located on the same lot and that each have six or more inches in DBH.

A tree survey was performed in 2013 to inventory and evaluate trees with trunks of six inches DBH or greater within the project site and immediate vicinity (Arbor Resources, 2013). During the October 18, 2017 reconnaissance survey of the project site, ESA confirmed and updated the inventory as needed to reflect current conditions. Of the 56 trees inventoried in 2013, 12 have since been removed from the site (three almond, one holly oak, three Italian stone pine, two red gum eucalyptus, one red ironbark eucalyptus, one silver dollar eucalyptus and one blackwood acacia). Of the 44 remaining trees from the 2013 inventory, the project applicant proposes to remove the remaining 40 trees within the project site.<sup>6</sup> Four Nichol's willow-leaved peppermint trees located along the

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<sup>6</sup> ESA biologist did not observe additional trees that were not included in the 2013 inventory, and that appeared to be at least six inches DBH, during the 2017 reconnaissance survey.

south eastern border of the project site occur on the neighboring property and would not be disturbed under the proposed project.

The Fremont Municipal Code includes the following standards for mitigation of authorized removal of private protected trees (Chapter 18.215.080) connected to a development project: “Required mitigation for each tree removed shall be the planting of one 24-inch box replacement tree of a species and in a location approved by the person or entity imposing mitigation requirements under this chapter. When, because of lot size, configuration or development, the property cannot fully accommodate the mitigation plantings, the applicant shall pay the City a fee in lieu of on-site replacement for each tree that is not replaced on site. The amount of the fee shall be equal to the per unit cost to the City for a planted 24-inch box tree as established by the City’s last award of a contract following a competitive bid for such work. Mitigation trees associated with a development project are in addition to any requirement for planting trees that would otherwise be imposed as a condition of project approval.”

With adherence to the requirements of the City’s Tree Preservation Ordinance as described above, the proposed project would have a less-than-significant impact related to conflicts with local policies or ordinances protecting biological resources. This impact will not be further addressed in the EIR.

- f) **No Impact.** There is no adopted Habitat Conservation Plan or Natural Community Conservation Plan for this area and, therefore, no conflict with such plans would occur under the proposed project. This impact will not be further addressed in the EIR.

## References

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- California Department of Fish and Wildlife (CDFW), 2017. California Natural Diversity Database (CNDDDB). RareFind version 5 query of the Niles, Newark, La Costa Valley, Hayward, Dublin, Livermore, Mountain View, Milpitas, Calaveras Reservoir USGS 7.5-minute topographic quadrangle. Accessed October 10, 2017.
- California Native Plant Society (CNPS), 2017. Inventory of Rare and Endangered Plants for Niles, Newark, La Costa Valley, Hayward, Dublin, Livermore, Mountain View, Milpitas, Calaveras Reservoir USGS 7.5-minute topographic quadrangles. Available at: [www.rareplants.cnps.org/](http://www.rareplants.cnps.org/). Accessed October 30, 2017.
- U.S. Fish and Wildlife Service (USFWS), 2017. My Project, IPaC Trust Resource Report of Federally Endangered and Threatened Species in the vicinity of the Niles Gateway Mixed-Use Project, generated October 30, 2017.

## 4.5 Cultural Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>5. CULTURAL RESOURCES — Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

- a) **No Impact.** CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. An historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register, or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California. The following discussion focuses on architectural and structural resources. Archaeological resources, including archaeological resources that are potentially historical resources according to CEQA Guidelines Section 15064.5, are addressed under criterion b), below.

The proposed project is situated on the site of the former Henkel/Schuckl Cannery. The site was historically used for a variety of industrial land use activities including a foundry, cannery, herbicide manufacturing, metal treatment, and chemical manufacturing between the early 1900s and 2002. All buildings and structures associated with the previous industrial uses were demolished in 2009, and only remnants of the foundations remain. No historical resources remain on the project site, and no individual historical resources were identified adjacent to the project site. P-01-3280, the Niles Old Town Historic Complex, was documented in 1974 by the Mission Peak Heritage Foundation, which identified clusters of historic development in the community of Niles, including Niles Boulevard between J and G Streets, the site of the Vallejo Mills, the Niles Depot, Essanay Studios, and a collection of Victorian-era residences and commercial buildings along 2nd and 3rd Streets between G and J Streets. These discontinuous areas of historic development were documented in the records search as one large rectangular area, which includes the location of the project site. However, the project site is not included within any of the documented contributing areas listed within P-01-3280. The proposed project is located within the Niles HOD, which is a zoning overlay designation and not a listed or recognized historic district under CEQA. As such, the proposed project would have no

direct or indirect effects upon historical resources. This impact will not be further addressed in the EIR.

- b) **Less than Significant.** This section discusses archaeological resources, both as historical resources according to CEQA Guidelines Section 15064.5, as well as unique archaeological resources, as defined in Public Resources Code (PRC) Section 21083.2(g). A significant impact would occur if the project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

ESA completed a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System on October 20, 2017 (File No. 17-1192). The review included the project site and a 0.25 mile radius. Previous surveys, studies, and site records were accessed. Records were also reviewed in the Historic Property Directory for Alameda County, which contains information on places of recognized historical significance including those evaluated for listing in the *National Register of Historic Places*, the *California Register of Historical Resources*, the *California Inventory of Historical Resources*, *California Historical Landmarks*, and *California Points of Historical Interest*. The purpose of the records search was to: (1) determine whether known cultural resources have been recorded within the project vicinity; (2) assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby sites; and (3) develop a context for the identification and preliminary evaluation of cultural resources.

Results of the records search indicate that no prehistoric or historic-era cultural resources have been previously recorded in the project site. One resource with an archaeological component has been recorded in the vicinity of the project site. Vallejo Mills Historic Park (P-01-000227) is a State Historic Landmark located approximately 1,000 feet northeast of the project site. However, this resource is too distant from the site to be adversely affected, and is not discussed further.

LSA Associates, an environmental consulting firm, previously surveyed the project site in 2008 as part of the Henkel property demolition project EIR, and did not identify any prehistoric or historic-era archaeological sites on the project site. However, LSA did identify a potential historic-era concrete floor approximately five feet below the existing ground surface in an area excavated to remove contaminated soils at the northern end of the project site (LSA, 2008).

On October 25, 2017, ESA archaeologists conducted a survey of the project site. A large portion of the site was paved and showed evidence of disturbed soils. Additionally, concrete debris was scattered throughout the site. Dense vegetation, in addition to the pavement, limited ground visibility. Areas where soil was visible were intuitively surveyed for cultural material. These areas included the southern third of the project site and the northern end of the site. Specific attention was paid to the northern portion of the project site, which had been identified by LSA (2008) as a potentially sensitive area for

historic-era archaeological features. The current survey did not identify any evidence of the concrete floor and it appeared that the excavated areas mentioned in the LSA study (2008) were backfilled. No evidence of prehistoric or historic-era resources were identified during the field survey.

Based on the results of the records search, background research, and surface survey, no archaeological resources have been identified at the project site and the site has a low potential to uncover buried archaeological resources. As such, the proposed project is not anticipated to impact any archaeological resources pursuant to CEQA Guidelines Section 15064.5.

While unlikely, if any previously unrecorded archaeological resources are identified during project ground disturbing activities and were found to qualify as an historical resource per CEQA Guidelines Section 15064.5 or a unique archaeological resource, as defined in PRC Section 21083.2(g), any impacts to the resource resulting from the proposed project could be potentially significant. However, as described in *Section 2, Project Description*, the proposed project would comply with the standard development requirements (Fremont Municipal Code Chapter 18.218), which includes the following requirements related to the accidental discovery of cultural resources:

*“Accidental Discovery of Cultural Resources. The following requirements shall be met to address the potential for accidental discovery of cultural resources during ground disturbing excavation:*

- (A) The project proponent shall include a note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources.*
  
- (B) The project proponent shall retain a professional archaeologist to provide a preconstruction briefing to supervisory personnel of any excavation contractor to alert them to the possibility of exposing buried cultural resources, including significant prehistoric archaeological resources. The briefing shall discuss any cultural resources, including archaeological objects, that could be exposed, the need to stop excavation at the discovery, and the procedures to follow regarding discovery protection and notification of the project proponent and archaeological team.*
  
- (C) In the event that any human remains or historical, archaeological or paleontological resources are discovered during ground disturbing excavation, the provisions of CEQA Guidelines Sections 15064(e) and (f) requiring cessation of work, notification, and immediate evaluation shall be followed. (Ord. 27-2016 § 37, 12-6-16.)”*

These requirements would apply to the proposed project per Chapter 18.218.050(c)(2) of the Fremont Municipal Code and would minimize impacts related accidental discovery of

cultural resources during construction. Impacts would, therefore, be less than significant. This impact will not be further addressed in the EIR.

- c) **Less than Significant.** Rock formations that are considered of paleontological sensitivity are those rock units that have yielded significant vertebrate or invertebrate fossil remains. This includes, but is not limited to, sedimentary rock units that contain significant paleontological resources anywhere within its geographic extent. The project site is underlain by Quaternary alluvium, specifically riverwash (3 percent slopes) (NRCS, 2017). Through a search of the University of California Museum of Paleontology (UCMP) database, no paleontological resources have been identified in Quaternary alluvium in the project vicinity.

Given the previous disturbance of the project site and the relatively shallow depth of disturbance, paleontological resources are not expected to be uncovered during ground disturbing activities. In the unlikely event that paleontological resources are uncovered, the significance of resource would be unknown until examined by a qualified paleontologist. This would be a potentially significant impact on paleontological resources. However, as discussed above, the project must comply with the standard development requirements pursuant to Chapter 18.218.050(c)(2) of the Fremont Municipal Code and would minimize impacts related to accidental discovery of paleontological resources. Impacts would, therefore, be less than significant. This impact will not be further addressed in the EIR.

- d) **Less than Significant.** Through a records search and background research, no human remains are known to exist at the project site. Therefore, the proposed project is not anticipated to impact human remains, including those interred outside of formal cemeteries.

While unlikely, if any previously unknown human remains were encountered during ground disturbing activities, any impacts to the human remains resulting from the project could be potentially significant. However, as discussed above, the project must comply with the standard development requirements pursuant to Chapter 18.218.050(c)(2) of the Fremont Municipal Code and would minimize impacts related to accidental discovery of human remains. Impacts would, therefore, be less than significant. This impact will not be further addressed in the EIR.

## References

- Archaeological/Historical Consultants, 1992. *Archaeological Survey Report, Widening of Mission Boulevard in Hayward, Union City, and Fremont, Alameda County*. Prepared for California Department of Transportation. On file (S-14067), NWIC, 1992.
- Basin Research Associates, Inc., 1987. *Cultural Resources Assessment of the Alameda County Water District Property on Bunting Lane, City of the Fremont, County of Alameda, California*. Prepared for the Alameda County Water District. On file (S-9403), NWIC, 1987.

LSA, 2008. *An Archaeological and Paleontological Resources Study for the Henkel Property Demolition Project EIR, 37899 Niles Boulevard, Fremont, Alameda County, California*. Prepared for City of Fremont, Planning Division, Community Development Department. On file (S-35457), NWIC, January 2008.

Natural Resources Conservation Service (NRCS), 2017. Web Soil Survey. Available online at: [websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx](http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx). Accessed November 2, 2017.

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Society of Vertebrate Paleontology (SVP), 2010. *Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontological Resources: Standard Guidelines*, Society of Vertebrate Paleontology News Bulletin, 2010.

University of California Museum of Paleontology (UCMP), 2017. *Collections Database Search Results*. Available at: [www.ucmp.berkeley.edu/science/collections.php](http://www.ucmp.berkeley.edu/science/collections.php). Accessed October 2017.

## 4.6 Geology, Soils, and Seismicity

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>6. GEOLOGY and Soils —</b>				
<b>Would the project:</b>				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in 24 CCR 1803.5.3 of the California Building Code, <sup>7</sup> creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

- a.i) **Less than Significant Impact.** The project site is located in a seismically-active region of California that is part of the Coast Ranges geomorphic province. The closest active fault to the project site is the Hayward fault, which is located approximately 0.2 mile to the west and the Calaveras fault to the east (Cornerstone, 2013). The Hayward fault and other regional active faults, including the Calaveras and San Andreas faults, pose the greatest threat of significant damage in the Bay Area according to the U.S. Geologic Survey (USGS) Working Group (USGS, 2015).

However, the project site is not located in an Alquist-Priolo Earthquake Fault Zone nor are there known active faults located on the site (Cornerstone, 2013). The purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to restrict construction of structures

<sup>7</sup> The updated CBC no longer cites the 1997 UBC Table 18-1-B for identifying expansive soils. The checklist in Appendix G of the CEQA Guidelines still refers to this out of date table. This EIR uses the updated CBC section as defined in 24 CCR 1803.5.3 of the California Building Code.

intended for human occupancy along traces of known faults. Because the project site is not located in an Alquist-Priolo Earthquake Fault Zone and is not located on or immediately adjacent to an active fault, the project would have a less-than-significant impact related to fault rupture hazards. This impact will not be further addressed in the EIR.

- a.ii) **Less than Significant Impact.** The Preliminary Geotechnical Investigation indicated that the Hayward Fault is located 0.2 mile from the project site (Cornerstone, 2013). As such, the proposed project's structures could potentially be subject to strong ground shaking during a seismic event. The primary and secondary effects of groundshaking could damage structural foundations, distort or break wells or pipelines, and place people at risk of injury or death. The level of risk would be similar to those of any housing project in the local area.

The structural elements of the proposed project would be required to undergo appropriate design-level geotechnical evaluations prior to final design and construction. The 2013 Cornerstone investigation was a preliminary geotechnical investigation; the final design-level geotechnical investigation would provide conclusions and recommendations based on the final design. The proposed project would be required to adhere to the seismic standards and regulatory requirements in the California Building Code (CBC) and local ordinances (Fremont Municipal Code standards). Ensuring that all buildings and structures are constructed in compliance with the law is the responsibility of the project engineers and building officials. The local building officials are typically with the local jurisdiction (i.e., the City of Fremont) and are responsible for inspections and ensuring CBC and local code compliance prior to approval of the building permit.

The CBC, promulgated in Title 24 of the California Code of Regulations, describes required standards for the construction, alteration, replacement, location, and demolition of buildings, structures, and appurtenances connected or attached to such buildings or structures throughout California. The standards include earthquake design requirements that determine the seismic design category and structural design requirements. While complete avoidance of any damage may not be feasible, incorporation of industry standard seismic design measures in accordance with current building requirements would ensure that potential impacts related to ground shaking would be less than significant. The impact would be less than significant and will not be further addressed in the EIR.

- a.iii) **Less than Significant Impact.** The Preliminary Geotechnical Investigation indicated the project site is located within a State-designated Liquefaction Hazard Zone (Cornerstone 2013). As such, the proposed project's structures could potentially be subject to seismic related ground failure such as liquefaction during a seismic event.

As discussed above for criterion a.ii), compliance with the CBC and Fremont Municipal Code (promulgated in Title 24 of the California Code of Regulations and Title 15 of the Fremont Municipal Code, respectively) standards would require the project applicant to prepare a design-level geotechnical investigation that would address the potential for seismic hazards to occur onsite and identify abatement measures to reduce potential

significant effects of such an event to acceptable levels. This investigation would be required to include evaluating seismic-related ground failures such as liquefaction and provide recommendations to address such hazards. With compliance with the regulatory requirements and the implementation of geotechnical design recommendations, impacts relative to seismic-related ground failure would be reduced to a less-than-significant level. This impact will not be further addressed in the EIR.

- a.iv) **No Impact.** The project site contains flat relief and is not near any slopes capable of failing during a seismic event. Therefore, the proposed project would not be adversely affected by potential impacts associated with landslides. No impact would occur and will not be further addressed in the EIR.
- b) **Less than Significant Impact.** The proposed construction activities would include grading and excavation. These ground disturbance activities could expose soils to the effects of erosion and loss of topsoil, which could result in sediment being discharged to the adjacent Alameda Creek. Because the overall footprint of construction activities would exceed one acre, the proposed project would be required to comply with the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ) (Construction General Permit). In addition to compliance with the Construction General Permit, the City of Fremont also requires the implementation of BMPs described in the C3 Technical Guidance Manual, provided through Alameda Countywide Clean Water Program, of which the City of Fremont is a member (Clean Water Program, 2015). These state and local requirements were developed to ensure that stormwater is managed and erosion is controlled on construction sites. The Construction General Permit requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which requires applications of BMPs to control runoff and runoff from construction work sites. The BMPs would include, but would not be limited to, physical barriers to prevent erosion and sedimentation, construction of sedimentation basins, limitations on work periods during storm events, use of infiltration swales, protection of stockpiled materials, and a variety of other measures that would substantially reduce or prevent erosion from occurring during construction. The C3 Technical Guidance Manual provides further details of specific BMPs, including measures for site design, source control, stormwater treatment, and hydromodification. The grading and building plans submitted by the applicant must demonstrate compliance prior to issuance of building permits. Through compliance with the regulations discussed above, impacts associated with soil erosion during construction would be less than significant for all project components.

The project site is located entirely within a previously-disturbed area. The proposed project includes landscape and stormwater management plans with project design features to prevent erosion and the loss of topsoil (CBG, 2017) including routing all surface water (rainfall and landscaping runoff) into the curb-and-gutter system directed in one of 12 bioretention systems, and then through a hydro modification vault to ensure sediment would not be discharged to Alameda Creek. Therefore, with the implementation

- of the aforementioned project design features, the impact relative to erosion or loss of topsoil would be less than significant. This impact will not be further addressed in the EIR.
- c) **Less than Significant Impact.** As previously discussed in criterion a.iv), the site is not subject to landslides. As previously discussed in criterion a.iii), impacts from liquefaction would be less than significant through compliance with the CBC and Fremont Municipal Code standards. Lateral spreading is typically associated with and related to seismic related ground failure and areas in slopes. The project location would be located on flat terrain, not susceptible to slope movement. Finally, the proposed project does not include groundwater withdrawal that might cause subsidence and the ground surface would not be susceptible to collapse. In summary, with compliance with the CBC and Fremont Municipal Code standards, impacts would be less than significant and will not be further addressed in the EIR.
- d) **Less than Significant Impact.** The Preliminary Geotechnical Investigation included laboratory soil testing that indicated that the soils within the project site have very low expansion potential (Cornerstone, 2013). As such, the proposed project would not be exposed to expansive soil hazards. Impacts would be less than significant and will not be further addressed in the EIR.
- e) **No Impact.** The proposed project would be served with sanitary sewer service provided by Union Sanitary District; no septic systems or alternative wastewater disposal systems would be required for the project. No impact would occur and will not be further addressed in the EIR.

## References

- Carlson, Barbee, & Gibson (CBG), 2017. Henkel/Shuckl (sic) Cannery, Tract map 8205, Site Development Plan and Vesting Tentative Map, April 19, 2017.
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## 4.7 Greenhouse Gas Emissions

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>7. GREENHOUSE GAS EMISSIONS — Would the project:</b>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

“Global warming” and “global climate change” are the terms used to describe the increase in the average temperature of the earth’s near-surface air and oceans since the mid-20th century and its projected continuation. Increases in greenhouse gas (GHG) concentrations in the earth’s atmosphere are thought to be the main cause of human-induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the earth and is reflected back into space. Some GHGs occur naturally and are necessary for keeping the earth’s surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature. Carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>) are the principal GHGs. When concentrations of these gases exceed natural concentrations in the atmosphere, the greenhouse effect may be enhanced. CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O occur naturally and are also generated through human activity. Emissions of CO<sub>2</sub> are largely by-products of fossil fuel combustion, whereas CH<sub>4</sub> results from off-gassing<sup>8</sup> associated with agricultural practices and landfills. Other human-generated GHGs include fluorinated gases such as SFCs, PFCs, and SF<sub>6</sub>, which have much higher heat-absorption potential than CO<sub>2</sub> and are byproducts of certain industrial processes.

CO<sub>2</sub> is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have on global warming is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO<sub>2</sub>. CH<sub>4</sub> and N<sub>2</sub>O are substantially more potent GHGs than CO<sub>2</sub>, with GWPs of 25 and 298 times that of CO<sub>2</sub>, respectively (IPCC 2007).

In emissions inventories, GHG emissions are typically reported in terms of pounds or metric tons of CO<sub>2</sub> equivalents (CO<sub>2</sub>e). CO<sub>2</sub>e are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH<sub>4</sub> and N<sub>2</sub>O have much higher GWPs than CO<sub>2</sub>, CO<sub>2</sub> is

<sup>8</sup> Off-gassing is defined as the release of chemicals under normal conditions of temperature and pressure.

emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in CO<sub>2</sub>e, both from residential developments and human activity in general.

### ***City of Fremont Climate Action Plan***

The *City of Fremont Climate Action Plan* (City of Fremont, 2012) includes the goal of reducing GHG emissions in the City by 25 percent by 2020, from a 2005 baseline. Implementation actions for reducing GHGs are in the sectors of land use and mobility, energy, solid waste, water, and municipal services and operations.

### ***Approach to Analysis***

With regard to impacts from GHGs, both BAAQMD and the California Air Pollution Control Officers Association (CAPCOA) consider GHG impacts to be exclusively cumulative impacts (BAAQMD, 2017; CAPCOA, 2008); therefore, assessment of significance is based on a determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere. This analysis uses both a quantitative and a qualitative approach. The quantitative approach is used to address the first significance criterion: whether the project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. This analysis considers that, because the quantifiable thresholds developed by BAAQMD in its 2009 Justification Report and included in the BAAQMD's 2017 *CEQA Air Quality Guidelines* (BAAQMD 2017b) were formulated based on AB 32 and California Climate Change Scoping Plan reduction targets for which its set of strategies were developed to reduce GHG emissions statewide, a project cannot exceed a numeric BAAQMD threshold without also conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs (the state Climate Change Scoping Plan). Therefore, if a project exceeds a numeric threshold and results in a significant cumulative impact, it would also result in a significant cumulative impact with respect to plan, policy, or regulation consistency, even though the project may incorporate measures and have features that would reduce its contribution to cumulative GHG emissions.

Separate thresholds of significance are established for operational emissions from stationary sources (such as generators, furnaces, and boilers) and non-stationary sources (such as on-road vehicles). As no threshold has been established for construction-related emissions, the operational emissions thresholds apply. The threshold for stationary sources is 10,000 metric tons of CO<sub>2</sub>e per year (i.e., emissions above this level may be considered significant). For non-stationary sources, three separate thresholds have been established:

- Compliance with a Qualified Greenhouse Gas Reduction Strategy (i.e., if a project is found to be out of compliance with a Qualified Greenhouse Gas Reduction Strategy, its GHG emissions may be considered significant); or
- 1,100 metric tons of CO<sub>2</sub>e per year (i.e., emissions above this level may be considered significant); or
- 4.6 metric tons of CO<sub>2</sub>e per service population per year (i.e., emissions above this level may be considered significant). (Service population is the sum of residents plus employees expected for a development project.)

This Initial Study uses two thresholds to determine significance. First, the quantitative “bright-line” threshold of 1,100 metric tons of CO<sub>2</sub>e per year in the 2017 *CEQA Air Quality Guidelines* is applied. Second, the quantitative efficiency threshold of 4.6 metric tons of CO<sub>2</sub>e per service population annually is also applied. Two separate thresholds are used because some large projects will always exceed 1,100 even if they are extremely efficient on a per-population basis. If the project construction and operational GHG emissions would result in GHG emissions below *either* of these thresholds, then, consistent with BAAQMD Guidelines, it would be considered to have a less-than-significant impact on climate change.

GHG emissions resulting from the project were estimated using CalEEMod version 2016.3.2, with model data and assumptions included in **Appendix A**. Construction emissions were estimated for equipment and truck exhaust and construction worker vehicles. In regards to operations, vehicle trips assumed default trip lengths for urban land uses, which are embedded in CalEEMod. The model makes adjustments for implementation of Pavley vehicle standards (state Assembly Bill 1493), which car manufacturers are required to comply with (the standards are incorporated into the EMFAC2014 emission factors used in the modeling). Area and indirect sources associated with project operations would primarily result from natural gas usage, electrical usage, water and wastewater transport (the energy used to pump water and wastewater to and from the project) and solid waste generation. GHG emissions from electrical usage are generated when energy consumed on the site is generated by fuel combustion at power plants providing grid electricity. GHG emissions from water and wastewater transport are also indirect emissions resulting from the energy required to transport water from its source, and the energy required to treat wastewater and transport it to its treated discharge point. Solid waste emissions are generated when the increased waste generated by the project are taken to a landfill to decompose.

- a) **Less than Significant.** During construction and operation, the project would generate both direct and indirect GHG emissions that may have a significant impact on the environment. These GHGs include CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O). Application of BAAQMD’s project-specific GHG emissions thresholds includes both direct emissions from a project’s vehicle trip generation and onsite water and space heating and other stationary sources, as well as indirect emissions from offsite electrical generation, solid waste generation, and water conveyance and treatment. The following activities associated with the proposed project could contribute to the generation of GHG emissions:
- **Construction Activities.** Construction equipment typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. CH<sub>4</sub> is also emitted during the fueling of heavy equipment.
  - **Solid Waste Disposal Emissions.** Resulting emissions associated with waste generation and disposal in landfills are indirect. Landfills emit anthropogenic CH<sub>4</sub> from the anaerobic breakdown of material.
  - **Natural Gas, Electricity, and Water Use.** Natural gas use results in the emissions of two GHGs: CH<sub>4</sub> (the major component of natural gas) and CO<sub>2</sub> from the combustion of natural gas. CH<sub>4</sub> is released prior to initiation of combustion of the natural gas (as before a flame on a stove is sparked), and from the small amount of

CH<sub>4</sub> that is uncombusted in a natural gas flame. Electricity use can result in GHG production if the electricity is generated by combustion of fossil fuel. GHG emissions associated with treatment and transport of water is also included in the analysis below.

- **Motor Vehicle Use.** Transportation associated with the project would result in GHG emissions from the combustion of fossil fuels in daily automobile and truck trips. However, not all of these emissions would be “new” to the region or state since drivers would likely have relocated from another area. To be conservative, however, all vehicle trips predicted to be generated by the project scenarios in the Transportation analysis were assumed to be new trips in this analysis.
- **Stationary Sources.** The project would not include any new or expanded stationary sources that would exceed BAAQMD’s industrial threshold of 10,000 metric tons per year (MT/yr.) of CO<sub>2</sub>e. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require an air district permit to operate.

### Construction

Sources of GHGs during construction include construction equipment, trucks, and worker commute trips. Project construction is expected to last approximately 30 months, commencing in March 2019 with completion in August 2021. The CalEEMod model was used to quantify construction emissions associated with off-road equipment, haul trucks, and on-road worker vehicle emissions.

Direct comparison of construction GHG emissions to long-term thresholds would not be appropriate because these emissions cease upon completion of construction, which only lasts for three years. Other districts (e.g., South Coast Air Quality Management District, 2008; San Luis Obispo County Air Pollution Control District, 2012) recommend that GHG emissions from construction activities be amortized over a project’s operational lifetime (typically assumed to be 30 years) for comparison with long-term GHG emissions significance thresholds. Construction emissions over the full buildout duration were annualized assuming a 30-year development life after completion of construction (which is likely low), and added to overall project emissions for comparison to significance thresholds. Amortized GHG emissions associated with project construction would result in annualized generation of 33 metric tons of CO<sub>2</sub>e.

Construction GHG emissions were estimated using CalEEMod, version 2016.3.2 (ESA, 2017); EMFAC2014 emission factors were used to estimate emissions for onsite truck operation (including on-road truck idling and water truck operation). Emissions modeling was conducted for each of the project’s construction phases using CalEEMod default parameters for Alameda County. **Table 4.7-5** presents GHG construction emissions. Based on estimates of equipment use, project construction would generate a total of 984 metric tons CO<sub>2</sub>e, a maximum of 454 metric tons CO<sub>2</sub>e during 2020, and 33 metric tons CO<sub>2</sub>e amortized over 30 years of project operation.

**TABLE 4.7-5  
CONSTRUCTION PHASE GHG EMISSIONS (METRIC TONS PER YEAR)**

Source	CO <sub>2</sub> e
2019	251
2020	454
2021	279
Total Construction Emissions	984
Annual Construction Emissions Amortized over 30 years	33

SOURCE: ESA 2017

### Operation

The CalEEMod model was used to estimate GHG emissions from motor vehicle trips, grid electricity usage, solid waste, and other sources (including area sources, natural gas combustion, and water/wastewater conveyance) based on project specific information. The methodology used to analyze operational GHG impacts was based on the approach described in BAAQMD’s *CEQA Air Quality Guidelines* (BAAQMD, 2017). Project operational emissions were compared to both the GHG threshold of significance for non-stationary sources of 1,100 metric tons of CO<sub>2</sub>e per year and the “efficiency threshold” of 4.6 metric tons of CO<sub>2</sub>e per service population per year (BAAQMD, 2017).

**Table 4.7-6** presents the operational-related GHG emissions from the project. Emissions presented in Table 4.7-6 include the following two project design features: 1) all buildings would exceed 2016 Title 24 building energy efficiency requirements by 25 percent (shown in the second column of Table 4.7-6); and 2) all buildings would install water saving features including low flow bathroom faucets, low flow kitchen faucets, low flow toilets, and low flow showers, as required by California Building Code Sections 4303.1.1 through 4303.1.4.4 (for residential use) and Sections 5.303.3.1 through 5.303.4 (for commercial uses). These measures are modeled in CalEEMod (calculation details are provided in Appendix A). Emissions would also include compliance with the City of Fremont’s residential solar requirements, which stipulate that all residential buildings must have a solar photovoltaic system installed. For buildings less than 4,500 square feet of conditioned floor space (the townhomes), minimum nameplate solar system sizes, ranging from 1.1 to 2.4 kilowatts (kW) must be installed, based on the building square footage; and buildings greater than 4,500 square feet of conditioned floor space (the CRAFT building), a solar photovoltaic system sized to meet a minimum of 55 percent of the building’s total time dependent valuation (TDV) energy on an annual basis must be installed.<sup>9</sup> Based on these requirements, it is estimated that the solar photovoltaic systems installed at the project site would generate approximately 315,000 kilowatt hours (kWh) annually, or about 53 percent of the site’s total electricity demand (calculation details are provided in Appendix A).

<sup>9</sup> City of Fremont, CA, Municipal Code § 15.44.050.

**TABLE 4.7-6  
 OPERATIONAL GHG EMISSIONS (METRIC TONS PER YEAR)<sup>a</sup>**

Source	CO <sub>2</sub> e	CO <sub>2</sub> e (with energy-efficient design)
Area	1	1
Energy	209	180
Mobile	865	865
Waste	19	19
Water	19	16
Total	1,113	1,081
Amortized Construction Emissions	33	33
Total Annual Emissions	1,146	1,114
BAAQMD CEQA threshold	1,100	1,100
Exceed threshold?	Yes	Yes
Total Per Service Population Emissions <sup>c</sup>	3.7	3.6
BAAQMD CEQA threshold	4.6	4.6
Exceed threshold?	No	No

NOTES:

- <sup>a</sup> Emissions include results modeled with CalEEMod. Additional data and assumptions are described in Appendix A.
- <sup>b</sup> Energy-efficient design assumes The proposed buildings would be constructed to exceed 2016 Title 24 building energy efficiency requirements by 25 percent, as is proposed by the project sponsor.
- <sup>c</sup> Based on a project population of 296 residents and 17 jobs = 313 service population, as presented in Section 4.13 Population and Housing.

SOURCE: ESA 2017

As shown in Table 4.7-6, annual project emissions would total 1,146 metric tons of CO<sub>2</sub>e without the energy-efficient design proposed by the project sponsor, which would exceed the BAAQMD threshold of 1,100 metric tons of CO<sub>2</sub>e without mitigation. However, emissions per service population would be 3.7 metric tons of CO<sub>2</sub>e per year, which would be below the BAAQMD efficiency threshold of 4.6 metric tons of CO<sub>2</sub>e per service population per year and therefore not a significant impact. With the additional voluntary energy efficiency measures included as part of the project design, project emissions would be 1,114 metric tons of CO<sub>2</sub>e per year, which would still exceed the 1,100 metric ton threshold. However, emission per service population would be 3.6 metric tons of CO<sub>2</sub>e per service population per year, below the 4.6-metric ton threshold. Because the *BAAQMD CEQA Air Quality Guidelines* state that GHG emissions must be below *one* of these thresholds of significance (not both), this would represent a less-than-significant cumulative GHG impact and will not be further evaluated in the EIR.

- b) **Less than Significant.** California Assembly Bill (AB) 32,<sup>10</sup> the Global Warming Solutions Act of 2006, is the cornerstone of state efforts to reduce GHG emissions. The law requires CARB to establish a statewide GHG emissions cap for 2020 based on 1990 emission levels, develop a mandatory reporting program of GHG emissions, adopt regulations for discrete early actions to reduce GHG emissions, prepare a scoping plan to

<sup>10</sup> AB 32 is codified in California Health and Safety Code Division 25.5, Sections 38500 et seq.

identify how emissions reductions will be achieved, and adopt a regulation that establishes a market-based compliance mechanism (also referred to as “Cap and Trade”).

In December 2008, CARB approved the AB 32 Scoping Plan outlining the state’s strategy to achieve the 2020 GHG emissions limit (CARB, 2009a). The Scoping Plan estimated a reduction of 174 million metric tons of CO<sub>2</sub>e from the transportation, energy, agriculture, forestry, and high climate-change-potential sectors, and proposed a comprehensive set of actions designed to reduce overall GHG emissions in California, improve the environment, reduce dependence on oil, diversify California’s energy sources, save energy, create new jobs, and enhance public health. The Scoping Plan must be updated every five years to evaluate the mix of AB 32 policies to ensure that California is on track to achieve the 2020 GHG reduction goal.

In response to the 2030 GHG reduction target stipulated in Executive Order B-30-15 (40 percent below 1990 levels by 2030) and codified in SB 32, CARB released the Final Proposed 2017 Change Scoping Plan in November 2017 (CARB 2017). The 2017 Climate Change Scoping Plan sets the groundwork to reach California’s long-term climate goals set forth in Executive Orders S-3-05 and B-16-2012 and highlights California’s progress toward meeting the near-term 2020 GHG emission reduction goals defined in the initial Scoping Plan.

None of these statewide plans or policies constitutes a regulation to adopt or implement a regional or local plan for reduction or mitigation of GHG emissions. In addition, it is assumed that any requirements formulated under the mandate of AB 32 and SB 32 would be implemented consistent with statewide policies and laws.

In 2012, the City of Fremont adopted the Fremont Climate Action Plan (CAP) to address the major sources of GHG emissions within the City. The CAP identifies a GHG emission reduction goal of 25 percent below the City’s 2005 emissions by 2020 (City of Fremont, 2012). The CAP includes a wide variety of community-wide measures to reduce emissions in the sectors of land use and mobility, energy, solid waste, water, and municipal services and operations. However, it should be noted that the CAP is not considered a qualified GHG reduction strategy consistent BAAQMD guidelines.

Since adoption of the CAP, the City of Fremont has adopted an ordinance and amendments to FMC Chapter 15.44, Fremont Energy Code, adopting the 2016 California Green Building Standards Code (CALGreen). The 2016 CALGreen requirements include mandatory measures for all new building construction, and the CALGreen Residential Mandatory Measures checklist must be included on a plan sheet for all projects subject to these measures (City of Fremont, 2017). The City has also adopted FMC Section 15.44.050 which stipulates mandatory requirements for the installation of photovoltaic solar energy systems in new residential construction, as discussed in criterion a) above. Consequently, the project would be required to install solar energy systems on both the CRAFT building and on the townhome buildings. This would reduce the project’s electricity demand and associated GHG emissions, as discussed in criterion a) above. The CAP does not include any additional measures that are directly applicable to the proposed project.

In addition, as discussed in criterion a) above, combined amortized construction and operational GHG emissions would not exceed the applicable BAAQMD CEQA threshold of significance. The project would also implement BMPs to reduce air quality impacts during project construction, some of which would also reduce GHG emissions, such as limiting vehicle idling time and maintaining equipment in good operational condition. Through project design features, the project would exceed 2016 Title 24 building energy efficiency requirements by 25 percent, require low-flow water fixtures, and reduce VMT through its proximity to regional job centers and high-quality transit service.

Based on the proposed project's required compliance with the City's Green Building Ordinance and Solar Ordinance, the proposed project would not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. Additionally, as discussed in criterion a) above, operational GHG emissions would not exceed the applicable BAAQMD CEQA threshold of significance. Therefore, operational impacts would be less than significant and will not be further addressed in the EIR.

## References

- Bay Area Air Quality Management District (BAAQMD), 2017. *California Environmental Quality Act Air Quality Guidelines*. May 2017. Available at [www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa\\_guidelines\\_may2017-pdf.pdf?la=en](http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en). Accessed November 28, 2017.
- California Air Pollution Control Officers Association (CAPCOA), 2008. *CEQA & Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*. January. Available at [www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf](http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf). Accessed December 2017.
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- San Luis Obispo County Air Pollution Control District (SLOAPCD), 2012. *Greenhouse Gas Thresholds and Supporting Evidence*. Available at [www.slocleanair.org/images/cms/upload/files/Greenhouse%20Gas%20Thresholds%20and%20Supporting%20Evidence%204-2-2012.pdf](http://www.slocleanair.org/images/cms/upload/files/Greenhouse%20Gas%20Thresholds%20and%20Supporting%20Evidence%204-2-2012.pdf). Accessed December 2017.

South Coast Air Quality Management District (SCAQMD), 2008. *Interim CEQA GHG Threshold for Stationary Sources, Rules, and Plans*. Available online at [www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2](http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgboardsynopsis.pdf?sfvrsn=2). Accessed December 2017.

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## 4.8 Hazards and Hazardous Materials

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>8. HAZARDS AND HAZARDOUS MATERIALS — Would the project:</b>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

This section is based on the two Phase I Environmental Site Assessments (Phase I assessments) prepared by ENGeo, dated August 22, 2013, and September 12, 2014 (Engeo, 2013 and 2014).

In addition, comments from the Alameda County Water District (ACWD) have been considered in the analyses (ACWD 2008a, 2008b, 2011, 2015, and 2017). ACWD provided comments because of the project site's proximity to their groundwater recharge facilities for the ACWD-managed Niles Cone Groundwater Basin. ACWD estimates that 40 percent of the water supply for the Fremont, Newark, and Union City area comes from this groundwater basin. ACWD has three inflatable dams on the adjacent Alameda Creek and a number of lakes and ponds used for recharging the basin. The storm drainage system for the proposed project would discharge to Alameda Creek just upstream of all of the above-noted ACWD recharge facilities.

- a, b) **Less than Significant Impact.** Construction of the proposed project would require the use of certain hazardous materials such as fuels, oils, solvents, and glues in limited quantities. If spilled, these hazardous materials could enter surface water, result in soil or groundwater contamination, or expose workers to hazardous materials. However, in consideration of the size of proposed construction, there is a low likelihood for any significant quantities of hazardous materials being necessary at the site. As described in criterion a) in *Section 4.9, Hydrology and Water Quality*, the project would be required to obtain coverage under the Construction General Permit. The Construction General Permit requires preparation and implementation of a SWPPP, which requires the identification of all hazardous materials to be used during construction, the storage locations with a description of secondary containment measures, and spill prevention and response measures in the event of a spill. In addition, construction contractors would be required to prepare and implement a Hazardous Materials Business Plan (HMBP) pursuant to California Health and Safety Code, Division 20, Chapter 6.95, that describes the location, type, quantity, and health risks of hazardous materials which are handled, used, stored, or disposed of, and that includes emergency response plans and procedures in the event of a reportable release or threatened release of a hazardous material. Through compliance with applicable regulatory requirements, impacts related to the use of hazardous materials used during construction would be less than significant.

The proposed project would develop townhome uses, CRAFT units, retail/restaurant uses, and community space uses. The CRAFT units would function as live-work spaces for artists, designers, and similar endeavors. Because the spaces would function as residences, uses that may involve large quantities of hazardous materials (e.g., auto repair, manufacturing, research and development, etc.) would not be permitted. The retail/restaurant uses would be expected to use small quantities of commonly used hazardous materials such as cleaning solvents, coolants, degreasers, and mechanical fluids, whose routine use would not be considered a risk to human health or the environment. The townhome uses and community space uses would use typical quantities of common household hazardous materials such as cleaners, kitchen and restroom cleaners, and other maintenance materials. Landscaping maintenance may require the use of limited quantities of industry standard hazardous materials such as herbicides or pesticides but not in such a manner as to represent a significant threat to human health and the environment. Such materials are typically stored in cabinets onsite in accordance with all laws and regulations and with proper permits, where applicable. Overall, the project uses would not create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials. Through compliance with applicable regulatory requirements, impacts would be less than significant. This impact will not be further addressed in the EIR.

- c) **Less than Significant Impact.** The nearest schools to the project site are the Corpus Christi Religious School to the west (about 285 feet from project) and the Safari Kids Childcare and Preschool across Alameda Creek to the south (about 1,500 feet from project site). Niles Elementary School at 37141 2nd Street is located 0.5 mile to the west. Construction activities would require the use of certain hazardous materials such as fuels,

oils, solvents, and glues in limited quantities. As described in criterion b), the handling, use, storage, and disposal of hazardous materials during construction would be addressed through the preparation of a SWPPP and HMBP. In addition, construction traffic would use Niles Boulevard, not the streets the schools are located along, and would, therefore, not pass in front of the schools. The proposed development would be expected to employ commonly used hazardous materials such as cleaning solvents, coolants, degreasers, kitchen and restroom cleaners, and pesticides in limited quantities. Such materials are typically stored in cabinets onsite in accordance with all laws and regulations and with proper permits, where applicable. Through compliance with applicable regulatory requirements, impacts related to the handling of hazardous materials and associated risk to nearby schools would be less than significant. This impact will not be further addressed in the EIR.

d) **Less than Significant with Mitigation.** The project site previously supported industrial land use activities for approximately 100 years and is listed as a Cleanup Program Site, due to the presence of petroleum hydrocarbons, pesticides, herbicides, and metals. The site underwent remediation (cleanup) under the supervision of the Regional Water Quality Control Board (RWQCB) from approximately 2006 to 2011. A “No Further Action” Letter was issued by RWQCB in May 2013 signifying that residential development could be pursued onsite with land use conditions labeled as “Post Closure Site Management Requirements.” The conditions are listed below:

- Activities prohibited which disturb the remedy and monitoring systems without approval
- Asphalt cover not to be disturbed without approval
- Land use covenant
- No excavation of contaminated soils without agency review and approval
- No groundwater extraction at any depth without approval
- Notify after change of property owner
- Notify damages to remedy and monitoring systems upon discovery
- Notify prior to change in land use
- Notify prior to development
- Notify prior to subsurface work
- Only extraction of groundwater for site remediation permitted
- Perform H&S plan prior to subsurface work
- Requires surface covers

Subsequently, the project applicant conducted additional remediation efforts under the regulatory jurisdiction of RWQCB with the purpose of removing or amending several restrictions associated with the previous remediation efforts that would allow the development of residential uses on the project site; the additional remediation work was conducted between March and June 2015 (Engeo, 2015). RWQCB issued a letter in July

2016 approving the remediation report, concurring that the concentrations in soil had achieved acceptable results (RWQCB, 2016). The next actions would be the submittal of an updated Risk Management Plan and revised deed restrictions to the RWQCB for their review and approval; these revisions are in progress. **Mitigation Measure HAZ-1** would require the project applicant to submit and obtain approval of the updated Risk Management Plan and revised land use conditions for the project site from RWQCB, noted above. Site remediation efforts have been completed and are independent of the proposed project and, therefore, the intent of the mitigation measure is to ensure that the proposed project would not impair or conflict with these efforts. With the implementation of mitigation, impacts would be less than significant. This impact will not be further addressed in the EIR.

**Mitigation Measure HAZ-1: Updated Risk Management Plan.** An updated Risk Management Plan and revised land use conditions for the project site shall be submitted to RWQCB for their review and approval prior to issuance of grading or building permits for site development. Documentation of RWQCB approval of the updated Risk Management Plan and revised land use conditions shall be submitted to the City of Fremont Community Development Department prior to issuance of building permits.

- e, f) **No Impact.** The project site is not located within two miles of any public airport or in the vicinity of a private airstrip. Hayward Executive Airport, located 9.4 miles to the northwest, is the closest airport to the project site. As such, there are no associated airport land use plans and the project would not result in a safety hazard for people residing or working at the project site. No impacts would occur. This impact will not be further addressed in the EIR.
- g) **Less than Significant Impact.** The proposed project would be served via two points of vehicular access: one point on Niles Boulevard at the north end of the site, and a private street extending south from the 90-degree turn of Niles Boulevard. This would meet California Fire Code requirements for the provision of a minimum of two vehicular access points. Additionally, the proposed project would not involve any permanent road closures, lane reductions, or other modifications that could impair emergency response or evacuation in the project vicinity. As part of the plan check review process, the City of Fremont conducts interdepartmental review of new construction for compliance with applicable codes and other established development policies. This includes review of project design and circulation by the City of Fremont Fire Department, and Building, Transportation, and Engineering Divisions for compliance with the State Building Code and Fire Code prior to approval of the plans. This process would ensure the project incorporates requirements for turning radii, clearances, and access. Therefore, potential impacts related to emergency and evacuation plans would be less than significant. This impact will not be further addressed in the EIR.
- h) **No Impact.** The project site is not located within the Fremont Very High Fire Hazard Severity Zone (City Ordinance 33-2007) (City of Fremont, 2007). The site is surrounded

by urban uses/infrastructure on three sides and Alameda Creek on the fourth, and is in an area serviced by the Fremont Fire Department. New construction would be required to comply with all applicable fire code and fire suppression requirements, which would minimize the potential adverse effects from fire. Therefore, the proposed project would not expose people or structures to significant risks associated with wildland fires. This impact will not be further addressed in the EIR.

## References

- Alameda County Water District (ACWD) 2008a, *Comments on the Notice of Preparation for a Draft Environmental Impact Report and Public Review Draft Henkel Demolition Project Initial Study, dated April 2008*, May 13, 2008.
- Alameda County Water District (ACWD) 2008b, *Comments on the Draft Environmental Impact Report for the Henkel Property Demolition Project, dated September 2008*, November 3, 2008.
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- Engco, 2014, *Phase I Environmental Site Assessment, Niles Boulevard Roadway Dedication, Fremont, California*, September 12, 2014.
- Engco, 2015, *Removal Action Work Plan Completion Report, 37899 Niles Boulevard, Fremont, California*, October 14, 2015.
- San Francisco Bay Regional Water Quality Control Board (RWQCB), 2016, *Approval of Removal Action Work Plan Completion Report for Property at 37899 Niles Boulevard, Fremont, Alameda County*, July 15, 2016.
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## 4.9 Hydrology and Water Quality

<u>Issues (and Supporting Information Sources):</u>	<u>Potentially Significant Impact</u>	<u>Less Than Significant with Mitigation Incorporated</u>	<u>Less Than Significant Impact</u>	<u>No Impact</u>
<b>9. HYDROLOGY AND WATER QUALITY — Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

The analysis in this section is based on the Planning Submittal titled *Henkel/Shuckl Cannery - Niles, Fremont, CA, December 22, 2014, Revision April 19<sup>th</sup>, 2017, Revision November 2, 2017*, submitted by Valley Oak Partners and Studio T Square (Valley Oak Partners, 2017).

In addition, comments from ACWD have been considered in the analyses (ACWD 20108a, 2008b, 2011, 2015, and 2017). ACWD provided comments because of the project site proximity to their groundwater recharge facilities used to recharge the ACWD-managed Niles Cone Groundwater Basin. ACWD estimates that 40 percent of the water supply for the Fremont, Newark, and Union City area comes from this groundwater basin. ACWD has three inflatable dams on the adjacent Alameda Creek and a number of lakes and ponds used for recharging the

basin. The storm drainage system for the proposed project would discharge to Alameda Creek just upstream of all of the above-noted ACWD recharge facilities.

- a, f) **Less than Significant Impact.** The project site is located entirely within a previously-disturbed area. Development activities associated with the proposed project could result in the discharge of pollutants and could impact the quality of receiving waters, or otherwise substantially degrade water quality during construction activities and during the operational phase. Each phase is discussed below.

### **Construction**

Construction of the proposed project would involve demolition, grading, excavation, and paving. During these activities, there would be the potential for surface water runoff from the construction site to carry sediment and pollutants into stormwater drainage systems and local waterways. Grading and the exposure of shallow soils related to grading and excavation could result in erosion and sedimentation. The accumulation of sediment could result in the blockage of flows, potentially causing increased localized ponding or flooding. Construction activities would require the use of fuels (gasoline and diesel) for equipment and vehicles, paints, thinners, solvents, and cleaning solutions. An accidental release of any of these substances could degrade the quality of the surface water runoff and adversely affect receiving waters.

Because the overall footprint of construction activities would exceed one acre, the proposed project would be required to comply with the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities (Order 2009-0009-DWQ, NPDES No. CAS000002; as amended by Orders 2010-0014-DWQ and 2012-006-DWQ) (Construction General Permit). In addition to compliance with the Construction General Permit, the City of Fremont also requires the implementation of Best Management Practices (BMPs) described in the C.3 Stormwater Technical Guidance Manual, provided through Alameda County Clean Water Program, of which the City of Fremont is a member (Clean Water Program, 2016). Finally, the project would be required to comply with the City of Fremont Grading, Erosion, and Sediment Control Ordinance (Chapter 18.205) and Stormwater Management and Discharge Control Ordinance (Chapter 18.210). These state and local requirements were developed to ensure that stormwater is managed and erosion is controlled on construction sites. The Construction General Permit requires preparation and implementation of a SWPPP, which requires applications of BMPs to control runoff and runoff from construction work sites. In addition to the erosion-focused BMPs discussed in *Section 4.6, Geology, Soils, and Seismicity*, criterion b), the SWPPP would also be required to identify all hazardous materials to be used during construction, the storage locations with a description of secondary containment measures, and spill prevention and response measures in the event of a spill. Finally, the C3 Technical Guidance Manual provides further details of specific BMPs, including measures for stormwater treatment and hydromodification, which would further protect water quality. Therefore, with compliance with the regulations discussed above, impacts associated with water quality impacts during construction would be less than significant.

As a part of the permitting process, the project applicant would be required to submit grading, construction and building documents to the City for their review and approval. Therefore, with adherence to the applicable regulations, construction impacts related to potential violation or water quality standards and substantial degradation of water quality would be less than significant. This impact will not be further addressed in the EIR.

### **Operation**

The proposed project would develop new impervious surfaces, which could increase the volume of stormwater runoff at the site and could result in the discharge of associated pollutants and sediment to the pollutant load in runoff being transported to receiving waters. Runoff from new landscaped areas may contain residual pesticides and fertilizers. The development of residential units and public open spaces could increase the amount of trash and debris entering the stormwater drainage system.

The proposed project would result in approximately 5.23 acres (227,900 square feet) of impervious surface area. Inasmuch as some building foundations from the former cannery remain on the project site, not all of the project impervious surface would be new to the site. However, the existing impervious surface is not certain, in part because the condition of the remnant foundations is unknown. Because the project would create in excess of 10,000 square feet of impervious surface area, it would be subject to the NPDES C.3 requirements of the Municipal Regional Stormwater (MRP) NPDES Permit and the Alameda Countywide Clean Water Program. In particular, provision C.3 of the NPDES permit governs storm drain systems and regulates post-construction stormwater runoff. The provision requires the implementation of Low Impact Development (LID) measures in new development projects. These measures include source control, site design, and treatment requirements to reduce the amount of stormwater runoff and improve the quality of the stormwater runoff.

To comply with the above-listed requirements, the Grading and Drainage Plan and Stormwater Management Plan (Valley Oaks Partners, 2017) show that all site drainage would be either collected into the storm drains and routed to one of 12 bioretention basins, or flow as surface flow directly to one of the bioretention basins. The bioretention basins would be designed to treat the water, removing sediment, pollutants, trash and debris. As described in *Section 2, Project Description*, the bioretention areas would typically consist of 18 inches of filter media/planting soil mix underlain by permeable rock and a four-inch perforated pipe subdrain system. Due to the permeable rock at the base of the bioretention areas, some of the water would infiltrate downward and migrate to the underlying aquifer. The rest of the treated water would then be routed by storm drains to a hydromodification vault at the southeast corner of the project site for a second round of treatment. Then the water would be routed by storm drain to the existing storm drain line within Niles Boulevard that flows south and discharges into Alameda Creek upstream of ACWD Rubber Dam #3. Thus, the treated water would flow to Alameda Creek and further recharge the underlying Niles Cone Groundwater Basin through ACWD recharge facilities.

With compliance with the above-described requirements and the construction of water treatment facilities, operational impacts related to potential violation or water quality standards and substantial degradation of water quality would be less than significant. This impact will not be further addressed in the EIR.

- b) **Less than Significant Impact.** The proposed project would be served with potable water service provided by ACWD. ACWD receives a majority (60 percent) of its water supplies from sources outside the region and the remaining 40 percent from runoff in the Alameda Creek Watershed. Runoff from the northern region flows to tributaries of Alameda Creek, where it is carried to ACWD facilities and used for groundwater recharge. Rainwater runoff from the watershed and a portion of the State Water Project supply is captured behind three large, inflatable rubber dams which span the width of the Alameda Creek Flood Control Channel. These dams divert water to several hundred acres of ponds (former gravel quarries) where water percolates to recharge the underlying Niles Cone Groundwater Basin.

The proposed project would increase the impervious surface area of the site (5.23 acres of the 6.07 acres) and, thus, the amount of recharge to the underlying groundwater aquifer could be reduced. The proposed project would be required to implement LID stormwater treatment measures on the project site in accordance with the C.3 provisions and Alameda County Clean Water Program guidelines. As previously discussed, the proposed project would install an onsite storm drainage system consisting of a network of bioretention areas, inlets, and underground piping. Incorporation of these design measures in accordance with local and state requirements would help minimize any increased flows offsite and encourage onsite infiltration. Treated runoff would be conveyed to an existing storm drainage line within the Niles Boulevard dead end segment that discharges into Alameda Creek. Consequently, the bioretention basins would facilitate recharge and the drainage system would facilitate the return of rainwater to the creek.

Development of the site would not involve groundwater extraction. Therefore, the proposed project would not lower the groundwater table as a result of groundwater extraction or substantively reduce groundwater recharge. In summary, despite a potential reduction in the amount of infiltration that would occur onsite due to an increase in impervious surfaces, because proposed biotreatment retention areas would encourage onsite infiltration, treated runoff would be returned to Alameda Creek, and no groundwater extraction would occur, the potential impact on regional groundwater levels would be less than significant. This impact will not be further addressed in the EIR.

- c) **Less than Significant Impact.** Development of the proposed project would include construction activities that would expose soils and could potentially result in substantial erosion. As discussed previously in criterion a) above, the Construction General Permit, along with local related codes, would apply to this proposed project, and would require the preparation and implementation of a SWPPP and various BMPs, to identify and control sources of sediment. With compliance with existing regulations, impacts would be less than significant.

In addition, and as previously discussed, a drainage system would be constructed across the site that would control and manage surface water runoff to prevent erosion and siltation. This impact will not be further addressed in the EIR.

- d) **Less than Significant Impact.** As previously discussed, the proposed project would install an onsite storm drainage system consisting of a network of bioretention areas, inlets, and underground piping. Runoff would be conveyed to an existing storm drainage line within the Niles Boulevard dead end segment that discharges into Alameda Creek. The drainage system would comply with Fremont Municipal Code requirements concerning control and release of runoff into downstream waterways. As such, the proposed project would not result in downstream flooding. With implementation of these project design features, impacts would be less than significant. This impact will not be further addressed in the EIR.
- e) **Less than Significant Impact.** As previously discussed, the proposed project would install an onsite storm drainage system consisting of a network of bioretention areas, inlets, and underground piping which would manage stormwater runoff. Runoff would be conveyed to an existing storm drainage line within the Niles Boulevard dead end segment that discharges into Alameda Creek. The drainage system would comply with the controls required by the MRP and Alameda County Clean Water Program concerning control and release of runoff into downstream waterways. As such, the proposed project would not adversely affect existing drainage systems nor provide additional polluted runoff. With implementation of these project design features, impacts would be less than significant. This impact will not be further addressed in the EIR.
- g, h) **No Impact.** The project site is not located within a flood hazard area (FEMA, 2017), which would preclude the placement of structures or housing within this area. No impact would occur. This impact will not be further addressed in the EIR.
- i) **Less than Significant Impact.** The project site is not located in an area protected by a levee and, therefore, is not susceptible to flooding related to levee overtopping or failure.

The project site is located within the dam failure inundation areas of the Calaveras (10 miles to the southeast), Turner (6.7 miles to the east), and Del Valle (12.5 miles to the east) dams (City of Fremont, 2011). Flood waters resulting from dam failure would take 90 minutes (Turner) and 160 minutes (Del Valle) to reach populated areas of the City. A new dam is being constructed immediately downstream of the Calaveras Dam and the Calaveras Reservoir is being kept at less than 40 percent of the normal operating levels in order to reduce the risk of dam failure until the construction of the new dam is completed. Dam failure is a low probability event that can be caused by a seismic event. Existing dams are subject to both federal and state laws addressing dam safety and are periodically inspected to ensure that they are adequately maintained and that any identified deficiencies are corrected. Within the state of California, dam safety is regulated by the Division of Safety of Dams. Regular inspections and required maintenance of the dams substantially reduce the potential for catastrophic failure. The construction of a new dam at the Calaveras Reservoir with a concurrent reduction in Calaveras Reservoir water storage would limit the potential inundation hazards from

dam failure to a less than significant level. This impact will not be further addressed in the EIR.

- j) **No Impact.** The project site is not located adjacent to any large enclosed bodies of water and, therefore, would not be susceptible to inundation by seiche. Additionally, the project site is more than seven miles from San Francisco Bay, a condition that precludes inundation by tsunamis. Finally, the project site is surrounded by flat relief and, thus, would not be inundated by mudflow. Thus, there would be no impact with respect to these issues, and this will not be further addressed in the EIR.

## References

- Alameda County Water District (ACWD) 2008a. *Comments on the Notice of Preparation for a Draft Environmental Impact Report and Public Review Draft Henkel Demolition Project Initial Study, dated April 2008*, May 13, 2008.
- Alameda County Water District (ACWD) 2008b. *Comments on the Draft Environmental Impact Report for the Henkel Property Demolition Project, dated September 2008*, November 3, 2008.
- Alameda County Water District (ACWD) 2011. *Comments on Niles Creekside Preliminary Review Procedure*, May 25, 2011.
- Alameda County Water District (ACWD) 2015. *Draft Initial Study and Mitigated Negative Declaration for the Niles Mixed-Use Project*, January 14, 2015.
- Alameda County Water District (ACWD) 2017, *PLN2014-00338 Niles Gateway Mixed Use*, July 14, 2017.
- City of Fremont, 2011. *City of Fremont General Plan, Safety Element*. Adopted December 2011.
- Clean Water Program, 2016. *C.3 Stormwater Technical Guidance*, May 2, 2016.
- Federal Emergency Management Agency (FEMA), *FEMA Flood Map Service Center*. Available at: [msc.fema.gov/portal](http://msc.fema.gov/portal). Accessed November 2, 2017.
- Valley Oak Partners and Studio T Square (Valley Oak Partners), 2017. *Henkel/Shuckl Cannery - Niles, Fremont, CA, December 22, 2014, Revision April 19th, 2017, Revision November 2, 2017*.

## 4.10 Land Use and Land Use Planning

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>10. LAND USE AND LAND USE PLANNING —</b>				
<b>Would the project:</b>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

- a) **Less than Significant Impact.** The project site was used for a variety of industrial land use activities including a foundry, cannery, herbicide manufacturing, metal treatment, and chemical manufacturing between the early 1900s and 2002. All structures associated with the previous industrial uses were demolished in 2009, and remnants of the building foundations are all that remain. Land uses in the project vicinity include single-family residences to the west, Alameda Creek (and the associated Alameda Creek Trail) to the south, a mixed residential and commercial use area to the northwest, and single-family residences east of the Union Pacific Railroad (UPRR) tracks.

The proposed project would not physically divide an established community as the project site is an infill site. The proposed project would not introduce features that would create a barrier, divide, or separate adjacent uses. Redevelopment of the site with residential and retail/commercial uses would be generally consistent with the land uses in the area. The proposed project, therefore, would not divide an established community and this impact would be less than significant. This issue will not be further addressed in the EIR.

- b) **Less than Significant Impact.** The project site is located within the Niles Community Plan Area identified in the Community Plans Element of the General Plan. As described in *Section 2, Project Description*, the project site is currently designated Service Industrial and as a Special Study Area. The designation of Special Study Area reflects current allowable uses, but the General Plan acknowledges that these areas may also transition to new uses in the long-term. As such, the project site was identified as property that may be considered for a future General Plan Amendment to a more intense use with appropriate environmental review (City of Fremont, 2011).

#### General Plan Policies

The City of Fremont General Plan was adopted in 2011 and is a comprehensive long range guide to the development of the City. It contains goals, policies, and

implementation measures to achieve the community’s 25-year long term vision. Overall, the General Plan aims to establish a “flourishing downtown, increased jobs to match an increasing resident workforce, a variety of housing types, and thriving, pedestrian-oriented commercial district.” (City of Fremont, 2011). The City of Fremont is assigned a portion of the regional housing need and plans to fulfill its share of the Regional Housing Needs Assessment through approved residential development proposals, developments currently under construction, and focused development of key infill opportunity sites (City of Fremont, 2014). The project site is identified in the Housing Element as a committed residential development project for 75 units.

The following policies and implementing actions from the Land Use, Housing, and Community Plans Elements of the General Plan apply to the proposed project:

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- **Land Use Policy 2-1.11: Infill Emphasis.** Focus new development on underutilized or “skipped over” sites that are already served by infrastructure and public streets. Strongly discourage, and where appropriate prohibit, the conversion of open space or underdeveloped land on the fringes of Fremont to urban uses.
  - **Land Use Policy 2-2.4: Use of the General Plan Land Use Map.** Ensure that future land use decisions are fully consistent with the General Plan Land Use Map. Each General Plan land use category shall have at least one corresponding zoning district. More than one zoning district per General Plan category may be established for categories which accommodate a wide range of densities or development types. Residential zoning districts should generally be differentiated by the number of units allowed per net acre (or square feet of lot area per dwelling unit).
  - **Land Use Policy 2-2.5: Zoning and Subdivision Regulations.** Use zoning and subdivision regulations to direct the city’s growth, ensure sufficient opportunities for new development, improve Fremont’s quality of life, create complete neighborhoods, reduce nuisances, achieve compatibility between adjacent properties and uses, address land use conflicts, and protect the health and safety of residents, visitors, and workers.
    - **Land Use Implementation 2-2.5.F: Planned (P) District.** Use Planned Development (P) zoning to provide flexibility in application of the zoning code, encourage more desirable site planning outcomes, or achieve particular mixes of land uses or unit types. Within mixed use areas, P District zoning may be used to indicate sites or portions thereof on which housing or commercial is a required land use.
  - **Land Use Policy 2-3.4: Infill Development.** Support infill development on vacant and underutilized land in Fremont’s neighborhoods, particularly where there are vacant lots or parcels that create “gaps” in the urban fabric and disrupt the continuity of a neighborhood. Such development should respect the scale and form of surrounding properties.
  - **Housing Policy 3.02: Promote existing opportunities to intensify development.**
    - **Housing Action 3.02-A:** Maintain Inventory of Residential Vacant and Underutilized Opportunity Sites to Encourage Development.
    - **Housing Action 3.02-C:** Redesignation of Land for Higher-Intensity Housing Construction
  - **Niles Community Plan Policy 11-8.12: Conversion of Remnant Industrial Parcels.** Encourage collaborative efforts by the City and private property owners to redevelop remnant industrial parcels in the Niles area. When appropriate the City should take the lead role to facilitate the reuse of these sites. Community input should be solicited throughout this process.
    - **Niles Community Plan Implementation 11-8.12.A: Henkel Property (37899 Niles Boulevard).** Support reuse of the Henkel property with a mix of commercial, residential and / or live-work uses, depending on market conditions and appropriate environmental remediation measures. Access to Alameda Creek should be provided from future development.
  - **Niles Community Plan Policy 11-8.1: Enhancing the Character of Niles Town.** Enhance the character of Niles Town Center by preserving and restoring historic buildings, attracting new infill development that is compatible in scale and design with existing development, continuing streetscape and signage improvements, enhancing gateways, and maintaining a comfortable environment for pedestrians.
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- **Niles Community Plan Policy 11-8.2: Opportunity Sites in Niles.** Direct development in Niles to key opportunity sites, as identified in this Community Plan. Development on these sites should increase retail activity, provide a mix of housing types, eliminate gaps in the development pattern, and complement historic architectural styles.
- **Niles Community Plan Policy 11-8.3: Niles Retail Mix.** Expand the mix of retail uses in Niles, leveraging the District's historic character to retain existing businesses and encourage new retail uses for residents, visitors, and the local workforce.
- **Niles Community Plan Policy 11-8.7: Pedestrian-Oriented Town Center.** Maintain a pedestrian-oriented environment along Niles Boulevard and the lettered cross streets extending to Second Street. Consistent with the Community Character Element, new buildings on Niles Boulevard should be constructed to the front setback, with parking located to the rear. In the heart of the business district, the goal should be continuous ground floor storefronts along the boulevard, complemented by an attractive, pedestrian-friendly streetscape.

The proposed project would redevelop a vacant, remnant industrial site with residential units, small-scale retail/restaurant space, CRAFT units, and community center. The proposed project would meet the General Plan Special Study Area designation in that it is an infill development that would redevelop an underutilized site with new residential and mixed-uses. The applicant proposes a General Plan Amendment to change the land use designation from Service Industrial (Special Study Area) to Town Center and Medium Density Residential. The General Plan Amendment would facilitate the mixed-use development consistent with Land Use and Community Plan Policies 2.1-11, 2.3-4, 11-8.12, and 11-8.2, and Housing Element Policy 3.02, which promote infill development, redeveloping remnant industrial parcels with new residential and mixed-use development, and utilizing sites already served by infrastructure.

The General Plan Amendment and rezoning of the project site to a Planned District would ensure consistency with Land Use Policy 2.2-5 and Land Use Implementation 2.2-5F, which seek to encourage more desirable site planning outcomes.

### **Land Use Designation**

The proposed project would be consistent with the Town Center and Medium Density Residential land use designations. The Town Center land use designation allows a maximum floor area ratio (FAR) of 0.5 for non-residential projects and 1.25 for mixed-use projects with ground floor commercial and residential uses (City of Fremont, 2011). The proposed CRAFT building would have a floor area of 25,171 square feet and occupy 0.722 acre, which equates to an FAR of 0.80. This would be below the maximum FAR of 1.25 for mixed-use Town Center projects. The Medium Density Residential land use designation permits residential densities of 13 to 15 dwelling units per acre. The proposed 82 townhomes would occupy 5.96 acres of the site for a density of 13.74 dwelling units per acre.

### **Zoning**

The project site is currently zoned I-S (Service Industrial) with an Historical Overlay District (HOD). The proposed project would rezone the project site to Planned District P-2014-0338 (HOD). The purpose of the Planned District designation is to “encourage and provide a means for effectuating desirable development, redevelopment, rehabilitation

and conservation in the city, which features variations in siting, mixed land uses and/or varied dwelling types. The amenities and compatibility of P districts is to be ensured through adoption of a precise site plan, showing proper orientation, desirable design character and compatible land uses” (Fremont Municipal Code, Chapter 18.110, Section 18.110.010).

The project site is located within the Niles HOD. The purpose of the HOD is to “identify the areas of Fremont that possess a unique historical character, and to retain, enhance, promote and expand the cultural and historical identities, character and environments of such areas through the adoption and application of appropriate standards and guidelines.” As described in *Section 4.1, Aesthetics*, in accordance with Fremont Municipal Code Section 18.135.050, Historical Architectural Review Board (HARB) review is required for all new development and adoption of a Planned District within an HOD. HARB reviews projects for compatibility, in terms of siting, massing, scale, size, material, texture and color, with the historical character and existing resources within the HOD. HARB reviews the exterior features of new proposed projects within the HOD and for compliance with applicable standards, while the General Plan Amendment and zoning changes are assessed for conformance with the guidelines and regulations by staff prior to consideration by the Planning Commission and City Council.

### **Conclusion**

The proposed project would be consistent with the proposed land use designations for the project site. As discussed above, the proposed project would implement and support various policies of the General Plan, particularly as it relates to infill development, residential housing production, and mixed-uses. The project would substantially comply with the *Niles Design Guidelines and Regulations* and, therefore, would be compatible with the character of the area as specified in the *Niles Design Guidelines and Regulations* (ESA, 2018), and consistent with Policies 11.8-1 and 11.8-3. As part of the project approval process, staff reports prepared for the decision-makers would include a comprehensive project analysis and findings regarding the consistency of the proposed project with applicable plans, policies, and regulations independent of the environmental review process. The potential policy conflicts do not, in and of themselves indicate a significant environmental effect within the meaning of CEQA. To the extent that physical environmental impacts may result from conflicts – in this case potential aesthetic impacts – as described in criterion b) in *Section 4.1, Aesthetics*, further detailed analysis will be conducted as part of the EIR to evaluate the project’s compatibility with the historic character of Niles.

- c) **No Impact.** There is no adopted Habitat Conservation Plans or Natural Community Conservation Plans covering the project area. Therefore, no conflict would occur under the proposed project. This issue will not be further addressed in the EIR.

## References

City of Fremont, 2011. *City of Fremont General Plan, Land Use and Community Plans Elements*. Adopted December, 2011.

City of Fremont, 2014. *City of Fremont General Plan Housing Element 2015-2023*. Adopted December 2, 2014.

Environmental Science Associates (ESA), 2018. *Design Review of the Niles Gateway Mixed-Use Project for Compliance with the Niles Design Guidelines and Regulations*. Memorandum from Johanna Kahn and Kathy Anderson, to David Wage. January.

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## 4.11 Mineral Resources

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>11. MINERAL RESOURCES — Would the project:</b>				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

- a, b) **No Impact.** There are no known significant mineral resources on the project site (USGS, 2017). Additionally, there are no operational mineral recovery sites in the project area. The project would, therefore, have no impact on a designated locally important mineral resource and this impact will not be further addressed in the EIR.

### References

U.S. Geological Survey (USGS), 2017. Mineral Resources Online Spatial Data. Available at: [mrddata.usgs.gov/general/map.html](http://mrddata.usgs.gov/general/map.html). Accessed October 16, 2017.

## 4.12 Noise

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>12. NOISE — Would the project result in:</b>				
a) Exposure of persons to or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. Given that the typical human ear is not equally sensitive to all frequencies of the audible sound spectrum, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes low and extremely high frequencies, referred to as A-weighting, and is expressed in units of A-weighted decibels (dBA).<sup>11</sup>

### Noise Exposure and Community Noise

Noise levels rarely persist consistently over a long period of time. Rather, noise levels at any one location vary with time. Specifically, community noise is the result of many distant noise sources that constitute a relatively stable background noise exposure where the individual contributors are unidentifiable. Throughout the day, short duration single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens) that are readily identifiable to the individual add to the existing

<sup>11</sup> All noise levels reported herein reflect A-weighted decibels unless otherwise stated.

background noise level. The combination of the slowly changing background noise and the single-event noise events give rise to a constantly changing community noise environment.

To legitimately characterize a community noise environment and evaluate cumulative noise impacts, community noise levels must be measured over an extended period of time. This time-varying characteristic of environmental noise is described using statistical noise descriptors, including the ones described below:

- $L_{eq}$ : The equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The  $L_{eq}$  is the constant sound level that would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).
- $L_{max}$ : The instantaneous maximum noise level measured during the measurement period of interest.
- $L_{dn}$ : The day-night average sound level ( $L_{dn}$ ) is the energy average of the A-weighted sound levels occurring during a 24-hour period, accounting for the greater sensitivity of most people to nighttime noise by weighting (“penalizing”) nighttime noise levels by adding 10 dBA to noise between 10:00 p.m. and 7:00 a.m.

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise would be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

These relationships occur in part because of the logarithmic nature of the decibel system. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

### ***Applicable Noise Regulations***

State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings (other than detached single-family dwellings) that are intended to limit the extent of noise transmitted into habitable spaces. The California Noise Insulation Standards found in CCR, Title 24 establish requirements for new multi-family residential units, hotels, and motels that may be subject to relatively high levels of transportation noise. In this case, the noise insulation criterion is 45 dBA  $L_{dn}$ /CNEL inside noise-sensitive spaces. For developments with exterior transportation noise exposure exceeding 60 dBA  $L_{dn}$ /CNEL, an acoustical analysis and

mitigation (if required) must be provided showing compliance with the 45 dBA Ldn/CNEL interior noise exposure limit.

The City of Fremont General Plan Safety Element (adopted in 2011) outlines acceptable exterior and interior noise standards for residential development. The City General Plan states that exterior noise levels should not exceed an Ldn of 60 dBA at backyards in single-family housing projects; however, where an outdoor Ldn of 60 dBA or lower cannot be achieved after the application of feasible mitigations, an Ldn of 65 dBA may be permitted at the discretion of the City Council. The General Plan states that interior noise levels should not exceed an Ldn of 45 dBA in habitable rooms and that typical  $L_{\max}$  noise levels should not exceed 50 dBA in bedrooms during the nighttime or 55 dBA in any habitable room during the daytime.

Fremont Municipal Code Section 18.160.010 limits weekday construction operational hours for activities within 500 feet of a noise-sensitive receptor to weekday hours of 7:00 a.m. to 7:00 p.m. and Saturday or holiday hours of 9:00 a.m. to 6:00 p.m., while Sunday construction is not allowed. Construction activity for projects not located within 500 feet of residences, lodging facilities, nursing homes or inpatient hospitals are limited to weekday hours of 6:00 a.m. to 10:00 p.m. and weekend or holiday hours of 8:00 a.m. to 8:00 p.m.

### ***Sensitive Receptors***

The project site is located in the Niles Community Plan Area on the northeastern portion of the City of Fremont. The surrounding area consists of residential uses to the west, Alameda Creek (and the associated Alameda Creek Trail) to the south, and the UPRR tracks on a raised embankment on the east side of Niles Boulevard. The nearest residences are located approximately 45 feet from the project site.

a, d) **Less than Significant with Mitigation.**

### **Noise Exposure**

Policy 10-8.1, Site Development Acceptable Noise Environment, of the Safety Element of the City of Fremont General Plan contains guidelines for determining the compatibility of various land uses with a range of ambient noise levels given that some land uses are more sensitive to noise than others (City of Fremont, 2011). Policy 10-8.6 of the Safety Element identifies noise sensitive land uses as consisting of single and multi-family residential uses, schools, hospitals, libraries, places of religious worship, and convalescent homes. Although a recent California Supreme Court case found that “agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project’s future users or residents,” in the interest of full disclosure, an analysis of the noise environment standards of Policy 10-8.1 are assessed herein.

A noise survey was conducted on the project site in 2013 (Illingworth and Rodkin, 2014). Monitored noise levels revealed long term noise levels on the project site ranged from 59 to 65 dBA, Ldn, with the highest noise levels being recorded at the northwestern portion

of the site closest to Niles Boulevard.<sup>12</sup> These measurements captured rail activity of approximately 12 train pass-by events per day.

### **Exterior Noise Compatibility**

Implementation Measure 10-8.1 of the City's General Plan Safety Element identifies a goal for maximum acceptable exterior noise levels in residential areas to be an Ldn of 60 dBA as a guide for design of future development. This goal is to be applied where outdoor use is a major consideration but would not normally be applied to small decks associated with apartments or condominiums. Implementation Measure 10-8.1 further stipulates that when the City determines that providing an outdoor Ldn of 60 dBA or lower cannot be achieved after the application of appropriate mitigations, an Ldn of 65 dBA may be permitted at the discretion of the City Council.

The proposed picnic area at the southern end of the CRAFT building would be within the 60 dBA noise contour and would be within the normally acceptable land use category for open space development. Neither the "passive" park at the northernmost tip of the project site nor the exterior restaurant eating areas would be considered as outdoors areas used for recreation and therefore, notwithstanding their location at the 65 dBA noise contour, would also be considered consistent with the land use compatibility standards of the General Plan. This impact will not be further addressed in the EIR.

### **Interior Noise Compatibility**

General Plan Implementation Measure 10-8.1 (2) requires that indoor noise levels not exceed an Ldn of 45 dBA in new housing units and further requires a noise insulation study, conforming to the methodology of the State Building Code, to be prepared for all new housing, hotels, and motels exposed to an exterior Ldn of 60 dBA or greater and submitted to the building department prior to issuance of a permit. While the CRAFT units could be subject to future exterior noise levels closer to 65 dBA, Ldn, as discussed above, all of the proposed residential units would be required to comply with interior noise level standards established in Implementation Measure 10-8.1 (2) and the California Noise Insulation Standards of Title 24 established for new multi-family residential units, requiring an acoustical analysis and mitigation (if required) showing compliance with the 45 dBA Ldn interior noise exposure limit. Compliance with Title 24 standards may require installation of forced air mechanical ventilation to allow residents to keep windows closed to achieve the interior standard. Consequently, the proposed project would have a less-than-significant impact with respect to noise exposure of proposed residences under existing conditions.

General Plan Implementation Measure 10-8.1.A(4) states that maximum instantaneous noise level in bedrooms at night should not exceed 50 dBA and that typical maximum instantaneous noise levels in other rooms and bedrooms during the daytime should not

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<sup>12</sup> Because traffic volumes are similar to those in 2014, based on recent counts, the monitored noise volumes in the 2014 study remain representative of existing conditions.

exceed 55 dBA. The typical maximum noise level is the maximum level that is exceeded during 30 percent of the measured pass-by events, based on the measurement of at least 10 events during the daytime and the nighttime. Instantaneous maximum noise levels ( $L_{max}$ ) were measured during train passages on the UPRR tracks and monitored over a 48-hour period. During this period, about 24 train pass-by events occurred with the typical maximum noise level was 83 dBA  $L_{max}$  measured 150 feet from the railroad tracks (Illingworth and Rodkin, 2014). At the nearest building façade of the proposed project, approximately 100 feet from the tracks, the level was estimated to be 87 dBA  $L_{max}$ . To reduce this potentially significant impact, the building facades nearest Niles Boulevard would need to reduce single event noise by 37 dBA at bedrooms and 32 dBA in other rooms to achieve the interior noise goal of 50 dBA  $L_{max}$  in bedrooms and 55 dBA  $L_{max}$  in other rooms. Implementation of **Mitigation Measure NOI-1** identified below would require noise reduction measures that would reduce impacts to a less than significant level. This impact will not be further addressed in the EIR.

### **Cumulative Development Impacts**

Future cumulative development within the City and the Bay Area could further increase noise levels from the principal noise sources surrounding the project site: roadway traffic and operations on the UPRR tracks. The Safety Element of the General Plan and EIR projects future (2030) noise levels within the City and indicates that at the northern portion of the project site, noise levels along Niles Boulevard are projected to increase by 2 dBA,  $L_{dn}$  (Illingworth and Rodkin, 2014). Such an increase in exterior noise levels could potentially result in proposed residential units being located in a “conditionally acceptable” land use category pursuant to the General Plan Safety Element. Such a classification means that the proposed project could be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features are included in the design. Such an analysis has been conducted (Illingworth and Rodkin, 2014) and **Mitigation Measure NOI-1** below identifies the noise reduction measures identified to address the potential for being reclassified as a conditionally acceptable noise environment for residential uses under future traffic-related cumulative conditions. With implementation of Mitigation Measure NOI-1, future noise exposure impacts of the proposed project resulting from future transportation increases would be less than significant.

Potential future noise impacts resulting from changes to railway operations in the project area are addressed in the Draft EIR for the *ACEforward* project. *ACEforward* is a phased improvement plan proposed by the San Joaquin Regional Rail Commission (SJRRRC) to increase service reliability and frequency, enhance passenger facilities, reduce travel times along the existing Altamont Corridor Express (ACE) service corridor from San Jose to Stockton and extend ACE service to Manteca, Modesto, Ceres, Turlock and Merced. The plan would provide the foundation for SJRRRC’s near-term and longer-term vision of intercity and commuter passenger rail services. Alternative CNS-1a would include construction of a new bridge over Alameda Creek that would include a new track connection between the north–south segment of the UPRR Niles Subdivision and the east–west segment of the UPRR Oakland Subdivision to allow for freight to use the Niles

Subdivision traveling through Niles Canyon to and from the Port of Oakland. This element of the ACE*forward* project would result in redistribution of freight traffic currently using the Oakland Subdivision, with trains now on the track 500 feet south of the project site relocated to a new track and bridge that would parallel the existing track adjacent to the northern boundary of the project site.

The ACE*forward* Draft EIR projects that Alternative CNS-1a would result in a moderate to severe noise impact at 50 residences along the east side of the Niles Subdivision between Niles Junction and Nursery Avenue due to an increase in freight traffic, proximity of the tracks, and train horn noise at the nearby grade crossings. It also projects moderate to severe impacts at 36 residences along the west side the Niles Subdivision between Niles Junction and Nursery Avenue. This would constitute a significant cumulative noise increase impact. Noise contributions of the proposed project (discussed below) would not contribute considerably to this cumulative noise impact. However, given that severe noise impacts are identified, if Alternative CNS-1a is selected future noise exposure of the project site could be 62 dBA, Ldn or higher. Such a noise exposure increase would also have the potential for the project site being reclassified as a conditionally acceptable noise environment for residential uses under future cumulative conditions. Mitigation Measure NOI-1 was developed to address a noise exposure of up to 65 dBA, Ldn. Consequently, future noise exposure impacts of the proposed project from future increases in freight rail operations as well as roadway transportation increases would be less than significant with Mitigation Measure NOI-1. This impact will not be further addressed in the EIR.

**Mitigation Measure NOI-1: Building Design Requirements to Reduce Residential Noise Exposure.** To reduce the potential for future noise exposure increases on the project site, the following measures shall be included in plans submitted for building permits:

- Forced-air mechanical ventilation, satisfactory to the local building official, shall be provided for all residential units to allow occupants to keep the windows closed to control noise.
- All east, north, and south facing facades in the 20 northernmost townhomes nearest the railroad tracks and Niles Boulevard shall achieve an outdoor to indoor noise reduction of at least 37 dBA in bedrooms and 32 dBA in other rooms with an adequate margin of safety. Windows and doors of these building facades shall be sound rated. The specific noise control treatments shall be determined during final design and approved by the City prior to issuance of a building permit.

### **Construction Noise**

The proposed project's construction activities would typically occur during the work week, Monday through Friday, between the hours of 7:00 a.m. and 7:00 p.m. If weekend work is necessary, construction would occur on Saturdays from 9:00 a.m. to 6:00 p.m.

and, in most cases, construction would end by 4:00 p.m. Therefore, the project would be consistent with the construction hour limitations established in the Fremont Municipal Code Section 18.160.010.

Construction is expected to commence in March 2019 and last for 30 months. Activities occurring during this period would consist of, excavation, auguring and concrete pumping, building erection, utility trenching, roadway paving and landscaping.

Policy 10-8.5, Construction Noise Levels of the City of Fremont General Plan Safety Element, directs the City to control construction noise at its source to maintain existing noise levels, and in no case to exceed the acceptable noise levels. For residential uses which border the project site to the west, the General Plan identifies conditionally acceptable noise level to be 75 dBA Ldn.

Construction of the proposed project would generate temporary and intermittent noise at and near the project site. Noise levels would fluctuate depending on the particular type, number, and duration of use of various pieces of construction equipment. Typical noise levels generated by the construction activities that would be required for construction of the proposed project are shown in **Table 4.12-1**. Project construction would not require pile driving. The noisiest construction activity would be expected to range from 77 dBA to 85 dBA at a distance of 50 feet. Given that the nearest residential units would be approximately 45 feet from the project building construction activities, construction activity for the proposed project could occasionally exceed conditionally acceptable noise levels of 75 dBA Ldn.

**TABLE 4.12-1  
TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS**

Construction Phase	Average Noise Level (dBA, Leq at 50 feet)
Backhoe	78
Auger Drill Rig	84
Grader	85
Loader	79
Paver	77
Excavator	81

SOURCE: U.S. Department of Transportation, Federal Highway Administration, *FHWA Highway Noise Construction Handbook*, August 2006.

Consequently, construction noise may be disruptive to adjacent sensitive receptors. Construction activities may result in a substantial temporary or periodic increase in ambient noise levels above the existing daytime noise levels of 54 to 57 Leq, dBA that were monitored in the vicinity of the project (Illingworth and Rodkin, 2014). Therefore, construction noise is considered a potentially significant noise impact. Implementation of **Mitigation Measures NOI-2a** and **NOI-2b**, which identify performance standards, would reduce the impact of temporary construction noise to a less-than-significant level. With adoption of these mitigation measures, noise impacts from project construction impacts

would be considered less than significant. This impact will not be further addressed in the EIR.

**Mitigation Measure NOI-2a: Daytime Noise Reduction Measures.** To reduce daytime noise impacts due to construction, the applicant shall require construction contractors to implement the following measures:

- Equipment and trucks used for project construction shall use 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).
- Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. 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 where feasible; this could achieve a reduction of 5 dBA. Quieter procedures, such as use of drills rather than impact tools, shall be used whenever feasible.
- Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or other measures to the extent feasible.

**Mitigation Measure NOI-2b: Site-Specific Noise Attenuation Measures.** To further mitigate extreme noise generating construction impacts, a set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant to achieve a fence line noise level of no greater than 75 dBA. Prior to commencing construction, a plan for implementation of such measures shall be submitted for review and approval by the City Building and Safety Division of the Community Development Department to ensure that maximum feasible noise attenuation would be achieved. These attenuation measures shall include as many of the following control strategies as necessary:

- Erect temporary noise barriers around the construction site, particularly along the eastern boundary of the site to shield the adjacent buildings and other sensitive receptors. Moveable sound barrier curtains can provide 15 dBA of sound attenuation (INC, 2014); and
- Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site.

b) **Less than Significant Impact.** Ground-borne vibration from construction activities at the project site would produce vibration. Since the City does not have specific regulations

pertaining to vibration, the Federal Transportation Administration (FTA) thresholds for building damage and annoyance have been applied to the project. The proposed project would result in a significant vibration impact if buildings would be exposed to the FTA vibration threshold level of 0.2 in/sec PPV for building damage, or if sensitive individuals would be exposed to the FTA vibration threshold level of 80 vibration decibels (VdB) for human annoyance. Vibration impacts are considered below for project construction only, since no major vibration sources would be associated with project operations.

The preliminary geotechnical investigation for the proposed project found that proposed structures could be supported by shallow foundations (CEG, 2013) and, therefore, installation of piles by pile driving or other techniques would not be required. Typical reference vibration levels for various pieces of standard construction equipment, including drilling, are listed below in **Table 4.12-2**. The nearest sensitive residential receptors are located approximately 45 feet from potential construction areas. As shown in Table 4.12-1, construction activities of the proposed project would not result in significant vibration resulting in building damage (exceeding 0.2 peak particle velocity (PPV)) or human annoyance (exceeding 80 VdB) at the nearest sensitive receptors. Therefore, construction vibration impacts would be less than significant. Operation of the proposed project would be for typical residential and retail/restaurant purposes and would not result in any major sources of vibration. There would be no vibration impact from project operations. This impact will not be further addressed in the EIR.

**TABLE 4.12-2  
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT**

<b>Equipment/Activity</b>	<b>PPV at 25 feet (inches/second)<sup>a</sup></b>	<b>PPV at nearest residential receptor (45 feet)</b>	<b>Vibration decibels at reference distance 25 feet (VdB)<sup>b</sup></b>	<b>RMS at nearest receptor (45 feet)</b>
Large Bulldozer	0.089	0.04	87	79
Loaded Trucks	0.076	0.03	86	78
Caisson Drilling	0.089	0.04	87	79

<sup>a</sup> Buildings can be exposed to ground-borne vibration levels of 0.2 PPV without experiencing structural damage.

<sup>b</sup> The human annoyance response level is 80 VdB.

SOURCE: ESA, 2017; Federal Transit Administration, 2006.

Groundborne vibration at the site results from existing railroad train pass by events which would expose future occupants of the project site to vibration. Vibration measurements were collected in 2014 approximately 110 feet from the UPRR tracks, representing the easternmost boundaries of the nearest residential units proposed by the project (Illingworth and Rodkin, 2014). Two passenger trains passed by during the three-hour monitoring period and indicated maximum vibration levels ranging from 72 to 74 VdB. This exposure level is below the Federal Transit Administration's

threshold of 80 VdB for infrequent events. Therefore, vibration exposure impacts to future residents would be less than significant.

- c) **Less than Significant Impact.** The proposed project would generate vehicle trips which would contribute to increased traffic volumes on local roadways. Policy 10.8-3: Environmental Noise Protection in the City of Fremont General Plan requires the evaluation of mitigation measures for projects under the following circumstances: 1) the project would cause the Ldn to increase by 5 dBA or more but would remain below 60 dBA; 2) the project would cause the Ldn to increase by 3 dB(A) or more and exceed 60 dBA; or 3) the project has the potential to generate significant adverse community response due to the unusual character of the noise.

Noise level projections were made using traffic data and the Federal Highway Administration (FHWA) Noise Prediction Model for those road segments that would experience the greatest increase in traffic volume and/or that would pass near residential areas. The model is based on the California Vehicle Noise (CALVENO) reference noise factors developed by Caltrans for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The traffic analysis indicates that the project would generate 56 additional vehicle trips during the a.m. peak hour and 79 additional vehicle trips during the p.m. peak hour. For the modeling effort, p.m. peak hour traffic volumes during weekdays were analyzed.

The results of the noise modeling effort are shown in **Table 4.12-3** for the baseline (2017) and baseline plus project scenarios. Modeled existing noise levels shown in Table 4.12-3 correspond to a distance of 15 meters (50 feet) from the centerline of applicable roadway segments. As shown in Table 4.12-3, the proposed project would increase existing local roadway noise levels by 1 dBA and would, therefore, have a less than significant project-level roadway noise impact. These are nominal increases that would be undetectable by the human ear. Further, this increase would also be less than cumulatively considerable in a cumulative development context. This impact will not be further addressed in the EIR.

**TABLE 4.12-3  
 TRAFFIC NOISE INCREASES IN THE PROJECT AREA<sup>a</sup>**

Road Segment	Baseline Traffic Noise	Baseline Plus Project	Project Increase
1. Niles Boulevard ( between J Street and the Project entrance) PM Peak Hour	62.7	62.8	0.1
2. Niles Canyon Road (between Mission Boulevard and Niles Boulevard) PM Peak Hour	62.5	63.1	0.6

<sup>a</sup> These listed values represent the modeled existing noise levels from mobile sources along specified roadways and are based on traffic data from the Transportation Section. Road center to receptor distance is assumed to be 15 meters (approximately 50 feet). Vehicle mix on these road segments is assumed to be 97 percent auto, two percent medium trucks, and one percent heavy trucks. The speed for the roadway is assumed to be 30 miles per hour.

SOURCE: ESA, 2017.

- e, f) **No Impact.** The project site is not located within two miles of a public airport or private airstrip, and is not within an airport land use plan area. Hayward Executive Airport, located 9.4 miles to the northwest, is the closest airport to the project site. Therefore, there would be no impact in relation to airports and the project exposing people residing or working in the project area to excessive noise levels. This impact will not be further addressed in the EIR.

## References

- City of Fremont, 2011. *General Plan 2030, Safety and Noise Elements*, Adopted 2011.
- Cornerstone Earth Group (CEG), 2013. *Preliminary Geotechnical Investigation, Niles Boulevard Development*, 2013.
- Illingworth and Rodkin, 2014. *Environmental Noise and Groundborne Vibration Assessment*, June 6, 2014.
- Industrial Noise Control (INC), 2014. Product Specification Sheet, INC Portable Noise Screen, 2014.
- San Joaquin Regional Rail Commission, 2017. *Draft Environmental Impact Report San Joaquin Regional Rail Commission, Ace Forward*, May 2017.
- U.S. Department of Transportation, Federal Transit Administration (FTA), 2006. *Transit Noise and Vibration Impact Assessment*, April, 2006.
- U.S. Department of Transportation, Federal Highway Administration, 2006. *FHWA Highway Noise Construction Handbook*, August 2006.

## 4.13 Population and Housing

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>13. POPULATION AND HOUSING — Would the project:</b>				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Discussion

- a) **Less than Significant Impact.** The proposed project would increase both the daytime and residential population in the City of Fremont through the construction of 95 dwelling units, approximately 2,400 square feet of restaurant use, 3,483 square feet of retail use, and 1,450 square feet of community center space.

According to the U.S. Green Building Council, a high quality restaurant would provide approximately 134 square feet per employee and community retail would provide approximately 383 square feet per employee (USGBC, 2008). Using these figures, the project would generate approximately 27 employees. For comparison purposes, the California Employment Development Department indicates that, as of October 2017, the City of Fremont had 3,200 unemployed persons (State of California 2017). This serves to indicate that workers would likely come from the available local labor such that the new jobs generated by the proposed project would not result in significant indirect growth in population.

According to the California Department of Finance (DOF), the average per-household population in the City of Fremont is 3.11 (DOF, 2017). Using this number, the project would result in an increase in population of approximately 296 people. However, this is consistent with the population growth anticipated in the General Plan. Additionally, the project site is located in a developed urban area, previously used for industrial uses, and would not require the extension of roads or other infrastructure to an undeveloped area. Therefore, the project would not induce population growth in the area and the impact would be less than significant. This impact will not be further addressed in the EIR.

- b, c) **No Impact.** There are no existing residential units within the project site. Therefore, the project would have no impact related to the displacement of people or housing. These impacts will not be further addressed in the EIR.

## References

California Department of Finance (DOF), 2017. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2017 with 2010 Census Benchmark, May 2017. Available at: [www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/](http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/). Accessed October 17, 2017.

City of Fremont, 2011. *Draft Environmental Impact Report, Fremont Draft General Plan Update*, July 2011.

State of California Employment Development Department, 2017. *Monthly Labor Force Data for Cities and Census Designated Places (CDP) October 2017 – Preliminary*. November 17, 2017. Available at: [www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html](http://www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html). Accessed December 5, 2017.

U.S. Green Building Council (USGBC), 2008. *Building Area per Employee by Business Type*, May 13, 2008. Available at: [www.usgbc.org/Docs/Archive/General/Docs4111.pdf](http://www.usgbc.org/Docs/Archive/General/Docs4111.pdf). Accessed October 17, 2017.

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## 4.14 Public Services

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>14. PUBLIC SERVICES — Would the project:</b>				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government 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:				
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

a.i) **Less than Significant Impact.** Fire protection and emergency services are provided by the Fremont Fire Department. The department is responsible for conducting plan-checks and field inspections of extinguishing and sprinkler systems and fire alarm systems for all new and existing construction projects within the City. The department is also responsible for conducting a fire safety clearance for new businesses and residences. The City has 11 fire stations; the closest station to the project site is Fire Station No. 2, located at 37299 Niles Boulevard, less than 0.5-mile north of the project site (City of Fremont Fire Department, 2017).

As discussed in *Section 4.13, Population and Housing*, the project would result in approximately 296 new residents on the project site. The associated increase in the demand for fire suppression and emergency medical services would not be substantial, and would be typical of the demand from the surrounding residential areas. Because the project site is an infill site, nearby services are already available, thus, the proposed project would not generate an unusual demand for fire and emergency services that would result in the need for new facilities to maintain service ratios and response times. An increase in the amount of hazards related to fires would not be expected because the project would be required to comply with the California Building Code, Fire Code, Electrical Code, and Mechanical Code. Before issuing a building permit, the City would review project plans to ensure that fire and safety measures are in compliance with state and local fire safety regulations. The Fire Department would be responsible for reviewing projects for adequate access for fire and emergency apparatus, design features (setbacks, clearances, etc.) and compliance with building and fire safety code requirements (City of Fremont, 2011a). Additionally, City Council passed resolutions implementing Development Impact Fees for all new development in 1991 to offset impacts on public

facilities and services. The proposed project would be subject to the Fire Service Development Impact Fee, which would further offset impacts on fire service from the proposed project. Therefore, the proposed project’s impact on fire protection would be less than significant. This issue will not be further addressed in the EIR.

- a.ii) **Less than Significant Impact.** The Fremont Police Department provides police protection services. The City has one police station located at 2000 Stevenson Boulevard where all City police functions are housed in the 67,000 square foot complex. Police officers are deployed in teams into three separate patrol zones. The project site is located in Police Zone 1 (Fremont Police Department, 2017).

As discussed in *Section 4.13, Population and Housing*, the project would result in approximately 296 new residents on the project site. The associated increase in the demand for police services would not be substantial, and would be typical of the demand from the surrounding residential areas. Because the project site is an infill site, nearby services and patrols are already available, thus, the proposed project would not generate an unusual or increased demand for police services. Therefore, the proposed project’s impact on police protection would be less than significant. This issue will not be further addressed in the EIR.

- a.iii) **Less than Significant Impact.** The project site is located within the Fremont Unified School District (FUSD) service area. As discussed in *Section 4.13, Population and Housing*, the proposed project would construct 95 dwelling units consisting of 82 townhomes and 13 CRAFT units that would result in an increase in population of approximately 296 people. Based on FUSD’s student generation rates for single-family attached units (townhomes) and multi-family units (CRAFT units), the proposed project would generate approximately 47 students across all grade-levels. **Table 4.14-1** below presents the estimated generation of new students by grade level.

**TABLE 4.14-1  
ESTIMATED GENERATION OF STUDENTS FROM THE PROPOSED PROJECT**

Grade Level	Student Generation Rates for Single-Family Attached Units	Student Generation Rates for Multi-Family Units	Estimated Number of New Students from Proposed Project <sup>a</sup>
Elementary School (K-6)	0.3048	0.1767	28
Middle School (7-8)	0.0706	0.0500	7
High School (9-12)	0.1338	0.0533	12
<b>Total<sup>b</sup></b>	<b>0.5092</b>	<b>0.2800</b>	<b>47</b>

NOTES:

- <sup>a</sup> Assumes 82 single-family attached units (townhomes) and 13 multi-family units (CRAFT units)
- <sup>b</sup> Sum of components may not equal the total value due to rounding

SOURCE: Cooperative Strategies, 2017.

The project site is within the attendance boundaries for Niles Elementary School, Centerville Junior High School, and Washington High School. The proposed project was included in the enrollment projections for the FUSD conducted in 2016, and student enrollment is projected to continue to increase by 18.41 percent in school year 2023/2024 (FUSD, 2016).

SB 50 (Chapter 407, Statutes of 1998) instituted a school facility program by which school districts can levy fees for the purpose of construction or reconstruction of school facilities. FUSD levies Level III developer fees. Effective May 1, 2017, the Level III fees are \$26.11 per square foot for residential construction (FUSD, 2017). The project applicant would pay the State-mandated school impact fees to the FUSD that are being levied at the time of development. The California Legislature has declared that payment of the State-mandated school impact fee is deemed to be full and adequate mitigation under CEQA on the provision of school facilities (California Government Code Section 65996). Because the project would generate a relatively small number of new students (fewer than 50), the proposed project would not result in the need for new or expanded school facilities, the construction of which could result in adverse physical effects. Because the project applicant would pay State-mandated school impact fees, the proposed project's contribution to any cumulative effects related to potential construction of school facilities would be fully mitigated. Furthermore, to the extent that the FUSD would undertake any school expansion or construction project(s), such project(s) would be subject to their own CEQA review. Therefore, the impact of the project on school facilities would be less than significant. This impact will not be further addressed in the EIR.

- a.iv) **Less than Significant Impact.** The City has approximately 1,148 acres of parkland including 53 parks and recreational facilities within its limits. The City collects development impact fees for the park system in order to retain its standard of five acres of parkland per 1,000 residents (City of Fremont, 2011a).

Parks and recreational facilities in the vicinity of the project site include the Niles Town Plaza, Niles Community Park, Viejo Mill Historical Park, and California Nursery Historic Park. Based on the approximately 296 residents generated by the proposed project, approximately 1.5 acres of parkland would be required to maintain the City's standard. The proposed project would provide approximately 1.55-acres of common open space/park areas for the residents in the form of a passive park space at the north end of the site, outdoor space at the community center, and resident's picnic park (Valley Oak Partners, 2017). Because the project would meet the required parkland acreage, it would not result in significant increased demand for recreational facilities.

Therefore, the proposed project would have a less-than-significant impact on parks. This issue will not be discussed further in the EIR.

- a.v) **Less than Significant Impact.** Library services within the City are provided by the Alameda County library system, which operates four public libraries in Fremont. The

City operates several community centers, one senior center, and the Family Resource Center. The proposed project would result in an increase in population of 296 residents. This could increase demand for public facilities. However, because new development within the City would be required to pay the applicable Development Impact Fees that would be collected in the amounts required for each type of public service would be sufficient to offset the project's impacts on those services. Additionally, the proposed project would include 1,450 square feet of community center space. Therefore, the proposed project would have a less-than-significant impact to other public facilities. This issue will not be discussed further in the EIR.

## References

- City of Fremont, 2011a. *City of Fremont General Plan, Public Facilities and Parks & Recreation Element*, adopted December 2011.
- City of Fremont, 2011b. *Draft Environmental Impact Report, Fremont Draft General Plan Update*, July 2011.
- City of Fremont Fire Department, 2017. Fire Department Responsibilities. Available at: [fremont.gov/96/Fire-Department](http://fremont.gov/96/Fire-Department). Accessed October 25, 2017.
- Cooperative Strategies, 2016. *Fremont Unified School District Enrollment Analysis Presentation*, October 26, 2016.
- Cooperative Strategies, 2017. *Fremont Unified School District School Facilities Needs Analysis*, April 10, 2017.
- Fremont Police Department, 2017. Police Reporting Zone Map. Available at: [www.fremontpolice.org/DocumentCenter/Home/View/38](http://www.fremontpolice.org/DocumentCenter/Home/View/38). Accessed October 25, 2017.
- Fremont Unified School District (FUSD), 2017. *Resolution No. 002-1617, Approving and Adopting the School Facilities Needs Analysis and Authorizing the Alternative School Facility Fees in Accordance with Government Code Sections 65995.5 through 65995.7*, May 10, 2017.
- Valley Oak Partners and Studio T Square (Valley Oak Partners), 2017. *Henkel/Shuckl Cannery - Niles, Fremont, CA, December 22, 2014, Revision April 19th, 2017, Revision November 2, 2017*.

## 4.15 Recreation

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>15. RECREATION:</b>				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

a, b) **Less than Significant Impact.** The City has approximately 1,148 acres of parkland including 53 parks and recreational facilities within its limits. The following parks are located near the project site:

- Niles Town Plaza is located approximately 0.22 miles northwest of the proposed project site. Niles Town Plaza is classified as a civic park under the City’s General Plan and provides an amphitheater, stage, and seating areas with a railroad depot theme around two renovated railroad buildings, a caboose, and embedded railroad tracks.
- Niles Community Park is located approximately 0.34 miles west of the proposed project site. Niles Community Park is classified as a citywide or community park under the City’s General Plan and provides tennis courts, open fields, playground equipment, picnic space, and a pond.
- Viejo Mill Historical Park is located approximately 0.16 miles northeast of the proposed project site. Viejo Mill Historical Park is classified as a historic park under the City’s General Plan and open space around the remnants of the historic Vallejo Flour Mill.
- California Nursery Historical Park is located approximately 0.82 miles west of the proposed project site. The California Nursery Historic Park is classified as a historic park under the City’s General Plan and includes a botanic garden and historic buildings.

The City has a goal of maintaining five acres of parkland per 1,000 residents (City of Fremont, 2011).

As discussed in *Section 4.13, Population and Housing*, the proposed project is expected to result in an increase in population by approximately 296 residents. The proposed project would not increase the use of parks or recreational facilities such that substantial deterioration would occur.

As described in *Section 4.14, Public Services*, new residential developments are required to pay mitigation impact fees for parkland acquisition and improvement. As such, the

project would have a less-than-significant impact on recreational resources. This impact will not be further addressed in the EIR.

## References

City of Fremont, 2011. *City of Fremont General Plan, Parks & Recreation Element*, adopted December 2011.

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## 4.16 Transportation and Traffic

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>16. TRANSPORTATION/TRAFFIC —</b>				
<b>Would the project:</b>				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Discussion

- a, b, d, e, f) **Potentially Significant Impact.** Project-related traffic could have potentially significant transportation and traffic impacts. A detailed traffic analysis will be prepared for the EIR that will analyze project-generated traffic impacts as it relates to: potential conflicts with plans, ordinances, policies, and congestion management program; design features; and emergency access.
- c) **No Impact.** The proposed project would have no impact on air traffic patterns as the closest airport to the site Hayward Executive Airport, is located 9.4 miles to the northwest. Thus, no impact would result and this issue will not be further addressed in the EIR.

## 4.17 Tribal Cultural Resources

<u>Issues (and Supporting Information Sources):</u>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>17. TRIBAL CULTURAL RESOURCES — Would the project:</b>				
a) Cause a substantial adverse change in the significance of a tribal cultural resource?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

- a) **Less than Significant with Mitigation.** Tribal cultural resources are: 1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing in the California Register of Historical Resources (California Register), or local register of historical resources, as defined in PRC Section 5020.1(k); or, 2) a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in PRC Section 5024.1(c). For a cultural landscape to be considered a tribal cultural resource, it must be geographically defined in terms of the size and scope of the landscape (PRC Section 21074[b]). Also, an historical resource, as defined in PRC Section 21084.1, unique archaeological resource, as defined in PRC Section 21083.2(g), or non-unique archaeological resource, as defined in PRC Section 21083.2(h), may also be a tribal cultural resource.

As described in *Section 2, Project Description*, the proposed project would implement standard development requirements (Fremont Municipal Code Chapter 18.218), which include the City’s notification of Native American tribes that might have knowledge of tribal cultural resources within the project site:

*“Notification, Affiliated California Native American Tribes. Prior to preparation of an environmental assessment and within 14 days of determining that an application for a project is complete, the city shall provide formal notification to the designated contact or a tribal representative of traditionally and culturally affiliated California Native American tribes that have requested to receive such notice from the city. The written notification shall include a brief description of the proposed project and its location, project contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to AB 52.”*

ESA sent a Sacred Lands File search request to the Native American Heritage Commission (NAHC) on October 23, 2017. ESA received a response from the NAHC on October 30, 2017. The NAHC recommended that agencies should provide information regarding any cultural resources assessment completed for the project to date, including the results of the Sacred Lands File search request; the NAHC search of the Sacred Lands File produced negative results. On November 7, 2017, the City of Fremont sent notice of the proposed project to the Native American tribes named on the contacts list (provided in NAHC’s

response on October 30, 2017), to allow early consultation with the City (City of Fremont, 2017). No requests for consultation were received by the City and no tribal cultural resources have been identified at the site.

Based on the results of correspondence with the NAHC and the NWIC records search, no known tribal cultural resources listed or determined eligible for listing in the California Register, or included in a local register of historical resources as defined in PRC Section 5020.1(k), pursuant to PRC Section 21074(a)(1), would be impacted by the project. In addition, the City of Fremont did not determine any resource that could potentially be affected by the project to be a tribal cultural resource significant pursuant to criteria set forth in PRC Section 5024.1(c). Therefore, the project would not impact any such resources.

If any previously unrecorded archaeological resource were identified during ground-disturbing construction activities and were found to qualify as a tribal cultural resource pursuant to PRC Section 21074(a)(1) (determined to be eligible for listing in the California Register or in a local register of historical resources), any impacts to the resource resulting from the project could be potentially significant. However, as described in *Section 2, Project Description*, the proposed project would comply with the standard development requirements (Fremont Municipal Code Chapter 18.218), which includes the requirements related to the accidental discovery of cultural resources. Impacts related to accidental discovery would, therefore, be less than significant. This impact will not be further addressed in the EIR.

## References

City of Fremont, 2017. Subject: Niles Gateway Mixed-Use Project. Sent to: Muwekma Ohlone Indian Tribe of the SF Bay Area, The Ohlone Indian Tribe, Coastanoan Rumsen Carmel Tribe, Amah Mutsun Tribal Band of Mission San Juan Bautista, Indian Canyon Mutsun Band of Costanoan, and North Valley Yokuts Tribe. November 7, 2017.

## 4.18 Utilities and Service Systems

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>18. UTILITIES AND SERVICE SYSTEMS —</b>				
<b>Would the project:</b>				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Discussion

a, b, e) **Less than Significant Impact.** Union Sanitary District provides wastewater collection, treatment and disposal services to the cities of Fremont, Newark and Union City. The District maintains a system with over 783 miles of sewage collection pipes, which relay much of Fremont's wastewater to the Irvington Pump Station, and then to the 33-acre Alvarado Treatment Plant facility. The Plant provides both primary and secondary treatment. The amount of wastewater that is anticipated by the proposed project would be an incremental increase and would not exceed the wastewater treatment requirements of the San Francisco Bay Regional Water Quality Control Board.

Abandoned sanitary sewer lines in the project site would be removed and new sanitary sewer lines would be installed to accommodate the project's demand. The City's General Plan EIR identifies potentially significant impacts in terms of exceedances of the capacity of the existing local sanitary sewer conveyance system if a project is proposed in an area designated for residential densities exceeding 29.9 units per acre (City of Fremont, 2011b). Based on the construction of 95 units on 6.07 acres, the proposed project would equate to a residential density of approximately 15.7 units per acre. Therefore, the proposed project would not exceed the capacity of the existing local sanitary sewer conveyance system. Furthermore, other than extending the existing infrastructure to individual units on the project site, no additional wastewater treatment facilities would

need to be constructed to accommodate the proposed project. For these reasons, the project's impact to sanitary sewer services would be less than significant. This impact will not be further addressed in the EIR.

- c) **Less than Significant Impact.** The proposed project would create approximately 5.23 acres (227,900 square feet) of impervious surface area.<sup>13</sup> Because the project would create in excess of 10,000 square feet of impervious surface area, it would be required to include stormwater drainage control features in accordance with the National Pollution Discharge Elimination System (NPDES) C.3 requirements of the Municipal Regional Permit (MRP) and the Alameda Countywide Clean Water Program (CWP). As such, the proposed project would be required to incorporate low impact development techniques to treat stormwater runoff before it is discharged into the City's storm drainage system. The proposed project would contain an onsite stormwater drainage system consisting of a network of 12 bioretention areas, inlets, and underground piping which would treat and reduce the amount of stormwater discharged to the City's storm drainage system. Implementing the drainage and treatment controls required by MRP and CWP and would avoid or minimize potential impacts on municipal drainage facilities. Therefore, the proposed project's impact on municipal drainage facilities would be less than significant. This impact will not be further addressed in the EIR. Refer to *Section 4.9, Hydrology and Water Quality*, for impacts associated with water quality.
- b, d) **Less than Significant Impact.** The proposed project would include connections to the existing water main at the north end of the site. Abandoned water lines in the project site would be removed and new water lines and fire service water mains would be installed to accommodate the project's demand. ACWD provides water to the project site. The proposed project would increase water demand from ACWD by approximately 23.5 acre-feet per year.<sup>14</sup> ACWD anticipates that in a normal year, total water supply would exceed total projected water demand by between 6,200 acre-feet (2040) and 14,300 acre-feet (2020). It is anticipated that ACWD water conservation programs, in combination with the City's water conservation efforts, would ensure adequate water supply to meet projected future demands for the District. Additionally, the District has a water supply shortage contingency plan that would address a water supply shortage of up to 50 percent (ACWD, 2016).

ACWD has estimated future water demands in its service area through 2030 based on planned future land uses in the service area. As identified in the City's General Plan EIR, in order to minimize additional demands on potable water supplies, new development would be required to install the latest technology in water efficient plumbing fixtures,

<sup>13</sup> As noted previously, not all of the impervious surface would be new because some foundations from previously demolished buildings remain on the site; however, the precise existing impervious surface area is unknown.

<sup>14</sup> Assumes a residential demand of 70 gallons per capita per day (GPCD) and a commercial, industrial, and institutional demand of 35.5 GPCD per the ACWD Urban Water Management Plan 2015-2020 (ACWD, 2016). The project would result in approximately 296 new residents on the project site and would include approximately 7,333 square feet of non-residential uses.

irrigation systems and landscaping according to the California Green Building Code (CALGreen).

The landscaping of the proposed project would be required to comply with the Water Efficient Landscape Ordinance (State ordinance enforced through the building permit plan review process).

Since the projected water demand of the proposed project has already been accounted for in the General Plan, and because no new facilities would need to be constructed to accommodate this project, the project's impact on water supply availability and potential need or construction of new water treatment facilities would be less than significant. This impact will not be further addressed in the EIR.

- f) **Less than Significant Impact.** The City's garbage and recycling service is provided by Republic Services. Materials collected are transported to the Fremont Recycling and Transfer Station located at 41149 Boyce Road for processing, and the majority of solid waste materials are later transported to the Altamont Landfill (City of Fremont, 2011). The Altamont Landfill is permitted to accept 11,150 tons of solid waste per day, and has a remaining capacity of 65,400,000 cubic yards (CalRecycle, 2017a). According to data supplied to the Alameda County Waste Management Authority (now named StopWaste), the 2015 diversion rate for Fremont was 71 percent (StopWaste, 2016), which is above the 50 percent diversion requirement per California Integrated Waste Management Act of 1989, or Assembly Bill (AB) 939.

### Construction

Solid waste generated by build out of the project site would largely result from the removal of existing debris piles and construction debris as a result of construction of the proposed project. The project would be required to comply with the City's Construction & Demolition (C&D) Debris Diversion and Recycling Ordinance (No. 19-2016) (Fremont Municipal Code, Chapter 8.40), which requires that new development submit a waste handling plan for managing construction debris to promote separation of waste types and recycling. These plans would need to be prepared in coordination with City staff, the project applicant, and construction contractors, and must be approved by City staff prior to issuance of any permits. In addition, the project applicant is required to submit documentation reporting the actual volume and weight of construction debris that was and was not diverted by type of material within 30 calendar days of project completion (Fremont Municipal Code, Section 8.40.830). The proposed project would also be subject to the CALGreen Code which requires 65 percent of nonhazardous construction and demolition waste to be recycled or salvaged. Debris resulting from project construction could amount to about 165 tons, or less than 2 percent of the Altamont Landfill's permitted capacity for a single day.<sup>15</sup> Assuming compliance with the City's C&D Ordinance and

<sup>15</sup> Calculation based on 4.4 pounds per square foot (USEPA, 1998) and a total of 188,000 square feet of construction, with 60 percent of construction debris assumed to be recycled or salvaged.

CALGreen regarding management of construction debris, project construction would result in less-than-significant impacts on landfill capacity. This impact will not be further addressed in the EIR.

### Operation

CalRecycle provides various solid waste generation rates developed by studies of a variety of jurisdictions throughout the State, ranging from 7.8 pounds per dwelling unit per day (lb/unit/day) to 12.23 pounds per household per day (lb/household/day) for single-family residential development (CalRecycle, 2017b). Using the highest solid waste generation rate of 12.23 pounds per household per day (lb/household/day) for residential development, the proposed project would generate approximately 1,162 pounds of solid waste per day. As of 2014, the Altamont Landfill had a remaining capacity of 65,400,000 cubic yards. The proposed project would result in an incremental increase in the current quantity of waste disposal at the Altamont Landfill, and would represent less than 0.01 percent of the daily permitted capacity. CalRecycle provides an estimated closure date of 2025 for the Altamont Landfill (Cal Recycle, 2017a); however, due recovery and diversion programs, the landfill has a disposal capacity through 2045 (Waste Management, 2017). Since more than 25 years of remaining capacity exists at the landfill, the proposed project would not substantially reduce the existing landfill capacity. Therefore, operation of the project would represent a less-than-significant impact on solid waste disposal. This impact will not be further addressed in the EIR.

- g) **Less than Significant Impact.** The proposed project would not conflict with or interfere with the City's ability to implement its adopted solid waste management programs and policies, including City Ordinance No. 11-2008, Section 2, 9-2-08, or Alameda County's Measure D. The project would be served by weekly curbside pickup of recyclable materials by Republic Services. Waste generated by the proposed project would enter the same stream as other area waste collected by Republic Services and would be subject to the same existing requirements regarding recycling and solid waste disposal. Because existing solid waste collection and disposal in Fremont complies with current federal, State and local requirements, the proposed project would not violate any federal, State, or local statutes or regulations related to solid waste and the project's impact would be less than significant. This impact will not be further addressed in the EIR.

### References

- Alameda County Water District (ACWD), 2016. *Urban Water Management Plan 2015-2020*, adopted June 9, 2016.
- California Department of Resources Recycling and Recovery (CalRecycle), 2017a. Facility/Site Summary Details: Altamont Landfill & Resource Recv'ry (01-AA-0009). Available at: [www.calrecycle.ca.gov/SWFacilities/Directory/01-AA-0009/Detail/](http://www.calrecycle.ca.gov/SWFacilities/Directory/01-AA-0009/Detail/). Accessed October 18, 2017.
- CalRecycle, 2017a. Facility/Site Summary Details: Altamont Landfill & Resource Recv'ry (01-AA-0009). Available at: [www.calrecycle.ca.gov/SWFacilities/Directory/01-aa-0009/Detail/](http://www.calrecycle.ca.gov/SWFacilities/Directory/01-aa-0009/Detail/). Accessed October 18, 2017.

- CalRecycle, 2017b. Estimated Solid Waste Generation Rates. Available at: [www2.calrecycle.ca.gov/WasteCharacterization/General/Rates#Residential](http://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates#Residential). Accessed October 18, 2017.
- City of Fremont, 2011. *Draft Environmental Impact Report, Fremont Draft General Plan Update*, July 2011.
- StopWaste, 2016. Waste Disposal Tonnages and Diversion Rates for Alameda County Jurisdictions, updated November 16, 2016. Available at: [www.stopwaste.org/sites/default/files/Disposal%20Diversion%20Web%2011-16-16%20v2.pdf](http://www.stopwaste.org/sites/default/files/Disposal%20Diversion%20Web%2011-16-16%20v2.pdf). Accessed October 18, 2017.
- United States Environmental Protection Agency (USEPA), *Characterization of Building-Related Construction and Demolition Debris in the United States*, prepared by Franklin Associates, June 1998. Available at: [www.epa.gov/sites/production/files/2016-03/documents/charact\\_bulding\\_related\\_cd.pdf](http://www.epa.gov/sites/production/files/2016-03/documents/charact_bulding_related_cd.pdf). Accessed December 12, 2017.
- Waste Management, 2017. Altamont Landfill – Sustainability, webpage. Available at: [altamontlandfill.wm.com/sustainability/index.jsp](http://altamontlandfill.wm.com/sustainability/index.jsp). Accessed October 18, 2017.
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## 4.19 Mandatory Findings of Significance

<i>Issues (and Supporting Information Sources):</i>	<i>Potentially Significant Impact</i>	<i>Less Than Significant with Mitigation Incorporated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
<b>19. MANDATORY FINDINGS OF SIGNIFICANCE —</b>				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Discussion

- a) **Less than Significant with Mitigation.** Based on background research, site visits, and the analysis herein, the proposed project does not have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. It is expected that all potential impacts to biological and cultural resources would be less than significant through compliance with the City of Fremont’s standard development regulations codified in the Fremont Municipal Code Chapter 18.218. No significant operational impacts related to the project are anticipated.
- b) **Potentially Significant.** Cumulative impacts other than those related to aesthetics and transportation and traffic would be less than significant, or the project would result in a less than cumulatively considerable contribution to cumulative impacts. Cumulative impact related to aesthetics and transportation and traffic will be analyzed in the EIR.
- c) **Potentially Significant.** Based on background research, site visits, and the analysis herein, the proposed project could result in substantial adverse effects on human beings in relation to aesthetics and transportation and traffic. Short-term construction-related impacts related to hazards and hazardous materials and noise would be reduced to less than significant levels through the implementation of Mitigation Measures AIR-1, HAZ-1, NOI-1, NOI-2a, and NOI-2b. Potentially significant adverse effects on human beings,

either directly or indirectly, associated with aesthetics and transportation and traffic generated by the project will be analyzed in the EIR.

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Appendices

# NILES GATEWAY MIXED-USE PROJECT

Initial Study

Prepared for  
City of Fremont

January 2018



# Appendices

## NILES GATEWAY MIXED-USE PROJECT Initial Study

Prepared for  
City of Fremont

January 2018

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Los Angeles	Sacramento	Tampa
Miami	San Diego	

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# Appendices

- A. Air Quality and Greenhouse Gas Modeling Outputs
- B. Special-Status Plant and Animal Species



# Appendix A

Air Quality and Greenhouse Gas Modeling  
Outputs



# **Appendix A-1**

## Summary Tables

Tables for EIR

Updated:

12/8/2017

Green = use in IS sections

Criteria Pollutant Tables

CONSTRUCTION

Source	Unmitigated Average Daily Emissions (lbs/day)				Mitigated Average Daily Emissions (lbs/day)				percent reduction due to mitigation			
	ROG	NO <sub>x</sub>	Exhaust PM10	Exhaust PM2.5	ROG	NO <sub>x</sub>	Exhaust PM10	Exhaust PM2.5				
Off-Road Equipment	1.6	15.5	0.9	0.8	0.3	1.7	<0.1	<0.1	-83%	-89%	-96%	-96%
On-Road Trucks	<0.1	2.4	<0.1	<0.1	<0.1	2.4	<0.1	<0.1	0%	0%	0%	0%
Arch. Coatings	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0%	#DIV/0!	#DIV/0!	#DIV/0!
Worker Trips	0.3	0.2	<0.1	<0.1	0.3	0.2	<0.1	<0.1	0%	0%	0%	0%
<b>Total Average Daily Emissions</b>	<b>2.4</b>	<b>18.0</b>	<b>0.9</b>	<b>0.8</b>	<b>1.1</b>	<b>4.3</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>	<b>-54%</b>	<b>-76%</b>	<b>-95%</b>	<b>-94%</b>
<b>BAAQMD Construction Threshold</b>	<b>54</b>	<b>54</b>	<b>82</b>	<b>54</b>	<b>54</b>	<b>54</b>	<b>82</b>	<b>54</b>				
Exceeds Threshold?	No	No	No	No	No	No	No	No				

Year	Unmitigated Average Daily Emissions (lbs/day)				Mitigated Average Daily Emissions (lbs/day)				Year	Workdays
	ROG	NO <sub>x</sub>	Exhaust PM10	Exhaust PM2.5	ROG	NO <sub>x</sub>	Exhaust PM10	Exhaust PM2.5		
2019	1.6	15.0	0.8	0.7	0.5	3.4	<0.1	<0.1	2019	218
2020	2.9	20.3	1.0	1.0	1.4	4.9	<0.1	<0.1	2020	262
2021	2.7	18.4	0.9	0.8	1.4	4.6	<0.1	<0.1	2021	161
Maximum	2.9	20.3	1.0	1.0	1.4	4.9	<0.1	<0.1		
<b>BAAQMD Construction Threshold</b>	<b>54</b>	<b>54</b>	<b>82</b>	<b>54</b>	<b>54</b>	<b>54</b>	<b>82</b>	<b>54</b>		
Exceeds Threshold?	No	No	No	No	No	No	No	No		

Actual Data: Average lbs/day	Unmitigated				Mitigated				Year	Workdays
	ROG	NOX	PM10 Exh	PM2.5 Ex	ROG	NOX	PM10 Exh	PM2.5 Ex		
<b>2019</b>										
Fugitive Dust	0	0	0	0	0	0	0	0	2019	218
Off-Road	1.323845872	13.12187156	0.770781651	0.719038532	0.2144954	1.4547706	0.026697248	0.026697248	2019	218
Paving	0.020458716	0	0	0	0.0204587	0	0	0	2019	218
Archit. Coating	0	0	0	0	0	0	0	0	2019	218
Hauling	0.010183486	0.344678899	0.001284404	0.001192661	0.0101835	0.3446789	0.001284404	0.001192661	2019	218
Vendor	0.04706422	1.335779817	0.00853211	0.008165138	0.0470642	1.3357798	0.00853211	0.008165138	2019	218
Worker	0.19813945	0.151299083	0.002946789	0.002763303	0.1981394	0.1512991	0.002946789	0.002763303	2019	218
Onsite trucks	0.002670329	0.066116929	0.000117948	0.000112846	0.0026703	0.0661169	0.000117948	0.000112846	2019	218
<b>2020</b>										
Fugitive Dust	0	0	0	0	0	0	0	0	2020	262
Off-Road	1.758198473	17.27560305	0.999270229	0.937438168	0.2886107	1.8262595	0.036335878	0.036335878	2020	262
Paving	0	0	0	0	0	0	0	0	2020	262
Archit. Coating	0.647633588	0	0	0	0.6476336	0	0	0	2020	262
Hauling	0	0	0	0	0	0	0	0	2020	262
Vendor	0.086259542	2.703816794	0.012519084	0.011984733	0.0862595	2.7038168	0.012519084	0.011984733	2020	262
Worker	0.36600916	0.270137405	0.005789313	0.005392366	0.3660092	0.2701374	0.005789313	0.005392366	2020	262
Onsite trucks	0.002538337	0.07142897	0.000100008	9.56819E-05	0.0025383	0.071429	0.000100008	9.56819E-05	2020	262
<b>2021</b>										
Fugitive Dust	0	0	0	0	0	0	0	0	2021	161
Off-Road	1.583448447	15.64511801	0.857863354	0.804447205	0.289913	1.830559	0.03647205	0.03647205	2021	161
Paving	0	0	0	0	0	0	0	0	2021	161
Archit. Coating	0.740869565	0	0	0	0.7408696	0	0	0	2021	161
Hauling	0	0	0	0	0	0	0	0	2021	161
Vendor	0.071180124	2.459627329	0.005093168	0.00484472	0.0711801	2.4596273	0.005093168	0.00484472	2021	161
Worker	0.339383851	0.24221118	0.005704348	0.005182609	0.3393839	0.2422112	0.005704348	0.005182609	2021	161
Onsite trucks	0.002430141	0.07482741	8.99676E-05	8.60757E-05	0.0024301	0.0748274	8.99676E-05	8.60757E-05	2021	161
<b>All Construction</b>										
Fugitive Dust	0	0	0	0	0	0	0	0	641	
Off-Road	1.566585959	15.45341654	0.886045554	0.829758502	0.2637317	1.7009984	0.033092044	0.033092044	641	
Paving	0.006957878	0	0	0	0.0069579	0	0	0	641	
Archit. Coating	0.450795632	0	0	0	0.4507956	0	0	0	641	
Hauling	0.003463339	0.117223089	0.000436817	0.000405616	0.0034633	0.1172231	0.000436817	0.000405616	641	
Vendor	0.069141966	2.177223089	0.009297972	0.008892356	0.069142	2.1772231	0.009297972	0.008892356	641	
Worker	0.302230265	0.22270702	0.004801248	0.004445554	0.3022303	0.222707	0.004801248	0.004445554	641	
Onsite trucks	0.002556051	0.070475965	0.000103588	9.91065E-05	0.0025561	0.070476	0.000103588	9.91065E-05	641	
<b>Total</b>	<b>2.40173109</b>	<b>18.0410457</b>	<b>0.900685179</b>	<b>0.843601135</b>	<b>1.098877</b>	<b>4.288628</b>	<b>0.047731669</b>	<b>0.046934676</b>		
2019	1.602362073	15.01974629	0.783662903	0.731272479	0.493012	3.352645	0.039578499	0.038931195		
2020	2.860639101	20.32098622	1.017678634	0.954910949	1.391051	4.871643	0.054744283	0.053808659		
2021	2.737312129	18.42178393	0.868750837	0.81456061	1.443777	4.607225	0.047359533	0.046585455		
Max	2.860639101	20.32098622	1.017678634	0.954910949	1.443777	4.871643	0.054744283	0.053808659		

OPERATION

Source	Unmitigated Average Daily Emissions (lbs/day)				Mitigated Average Daily Emissions (lbs/day)				percent reduction due to mitigation			
	ROG	NO <sub>x</sub>	PM10	PM2.5	ROG	NO <sub>x</sub>	PM10	PM2.5				
Area	4.9	<0.1	<0.1	<0.1	4.9	<0.1	<0.1	<0.1	0%	0%	0%	0%
Energy	<0.1	0.7	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	-19%	-19%	-20%	-20%
Mobile	1.4	9.1	2.0	0.6	1.4	9.1	2.0	0.6	0%	0%	0%	0%
<b>Total Average Daily Emissions</b>	<b>6.4</b>	<b>8.8</b>	<b>2.0</b>	<b>0.7</b>	<b>6.4</b>	<b>8.7</b>	<b>2.0</b>	<b>0.7</b>	<b>0%</b>	<b>-1%</b>	<b>-1%</b>	<b>-2%</b>
<b>BAAQMD Operation Threshold</b>	<b>54</b>	<b>54</b>	<b>82</b>	<b>54</b>	<b>54</b>	<b>54</b>	<b>82</b>	<b>54</b>				
Exceeds Threshold?	No	No	No	No	No	No	No	No				

Source	Unmitigated Annual Emissions (tons/year)				Mitigated Annual Emissions (tons/year)			
	ROG	NO <sub>x</sub>	PM10	PM2.5	ROG	NO <sub>x</sub>	PM10	PM2.5
Area	0.9	<0.1	<0.1	<0.1	0.9	<0.1	<0.1	<0.1
Energy	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	0.3	1.7	0.4	0.1	0.3	1.7	0.4	0.1
<b>Total Average Daily Emissions</b>	<b>1.2</b>	<b>1.8</b>	<b>0.4</b>	<b>0.1</b>	<b>1.2</b>	<b>1.8</b>	<b>0.4</b>	<b>0.1</b>
<b>BAAQMD Operation Threshold</b>	<b>10</b>	<b>10</b>	<b>15</b>	<b>8</b>	<b>10</b>	<b>10</b>	<b>15</b>	<b>8</b>
Exceeds Threshold?	No	No	No	No	No	No	No	No

Actual Data: Average lbs/day	Unmitigated				Mitigated			
	ROG	NOX	PM10 T	PM2.5 T	ROG	NOX	PM10 T	PM2.5 T
Area	4.887123288	0.044712329	0.021369863	0.021369863	4.8871233	0.0447123	0.021369863	0.021369863
Energy	0.076164384	0.659178082	0.052712329	0.052712329	0.0613699	0.5315068	0.042410959	0.042410959
Mobile	1.409863014	9.084931507	1.964931507	0.607123288	1.409863	9.0849315	1.964931507	0.607123288
Waste	0	0	0	0	0	0	0	0
Water	0	0	0	0	0	0	0	0
<b>Total</b>	<b>6.373150685</b>	<b>9.788821918</b>	<b>2.039013699</b>	<b>0.681205479</b>	<b>6.358356</b>	<b>9.661151</b>	<b>2.028712329</b>	<b>0.67090411</b>

Actual Data: Total tons/yr	ROG	NOX	PM10 T	PM2.5 T	ROG	NOX	PM10 T	PM2.5 T
Area	0.8919	0.00816	0.0039	0.0039	0.8919	0.00816	0.0039	0.0039
Energy	0.0139	0.1203	0.00962	0.00962	0.0112	0.097	0.00774	0.00774
Mobile	0.2573	1.658	0.3586	0.1108	0.2573	1.658	0.3586	0.1108
Waste	0	0	0	0	0	0	0	0
Water	0	0	0	0	0	0	0	0
Total	1.1631	1.78646	0.37212	0.12432	1.1604	1.76316	0.37024	0.12244

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GHG Tables

CONSTRUCTION

Source	Total Annual Emissions (MTCO2e)				Mitigated Average Daily Emissions (lbs/day)				percent reduction due to mitigation
	CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e	
<b>2019</b>									
Off-Road Equipment	165.5	0.3	1.1	166.9	165.5	0.3	1.1	166.9	0% 0% 0% 0%
On-Road Trucks	42.4	<0.1	0.3	42.8	42.4	<0.1	0.3	42.8	0% 0% 0% 0%
Arch. Coatings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	#DIV/0! #DIV/0! #DIV/0! #DIV/0!
Worker Trips	41.4	<0.1	0.4	41.8	41.4	<0.1	0.4	41.8	0% 0% 0% 0%
Total 2019	249.3	0.3	1.9	251.5	249.3	0.3	1.9	251.5	
<b>2020</b>									
Off-Road Equipment	270.3	0.4	1.8	272.5	270.3	0.4	1.8	272.5	0% 0% 0% 0%
On-Road Trucks	82.3	<0.1	0.7	83.1	82.3	<0.1	0.7	83.1	#REF! #REF! #REF! #REF!
Arch. Coatings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0% 0% 0% 0%
Worker Trips	97.5	<0.1	0.9	98.4	97.5	<0.1	0.9	98.4	#DIV/0! #DIV/0! #DIV/0! #DIV/0!
Total 2020	450.1	0.6	3.4	454.1	450.1	0.6	3.4	454.1	
<b>2021</b>									
Off-Road Equipment	166.8	0.3	1.1	168.2	166.8	0.3	1.1	168.2	#DIV/0! #DIV/0! #DIV/0! #DIV/0!
On-Road Trucks	51.1	<0.1	0.4	51.6	51.1	<0.1	0.4	51.6	#REF! #REF! #REF! #REF!
Arch. Coatings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	#REF! #REF! #REF! #REF!
Worker Trips	58.1	<0.1	0.5	58.7	58.1	<0.1	0.5	58.7	#REF! #REF! #REF! #REF!
Total 2021	276.0	0.3	2.1	278.4	276.0	0.3	2.1	278.4	
<b>Total Construction Emissions</b>	<b>975.3</b>	<b>1.2</b>	<b>7.4</b>	<b>984.0</b>	<b>975.3</b>	<b>1.2</b>	<b>7.4</b>	<b>984.0</b>	0% 0% 0% 0%
<b>Total Construction Emissions Amortized over 30 Years</b>	<b>32.5</b>	<b>0.0</b>	<b>0.2</b>	<b>32.8</b>	<b>32.5</b>	<b>0.0</b>	<b>0.2</b>	<b>32.8</b>	

Actual Data: Total Metric Tons/year	Orange = Scaling				Blue = renewable diesel reductions				Year
	CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e	
<b>2019</b>									
Fugitive Dust	0			0	0			0	2019
Off-Road	165.53342	0.263297036	1.11706686	166.9137839	165.53322	0.2632967	1.11706551	166.9135822	2019
Paving	0			0	0			0	2019
Archit. Coating	0			0	0			0	2019
Hauling	9.3633	0.006761277	0.081735698	9.451796976	9.3633	0.0067613	0.081735698	9.451796976	2019
Vendor	30.3268	0.021899107	0.264733819	30.61343293	30.3268	0.0218991	0.264733819	30.61343293	2019
Worker	41.387552	0.022772614	0.390792708	41.80111732	41.387552	0.0227726	0.390792708	41.80111732	2019
Onsite trucks	2.688185858	0.01727062	0.001740611	2.707197089	2.6881859	0.0172706	0.001740611	2.707197089	2019
<b>2020</b>									
Fugitive Dust	0			0	0			0	2020
Off-Road	270.265448	0.429883533	1.823828537	272.5191601	270.26513	0.429883	1.823826378	272.5188374	2020
Paving	0			0	0			0	2020
Archit. Coating	0			0	0			0	2020
Hauling	0	0	0	0	0	0	0	0	2020
Vendor	79.697	0.057549531	0.695704499	80.45025403	79.697	0.0575495	0.695704499	80.45025403	2020
Worker	97.466044	0.053628603	0.920301333	98.43997394	97.466044	0.0536286	0.920301333	98.43997394	2020
Onsite trucks	2.643999899	0.017376864	0.00165346	2.663030223	2.6439999	0.0173769	0.00165346	2.663030223	2020
<b>2021</b>									
Fugitive Dust	0			0	0			0	2021
Off-Road	166.784972	0.265287752	1.125512691	168.1757724	166.78477	0.2652874	1.125511341	168.1755708	2021
Paving	0			0	0			0	2021
Archit. Coating	0			0	0			0	2021
Hauling	0	0	0	0	0	0	0	0	2021
Vendor	48.5039	0.035024865	0.423408428	48.96233329	48.5039	0.0350249	0.423408428	48.96233329	2021
Worker	58.0907	0.031963163	0.548508449	58.671117161	58.0907	0.0319632	0.548508449	58.671117161	2021
Onsite trucks	2.596298938	0.017309152	0.001545906	2.615153996	2.5962989	0.0173092	0.001545906	2.615153996	2021

**All Construction**

Fugitive Dust	0	0	0	0	0	0	0	0
Off-Road	602.58384	0.958468321	4.066408088	607.6087164	602.58312	0.9584672	4.066403229	607.6079904
Paving	0	0	0	0	0	0	0	0
Archit. Coating	0	0	0	0	0	0	0	0
Hauling	9.3633	0.006761277	0.081735698	9.451796976	9.3633	0.0067613	0.081735698	9.451796976
Vendor	158.5277	0.114473503	1.383846747	160.0260202	158.5277	0.1144735	1.383846747	160.0260202
Worker	196.944296	0.108364381	1.85960249	198.9122629	196.9443	0.1083644	1.85960249	198.9122629
Onsite trucks	7.928484696	0.051956636	0.004939977	7.985381309	7.9284847	0.0519566	0.004939977	7.985381309
<b>Total</b>	<b>975.3476207</b>	<b>1.240024118</b>	<b>7.396533</b>	<b>983.9841778</b>	<b>975.3469</b>	<b>1.240023</b>	<b>7.396528141</b>	<b>983.9834518</b>

2019	249.2992579	0.332006655	1.856069696	251.4873282	249.2991	0.332	1.856068346	251.4871265
2020	450.0724919	0.558438531	3.44148783	454.0724183	450.0722	0.558438	3.441485671	454.0720956
2021	275.9758709	0.349584932	2.098975474	278.4244313	275.9757	0.349585	2.098974124	278.4242297
Max	450.0724919	0.558438531	3.44148783	454.0724183	450.0722	0.558438	3.441485671	454.0720956

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**OPERATION**

Source	Table 4- 6 Unmitigated Annual Emissions (tons/year)				Table 4- 7 Mitigated Annual Emissions (tons/year)				
	CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e	
Area	1.2	<0.1	0.0	1	1.2	<0.1	0.0	1	0%
Energy	207.8	0.2	0.9	209	179.2	0.2	0.7	180	-14%
Mobile	863.6	1.1	0.0	865	863.6	1.1	0.0	865	0%
Waste	0.0	19.4	0.0	19	0.0	19.4	0.0	19	0%
Water	10.6	6.7	1.5	19	9.1	5.3	1.2	16	-17%
Total Annual Operational Emissions	1,083.2	27.5	2.4	1,113	1,053.0	26.1	2.0	1,081	-3%
Amortized Construction Emissions	32.5	0.0	0.2	33	32.5	0.0	0.2	33	0%
<b>Total Annual Emissions</b>	<b>1,115.7</b>	<b>27.5</b>	<b>2.6</b>	<b>1,146</b>	<b>1,085.5</b>	<b>26.2</b>	<b>2.2</b>	<b>1,114</b>	<b>-3%</b>
<b>BAAQMD Operation Threshold - Bright Line</b>	n/a	n/a	n/a	<b>1,100</b>	n/a	n/a	n/a	<b>1,100</b>	
Exceeds Threshold?	n/a	n/a	n/a	Yes	n/a	n/a	n/a	Yes	
<b>Total Per Service Population Emissions</b>	<b>3.6</b>	<b>0.1</b>	<b>0.0</b>	<b>3.7</b>	<b>3.5</b>	<b>0.1</b>	<b>0.0</b>	<b>3.6</b>	
<b>BAAQMD Operation Threshold - Efficiency</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>4.6</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>4.6</b>	
Exceeds Threshold?	n/a	n/a	n/a	No	n/a	n/a	n/a	No	

Population 296 \\Sfo-file01\projects\SF017\xxxx\D170627.00 - Fremont Niles Gateway\03 Working Documents\2\_IS-NOP\1\_Admin Draft  
 Jobs 17 estimate from Karl (12/7/17)

Service Population 313

Actual Data: Total tons/yr	CO2	CH4	N2O	CO2e	CO2	CH4	N2O	CO2e
Area	1.1524	0.03136	0	1.18376	1.1524	0.03136	0	1.18376
Energy	207.8169	0.2408	0.88245	208.94015	179.1802	0.22204	0.7473	180.14954
Mobile	863.6022	1.1312	0	864.7334	863.6022	1.1312	0	864.7334
Waste	0	19.418	0	19.418	0	19.418	0	19.418
Water	10.6253	6.65	1.51315	18.78845	9.0747	5.3228	1.21105	15.60855
<b>Total</b>	<b>1083.1968</b>	<b>27.47136</b>	<b>2.3956</b>	<b>1113.06376</b>	<b>1053.01</b>	<b>26.1254</b>	<b>1.95835</b>	<b>1081.09325</b>

unmitigated unmitigated unmitigated unmitigated mitigated mitigated mitigated mitigated

**HRA Tables**

Receptor Type	Table 4- 3 Actual Data			Cancer Risk	Chronic HI	PM2.5
	Cancer Risk	Chronic Hazard Index	Maximum Annual PM2.5 Concentration			
<b>Unmitigated</b>						
Residential - offsite	140.8	0.081	0.45	140.83	0.081	0.448
Residential - onsite	103.2	0.087	0.45	103.22	0.087	0.448
School	14.1	0.077	0.43	14.13	0.077	0.428
Maximum	140.8	0.087	0.45	140.83	0.087	0.448
<b>BAAQMD Cancer Threshold</b>	<b>10</b>	<b>1</b>	<b>0.3</b>			
Exceeds Threshold?	Yes	No	Yes			
<b>Mitigated</b>						
Residential - offsite	5.4	0.003	0.03	5.41	0.003	0.034
Residential - onsite	4.1	0.003	0.03	4.08	0.003	0.034
School	0.5	0.003	0.03	0.54	0.003	0.033
Maximum	5.4	0.003	0.03	5.41	0.003	0.034
<b>BAAQMD Cancer Threshold</b>	<b>10</b>	<b>1</b>	<b>0.3</b>			
Exceeds Threshold?	No	No	No			

# **Appendix A-2**

## Construction Schedule



# **Appendix A-3**

## Construction Trucks

**Onsite Trucks and Idling**

Updated: **12/8/2017**  
 Includes water trucks and truck idling

**Assumptions**

**Water Trucks**

Water trucks will be used onsite. Per BAAQMD Basic Mitigation Measures: All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day  
 Water truck average speed (mph) 5 assumption  
 VMT for water trucks estimated using CalEEMod methods (Appendix A) for grading passes as follows:  
 Site Area (acres) 6.07 PD  
 Water truck spray width (ft) 24 assume width of 2-lane road (12 feet each lane)  
 Daily VMT (2x per day) 4.17  
 travel time (hrs/day) 0.83 50.0775  
 Water Trucks = HHDT

The grading dust emissions are calculated by multiplying the emission factors with the total vehicle miles traveled (VMT) for the grading equipment (i.e., grader). The VMT are estimated based on the dimensions of the grading area and the blade width of the grading equipment.

$$E = EF \times VMT, \text{ and}$$

$$VMT = As / Wb \times 43,560(\text{sqft} / \text{acre}) / 5,280(\text{ft} / \text{mile})$$

Where:  
 E: emissions (lb)  
 EF: emission factor (lb/VMT)  
 VMT: vehicle miles traveled (mile)  
 As: the acreage of the grading site (acre)  
 Wb: Blade width of the grading equipment. The program uses a default blade width of 12 ft based on Caterpillar's 140 Motor Grader.<sup>7</sup>

**Idling**

Haul truck idling time per trip (min) 15 standard assumption  
 average daily water truck idling time (min) 15

**Summary of Emissions**

	Average Daily Emissions (lbs/day)				Total Emissions (MT)		
	ROG	NOX	PM10 Exh	PM2.5 Exh	CO2	CH4	N2O
<b>2019</b>							
Water Truck Travel	0.00251302	0.0612441	0.0001133	0.00010837	2.3997068	0.000614683	5.863E-06
Idling	0.000157309	0.0048728	4.678E-06	4.47603E-06	0.2884791	2.12442E-06	7.049E-07
<b>Total</b>	<b>0.002670329</b>	<b>0.066117</b>	<b>0.0001179</b>	<b>0.000112846</b>	<b>2.688186</b>	<b>0.000616808</b>	<b>6.57E-06</b>
<b>2020</b>							
Water Truck Travel	0.002395592	0.0668941	9.673E-05	9.25411E-05	2.3588706	0.000618675	5.543E-06
Idling	0.000142745	0.0045348	3.283E-06	3.14087E-06	0.2851293	1.92774E-06	6.967E-07
<b>Total</b>	<b>0.002538337</b>	<b>0.071429</b>	<b>0.0001</b>	<b>9.56819E-05</b>	<b>2.644</b>	<b>0.000620602</b>	<b>6.24E-06</b>
<b>2021</b>							
Water Truck Travel	0.002294662	0.0705589	8.699E-05	8.32272E-05	2.3146564	0.000616354	5.145E-06
Idling	0.000135479	0.0042685	2.977E-06	2.84851E-06	0.2816425	1.82961E-06	6.882E-07
<b>Total</b>	<b>0.002430141</b>	<b>0.074827</b>	<b>8.997E-05</b>	<b>8.60757E-05</b>	<b>2.596299</b>	<b>0.000618184</b>	<b>5.83E-06</b>
<b>Total</b>	<b>0.007638808</b>	<b>0.2123733</b>	<b>0.0003079</b>	<b>0.000294604</b>	<b>7.9284847</b>	<b>0.001855594</b>	<b>1.864E-05</b>

**For HRA (tons)**

	PM10 Exh		PM2.5 Ex	
	Unmit	Mit	Unmit	Mit
2019	3.78E-05	3.78E-05	3.62E-05	3.62E-05
2020	3.21E-05	3.21E-05	3.07E-05	3.07E-05
2021	2.88E-05	2.88E-05	2.76E-05	2.76E-05

**EMFAC2014 Emission Factors - Running**

**Efs by Speed Bin**

Located here: \\sfo-file01\projects\SFO\17xxxx\170627.00 - Fremont Niles Gateway\03 Working Documents\AQ-GHG\EMFAC

Emissions = tons/day; Fuel = 1000 gallons/day

calendar_year	season	month	sub_area	vehicle_class	fuel	speed	process	pollutant	emission	calendar_year	sub_area	vehicle_class	fuel	speed	vmt
2018	Annual		Alameda (S) HHDT	Dsl			STREX	NOx	0.3344137	2018	Alameda (S) HHDT	Dsl		5	11682.2
2018	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	CH4	0.0121774	2019	Alameda (S) HHDT	Dsl		5	12044.07
2018	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	CO2	48.725753	2020	Alameda (S) HHDT	Dsl		5	12387.58
2018	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	Fuel	4.3853178	2021	Alameda (S) HHDT	Dsl		5	12856.99
2018	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	NOx	0.2611731						
2018	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	PM10	0.0007097						
2018	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	PM2_5	0.000679						
2018	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	ROG	0.0149745						
2019	Annual		Alameda (S) HHDT	Dsl			STREX	NOx	0.3666705						
2019	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	CH4	0.0126572						
2019	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	CO2	49.41352						
2019	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	Fuel	4.4472168						
2019	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	NOx	0.2713759						
2019	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	PM10	0.0006782						
2019	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	PM2_5	0.0006488						
2019	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	ROG	0.0150455						
2020	Annual		Alameda (S) HHDT	Dsl			STREX	NOx	0.4119199						
2020	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	CH4	0.0131028						
2020	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	CO2	49.957996						
2020	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	Fuel	4.4962197						
2020	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	NOx	0.2800347						
2020	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	PM10	0.0005956						
2020	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	PM2_5	0.0005698						
2020	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	ROG	0.0147515						
2021	Annual		Alameda (S) HHDT	Dsl			STREX	NOx	0.4509512						
2021	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	CH4	0.0135483						
2021	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	CO2	50.87919						
2021	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	Fuel	4.5791271						
2021	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	NOx	0.289737						
2021	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	PM10	0.000556						
2021	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	PM2_5	0.0005319						
2021	Annual		Alameda (S) HHDT	Dsl			5 RUNEX	ROG	0.0146655						

Default\_Alameda\_2018\_2019\_2020\_Annual\_emission

**Calculated Efs (g/mi)**

Year	Vehicle Type	Fuel	Speed	VMT	ROG	NOX	PM10	PM2_5	CO2	CH4	N2O
2018	HHDT	Dsl	5	11682.19722	1.1628487	25.96900586	0.0551133	0.0527272	3783.815	0.945636469	0.009666
2019	HHDT	Dsl	5	12044.07226	1.133261	27.61839887	0.0510798	0.0488701	3721.931	0.953370348	0.009094
2020	HHDT	Dsl	5	12387.58468	1.0803061	30.16629759	0.0436189	0.0417319	3658.594	0.959560522	0.008597
2021	HHDT	Dsl	5	12856.99259	1.0347912	31.81895925	0.0392288	0.0375318	3590.018	0.955961944	0.007981

N2O separate calc

Fuel (gal)
340.54334
330.31141
321.15175
309.42652

**Water Truck Travel**

Phase	% of site exposed (watered) - estimate			Workdays			Days Watered			Total VMT		
	2019	2020	2021	2019	2020	2021	2019	2020	2021	2019	2020	2021
Demolition	100%	0%	0%	21	0	0	21	0	0	87.6	0.0	0.0
Site Preparation	100%	0%	0%	11	0	0	11	0	0	45.9	0.0	0.0
Grading/Excavation	100%	0%	0%	23	0	0	23	0	0	96.0	0.0	0.0
Drainage/Utilities/Sub-Grade	100%	0%	0%	44	0	0	44	0	0	183.6	0.0	0.0
Foundations/Concrete Pour	0%	0%	0%	12	31	19	0	0	0	0.0	0.0	0.0
Building Construction	50%	50%	50%	99	262	161	49.5	131	80.5	206.6	546.7	335.9
Architectural Coatings	0%	0%	0%	0	66	46	0	0	0	0.0	0.0	0.0
Paving	25%	0%	0%	24	0	0	6	0	0	25.0	0.0	0.0
<b>Total VMT</b>							<b>154.5</b>	<b>131.0</b>	<b>80.5</b>	<b>644.7</b>	<b>546.7</b>	<b>335.9</b>

Year	Total Emissions (tons)				Average Daily Emissions (lbs/day)				Total Emissions (MT)		
	ROG	NOX	PM10 Exh	PM2.5 Exh	ROG	NOX	PM10 Exh	PM2.5 Exh	CO2	CH4	N2O
2019	0.000805423	0.0196287	3.63E-05	3.47326E-05	0.002513	0.061244132	0.0001133	0.0001084	2.399707	0.000614683	5.86E-06
2020	0.000767787	0.0214396	3.1E-05	2.96594E-05	0.0023956	0.066894128	9.673E-05	9.254E-05	2.358871	0.000618675	5.54E-06
2021	0.000735439	0.0226141	2.788E-05	2.66743E-05	0.0022947	0.070558925	8.699E-05	8.323E-05	2.314656	0.000616354	5.15E-06
<b>Total</b>	<b>0.002308649</b>	<b>0.0636824</b>	<b>9.518E-05</b>	<b>9.10663E-05</b>	<b>0.0072033</b>	<b>0.198697184</b>	<b>0.000297</b>	<b>0.0002841</b>	<b>7.073234</b>	<b>0.001849712</b>	<b>1.66E-05</b>

**Idling**

**Haul Trucks - all 2019**

Total trips (one-way)	50	Construction Data Needs - AQ-GHG (BAAQMD)
Total trips (roundtrip)	25	
min idling	375	
hrs idling	6	

750 CY  
 16 CY/truck  
 47 rtp  
 94 one-way trips  
 10 rtp/day

**Water Trucks**

	2019	2020	2021
Average Daily idling time	15	15	15
Total idling time (hrs)	38.6	32.8	20.1

**EMFAC2014 Idling Emission Rates (g/hr-veh)**

calendar_year	season	month	sub_area	vehicle	clas	fuel	process	pollutant	emission_rate
2018	Annual		Alameda	SI HHDT	Dsl		IDLEX	NOx	33.540539
2018	Annual		Alameda	SI HHDT	Dsl		IDLEX	ROG	1.0819652
2018	Annual		Alameda	SI HHDT	Dsl		IDLEX	CO2	6503.2658
2018	Annual		Alameda	SI HHDT	Dsl		IDLEX	CH4	0.0502545
2018	Annual		Alameda	SI HHDT	Dsl		IDLEX	PM10	0.0342383
2018	Annual		Alameda	SI HHDT	Dsl		IDLEX	PM2_5	0.0327572
2019	Annual		Alameda	SI HHDT	Dsl		IDLEX	NOx	31.571686
2019	Annual		Alameda	SI HHDT	Dsl		IDLEX	ROG	1.0192347
2019	Annual		Alameda	SI HHDT	Dsl		IDLEX	CO2	6428.5036
2019	Annual		Alameda	SI HHDT	Dsl		IDLEX	CH4	0.0473408
2019	Annual		Alameda	SI HHDT	Dsl		IDLEX	PM10	0.0303123
2019	Annual		Alameda	SI HHDT	Dsl		IDLEX	PM2_5	0.029001
2020	Annual		Alameda	SI HHDT	Dsl		IDLEX	NOx	29.382021
2020	Annual		Alameda	SI HHDT	Dsl		IDLEX	ROG	0.9248718
2020	Annual		Alameda	SI HHDT	Dsl		IDLEX	CO2	6353.8569
2020	Annual		Alameda	SI HHDT	Dsl		IDLEX	CH4	0.0429579
2020	Annual		Alameda	SI HHDT	Dsl		IDLEX	PM10	0.0212704
2020	Annual		Alameda	SI HHDT	Dsl		IDLEX	PM2_5	0.0203502
2021	Annual		Alameda	SI HHDT	Dsl		IDLEX	NOx	27.656244
2021	Annual		Alameda	SI HHDT	Dsl		IDLEX	ROG	0.8777944
2021	Annual		Alameda	SI HHDT	Dsl		IDLEX	CO2	6276.1562
2021	Annual		Alameda	SI HHDT	Dsl		IDLEX	CH4	0.0407713
2021	Annual		Alameda	SI HHDT	Dsl		IDLEX	PM10	0.0192905
2021	Annual		Alameda	SI HHDT	Dsl		IDLEX	PM2_5	0.018456

Pl\_Alameda\_2018\_2019\_2020\_2021\_Annual\_idling

**Emissions**

Year	Total Emissions (tons)				Average Daily Emissions (lbs/day)				Total Emissions (MT)		
	ROG	NOx	PM10 Exh	PM2.5 Exh	ROG	NOx	PM10 Exh	PM2.5 Exh	CO2	CH4	N2O
2019	5.04177E-05	0.0015617	1.499E-06	1.43457E-06	0.0001573	0.004872797	4.678E-06	4.476E-06	0.288479	2.12442E-06	7.05E-07
2020	4.57499E-05	0.0014534	1.052E-06	1.00665E-06	0.0001427	0.004534843	3.283E-06	3.141E-06	0.285129	1.92774E-06	6.97E-07
2021	4.34212E-05	0.001368	9.542E-07	9.12947E-07	0.0001355	0.004268485	2.977E-06	2.849E-06	0.281643	1.82961E-06	6.88E-07
<b>Total</b>	<b>0.000139589</b>	<b>0.0043832</b>	<b>3.506E-06</b>	<b>3.35416E-06</b>	<b>0.0004355</b>	<b>0.013676125</b>	<b>1.094E-05</b>	<b>1.047E-05</b>	<b>0.855251</b>	<b>5.86177E-06</b>	<b>2.09E-06</b>
	ROG	NOx	PM10	PM2_5					CO2	CH4	

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# **Appendix A-4**

Land Use

**Land Use**

Updated: 12/8/2017

For CalEEMod Entry

Type	Subtype	Quantity	Unit	Acreage	Square Feet	
Parking	Parking Lot	1.7	acres	1.70	74,052	271 spaces
Recreational	Health Club	1,450	square feet	0.00	1,450	Community Center
Recreational	Quality Restaurant	2,400	square feet	0.00	2,400	Restaurant
Residential	Apartments Low Rise	13	dwelling units	4.37	17,838	
Residential	Condo/Townhouse	82	dwelling units	0.00	162,602	
Retail	Regional Shopping Center	3,483	square feet	0.00	3,483	Retail
				<b>6.07</b>	<b>261,825</b>	

Sources:

Initial Study: \\Sfo-file01\projects\SFO\17xxxx\170627.00 - Fremont Niles Gateway\03 Working Documents\2\_IS-NOP\3\_Screencheck Draft\Niles Gateway Initial Study\_120517.docx

Project Plans: \\Sfo-file01\projects\SFO\17xxxx\170627.00 - Fremont Niles Gateway\06 Project Library\2017-11\_Updated Plans Package

Construction Data Needs: \\Sfo-file01\projects\SFO\17xxxx\170627.00 - Fremont Niles Gateway\03 Working Documents\AQ-GHG\Construction Equipment

Fireplaces Defaults	NumberWood	NumberGas	NumberPropane	NumberNoFireplace	NumberFireplaceHourDay	FireplaceD	FireplaceWoodMass
Apartments Low Rise	2.21	1.95	0	0.52	3.5	11.14	228.8
Condo/Townhouse	13.94	12.3	0	3.28	3.5	11.14	228.8
Revised							
Apartments Low Rise	0	0					
Condo/Townhouse	0	0					

**Table 2-1**  
Niles Gateway Mixed-Use Project Summary

Use	Concept Plan Type	Quantity	Square Feet
CRAFT Units	A1	1	775
	A2	1	709
	B1	2	2,098
	B1-1	2	2,372
	B2	1	1,318
	B3	2	2,338
	2B	4	8,228
	Subtotal	13	17,838
Townhomes	1	28	53,536
	2B	22	45,254
	3	15	31,530
	3X	11	22,616
	4	6	9,666
	Subtotal	82	162,602
Non-Residential	Retail/Restaurant	-	5,883
	Community Center	-	1,450
	Subtotal		7,333
<b>TOTAL</b>		<b>95 units</b>	<b>187,773</b>
Parking	-	271 spaces	

SOURCE: Valley Oak Partners, LLC, 2017

From Initial Study

**"CRAFT" BUILDING**

2.5-Story Building: Units (2 BR, 2-1/2 Baths) and 2-Car Garages, with ground floor Retail

UNITS	Quan.	Living Space	Parking	Total livable area	Total sqft
Unit A1 (1BR)	1	775		775	775
Unit A2 (1BR)	1	709		709	709
Unit B1	2	1,049	458	1,049	2,098
Unit B1-1	2	1,186	472	1,186	2,372
Unit B2	1	1,318	524	1,318	1,318
Unit B3	2	1,169	524	1,169	2,338
TH Unit 2B	4	2,057	454	2,057	8,228
Total units	13				
Total unit area		1372			1738
Restaurant corner					2,400
Retail					3,483
Community space					1,450
Total additional s					7,333
Total CRAFT building					25,171

5,248 craft parking  
36,940 townhome parking  
38,590 guest/retail parking (estimate)  
80,778 total

**TOWNHOMES**

2- and 3-Story Units with 2-Car Garage

UNITS	Quan.	Space	Parking	Total sqft
Unit 1 (2BR+Den/3.5B)	28	1,912	454	53,536
Unit 2B (3BR+Den/3.5B)	22	2,057	454	45,254
Unit 3 (end) (3BR+Den/3.5B)	15	2,102	445	31,530
Unit 3X (end) (3BR+Den/3.5B)	11	2,056	445	22,616
Unit 4 (2-story end) (3BR+Den/3.5B)	6	1,611	445	9,666
Total units	82			
Total unit area		1983		162602
Total CRAFT building plus Townhomes: living area				180,440
Total CRAFT building plus Townhomes: living area + community space + restaurant				187,773

**PARKING**

ASSIGNED PARKING	Car/Unit	Space	Parking	Total
Townhomes	2			170
CRAFT Building: 2BR Units	2			14
CRAFT Building: 1BR Units	1			2
Total Assigned Parking				186
Guest / Retail Parking				Total
Guest/Retail Parkign on Niles Blvd.				28
Guest/Retail Parkign on Site				57
Total Assigned Parking				85

2017\_11\_08\_Henkel Niles\_Resubmittal\_Updated

\\Sfo-file01\projects\SFO\17xxxx\170627.00 - Fremont Niles Gateway\06 Project Library\2017-11\_Updated Plans Package

# **Appendix A-5**

## Trip Generation

**Trip Generation**

Updated: 12/13/2017  
 For CalEEMod Entry

Type	Subtype	Quantity	Unit	Calculated trips and VMT				CalEEMod Calcs			
				Trips	VMT	Trips	VMT	Daily Trips	Daily VMT	Annual Trips	Annual VMT
Parking	Parking Lot	1.7	acres	0	0	0	0				
Recreational	Health Club	1450	square feet	0	0	0	0				
Recreational	Quality Restaurant	2400	square feet	197	642	71,140	231,824			231,193	0.3%
Residential	Apartments Low Rise	13	dwelling units	93	591	29,984	190,250			189,672	0.3%
Residential	Condo/Townhouse	82	dwelling units	588	3,731	189,129	1,200,039			1,196,390	0.3%
Retail	Regional Shopping Center	3483	square feet	129	620	50,719	244,302			243,485	0.3%
				<b>1,007</b>	<b>5,585</b>	<b>340,972</b>	<b>1,866,415</b>			<b>1,860,739</b>	<b>0.3%</b>

Email from Mark Spencer 12/13/17

Note: reduced total daily trips by 21 (2%) to account for internal trip capture (email from Karl on 12/13/17)

Table 1 – Trip Generation Summary

Land Use	Units	Daily			AM Peak Hour			PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
<b>Existing</b>											
Multifamily Housing (Low-Rise)	95 du	7.17	681	0.56	53	15	38	0.67	64	38	26
Quality Restaurant	2.40 ksf	82.13	197	4.47	11	9	2	8.28	20	12	8
Shopping Center	3.48 ksf	36.98	128	3	10	6	4	4.21	15	7	8
Internal Trip Capture				8%	-6	-2	-4	15%	-15	-9	6
<b>Total</b>			<b>1006</b>		<b>68</b>	<b>28</b>	<b>40</b>		<b>84</b>	<b>48</b>	<b>36</b>

Note: du = dwelling unit; ksf = 1,000 square feet;

21

W-Trans Daily Trips

Rate	Trips
83.84	201
37.75	131
<b>1027</b>	

2% reduction in total trips due to internal trip capture

**Notes from Mark / Allison:**

NOT USED: Also, to be conservative and based on the location, no pass-by trips were applied and no internal trip capture between land uses was assumed

Weekdays would have approximately 1.5 times the number of trips as a Saturday, and approximately twice the number of trips as a Sunday for residential

Restaurant is about 15 more trips on Saturday than during the week, and 30 less trips on Sunday compared to the weekdays

Shopping center has 30 more trips on Saturday than during a weekday, while Sunday is 60 trips less than Weekdays.

CalEEMod Trip Type	Land Use	Calculated Trip rates by weekday		
		Weekday	Saturday	Sunday
Apartments Low Rise	Multifamily Housing (Low-Rise)	7.170321	4.78	3.59
Condo/Townhouse	Multifamily Housing (Low-Rise)	7.170321	4.78	3.59
Quality Restaurant	Quality Restaurant	82.12566	88.29	69.54
Regional Shopping Center	Shopping Center	36.97809	65.97	28.47

**CalEEMod Inputs**

VehicleTripsLandUseSubType	VehicleTripsLandUseSizeMetric	WD_TR	ST_TR	SU_TR	defaults							PR_TP	DV_TP	PB_TP	defaults					Weighted Trip Lengths		
					HW_TL	HS_TL	HO_TL	CC_TL	CW_TL	CNW_TL	HW_TTP				HS_TTP	HO_TTP	CC_TTP	CW_TTP	CNW_TTP	Average Pr	Average Overall Trip Length	
Apartments Low Rise	Dwelling Unit	7.17	4.78	3.59	10.8	4.8	5.7	0	0	0	0	86	11	3	31	15	54	0	0	0	7.146	6.35
Condo/Townhouse	Dwelling Unit	7.17	4.78	3.59	10.8	4.8	5.7	0	0	0	0	86	11	3	31	15	54	0	0	0	7.146	6.35
Health Club	1000sqft	0.00	0.00	0.00	0	0	0	7.3	9.5	7.3	52	39	9	0	0	0	64.1	16.9	19	7.6718	4.75	
Parking Lot	Acre	0.00	0.00	0.00	0	0	0	7.3	9.5	7.3	0	0	0	0	0	0	0	0	0	0	0	0.00
Quality Restaurant	1000sqft	82.13	88.29	69.54	0	0	0	7.3	9.5	7.3	38	18	44	0	0	0	69	12	19	7.564	3.26	
Regional Shopping Center	1000sqft	36.98	65.97	28.47	0	0	0	7.3	9.5	7.3	54	35	11	0	0	0	64.7	16.3	19	7.6586	4.82	

**CalEEMod Defaults (for reference)**

VehicleTripsLandUseSubType	VehicleTripsLandUseSizeMetric	WD_TR	ST_TR	SU_TR	HW_TL	HS_TL	HO_TL	CC_TL	CW_TL	CNW_TL	PR_TP	DV_TP	PB_TP	HW_TTP	HS_TTP	HO_TTP	CC_TTP	CW_TTP	CNW_TTP
Apartments Low Rise	Dwelling Unit	6.59	7.16	6.07	10.8	4.8	5.7	0	0	0	86	11	3	31	15	54	0	0	0
Condo/Townhouse	Dwelling Unit	5.81	5.67	4.84	10.8	4.8	5.7	0	0	0	86	11	3	31	15	54	0	0	0
Health Club	1000sqft	32.93	20.87	26.73	0	0	0	7.3	9.5	7.3	52	39	9	0	0	0	64.1	16.9	19
Parking Lot	Acre	0	0	0	0	0	0	7.3	9.5	7.3	0	0	0	0	0	0	0	0	0
Quality Restaurant	1000sqft	89.95	94.36	72.16	0	0	0	7.3	9.5	7.3	38	18	44	0	0	0	69	12	19
Regional Shopping Center	1000sqft	42.7	49.97	25.24	0	0	0	7.3	9.5	7.3	54	35	11	0	0	0	64.7	16.3	19

Day of week ratios

	0.9	1.1
	1.0	1.2
	1.6	1.2
#DIV/0!	#DIV/0!	
	1.0	1.2
	0.9	1.7

# **Appendix A-6**

Energy Use

**Energy Use**

Updated: 12/13/2017

For CalEEMod Entry

Sheet to calculate the kWh of energy generated by on-site rooftop solar based on the City's Solar Ordinance

Solar Ordinance: <http://www.codepublishing.com/CA/Fremont/html/Fremont15/Fremont1544.html#15.44.050>

**Newly constructed buildings of residential occupancy in the City of Fremont shall:**

1. Be designed to include the green building measures specified as mandatory under the California Green Building Standards Code (CalGreen) Chapter 4;
2. Have a solar photovoltaic system installed. The minimum system requirement shall be satisfied using either of two methods, prescriptive or performance:

**A. Prescriptive Method.** The method shall be applicable to those buildings less than 4,500 square foot of conditioned floor space. The nameplate system size shall be calculated as the sum of each solar module's nameplate output. The minimum capacity shall be:

Table 110.12-A: Minimum Nameplate System Size (kW<sub>DC</sub>) Required [C23]

Conditioned Space (ft <sup>2</sup> )	Minimum kW (DC) Required
Less than 1000	1.5
1000 - 1499	1.7
1500 - 1999	2.1
2000 - 2499	2.4
2500 - 2999	2.7
3000 - 3499	3
3500 - 3999	3.2
4000 - 4499	3.5

**B. Performance Method.** Install a solar photovoltaic system sized to meet the minimum percentage of the building's total TDV energy on an annual basis, as defined in Table 110.12-B. The system sizing requirement shall be based upon total building TDV energy use, including both conditioned and unconditioned space and calculated using modeling

Table 110.12-B: Minimum Percent Reduction of Total Annual TDV Energy Use by Climate Zone

Climate Zone	PV % Total TDV
CZ3	55%

**Residential kWh - unmitigated**

Unmitigated	464,862	<i>CalEEMod output below</i>
CRAFT	54,810	
TOWNHOMES	410,052	
Mitigated	459,912	<i>CalEEMod output below estimated based on DU portion estimated based on DU portion</i>
CRAFT	54,053	
TOWNHOMES	405,859	

**CalEEMod Output**

From file: FNG\_mitigated\_OUTPUT\_v4\_NoSolar

Land Use	UNMITIGATED	MITIGATED	UNMITIGATED	MITIGATED
	NaturalGas Use kBTU/yr	NaturalGas Use kBTU/yr	Electricity Use kWh/yr	Electricity Use kWh/yr
Apartment Low Rise	264544	206906	54810.3	54052.9
Condo/Townhouse	1.86E+06	1.45E+06	410052	405859
Health Club	35887.5	29416.9	10962	10523.4
Parking Lot	0	0	25918.2	25918.2
Quality Restaurant	403005	379068	69552	67950
Regional Shopping Center	16008	12615	36470.4	34521.6
<b>Total</b>				

**Option A: kW requirement - NOT USED**

**PV Watts kWh calculations by system size**

Inputs: Hayward weather data, fixed roof mount, and defaults: 20° tilt, 180° azimuth, 14% system loss, 96% inverter efficiency, and 1.1 DC to AC size

\\Sfs-file01\projects\SF017\17xxxx\0170527.00 - Fremont Niles Gateway\03 Working Documents\AQ-GHG\Solar PV

System size (kW)	Annual kWh
1.5	2,309
1.7	2,617
2.1	3,232
2.4	3,694

Unit Type	sqft/unit	kW per unit min	# units	kW total	Annual kWh/system	Annual kWh total
<b>CRAFT</b>						
Unit A1 (1BR)	775	1.5	1	1.5	2,309	2,309
Unit A2 (1BR)	709	1.5	1	1.5	2,309	2,309
Unit B1	1,049	1.7	2	3.4	2,617	5,234
Unit B1-1	1,186	1.7	2	3.4	2,617	5,234
Unit B2	1,318	1.7	1	1.7	2,617	2,617
Unit B3	1,169	1.7	2	3.4	2,617	5,234
TH Unit 2B	2,057	2.4	4	9.6	3,694	14,776
<b>Total</b>			<b>13</b>	<b>24.5</b>	<b>18,780</b>	<b>37,713</b>
<b>TOWNHOMES</b>						
Unit 1 (2BR+Den/3.1)	1,912	2.1	28	58.8	3,232	90,496
Unit 2B (3BR+Den/3)	2,057	2.4	22	52.8	3,694	81,268
Unit 3 (end) (3BR+D)	2,102	2.4	15	36.0	3,694	55,410
Unit 3X (end) (3BR+)	2,056	2.4	11	26.4	3,694	40,634
Unit 4 (2-story end)	1,611	2.1	6	12.6	3,232	19,392
<b>Total</b>			<b>82</b>	<b>186.6</b>	<b>17,546</b>	<b>287,200</b>
<b>TOTAL ALL UNITS</b>			<b>95</b>	<b>211.1</b>	<b>36,326</b>	<b>324,913</b>

70% Percent of total electricity demand

71% Percent of total electricity demand

**Option B: kWh requirement**

Percent energy	55%
Unmitigated	255,674
CRAFT	30,146
TOWNHOMES	225,529
Mitigated	252,952
CRAFT	29,729
TOWNHOMES	223,222

**TOTAL = Option B**

252,952

598,825 Total electricity demand

42% Percent of total electricity demand

# **Appendix A-7**

Silt Loading

**Silt Loading**

updated: 10/13/2017

**Silt Loading Factor**  
 For entry into CalEEMod - Construction onroad and Operation mobile  
 Source: ARB 2016: Miscellaneous Process Methodology 7.9 — Entrained Road Travel, Paved Road Dust. [https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9\\_2016.pdf](https://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2016.pdf)

**Table 6 2008 Roadway Travel Fractions and VMT (1) Estimates for California Entrained Paved Road Dust**

County	2008 HPMS Travel Fractions			
	Freeway	Major	Collector	Local
Alameda	0.566	0.317	0.064	0.053

1

**TABLE 7: 2008 Silt Loadings and PM10 Emission Factors for California Entrained Paved Road Dust Estimates**

County	Silt Loadings (g/m2)			
	Freeway	Major	Collector	Local
Alameda	0.015	0.032	0.032	0.32

**Composite SL** 0.037642 enter into CalEEMod NOTE: for operational mobile sources run, must do this as a last step immediately before running the model or else it will default to zero

**Re-entrained PAVED Road Dust Emission Factors**

*Methodology*

Calculation Methodology: USEPA AP-42, Paved Roads, Section 13.2.1, Revised January 2011: <http://www.epa.gov/ttn/chieff/ap42/ch13/final/c13s0201.pdf>

Avg vehicle weight and silt loading on Local Roads within Los Angeles County [http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9\\_2014.pdf](http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2014.pdf)

Precipitation Days greater than 0.254mm (0.01 in) [http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9\\_2014.pdf](http://www.arb.ca.gov/ei/areasrc/fullpdf/full7-9_2014.pdf)

Pollutant	Variables					E <sub>ext</sub> (g/mi)
	k	sL	W	P	N	
PM10	1.00	0.037642	2.4	24	365	2.45198
PM2.5	0.25	0.037642	2.4	24	365	2.41468

**Where:**  
 E = particulate emission factor (grams of particulate matter/VMT)  
 k = particle size multiplier (g/VMT)  
 sL = local roadway silt loading (g/m2)  
 W = average weight of vehicles on the road (tons)  
 P = number of wet days with at least 0.254mm of precipitation  
 N = number of days in the averaging period

**Source**  
 calculation  
 default from AP-42  
 ARB Section 7.9, Table 3. Local, Local Urban - SEE ABOVE  
 ARB Section 7.9, Table 3. 2.4 for Los Angeles  
 ARB Section 7.9, Table 10. 67 for Los Angeles  
 annual days (365)

# **Appendix A-8**

## CalEEMod Summary

CalEEMod Outputs

updated: 12/13/2017

Paste from CalEEMod: see OutputSummary\_v2

Construction updated: 12/1/2017

Year	Category 1	Category 2	Mit / Unmit	Annual Emissions (tons or MT per year for GHG)														
				ROG	NOX	CO	SOX	PM10 Exh	PM10 Dst	PM10 T	PM2.5 Ex	PM2.5 Dst	PM2.5 T	CO2	CH4	N2O		
2019	Fugitive Dust	Offroad Equipment	Unmitigated	-	-	-	-	-	0.024	0.024	-	0.004	0.004	-	-	-	-	-
2019	Off-Road	Offroad Equipment	Unmitigated	0.144	1.430	1.131	0.002	0.084	-	0.084	0.078	-	0.078	165.533	-	-	-	-
2019	Paving	Offroad Equipment	Unmitigated	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2019	Archit. Coating	Offroad Equipment	Unmitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2019	Hauling	Onroad Truck Travel	Unmitigated	0.001	0.038	0.006	0.000	0.000	0.001	0.001	0.000	0.000	0.000	9.363	-	-	-	-
2019	Vendor	Onroad Truck Travel	Unmitigated	0.005	0.146	0.032	0.000	0.001	0.002	0.003	0.001	0.001	0.002	30.327	-	-	-	-
2019	Worker	Worker Commute	Unmitigated	0.022	0.016	0.166	0.000	0.000	0.006	0.006	0.000	0.007	0.007	41.388	-	-	-	-
2020	Fugitive Dust	Offroad Equipment	Unmitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2020	Off-Road	Offroad Equipment	Unmitigated	0.230	2.263	1.860	0.003	0.131	-	0.131	0.123	-	0.123	270.265	-	-	-	-
2020	Paving	Offroad Equipment	Unmitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2020	Archit. Coating	Offroad Equipment	Unmitigated	0.085	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2020	Hauling	Onroad Truck Travel	Unmitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2020	Vendor	Onroad Truck Travel	Unmitigated	0.011	0.354	0.076	0.001	0.002	0.006	0.008	0.002	0.004	0.005	79.697	-	-	-	-
2020	Worker	Worker Commute	Unmitigated	0.048	0.035	0.363	0.001	0.001	0.015	0.016	0.001	0.016	0.017	97.466	-	-	-	-
2021	Fugitive Dust	Offroad Equipment	Unmitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2021	Off-Road	Offroad Equipment	Unmitigated	0.127	1.259	1.129	0.002	0.069	-	0.069	0.065	-	0.065	166.785	-	-	-	-
2021	Paving	Offroad Equipment	Unmitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2021	Archit. Coating	Offroad Equipment	Unmitigated	0.060	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2021	Hauling	Onroad Truck Travel	Unmitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2021	Vendor	Onroad Truck Travel	Unmitigated	0.006	0.198	0.042	0.001	0.000	0.004	0.004	0.000	0.002	0.003	48.504	-	-	-	-
2021	Worker	Worker Commute	Unmitigated	0.027	0.019	0.204	0.001	0.000	0.009	0.010	0.000	0.010	0.010	58.091	-	-	-	-
2019	Fugitive Dust	Offroad Equipment	Mitigated	-	-	-	-	-	0.024	0.024	-	0.004	0.004	-	-	-	-	-
2019	Off-Road	Offroad Equipment	Mitigated	0.023	0.159	1.225	0.002	0.003	-	0.003	0.003	-	0.003	165.533	-	-	-	-
2019	Paving	Offroad Equipment	Mitigated	0.002	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2019	Archit. Coating	Offroad Equipment	Mitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2019	Hauling	Onroad Truck Travel	Mitigated	0.001	0.038	0.006	0.000	0.000	0.001	0.001	0.000	0.000	0.000	9.363	-	-	-	-
2019	Vendor	Onroad Truck Travel	Mitigated	0.005	0.146	0.032	0.000	0.001	0.005	0.005	0.001	0.001	0.002	30.327	-	-	-	-
2019	Worker	Worker Commute	Mitigated	0.022	0.016	0.166	0.000	0.000	0.023	0.023	0.000	0.007	0.007	41.388	-	-	-	-
2020	Fugitive Dust	Offroad Equipment	Mitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2020	Off-Road	Offroad Equipment	Mitigated	0.038	0.239	1.972	0.003	0.005	-	0.005	0.005	-	0.005	270.265	-	-	-	-
2020	Paving	Offroad Equipment	Mitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2020	Archit. Coating	Offroad Equipment	Mitigated	0.085	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2020	Hauling	Onroad Truck Travel	Mitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2020	Vendor	Onroad Truck Travel	Mitigated	0.011	0.354	0.076	0.001	0.002	0.012	0.014	0.002	0.004	0.005	79.697	-	-	-	-
2020	Worker	Worker Commute	Mitigated	0.048	0.035	0.363	0.001	0.001	0.056	0.057	0.001	0.016	0.017	97.466	-	-	-	-
2021	Fugitive Dust	Offroad Equipment	Mitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2021	Off-Road	Offroad Equipment	Mitigated	0.023	0.147	1.217	0.002	0.003	-	0.003	0.003	-	0.003	166.785	-	-	-	-
2021	Paving	Offroad Equipment	Mitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2021	Archit. Coating	Offroad Equipment	Mitigated	0.060	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2021	Hauling	Onroad Truck Travel	Mitigated	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2021	Vendor	Onroad Truck Travel	Mitigated	0.006	0.198	0.042	0.001	0.000	0.007	0.008	0.000	0.002	0.003	48.504	-	-	-	-
2021	Worker	Worker Commute	Mitigated	0.027	0.019	0.204	0.001	0.000	0.035	0.035	0.000	0.010	0.010	58.091	-	-	-	-

For HRA

	PM10 Exh		PM2.5 Ex	
	Unmit	Mit	Unmit	Mit
Off-Road				
2019	0.084	0.003	0.078	0.003
2020	0.131	0.005	0.123	0.005
2021	0.069	0.003	0.065	0.003
On-Road				
2019	0.001	0.001	0.001	0.001
2020	0.002	0.002	0.002	0.002
2021	0.001	0.001	0.001	0.001

Operation updated: 1/22/2018

Year	Source	Mit / Unmit	Annual Emissions (tons or MT per year for GHG)															
			ROG	NOX	CO	SOX	PM10 Exh	PM10 Dst	PM10 T	PM2.5 Exh	PM2.5 Dst	PM2.5 T	CO2	CH4	N2O			
2024	Area	Unmitigated	0.892	0.008	0.707	0.000	0.004	-	0.004	0.004	-	0.004	1.152	0.001	-	-	-	-
2024	Energy	Unmitigated	0.014	0.120	0.061	0.001	0.010	-	0.010	0.010	-	0.010	207.817	0.009	0.003	-	-	-
2024	Mobile	Unmitigated	0.257	1.658	2.674	0.009	0.009	0.349	0.359	0.009	0.102	0.111	863.602	0.040	-	-	-	
2024	Waste	Unmitigated	-	-	-	-	-	-	-	-	-	-	-	0.694	-	-	-	-
2024	Water	Unmitigated	-	-	-	-	-	-	-	-	-	-	10.625	0.238	0.006	-	-	-
2024	Area	Mitigated	0.892	0.008	0.707	0.000	0.004	-	0.004	0.004	-	0.004	1.152	0.001	-	-	-	-
2024	Energy	Mitigated	0.011	0.097	0.050	0.001	0.008	-	0.008	0.008	-	0.008	179.180	0.008	0.003	-	-	-
2024	Mobile	Mitigated	0.257	1.658	2.674	0.009	0.009	0.349	0.359	0.009	0.102	0.111	863.602	0.040	-	-	-	-
2024	Waste	Mitigated	-	-	-	-	-	-	-	-	-	-	-	0.694	-	-	-	-
2024	Water	Mitigated	-	-	-	-	-	-	-	-	-	-	-	0.190	0.005	-	-	-

ONLY INCLUDES SOLAR ORDINANCE (no T24 or waste)

File: OutputSummary\_v3\_unmit\_SOLARONLY

File: OutputSummary\_v2\_mit

Mitigated INCLUDES above + transportation measures

29.0727 19.418 11.7349

17.0325 6.53385 2.3038

percent reduced by mit

Area	0%	0%	0%	0%	0%	0%	#DIV/0!	0%	0%	#DIV/0!	0%	0%	0%	0%	#DIV/0!	0%	0%	#DIV/0!
Energy	-19%	-19%	-18%	-20%	-20%	#DIV/0!	-20%	-20%	#DIV/0!	-20%	-20%	#DIV/0!	-20%	-14%	-8%	-15%	-	-
Mobile	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	#DIV/0!
Waste	#DIV/0!	0%	#DIV/0!	0%	#DIV/0!	#DIV/0!												
Water	#DIV/0!	-15%	-20%	-20%	-	-												

# **Appendix A-9**

Health Risk Assessment – AERSCREEN  
Outputs

**AERSCREEN Inputs and Outputs**

Updated: 12/6/2017

Notes  
Concentrations modeled using AERSCREEN worst-case 1-hr, scaled to annual

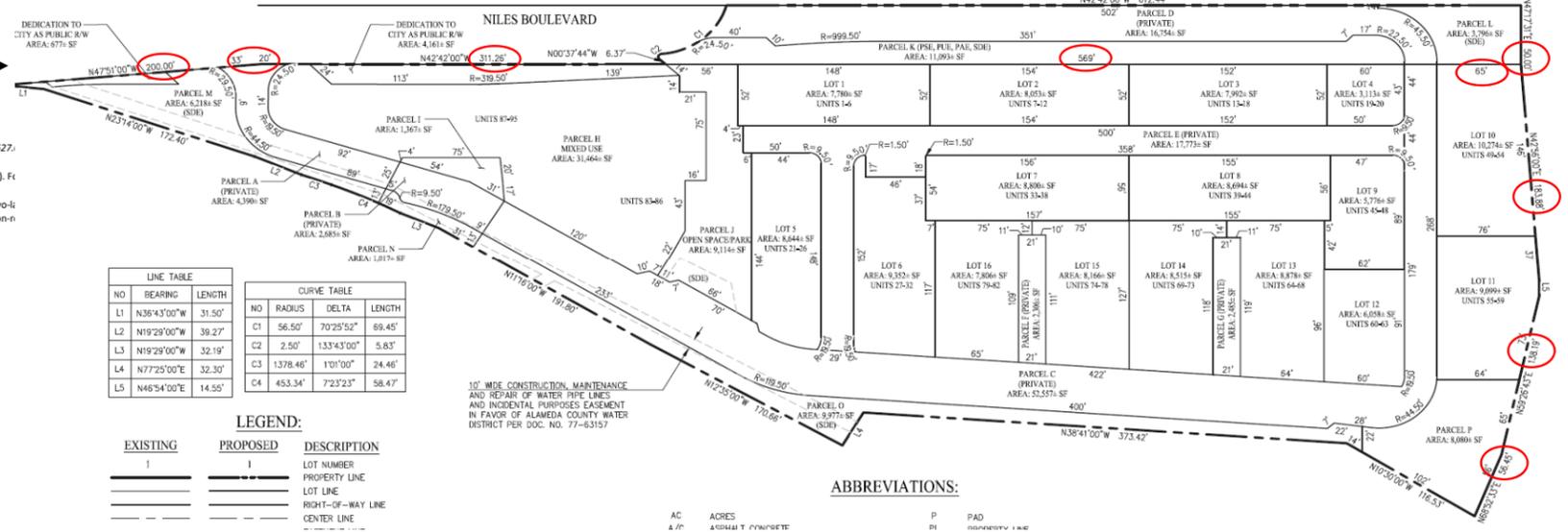
Input	Construction Off-Road Equip	Construction On-Road Trucks	Notes
Title	Offroad	Onroad	
Units	M	M	
Source Type	A	A	
DPM emission rate (g/s)	1	1	Unit emission rate for scaling
Release Height above ground (meters)	3.89	2.55	Release height for off-road construction equipment and on-road operational mobile sources from the CRRP-HRA (BAAQMD, SF DPH & SF Planning, 2012). For Off-road: rounded max down from 365m) to represent the majority of the construction area. On-road: 0.3 mile = 31 meters
Maximum horizontal dimension of area source (meters)	285	95	Off-road: rounded min down (from 130m) to represent the majority of the construction area. On-road: VW + 6m for single lane / Road Width + 6m for two-lane
Minimum horizontal dimension of area source (meters)	95	2.37	Initial vertical dimension for off-road construction equipment from the CRRP-HRA (BAAQMD, SF DPH & SF Planning, 2012). Initial vertical dimension for on-rural/urban
Initial Vertical Dimension (meters)	1.4	urban	Although CRRP uses rural (page 31), AERSCREEN is already exceedingly conservative, so per the AQTR SOW used urban instead.
population of urban area	233,136	233,136	https://www.census.gov/quickfacts/fact/table/fremontcitycalifornia/PST045216
min distance to ambient air (meters)	default	default	
NO2 chemistry	1	1	
max distance to probe	default	default	
include discrete receptors	no	no	
use flagpole receptors	yes	yes	
flagpole receptor height (meters)	1.5	1.5	BAAQMD 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards
source elevation	default	default	
min ambient temperature (F)	45	45	http://www.intellicast.com/local/history.aspx?location=USCA0008
max ambient temperature (F)	75	75	http://www.intellicast.com/local/history.aspx?location=USCA0008
min ambient temperature (K)	280	280	
max ambient temperature (K)	297	297	
min wind speed (m/s)	default	default	
anemometer height (m)	default	default	
surface characteristics	2	2	
Dominant surface profile	7	7	
dominant climate profile	1	1	
adjust	no	no	
debug	no	no	
Output file name	Offroad.out	Onroad.out	

Outputs	Construction Off-Road Equip	Construction On-Road Trucks	Distance (m)	Receptor Location
<b>Closest Receptors</b>				
<b>Concentrations - Maximum 1-hr (ug/m3)</b>				
Residential	1217.1	2707	n/a	Residential surrounding site
Hospital				
Daycare				
School	1161.6	2648	100	Schools
<b>Concentrations - Average Annual (ug/m3)</b>				
Residential	121.71	270.7		
Hospital				
Daycare				
School	116.16	264.8		
<b>All Receptors</b>				
<b>Distance (m)</b>				
	Paste from AERSCREEN Output			
	Concentrations - Maximum 1-hr (ug/m3)			
1	962.87	2554.10	1	
25	1028.9	2607.10	25	
50	1080	2623.10	50	
75	1123.7	2635.80	75	
100	1161.6	2648.00	100	
125	1195.2	2660.30	125	
145	1217.1	2680.30	145	
150	1142.7	2688.30	175	
175	832.54	2695.30	200	
200	636.68	2702.40	225	
225	528.06	2707.00	242	
250	448.98	1996.70	250	
275	388.81	928.67	275	
300	341.52	665.09	300	
325	303.69	519.90	325	
350	272.42	401.24	350	
	5.41			
	4.08			

**Actual Site Dimensions**

Length	Width
65	50
569	184
311	138
20	56
33	
200	
<b>1198</b>	<b>428</b>

source: \\sfo-file01\projects\SFO\170xxx\0170627



# **Appendix A-10**

Health Risk Assessment - Calculations

**HRA - Screening**

Updated: 12/6/2017

**HRA Notes:**

**Emission Rates / Scaling Factors**

	Construction Off-Road Equip	Construction On-Road Trucks	NOTES
<b>DDM g/s</b>			
<u>Unmitigated</u>			
All Construction	3.32E-03	1.12E-06	
2020-2021	3.55E-03	1.19E-06	for offsite for onsite
<u>Mitigated</u>			
All Construction	1.25E-04	1.12E-06	for offsite
2020-2021	1.38E-04	1.19E-06	for onsite
<b>PM2.5 g/s</b>			
<u>Unmitigated</u>			
2019	2.70E-03	4.55E-05	
2020	3.53E-03	6.55E-05	
2021	3.01E-03	3.75E-05	
<u>Mitigated</u>			
2019	1.01E-04	4.55E-05	
2020	1.38E-04	6.55E-05	
2021	1.38E-04	3.75E-05	

**Cancer Risk Calculations**

	Construction Off-Road Equip	Construction On-Road Trucks	NOTES
<b>Average Annual Scaler Concentrations (ug/m3)</b>			
Residential - offsite	121.71	270.70	
Residential - onsite	121.71	270.70	same as offsite, receptors could be any distance
School	116.16	264.80	
<b>Average Annual SCALED Concentrations (ug/m3)</b>			
<u>Unmitigated</u>			
Residential - offsite	0.404265381	0.000302995	
Residential - onsite	0.432514808	0.00032909	
School	0.3858308	0.000296392	
<u>Mitigated</u>			
Residential - offsite	0.015233709	0.000302995	
Residential - onsite	0.01677289	0.00032909	
School	0.014539049	0.000296392	
<b>Risk Factors</b>			
<u>Construction</u>			
Residential - offsite	348.09	348.09	Sum of all age groups; same for all scenarios
Residential - onsite	238.48	238.48	
School	36.61	36.61	--

**Cancer Risk - Unmitigated**

	Construction Off-Road Equip	Construction On-Road Trucks	Construction TOTAL
Residential - offsite	140.72	0.11	140.83
Residential - onsite	103.15	0.08	103.22
School	14.12	0.01	14.13

**Cancer Risk - Mitigated**

	Construction Off-Road Equip	Construction On-Road Trucks	Construction TOTAL
Residential - offsite	5.30	0.11	5.41
Residential - onsite	4.00	0.08	4.08
School	0.53	0.01	0.54

**Chronic Hazard Index**

Chronic REL (ug/m3) 5.0  
 California Air Resources Board, "Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values" and "OEHHA/ARB Approved Chronic Reference Exposure Levels and Target Organs," <http://www.arb.ca.gov>  
 Table last updated: February 23, 2017. Downloaded 10/9/17

	Construction Off-Road Equip	Construction On-Road Trucks	NOTES
<b>Chronic Hazard Index</b>			
<u>Unmitigated</u>			
Residential - offsite	0.1	0.0	0.08
Residential - onsite	0.1	0.0	0.09
School	0.1	0.0	0.08
<u>Mitigated</u>			
Residential - offsite	0.0	0.0	0.00
Residential - onsite	0.0	0.0	0.00
School	0.0	0.0	0.00

**ESTIMATED PM2.5 Concentrations - Average Annual (ug/m3)**

	Construction Off-Road Equip	Construction On-Road Trucks	NOTES
<b>Average Annual Scaler Concentration (ug/m3)</b>			
Residential - offsite	121.71	270.7	
Residential - onsite	121.71	270.7	
School	116.16	264.8	
<b>Average Annual SCALED Concentrations (ug/m3)</b>			
<u>Unmitigated</u>			
Residential - offsite	4.30E-01	1.77E-02	0.45
Residential - onsite	4.30E-01	1.77E-02	0.45
School	4.10E-01	1.73E-02	0.43
<u>Mitigated</u>			
Residential - offsite	1.68E-02	1.77E-02	0.03
Residential - onsite	1.68E-02	1.77E-02	0.03
School	1.60E-02	1.73E-02	0.03

**NOT USED - by year**

	Construction Off-Road Equip	Construction On-Road Trucks	NOTES
<b>Average Annual Scaler Concentration (ug/m3)</b>			
All Receptor Locations	121.71	270.7	
<b>Average Annual SCALED Concentrations (ug/m3)</b>			
<u>Unmitigated</u>			
2019	0.328539119	0.012312284	0.34
2020	0.430068269	0.017726607	0.45
2021	0.366334535	0.010151179	0.38
<u>Mitigated</u>			
2019	0.012344271	0.012312284	0.02
2020	0.016773007	0.017726607	0.03
2021	0.016757807	0.010151179	0.03

**4.12.2.1 Non-Continuous Sources**

When modeling a non-continuously emitting source (e.g., operating for eight hours per day and five days per week), the modeled long-term average concentrations are based on 24 hours a day and seven days per week for the period of the meteorological data set. Even though the emitting source is modeled using a non-continuous emissions schedule, the long-term concentration is still based on 24 hours a day and seven days per week. Thus, this concentration includes the zero hours when the source was not operating. For the offsite worker inhalation risk, we want to determine the long-term concentration the worker is breathing during their work shift. Therefore, the long-term concentration needs to be adjusted so it is based only on the hours when the worker is present. For example, assuming the emitting source and worker's schedules are the same, the adjustment factor is 4.2 = (24 hours per day) / (8 hours per shift) x (7 days in a week / 5 days in a work week). In this example, the long term residential exposure is adjusted upward to represent the exposure to a worker. Additional concentration adjustments may be appropriate depending on the work shift overlap. These adjustments are discussed below.

**4.12.2.2 Continuous Sources**

If the source is continuously emitting, then the worker is assumed to breathe the long-term annual average concentration during their work shift. Equation 4.1 becomes one and no concentration adjustments are necessary in this situation when estimating the inhalation cancer risk. Note however, if an assessor does not wish to apply the assumption the worker breathes the long-term annual average concentration during the work shift, then a refined concentration can be post-processed as described in Appendix M. All alternative assumptions should be approved by the reviewing authority and supported in the presentation of results.

**2.1.3.2 Short Term Projects**

In the 2015 HRA Guidelines, OEHHA recommends using actual project duration for short term projects, but cautions that the risk manager should consider a lower cancer risk threshold for very short term projects, because a higher exposure over a short period of time may pose a greater risk than the same total exposure spread over a much longer period of time. To ensure that short-term projects do not result in unanticipated higher cancer impacts due to short-duration high-exposure rates, the Air District recommends that the cancer risk be evaluated assuming that the average daily dose for short-term exposure lasts a minimum of three years for projects lasting three years or less. For residential exposures, the cancer risk calculations should include the most sensitive age groups (beginning with the third trimester of pregnancy) and should use the 95th percentile breathing rates. The Air District recommends following OEHHA guidelines for other aspects of short term projects. In summary, the Air District recommends:

- use of actual emission rates over a minimum 3-year duration for cancer risk assessments involving projects lasting 3 years or less, and
- use of actual project duration for cancer risk assessments on projects lasting longer than 3 years.

**8.3.1 Calculation of Noncancer Inhalation Hazard Quotient and Hazard Index**

To calculate the acute HQ, the maximum 1-hour ground level concentration (in ug/m<sup>3</sup>) of a substance at a receptor is divided by the acute 1-hour REL (in ug/m<sup>3</sup>) for the substance:

$$\text{Acute Hazard Quotient} = \frac{\text{1-Hour Max Concentration (ug/m}^3\text{)}}{\text{Acute REL (ug/m}^3\text{)}}$$

To calculate the chronic HQ, the annual average ground level concentration of a substance is divided by the chronic REL for the substance:

$$\text{Chronic Hazard Quotient} = \frac{\text{Annual Average Concentration (ug/m}^3\text{)}}{\text{Chronic REL (ug/m}^3\text{)}}$$

To calculate the 8-hour HQ, the adjusted annual average ground level concentration of a substance (represented as "Adjusted C<sub>8h</sub>" in EQ 5.4.1.4 A) is divided by the 8-hour REL for the substance:

# **Appendix A-11**

Health Risk Assessment – Risk Factors



# **Appendix A-12**

Health Risk Assessment – Emission Rates

**DPM and PM2.5 Emission Rates**

Updated: 12/4/2017

**HRA Notes:**

BAAQMD recommends short-term projects "use of actual emission rates over a minimum 3-year duration for cancer risk assessments involving projects lasting 3 years or less." This was since AIRSCREEN calculates maximum 1-hr concentration based on continuous emissions (which is then converted to annual), the 1-hr emission rate should be based on the emission rate during the entire construction period (24 hrs/day, 7 days per week).

To estimate annual average PM2.5 concentrations, divided PM2.5 exhaust emissions by the full 24hrs/day and 7 days/week when construction is occurring. This is still conservative because emissions would not occur for 2-4 months of the year (depending on the year). Could divide by the full 365 days/year for the entire year to be less conservative, but did not do this.

**DPM Emission Rates**

	Construction Off-Road Equip	Construction On-Road Trucks	NOTES
<b>DPM Emissions (lbs)</b>			
<b>Unmitigated</b>			
2019	168.1060049	2.7824	off-road includes equip + onsite trucks (travel + id)
2020	261.8729053	4.7968	--
2021	138.1736692	1.7384	--
All Construction	568.1525795	9.3176	
2020-2021	400.0465745	6.5352	for onsite receptors
<b>Mitigated</b>			
2019	5.89560494	2.7824	off-road includes equip + onsite trucks
2020	9.584105281	4.7968	--
2021	5.328669245	1.7384	--
All Construction	21.40937947	9.3176	
2020-2021	15.51377453	6.5352	for onsite receptors
<b>Scaling Factors for onroad sources</b>			
Hauling		0.008	haul trip = 40 miles rtp (20 miles each way, default); assume 0.3 mile onsite segment
Vendor		0.021	vendor trip = 14.6 miles rtp (7.3 miles each way, default); assume 0.3 mile onsite segment
Worker		0.014	worker trip = 21.6 miles rtp (10.8 miles each way, default); assume 0.3 mile onsite segment
<b>Time Values for Emission Rates</b>			
Total Calendar Days - 2019	305	305	
Total Calendar Days - 2020	365	365	
Total Calendar Days - 2021	226	226	
Total Calendar Days - all construction	898	898	Total calendar days (7 days/week); see note above
Total Calendar Days - 2020-2021 construction	591	591	Total calendar days for 2020-2021 construction (7 days/week); see note above
Hours per day	24	24	24 hrs/days; see note above

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

<b>Unmitigated</b>			
2019	2.89E-03	9.84E-07	
2020	3.77E-03	1.42E-06	
2021	3.21E-03	8.30E-07	
All Construction	3.33E-03	1.12E-06	Scaled on-road emissions by the highest of the 3 scaling factors to be conservative
2020-2021	3.55E-03	1.19E-06	
<b>Mitigated</b>			
2019	1.01E-04	9.84E-07	1% <- percent on-road vs. offroad
2020	1.38E-04	1.42E-06	1%
2021	1.38E-04	8.30E-07	1%
All Construction	1.25E-04	1.12E-06	1%
2020-2021	1.38E-04	1.19E-06	1%

**PM2.5 Exhaust Emission Rates**

	Construction Off-Road Equip	Construction On-Road Trucks	NOTES
<b>PM2.5 Exhaust Emissions (lbs)</b>			
<b>Unmitigated</b>			
2019	156.8227342	2.6424	off-road includes equip + onsite trucks
2020	245.0701321	4.5528	off-road includes equip + onsite trucks
2021	129.5717145	1.6144	off-road includes equip + onsite trucks
All Construction	532.0640409	8.8096	for offsite receptors
2020-2021	375.2413066	6.4572	for onsite receptors
<b>Mitigated</b>			
2019	5.892344303	2.6424	off-road includes equip + onsite trucks
2020	9.583322115	4.5528	off-road includes equip + onsite trucks
2021	5.927174499	1.6144	off-road includes equip + onsite trucks
All Construction	21.40084092	8.8096	for offsite receptors
2020-2021	15.50080661	6.4572	for onsite receptors

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

<b>Unmitigated</b>			
2019	2.70E-03	4.55E-05	
2020	3.53E-03	6.56E-05	
2021	3.01E-03	3.75E-05	
All Construction	3.11E-03	5.15E-05	
2020-2021	3.33E-03	5.48E-05	
<b>Mitigated</b>			
2019	1.01E-04	4.55E-05	
2020	1.38E-04	6.56E-05	
2021	1.38E-04	3.75E-05	
All Construction	1.25E-04	5.15E-05	
2020-2021	1.38E-04	5.48E-05	

**4.12.2.1 Non-Continuous Sources**

When modeling a non-continuously emitting source (e.g., operating for eight hours per day and five days per week), the modeled long-term average concentrations are based on 24 hours a day and seven days per week for the period of the meteorological data set. Even though the emitting source is modeled using a non-continuous emissions schedule, the long-term concentration is still based on 24 hours a day and seven days per week. Thus, this concentration includes the zero hours when the worker is not operating. For the offsite worker inhalation risk, we want to determine the long-term concentration the worker is breathing during their work shift. Therefore, the long-term concentration needs to be adjusted so it is based only on the hours when the worker is present. For example, assuming the emitting source and worker's schedules are the same, the adjustment factor is 4.2 = (24 hours per day/8 hours per shift)(7 days in a week/5 days in a work week). In this example, the long term residential exposure is adjusted upward to represent the exposure to a worker. Additional concentration adjustments may be appropriate depending on the work shift overlap. These adjustments are discussed below.

**4.12.2.2 Continuous Sources**

If the source is continuously emitting, then the worker is assumed to breathe the long-term annual average concentration during their work shift. Equation 4.1 becomes one and no concentration adjustments are necessary in this situation when estimating the inhalation cancer risk. Note however, if an assessor does not wish to apply the assumption the worker breathes the long-term annual average concentration during the work shift, then a refined concentration can be post-processed as described in Appendix M. All alternative assumptions should be approved by the reviewing authority and supported in the presentation of results.

**2.1.3.2 Short Term Projects**

In the 2015 HRA Guidelines, OEHHHA recommends using actual project duration for short term projects, but cautions that the risk manager should consider a lower cancer risk threshold for very short term projects, because a higher exposure over a short period of time may pose a greater risk than the same total exposure spread over a much longer period of time. To ensure that short-term projects do not result in unanticipated higher cancer impacts due to short-duration high-exposure rates, the Air District recommends that the cancer risk be evaluated assuming that the average daily dose for short-term exposure lasts a minimum of three years for projects lasting three years or less. For residential exposures, the cancer risk calculations should include the most sensitive age groups (beginning with the third trimester of pregnancy) and should use the 95<sup>th</sup> percentile breathing rates. The Air District recommends following OEHHHA guidelines for other aspects of short term projects. In summary, the Air District recommends:

- use of actual emission rates over a minimum 3-year duration for cancer risk assessments involving projects lasting 3 years or less, and
- use of actual project duration for cancer risk assessments on projects lasting longer than 3 years.

# **Appendix A-13**

## Constants

## Constants

Updated:

12/7/2017

grams per ton	907,185
grams per MT	1,000,000
grams per kg	1,000
lbs per ton	2,000
hrs/day	24
work hrs/day	10 12 hour construction window per day, but max of 8 hrs of equipment operation: Construction Data Needs - AQ-GHG (BAAQMD)
seconds/hr	3,600
grams per lb	453.592
1hr to annual concentration	0.1 <a href="https://www3.epa.gov/ttn/scram/models/screen/aerscreen_userguide.pdf">https://www3.epa.gov/ttn/scram/models/screen/aerscreen_userguide.pdf</a>
square feet per acre	43,560
feet per mile	5,280
feet per meter	3.28084
therms per BTU	1.00E-05

## GWPs

CH4	28 IPCC AR4:
N2O	265 IPCC AR4:

## GHG EFs from Climate Registry for Off-road equipment

CH4 (g/gal)	0.58 Table 13.7 , Construction/Mining Equipment - <a href="https://www.theclimaterestry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf">https://www.theclimaterestry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf</a>
N2O (g/gal)	0.26 Table 13.7 , Construction/Mining Equipment - <a href="https://www.theclimaterestry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf">https://www.theclimaterestry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf</a>
Ratio: CH4:CO2	0.00006
Ratio: N2O:CO2	0.00003

CO2 (kg/gal) - Diesel	10.21 Table 13.1 - <a href="https://www.theclimaterestry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf">https://www.theclimaterestry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf</a>
CO2 (kg/gal) - Biodiesel (B100)	9.45 Table 13.1 - <a href="https://www.theclimaterestry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf">https://www.theclimaterestry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf</a>
percent reduction biodiesel	7.4%

## CH4 and N2O from EMFAC

Gasoline - N2O per Nox	4.16% <a href="https://www.arb.ca.gov/msei/emfac2011-faq.htm#emfac2011_web_db_qstn07">https://www.arb.ca.gov/msei/emfac2011-faq.htm#emfac2011_web_db_qstn07</a>
Diesel - gN2O per gallon	0.3316 <a href="https://www.arb.ca.gov/msei/emfac2011-faq.htm#emfac2011_web_db_qstn07">https://www.arb.ca.gov/msei/emfac2011-faq.htm#emfac2011_web_db_qstn07</a>

# **Appendix A-14**

CalEEMod Output: w/o Energy Efficiency

Fremont Niles Gateway - Unmitigated - Alameda County, Annual

**Fremont Niles Gateway - Unmitigated  
Alameda County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	1.70	Acre	1.70	74,052.00	0
Health Club	1.45	1000sqft	0.00	1,450.00	0
Quality Restaurant	2.40	1000sqft	0.00	2,400.00	0
Apartments Low Rise	13.00	Dwelling Unit	0.00	17,838.00	37
Condo/Townhouse	82.00	Dwelling Unit	4.40	162,602.00	235
Regional Shopping Center	3.48	1000sqft	0.00	3,480.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	63
<b>Climate Zone</b>	5			<b>Operational Year</b>	2021
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MW hr)</b>	435	<b>CH4 Intensity (lb/MW hr)</b>	0.037	<b>N2O Intensity (lb/MW hr)</b>	0.005

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

Project Characteristics - Assume start in 2019, operational in 2021. EFs from PG&E (CO2) and EPA eGRID (CH4 and N2O)

Land Use - From PD. Total area = 6.07 acres; 1.7 asphalt area paved (271 spaces), remainder into residential

Construction Phase - Schedule from Doug Rich on 10/31/17. The Foundations/Concrete Pour phase = 63 days; Arch coatings = 112 days (adjusted post-model).

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Defaults

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Trips and VMT - new default worker/vendor values from CalEEMod 2016.

On-road Fugitive Dust - Updated silt loading value for construction and ops based on ARB method: Silt content based on ARB MISCELLANEOUS PROCESS METHODOLOGY 7.9 Entrained Road Travel, Paved Road Dust for SF-Alameda County weighted by travel fractions (Table 8 and 9).

Demolition -

Grading -

Architectural Coating -

Vehicle Trips - Trip rates from Allison Jaromin on 11/8/17. Included default pass-by/diverted. Used default trip lengths and Res/Nonres trip %s.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust - Silt content based on ARB MISCELLANEOUS PROCESS METHODOLOGY 7.9 Entrained Road Travel, Paved Road Dust for SF-Alameda County weighted by travel fractions (Table 8 and 9). Value = 0.037642

Woodstoves - No woodstoves or fireplaces per BAAQMD and email from Doug

Energy Use - All defaults

Water And Wastewater - All defaults

Solid Waste - All defaults

Construction Off-road Equipment Mitigation - all Tier 4 final

Mobile Land Use Mitigation - No MM (trip rates capture)

Energy Mitigation - Solar PV based on City's ordinance Option B (see AQ-GHGcalcs spreadsheet)

Water Mitigation -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Residential_Exterior	121,797.00	64,125.00



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
tblFireplaces	NumberGas	1.95	0.00
tblFireplaces	NumberGas	12.30	0.00
tblFireplaces	NumberNoFireplace	0.52	0.00
tblFireplaces	NumberNoFireplace	3.28	0.00
tblFireplaces	NumberWood	2.21	0.00
tblFireplaces	NumberWood	13.94	0.00
tblGrading	AcresOfGrading	10.00	6.00
tblGrading	MaterialExported	0.00	6,500.00
tblLandUse	LandUseSquareFeet	13,000.00	17,838.00
tblLandUse	LandUseSquareFeet	82,000.00	162,602.00
tblLandUse	LotAcreage	0.03	0.00
tblLandUse	LotAcreage	0.06	0.00
tblLandUse	LotAcreage	0.81	0.00
tblLandUse	LotAcreage	5.13	4.40
tblLandUse	LotAcreage	0.08	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00

tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.037
tblProjectCharacteristics	CO2IntensityFactor	641.35	435
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblRoadDust	RoadSiltLoading	0.1	0.037642
tblTripsAndVMT	HaulingTripNumber	813.00	50.00
tblVehicleTrips	ST_TR	7.16	4.78
tblVehicleTrips	ST_TR	5.67	4.78
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	94.36	88.29
tblVehicleTrips	ST_TR	49.97	65.97
tblVehicleTrips	SU_TR	6.07	3.59
tblVehicleTrips	SU_TR	4.84	3.59
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	72.16	69.54
tblVehicleTrips	SU_TR	25.24	28.47
tblVehicleTrips	WD_TR	6.59	7.17
tblVehicleTrips	WD_TR	5.81	7.17

tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	89.95	82.13
tblVehicleTrips	WD_TR	42.70	36.98
tblWoodstoves	NumberCatalytic	0.26	0.00
tblWoodstoves	NumberCatalytic	1.64	0.00
tblWoodstoves	NumberNoncatalytic	0.26	0.00
tblWoodstoves	NumberNoncatalytic	1.64	0.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2530	2.3601	1.8947	4.0300e-003	0.0400	0.1223	0.1622	0.0182	0.1146	0.1328	0.0000	364.0776	364.0776	0.0615	0.0000	365.6140
2020	0.7833	0.5422	0.5017	1.0300e-003	3.4200e-003	0.0275	0.0309	3.3000e-003	0.0257	0.0290	0.0000	91.5812	91.5812	0.0177	0.0000	92.0244
Maximum	0.7833	2.3601	1.8947	4.0300e-003	0.0400	0.1223	0.1622	0.0182	0.1146	0.1328	0.0000	364.0776	364.0776	0.0615	0.0000	365.6140

#### 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					
2019	0.0802	0.5551	1.9758	4.0300e-003	0.0748	6.4000e-003	0.0812	0.0182	6.2700e-003	0.0245	0.0000	364.0774	364.0774	0.0615	0.0000	365.6137

2020	0.7433	0.1081	0.5514	1.0300e-003	0.0114	1.5100e-003	0.0129	3.3000e-003	1.4800e-003	4.7900e-003	0.0000	91.5812	91.5812	0.0177	0.0000	92.0244
<b>Maximum</b>	<b>0.7433</b>	<b>0.5551</b>	<b>1.9758</b>	<b>4.0300e-003</b>	<b>0.0748</b>	<b>6.4000e-003</b>	<b>0.0812</b>	<b>0.0182</b>	<b>6.2700e-003</b>	<b>0.0245</b>	<b>0.0000</b>	<b>364.0774</b>	<b>364.0774</b>	<b>0.0615</b>	<b>0.0000</b>	<b>365.6137</b>

	<b>ROG</b>	<b>NOx</b>	<b>CO</b>	<b>SO2</b>	<b>Fugitive PM10</b>	<b>Exhaust PM10</b>	<b>PM10 Total</b>	<b>Fugitive PM2.5</b>	<b>Exhaust PM2.5</b>	<b>PM2.5 Total</b>	<b>Bio- CO2</b>	<b>NBio- CO2</b>	<b>Total CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
<b>Percent Reduction</b>	<b>20.54</b>	<b>77.15</b>	<b>-5.46</b>	<b>0.00</b>	<b>-98.50</b>	<b>94.72</b>	<b>51.31</b>	<b>0.00</b>	<b>94.47</b>	<b>81.89</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2019	3-31-2019	0.2630	0.0736
2	4-1-2019	6-30-2019	0.7579	0.1782
3	7-1-2019	9-30-2019	0.7920	0.1890
4	10-1-2019	12-31-2019	0.7960	0.1929
5	1-1-2020	3-31-2020	0.7947	0.3351
6	4-1-2020	6-30-2020	0.5352	0.5184
		<b>Highest</b>	<b>0.7960</b>	<b>0.5184</b>

## 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	0.8919	8.1600e-003	0.7070	4.0000e-005		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	1.1524	1.1524	1.1200e-003	0.0000	1.1803
Energy	0.0139	0.1203	0.0605	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	257.7275	257.7275	0.0128	3.9000e-003	259.2122
Mobile	0.2573	1.6580	2.6744	9.3700e-003	0.3493	9.3000e-003	0.3586	0.1020	8.7500e-003	0.1108	0.0000	863.6022	863.6022	0.0404	0.0000	864.6111
Waste						0.0000	0.0000		0.0000	0.0000	11.7349	0.0000	11.7349	0.6935	0.0000	29.0727
Water						0.0000	0.0000		0.0000	0.0000	2.3038	10.6253	12.9291	0.2375	5.7100e-003	20.5685
<b>Total</b>	<b>1.1631</b>	<b>1.7865</b>	<b>3.4418</b>	<b>0.0102</b>	<b>0.3493</b>	<b>0.0228</b>	<b>0.3722</b>	<b>0.1020</b>	<b>0.0223</b>	<b>0.1243</b>	<b>14.0387</b>	<b>1,133.1074</b>	<b>1,147.1461</b>	<b>0.9854</b>	<b>9.6100e-003</b>	<b>1,174.6449</b>

### 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	0.8919	8.1600e-003	0.7070	4.0000e-005		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	1.1524	1.1524	1.1200e-003	0.0000	1.1803
Energy	0.0139	0.1203	0.0605	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	207.8169	207.8169	8.6000e-003	3.3300e-003	209.0245
Mobile	0.2573	1.6580	2.6744	9.3700e-003	0.3493	9.3000e-003	0.3586	0.1020	8.7500e-003	0.1108	0.0000	863.6022	863.6022	0.0404	0.0000	864.6111
Waste						0.0000	0.0000		0.0000	0.0000	11.7349	0.0000	11.7349	0.6935	0.0000	29.0727
Water						0.0000	0.0000		0.0000	0.0000	2.3038	10.6253	12.9291	0.2375	5.7100e-003	20.5685
<b>Total</b>	<b>1.1631</b>	<b>1.7865</b>	<b>3.4418</b>	<b>0.0102</b>	<b>0.3493</b>	<b>0.0228</b>	<b>0.3722</b>	<b>0.1020</b>	<b>0.0223</b>	<b>0.1243</b>	<b>14.0387</b>	<b>1,083.1968</b>	<b>1,097.2355</b>	<b>0.9811</b>	<b>9.0400e-003</b>	<b>1,124.4572</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>4.40</b>	<b>4.35</b>	<b>0.43</b>	<b>5.93</b>	<b>4.27</b>

### 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	1/1/2019	1/28/2019	5	20	
2	Site Preparation	Site Preparation	1/29/2019	2/11/2019	5	10	
3	Drainage/Utilities/Sub-Grade	Site Preparation	2/12/2019	2/25/2019	5	10	
4	Foundations/Concrete Pour	Site Preparation	2/26/2019	3/11/2019	5	10	
5	Grading/Excavation	Grading	3/12/2019	4/8/2019	5	20	
6	Building Construction	Building Construction	4/9/2019	2/24/2020	5	230	

7	Paving	Paving	2/25/2020	3/23/2020	5	20
8	Architectural Coating	Architectural Coating	3/24/2020	4/20/2020	5	20

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 1.7**

**Residential Indoor: 192,375; Residential Outdoor: 64,125; Non-Residential Indoor: 10,995; Non-Residential Outdoor: 3,665; Striped Parking**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	4.00	81	0.73
Demolition	Crushing/Proc. Equipment	1	6.00	85	0.78
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Sweepers/Scrubbers	1	4.00	64	0.46
Demolition	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Sweepers/Scrubbers	1	4.00	64	0.46
Site Preparation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Drainage/Utilities/Sub-Grade	Sweepers/Scrubbers	1	4.00	64	0.46
Drainage/Utilities/Sub-Grade	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Drainage/Utilities/Sub-Grade	Trenchers	1	4.00	78	0.50
Foundations/Concrete Pour	Cement and Mortar Mixers	1	8.00	9	0.56
Grading/Excavation	Excavators	2	8.00	158	0.38
Grading/Excavation	Graders	1	8.00	187	0.41
Grading/Excavation	Rubber Tired Dozers	0	8.00	247	0.40
Grading/Excavation	Sweepers/Scrubbers	1	4.00	64	0.46
Grading/Excavation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20

Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Sweepers/Scrubbers	1	4.00	64	0.46
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	4.00	80	0.38
Paving	Surfacing Equipment	1	4.00	263	0.30
Architectural Coating	Air Compressors	1	8.00	78	0.48

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	192.00	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
Drainage/Utilities/Sub-Grade	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pour	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Excavation	4	10.00	0.00	50.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	102.00	23.00	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
Architectural Coating	1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

### 3.2 Demolition - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Fugitive Dust					0.0208	0.0000	0.0208	3.1500e-003	0.0000	3.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4500e-003	0.0731	0.0728	1.1000e-004		5.0500e-003	5.0500e-003		4.9000e-003	4.9000e-003	0.0000	9.7461	9.7461	1.3600e-003	0.0000	9.7801
<b>Total</b>	<b>9.4500e-003</b>	<b>0.0731</b>	<b>0.0728</b>	<b>1.1000e-004</b>	<b>0.0208</b>	<b>5.0500e-003</b>	<b>0.0259</b>	<b>3.1500e-003</b>	<b>4.9000e-003</b>	<b>8.0500e-003</b>	<b>0.0000</b>	<b>9.7461</b>	<b>9.7461</b>	<b>1.3600e-003</b>	<b>0.0000</b>	<b>9.7801</b>

**Unmitigated Construction Off-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.8000e-004	0.0298	5.0900e-003	8.0000e-005	4.1000e-004	1.1000e-004	5.2000e-004	2.8000e-004	1.0000e-004	3.8000e-004	0.0000	7.4287	7.4287	3.9000e-004	0.0000	7.4383
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	1.1000e-004	1.0000e-005	1.1000e-004	1.2000e-004	1.0000e-005	1.2000e-004	0.0000	0.7253	0.7253	2.0000e-005	0.0000	0.7258
<b>Total</b>	<b>1.2600e-003</b>	<b>0.0301</b>	<b>8.0100e-003</b>	<b>9.0000e-005</b>	<b>5.2000e-004</b>	<b>1.2000e-004</b>	<b>6.3000e-004</b>	<b>4.0000e-004</b>	<b>1.1000e-004</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>8.1539</b>	<b>8.1539</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>8.1641</b>

**Mitigated Construction On-Site**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0208	0.0000	0.0208	3.1500e-003	0.0000	3.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3400e-003	0.0116	0.0731	1.1000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	9.7461	9.7461	1.3600e-003	0.0000	9.7800

<b>Total</b>	<b>1.3400e-003</b>	<b>0.0116</b>	<b>0.0731</b>	<b>1.1000e-004</b>	<b>0.0208</b>	<b>1.6000e-004</b>	<b>0.0210</b>	<b>3.1500e-003</b>	<b>1.6000e-004</b>	<b>3.3100e-003</b>	<b>0.0000</b>	<b>9.7461</b>	<b>9.7461</b>	<b>1.3600e-003</b>	<b>0.0000</b>	<b>9.7800</b>
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**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.8000e-004	0.0298	5.0900e-003	8.0000e-005	9.4000e-004	1.1000e-004	1.0500e-003	2.8000e-004	1.0000e-004	3.8000e-004	0.0000	7.4287	7.4287	3.9000e-004	0.0000	7.4383
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	4.0000e-004	1.0000e-005	4.1000e-004	1.2000e-004	1.0000e-005	1.2000e-004	0.0000	0.7253	0.7253	2.0000e-005	0.0000	0.7258
<b>Total</b>	<b>1.2600e-003</b>	<b>0.0301</b>	<b>8.0100e-003</b>	<b>9.0000e-005</b>	<b>1.3400e-003</b>	<b>1.2000e-004</b>	<b>1.4600e-003</b>	<b>4.0000e-004</b>	<b>1.1000e-004</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>8.1539</b>	<b>8.1539</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>8.1641</b>

**3.3 Site Preparation - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	1.3000e-003	0.0120	0.0108	1.0000e-005		8.9000e-004	8.9000e-004		8.2000e-004	8.2000e-004	0.0000	1.2682	1.2682	4.0000e-004	0.0000	1.2783
<b>Total</b>	<b>1.3000e-003</b>	<b>0.0120</b>	<b>0.0108</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>8.9000e-004</b>	<b>8.9000e-004</b>	<b>0.0000</b>	<b>8.2000e-004</b>	<b>8.2000e-004</b>	<b>0.0000</b>	<b>1.2682</b>	<b>1.2682</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.2783</b>

**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	9.0000e-005	7.0000e-005	7.3000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1813	0.1813	1.0000e-005	0.0000	0.1815
<b>Total</b>	<b>9.0000e-005</b>	<b>7.0000e-005</b>	<b>7.3000e-004</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.1813</b>	<b>0.1813</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1815</b>

**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	2.5000e-004	3.9700e-003	0.0107	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2682	1.2682	4.0000e-004	0.0000	1.2783
<b>Total</b>	<b>2.5000e-004</b>	<b>3.9700e-003</b>	<b>0.0107</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>1.2682</b>	<b>1.2682</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.2783</b>

**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	9.0000e-005	7.0000e-005	7.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1813	0.1813	1.0000e-005	0.0000	0.1815
<b>Total</b>	<b>9.0000e-005</b>	<b>7.0000e-005</b>	<b>7.3000e-004</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.1813</b>	<b>0.1813</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1815</b>

### 3.4 Drainage/Utilities/Sub-Grade - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	2.3800e-003	0.0218	0.0174	2.0000e-005		1.6300e-003	1.6300e-003		1.5000e-003	1.5000e-003	0.0000	2.0254	2.0254	6.4000e-004	0.0000	2.0414
<b>Total</b>	<b>2.3800e-003</b>	<b>0.0218</b>	<b>0.0174</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>1.6300e-003</b>	<b>1.6300e-003</b>	<b>0.0000</b>	<b>1.5000e-003</b>	<b>1.5000e-003</b>	<b>0.0000</b>	<b>2.0254</b>	<b>2.0254</b>	<b>6.4000e-004</b>	<b>0.0000</b>	<b>2.0414</b>

#### 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	1.5000e-004	1.2000e-004	1.1700e-003	0.0000	4.0000e-005	0.0000	5.0000e-005	5.0000e-005	0.0000	5.0000e-005	0.0000	0.2901	0.2901	1.0000e-005	0.0000	0.2903
<b>Total</b>	<b>1.5000e-004</b>	<b>1.2000e-004</b>	<b>1.1700e-003</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.2901</b>	<b>0.2901</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2903</b>

**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	3.5000e-004	4.4200e-003	0.0170	2.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.0254	2.0254	6.4000e-004	0.0000	2.0414
<b>Total</b>	<b>3.5000e-004</b>	<b>4.4200e-003</b>	<b>0.0170</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>2.0254</b>	<b>2.0254</b>	<b>6.4000e-004</b>	<b>0.0000</b>	<b>2.0414</b>

**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	1.5000e-004	1.2000e-004	1.1700e-003	0.0000	1.6000e-004	0.0000	1.6000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.2901	0.2901	1.0000e-005	0.0000	0.2903
<b>Total</b>	<b>1.5000e-004</b>	<b>1.2000e-004</b>	<b>1.1700e-003</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.2901</b>	<b>0.2901</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2903</b>

**3.5 Foundations/Concrete Pour - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	2.9000e-004	1.8400e-003	1.5400e-003	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.2291	0.2291	2.0000e-005	0.0000	0.2297
<b>Total</b>	<b>2.9000e-004</b>	<b>1.8400e-003</b>	<b>1.5400e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2291</b>	<b>0.2291</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.2297</b>

### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.4000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1088	0.1088	0.0000	0.0000	0.1089
<b>Total</b>	<b>6.0000e-005</b>	<b>4.0000e-005</b>	<b>4.4000e-004</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.1088</b>	<b>0.1088</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1089</b>

### 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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.2291	0.2291	2.0000e-005	0.0000	0.2297

<b>Total</b>	<b>0.0000</b>	<b>0.2291</b>	<b>0.2291</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.2297</b>											
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**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	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	0.0000
Worker	6.0000e-005	4.0000e-005	4.4000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1088	0.1088	0.0000	0.0000	0.0000	0.1089
<b>Total</b>	<b>6.0000e-005</b>	<b>4.0000e-005</b>	<b>4.4000e-004</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.1088</b>	<b>0.1088</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1089</b>

**3.6 Grading/Excavation - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.5500e-003	0.0000	3.5500e-003	4.0000e-004	0.0000	4.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.1318	0.0936	1.8000e-004		5.7000e-003	5.7000e-003		5.2500e-003	5.2500e-003	0.0000	16.3811	16.3811	5.1800e-003	0.0000	16.5106
<b>Total</b>	<b>0.0115</b>	<b>0.1318</b>	<b>0.0936</b>	<b>1.8000e-004</b>	<b>3.5500e-003</b>	<b>5.7000e-003</b>	<b>9.2500e-003</b>	<b>4.0000e-004</b>	<b>5.2500e-003</b>	<b>5.6500e-003</b>	<b>0.0000</b>	<b>16.3811</b>	<b>16.3811</b>	<b>5.1800e-003</b>	<b>0.0000</b>	<b>16.5106</b>

**Unmitigated Construction Off-Site**



Hauling	2.3000e-004	7.7700e-003	1.3300e-003	2.0000e-005	2.4000e-004	3.0000e-005	2.7000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	1.9346	1.9346	1.0000e-004	0.0000	1.9371
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	4.0000e-004	1.0000e-005	4.1000e-004	1.2000e-004	1.0000e-005	1.2000e-004	0.0000	0.7253	0.7253	2.0000e-005	0.0000	0.7258
<b>Total</b>	<b>6.1000e-004</b>	<b>8.0600e-003</b>	<b>4.2500e-003</b>	<b>3.0000e-005</b>	<b>6.4000e-004</b>	<b>4.0000e-005</b>	<b>6.8000e-004</b>	<b>1.9000e-004</b>	<b>4.0000e-005</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.6598</b>	<b>2.6598</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>2.6629</b>

### 3.7 Building Construction - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1792	1.7720	1.3378	2.1800e-003		0.1064	0.1064		0.0996	0.0996	0.0000	193.8738	193.8738	0.0477	0.0000	195.0658
<b>Total</b>	<b>0.1792</b>	<b>1.7720</b>	<b>1.3378</b>	<b>2.1800e-003</b>		<b>0.1064</b>	<b>0.1064</b>		<b>0.0996</b>	<b>0.0996</b>	<b>0.0000</b>	<b>193.8738</b>	<b>193.8738</b>	<b>0.0477</b>	<b>0.0000</b>	<b>195.0658</b>

#### 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	9.9000e-003	0.2809	0.0621	6.1000e-004	4.2800e-003	1.8000e-003	6.0800e-003	2.7600e-003	1.7200e-003	4.4800e-003	0.0000	58.5093	58.5093	3.6100e-003	0.0000	58.5994
Worker	0.0369	0.0281	0.2841	7.8000e-004	0.0105	5.5000e-004	0.0110	0.0113	5.1000e-004	0.0118	0.0000	70.6507	70.6507	2.0100e-003	0.0000	70.7011
<b>Total</b>	<b>0.0468</b>	<b>0.3090</b>	<b>0.3462</b>	<b>1.3900e-003</b>	<b>0.0148</b>	<b>2.3500e-003</b>	<b>0.0171</b>	<b>0.0140</b>	<b>2.2300e-003</b>	<b>0.0162</b>	<b>0.0000</b>	<b>129.1599</b>	<b>129.1599</b>	<b>5.6200e-003</b>	<b>0.0000</b>	<b>129.3004</b>

**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	0.0269	0.1715	1.3966	2.1800e-003		3.3900e-003	3.3900e-003		3.3900e-003	3.3900e-003	0.0000	193.8735	193.8735	0.0477	0.0000	195.0656
<b>Total</b>	<b>0.0269</b>	<b>0.1715</b>	<b>1.3966</b>	<b>2.1800e-003</b>		<b>3.3900e-003</b>	<b>3.3900e-003</b>		<b>3.3900e-003</b>	<b>3.3900e-003</b>	<b>0.0000</b>	<b>193.8735</b>	<b>193.8735</b>	<b>0.0477</b>	<b>0.0000</b>	<b>195.0656</b>

**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	9.9000e-003	0.2809	0.0621	6.1000e-004	8.6900e-003	1.8000e-003	0.0105	2.7600e-003	1.7200e-003	4.4800e-003	0.0000	58.5093	58.5093	3.6100e-003	0.0000	58.5994
Worker	0.0369	0.0281	0.2841	7.8000e-004	0.0394	5.5000e-004	0.0399	0.0113	5.1000e-004	0.0118	0.0000	70.6507	70.6507	2.0100e-003	0.0000	70.7011
<b>Total</b>	<b>0.0468</b>	<b>0.3090</b>	<b>0.3462</b>	<b>1.3900e-003</b>	<b>0.0481</b>	<b>2.3500e-003</b>	<b>0.0504</b>	<b>0.0140</b>	<b>2.2300e-003</b>	<b>0.0162</b>	<b>0.0000</b>	<b>129.1599</b>	<b>129.1599</b>	<b>5.6200e-003</b>	<b>0.0000</b>	<b>129.3004</b>

**3.7 Building Construction - 2020**

**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	0.0330	0.3284	0.2678	4.5000e-004		0.0190	0.0190		0.0177	0.0177	0.0000	38.9627	38.9627	9.6600e-003	0.0000	39.2041
<b>Total</b>	<b>0.0330</b>	<b>0.3284</b>	<b>0.2678</b>	<b>4.5000e-004</b>		<b>0.0190</b>	<b>0.0190</b>		<b>0.0177</b>	<b>0.0177</b>	<b>0.0000</b>	<b>38.9627</b>	<b>38.9627</b>	<b>9.6600e-003</b>	<b>0.0000</b>	<b>39.2041</b>

**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	1.6800e-003	0.0527	0.0114	1.2000e-004	8.7000e-004	2.4000e-004	1.1200e-003	5.6000e-004	2.3000e-004	8.0000e-004	0.0000	11.8633	11.8633	6.8000e-004	0.0000	11.8803
Worker	6.8800e-003	5.0800e-003	0.0520	1.5000e-004	2.1400e-003	1.1000e-004	2.2500e-003	2.3000e-003	1.0000e-004	2.4000e-003	0.0000	13.9798	13.9798	3.6000e-004	0.0000	13.9888
<b>Total</b>	<b>8.5600e-003</b>	<b>0.0578</b>	<b>0.0634</b>	<b>2.7000e-004</b>	<b>3.0100e-003</b>	<b>3.5000e-004</b>	<b>3.3700e-003</b>	<b>2.8600e-003</b>	<b>3.3000e-004</b>	<b>3.2000e-003</b>	<b>0.0000</b>	<b>25.8431</b>	<b>25.8431</b>	<b>1.0400e-003</b>	<b>0.0000</b>	<b>25.8692</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.4900e-003	0.0350	0.2852	4.5000e-004		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	38.9626	38.9626	9.6600e-003	0.0000	39.2040

Total	5.4900e-003	0.0350	0.2852	4.5000e-004		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	38.9626	38.9626	9.6600e-003	0.0000	39.2040
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**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	1.6800e-003	0.0527	0.0114	1.2000e-004	1.7700e-003	2.4000e-004	2.0200e-003	5.6000e-004	2.3000e-004	8.0000e-004	0.0000	11.8633	11.8633	6.8000e-004	0.0000	11.8803
Worker	6.8800e-003	5.0800e-003	0.0520	1.5000e-004	8.0400e-003	1.1000e-004	8.1500e-003	2.3000e-003	1.0000e-004	2.4000e-003	0.0000	13.9798	13.9798	3.6000e-004	0.0000	13.9888
<b>Total</b>	<b>8.5600e-003</b>	<b>0.0578</b>	<b>0.0634</b>	<b>2.7000e-004</b>	<b>9.8100e-003</b>	<b>3.5000e-004</b>	<b>0.0102</b>	<b>2.8600e-003</b>	<b>3.3000e-004</b>	<b>3.2000e-003</b>	<b>0.0000</b>	<b>25.8431</b>	<b>25.8431</b>	<b>1.0400e-003</b>	<b>0.0000</b>	<b>25.8692</b>

**3.8 Paving - 2020**

**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	0.0125	0.1326	0.1361	2.4000e-004		6.6700e-003	6.6700e-003		6.1300e-003	6.1300e-003	0.0000	20.7003	20.7003	6.6900e-003	0.0000	20.8677
Paving	2.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0147</b>	<b>0.1326</b>	<b>0.1361</b>	<b>2.4000e-004</b>		<b>6.6700e-003</b>	<b>6.6700e-003</b>		<b>6.1300e-003</b>	<b>6.1300e-003</b>	<b>0.0000</b>	<b>20.7003</b>	<b>20.7003</b>	<b>6.6900e-003</b>	<b>0.0000</b>	<b>20.8677</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.6000e-004	4.7100e-003	1.0000e-005	1.9000e-004	1.0000e-005	2.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	1.2651	1.2651	3.0000e-005	0.0000	1.2660
<b>Total</b>	<b>6.2000e-004</b>	<b>4.6000e-004</b>	<b>4.7100e-003</b>	<b>1.0000e-005</b>	<b>1.9000e-004</b>	<b>1.0000e-005</b>	<b>2.0000e-004</b>	<b>2.1000e-004</b>	<b>1.0000e-005</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>1.2651</b>	<b>1.2651</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.2660</b>

**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	2.9000e-003	0.0126	0.1684	2.4000e-004		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	20.7003	20.7003	6.6900e-003	0.0000	20.8677
Paving	2.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>5.1300e-003</b>	<b>0.0126</b>	<b>0.1684</b>	<b>2.4000e-004</b>		<b>3.9000e-004</b>	<b>3.9000e-004</b>		<b>3.9000e-004</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>20.7003</b>	<b>20.7003</b>	<b>6.6900e-003</b>	<b>0.0000</b>	<b>20.8677</b>

**Mitigated Construction Off-Site**

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

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.6000e-004	4.7100e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.4000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	1.2651	1.2651	3.0000e-005	0.0000	1.2660
<b>Total</b>	<b>6.2000e-004</b>	<b>4.6000e-004</b>	<b>4.7100e-003</b>	<b>1.0000e-005</b>	<b>7.3000e-004</b>	<b>1.0000e-005</b>	<b>7.4000e-004</b>	<b>2.1000e-004</b>	<b>1.0000e-005</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>1.2651</b>	<b>1.2651</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.2660</b>

### 3.9 Architectural Coating - 2020

#### 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	0.7224					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2300e-003	0.0225	0.0244	4.0000e-005		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003	0.0000	3.4043	3.4043	2.6000e-004	0.0000	3.4109
<b>Total</b>	<b>0.7256</b>	<b>0.0225</b>	<b>0.0244</b>	<b>4.0000e-005</b>		<b>1.4800e-003</b>	<b>1.4800e-003</b>		<b>1.4800e-003</b>	<b>1.4800e-003</b>	<b>0.0000</b>	<b>3.4043</b>	<b>3.4043</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>3.4109</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.1000e-004	5.2300e-003	2.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	1.4057	1.4057	4.0000e-005	0.0000	1.4066
<b>Total</b>	<b>6.9000e-004</b>	<b>5.1000e-004</b>	<b>5.2300e-003</b>	<b>2.0000e-005</b>	<b>2.2000e-004</b>	<b>1.0000e-005</b>	<b>2.3000e-004</b>	<b>2.3000e-004</b>	<b>1.0000e-005</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>1.4057</b>	<b>1.4057</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4066</b>

### 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	0.7224					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-004	1.7200e-003	0.0244	4.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	3.4043	3.4043	2.6000e-004	0.0000	3.4109
<b>Total</b>	<b>0.7228</b>	<b>1.7200e-003</b>	<b>0.0244</b>	<b>4.0000e-005</b>		<b>5.0000e-005</b>	<b>5.0000e-005</b>		<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>3.4043</b>	<b>3.4043</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>3.4109</b>

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.1000e-004	5.2300e-003	2.0000e-005	8.1000e-004	1.0000e-005	8.2000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	1.4057	1.4057	4.0000e-005	0.0000	1.4066
<b>Total</b>	<b>6.9000e-004</b>	<b>5.1000e-004</b>	<b>5.2300e-003</b>	<b>2.0000e-005</b>	<b>8.1000e-004</b>	<b>1.0000e-005</b>	<b>8.2000e-004</b>	<b>2.3000e-004</b>	<b>1.0000e-005</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>1.4057</b>	<b>1.4057</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4066</b>

## 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	0.2573	1.6580	2.6744	9.3700e-003	0.3493	9.3000e-003	0.3586	0.1020	8.7500e-003	0.1108	0.0000	863.6022	863.6022	0.0404	0.0000	864.6111
Unmitigated	0.2573	1.6580	2.6744	9.3700e-003	0.3493	9.3000e-003	0.3586	0.1020	8.7500e-003	0.1108	0.0000	863.6022	863.6022	0.0404	0.0000	864.6111

#### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	93.21	62.14	46.67	189,672	189,672
Condo/Townhouse	587.94	391.96	294.38	1,196,390	1,196,390
Health Club	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Quality Restaurant	197.11	211.90	166.90	231,193	231,193
Regional Shopping Center	128.69	229.58	99.08	243,485	243,485
<b>Total</b>	<b>1,006.95</b>	<b>895.57</b>	<b>607.02</b>	<b>1,860,739</b>	<b>1,860,739</b>

#### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

#### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Condo/Townhouse	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Health Club	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Parking Lot	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Quality Restaurant	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Regional Shopping Center	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739

## 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	70.0090	70.0090	5.9500e-003	8.0000e-004	70.3977
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	119.9197	119.9197	0.0102	1.3800e-003	120.5854
NaturalGas Mitigated	0.0139	0.1203	0.0605	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8078	137.8078	2.6400e-003	2.5300e-003	138.6268
NaturalGas Unmitigated	0.0139	0.1203	0.0605	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8078	137.8078	2.6400e-003	2.5300e-003	138.6268

## 5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	264544	1.4300e-003	0.0122	5.1900e-003	8.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	14.1171	14.1171	2.7000e-004	2.6000e-004	14.2009
Condo/Townhouse	1.86297e+006	0.0101	0.0858	0.0365	5.5000e-004		6.9400e-003	6.9400e-003		6.9400e-003	6.9400e-003	0.0000	99.4154	99.4154	1.9100e-003	1.8200e-003	100.0062
Health Club	35887.5	1.9000e-004	1.7600e-003	1.4800e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9151	1.9151	4.0000e-005	4.0000e-005	1.9265
Parking Lot	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
Quality Restaurant	403008	2.1700e-003	0.0198	0.0166	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	21.5060	21.5060	4.1000e-004	3.9000e-004	21.6338
Regional Shopping Center	16008	9.0000e-005	7.8000e-004	6.6000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8543	0.8543	2.0000e-005	2.0000e-005	0.8593
<b>Total</b>		<b>0.0139</b>	<b>0.1203</b>	<b>0.0605</b>	<b>7.6000e-004</b>		<b>9.6200e-003</b>	<b>9.6200e-003</b>		<b>9.6200e-003</b>	<b>9.6200e-003</b>	<b>0.0000</b>	<b>137.8078</b>	<b>137.8078</b>	<b>2.6500e-003</b>	<b>2.5300e-003</b>	<b>138.6268</b>

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	264544	1.4300e-003	0.0122	5.1900e-003	8.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	14.1171	14.1171	2.7000e-004	2.6000e-004	14.2009
Condo/Townhouse	1.86297e+006	0.0101	0.0858	0.0365	5.5000e-004		6.9400e-003	6.9400e-003		6.9400e-003	6.9400e-003	0.0000	99.4154	99.4154	1.9100e-003	1.8200e-003	100.0062
Health Club	35887.5	1.9000e-004	1.7600e-003	1.4800e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9151	1.9151	4.0000e-005	4.0000e-005	1.9265
Parking Lot	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
Quality Restaurant	403008	2.1700e-003	0.0198	0.0166	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	21.5060	21.5060	4.1000e-004	3.9000e-004	21.6338
Regional Shopping Center	16008	9.0000e-005	7.8000e-004	6.6000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8543	0.8543	2.0000e-005	2.0000e-005	0.8593
<b>Total</b>		<b>0.0139</b>	<b>0.1203</b>	<b>0.0605</b>	<b>7.6000e-004</b>		<b>9.6200e-003</b>	<b>9.6200e-003</b>		<b>9.6200e-003</b>	<b>9.6200e-003</b>	<b>0.0000</b>	<b>137.8078</b>	<b>137.8078</b>	<b>2.6500e-003</b>	<b>2.5300e-003</b>	<b>138.6268</b>

### 5.3 Energy by Land Use - Electricity

#### Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	54810.3	10.8148	9.2000e-004	1.2000e-004	10.8748
Condo/Townhouse	410052	80.9084	6.8800e-003	9.3000e-004	81.3576
Health Club	10962	2.1629	1.8000e-004	2.0000e-005	2.1750
Parking Lot	25918.2	5.1140	4.3000e-004	6.0000e-005	5.1424
Quality Restaurant	69552	13.7235	1.1700e-003	1.6000e-004	13.7997
Regional Shopping Center	36470.4	7.1961	6.1000e-004	8.0000e-005	7.2360
<b>Total</b>		<b>119.9197</b>	<b>0.0102</b>	<b>1.3700e-003</b>	<b>120.5854</b>

#### Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	12651.7	2.4963	2.1000e-004	3.0000e-005	2.5102
Condo/Townhouse	367893	72.5900	6.1700e-003	8.3000e-004	72.9930
Health Club	-31196.7	-6.1555	-0.0005	-0.0001	-6.1897
Parking Lot	-16240.5	-3.2045	-0.0003	0.0000	-3.2222
Quality Restaurant	27393.3	5.4051	4.6000e-004	6.0000e-005	5.4351

Regional Shopping Center	-5688.27	-1.1224	-0.0001	0.0000	-1.1286
<b>Total</b>		<b>70.0090</b>	<b>5.9500e-003</b>	<b>8.0000e-004</b>	<b>70.3977</b>

## 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	0.8919	8.1600e-003	0.7070	4.0000e-005		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	1.1524	1.1524	1.1200e-003	0.0000	1.1803
Unmitigated	0.8919	8.1600e-003	0.7070	4.0000e-005		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	1.1524	1.1524	1.1200e-003	0.0000	1.1803

### 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	0.1324					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7381					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0214	8.1600e-003	0.7070	4.0000e-005		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	1.1524	1.1524	1.1200e-003	0.0000	1.1803

<b>Total</b>	<b>0.8919</b>	<b>8.1600e-003</b>	<b>0.7070</b>	<b>4.0000e-005</b>		<b>3.9000e-003</b>	<b>3.9000e-003</b>		<b>3.9000e-003</b>	<b>3.9000e-003</b>	<b>0.0000</b>	<b>1.1524</b>	<b>1.1524</b>	<b>1.1200e-003</b>	<b>0.0000</b>	<b>1.1803</b>
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**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	0.1324					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.7381					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0214	8.1600e-003	0.7070	4.0000e-005		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	1.1524	1.1524	1.1200e-003	0.0000	1.1803
<b>Total</b>	<b>0.8919</b>	<b>8.1600e-003</b>	<b>0.7070</b>	<b>4.0000e-005</b>		<b>3.9000e-003</b>	<b>3.9000e-003</b>		<b>3.9000e-003</b>	<b>3.9000e-003</b>	<b>0.0000</b>	<b>1.1524</b>	<b>1.1524</b>	<b>1.1200e-003</b>	<b>0.0000</b>	<b>1.1803</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	12.9291	0.2375	5.7100e-003	20.5685
Unmitigated	12.9291	0.2375	5.7100e-003	20.5685

## 7.2 Water by Land Use

### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.847002 / 0.53398	1.5418	0.0277	6.7000e-004	2.4331
Condo/Townhouse	5.34263 / 3.36818	9.7251	0.1748	4.2000e-003	15.3469
Health Club	0.0857576 / 0.0525614	0.1551	2.8100e-003	7.0000e-005	0.2453
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0.728481 / 0.0464988	1.0410	0.0238	5.7000e-004	1.8060
Regional Shopping Center	0.257772 / 0.15799	0.4661	8.4300e-003	2.0000e-004	0.7373
<b>Total</b>		<b>12.9291</b>	<b>0.2375</b>	<b>5.7100e-003</b>	<b>20.5686</b>

### Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.847002 / 0.53398	1.5418	0.0277	6.7000e-004	2.4331
Condo/Townhouse	5.34263 / 3.36818	9.7251	0.1748	4.2000e-003	15.3469
Health Club	0.0857576 / 0.0525614	0.1551	2.8100e-003	7.0000e-005	0.2453
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000

Quality Restaurant	0.728481 / 0.0464988	1.0410	0.0238	5.7000e- 004	1.8060
Regional Shopping Center	0.257772 / 0.15799	0.4661	8.4300e- 003	2.0000e- 004	0.7373
<b>Total</b>		<b>12.9291</b>	<b>0.2375</b>	<b>5.7100e- 003</b>	<b>20.5686</b>

## 8.0 Waste Detail

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### 8.1 Mitigation Measures Waste

#### Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.7349	0.6935	0.0000	29.0727
Unmitigated	11.7349	0.6935	0.0000	29.0727

### 8.2 Waste by Land Use

#### Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	5.98	1.2139	0.0717	0.0000	3.0074
Condo/Townhouse	37.72	7.6568	0.4525	0.0000	18.9695
Health Club	8.27	1.6787	0.0992	0.0000	4.1590

Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	2.19	0.4446	0.0263	0.0000	1.1014
Regional Shopping Center	3.65	0.7409	0.0438	0.0000	1.8356
<b>Total</b>		<b>11.7349</b>	<b>0.6935</b>	<b>0.0000</b>	<b>29.0727</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	5.98	1.2139	0.0717	0.0000	3.0074
Condo/Townhouse	37.72	7.6568	0.4525	0.0000	18.9695
Health Club	8.27	1.6787	0.0992	0.0000	4.1590
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	2.19	0.4446	0.0263	0.0000	1.1014
Regional Shopping Center	3.65	0.7409	0.0438	0.0000	1.8356
<b>Total</b>		<b>11.7349</b>	<b>0.6935</b>	<b>0.0000</b>	<b>29.0727</b>

**9.0 Operational Offroad**

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

**Fire Pumps and Emergency Generators**

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

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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# **Appendix A-15**

CalEEMod Output: w/ Energy Efficiency

Fremont Niles Gateway - Unmitigated - Alameda County, Annual

**Fremont Niles Gateway - Unmitigated  
Alameda County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	1.70	Acre	1.70	74,052.00	0
Health Club	1.45	1000sqft	0.00	1,450.00	0
Quality Restaurant	2.40	1000sqft	0.00	2,400.00	0
Apartments Low Rise	13.00	Dwelling Unit	0.00	17,838.00	37
Condo/Townhouse	82.00	Dwelling Unit	4.40	162,602.00	235
Regional Shopping Center	3.48	1000sqft	0.00	3,480.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	63
<b>Climate Zone</b>	5			<b>Operational Year</b>	2021
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MW hr)</b>	435	<b>CH4 Intensity (lb/MW hr)</b>	0.037	<b>N2O Intensity (lb/MW hr)</b>	0.005

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

Project Characteristics - Assume start in 2019, operational in 2021. EFs from PG&E (CO2) and EPA eGRID (CH4 and N2O)

Land Use - From PD. Total area = 6.07 acres; 1.7 asphalt area paved (271 spaces), remainder into residential

Construction Phase - Schedule from Doug Rich on 10/31/17. The Foundations/Concrete Pour phase = 63 days; Arch coatings = 112 days (adjusted post-model).

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Defaults

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Off-road Equipment - Equipment from Doug Rich on 10/31/17

Trips and VMT - default worker/vendor values from CalEEMod 2016.

On-road Fugitive Dust - Updated silt loading value for construction and ops based on ARB method: Silt content based on ARB MISCELLANEOUS PROCESS METHODOLOGY 7.9 Entrained Road Travel, Paved Road Dust for SF-Alameda County weighted by travel fractions (Table 8 and 9).

Architectural Coating -

Vehicle Trips - Trip rates from Allison Jaromin on 11/8/17. Included default pass-by/diverted. Used default trip lengths and Res/Nonres trip %s.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Road Dust - Silt content based on ARB MISCELLANEOUS PROCESS METHODOLOGY 7.9 Entrained Road Travel, Paved Road Dust for SF-Alameda County weighted by travel fractions (Table 8 and 9). Value = 0.037642

Woodstoves - No woodstoves or fireplaces per BAAQMD and email from Doug

Energy Use - All defaults

Water And Wastewater - All defaults

Solid Waste - All defaults

Construction Off-road Equipment Mitigation - all Tier 4 final

Mobile Land Use Mitigation - No MM (trip rates capture)

Energy Mitigation - 25% reduction below T24 per email from Doug. Solar PV based on City's ordinance Option B (see AQ-GHGcalcs spreadsheet)

Water Mitigation - all buildings would install water saving features including low flow bathroom faucets, low flow kitchen faucets, low flow toilets, and low flow showers

Fleet Mix -

Table Name	Column Name	Default Value	New Value
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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
tblFireplaces	NumberGas	1.95	0.00
tblFireplaces	NumberGas	12.30	0.00
tblFireplaces	NumberNoFireplace	0.52	0.00
tblFireplaces	NumberNoFireplace	3.28	0.00
tblFireplaces	NumberWood	2.21	0.00
tblFireplaces	NumberWood	13.94	0.00
tblGrading	AcresOfGrading	10.00	6.00
tblGrading	MaterialExported	0.00	6,500.00
tblLandUse	LandUseSquareFeet	13,000.00	17,838.00
tblLandUse	LandUseSquareFeet	82,000.00	162,602.00
tblLandUse	LotAcreage	0.03	0.00
tblLandUse	LotAcreage	0.06	0.00
tblLandUse	LotAcreage	0.81	0.00
tblLandUse	LotAcreage	5.13	4.40
tblLandUse	LotAcreage	0.08	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblOnRoadDust	RoadSiltLoading	0.10	0.04
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.037
tblProjectCharacteristics	CO2IntensityFactor	641.35	435
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblRoadDust	RoadSiltLoading	0.1	0.037642
tblTripsAndVMT	HaulingTripNumber	813.00	50.00
tblVehicleTrips	ST_TR	7.16	4.78
tblVehicleTrips	ST_TR	5.67	4.78
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	94.36	88.29
tblVehicleTrips	ST_TR	49.97	65.97
tblVehicleTrips	SU_TR	6.07	3.59
tblVehicleTrips	SU_TR	4.84	3.59
tblVehicleTrips	SU_TR	26.73	0.00

tblVehicleTrips	SU_TR	72.16	69.54
tblVehicleTrips	SU_TR	25.24	28.47
tblVehicleTrips	WD_TR	6.59	7.17
tblVehicleTrips	WD_TR	5.81	7.17
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	89.95	82.13
tblVehicleTrips	WD_TR	42.70	36.98
tblWoodstoves	NumberCatalytic	0.26	0.00
tblWoodstoves	NumberCatalytic	1.64	0.00
tblWoodstoves	NumberNoncatalytic	0.26	0.00
tblWoodstoves	NumberNoncatalytic	1.64	0.00

## 2.0 Emissions Summary

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### 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					
2019	0.2530	2.3601	1.8947	4.0300e-003	0.0400	0.1223	0.1622	0.0182	0.1146	0.1328	0.0000	364.0776	364.0776	0.0615	0.0000	365.6140
2020	0.7833	0.5422	0.5017	1.0300e-003	3.4200e-003	0.0275	0.0309	3.3000e-003	0.0257	0.0290	0.0000	91.5812	91.5812	0.0177	0.0000	92.0244
<b>Maximum</b>	<b>0.7833</b>	<b>2.3601</b>	<b>1.8947</b>	<b>4.0300e-003</b>	<b>0.0400</b>	<b>0.1223</b>	<b>0.1622</b>	<b>0.0182</b>	<b>0.1146</b>	<b>0.1328</b>	<b>0.0000</b>	<b>364.0776</b>	<b>364.0776</b>	<b>0.0615</b>	<b>0.0000</b>	<b>365.6140</b>

#### 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					
2019	0.0802	0.5551	1.9758	4.0300e-003	0.0748	6.4000e-003	0.0812	0.0182	6.2700e-003	0.0245	0.0000	364.0774	364.0774	0.0615	0.0000	365.6137
2020	0.7433	0.1081	0.5514	1.0300e-003	0.0114	1.5100e-003	0.0129	3.3000e-003	1.4800e-003	4.7900e-003	0.0000	91.5812	91.5812	0.0177	0.0000	92.0244
<b>Maximum</b>	<b>0.7433</b>	<b>0.5551</b>	<b>1.9758</b>	<b>4.0300e-003</b>	<b>0.0748</b>	<b>6.4000e-003</b>	<b>0.0812</b>	<b>0.0182</b>	<b>6.2700e-003</b>	<b>0.0245</b>	<b>0.0000</b>	<b>364.0774</b>	<b>364.0774</b>	<b>0.0615</b>	<b>0.0000</b>	<b>365.6137</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>20.54</b>	<b>77.15</b>	<b>-5.46</b>	<b>0.00</b>	<b>-98.50</b>	<b>94.72</b>	<b>51.31</b>	<b>0.00</b>	<b>94.47</b>	<b>81.89</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2019	3-31-2019	0.2630	0.0736
2	4-1-2019	6-30-2019	0.7579	0.1782
3	7-1-2019	9-30-2019	0.7920	0.1890
4	10-1-2019	12-31-2019	0.7960	0.1929
5	1-1-2020	3-31-2020	0.7947	0.3351
6	4-1-2020	6-30-2020	0.5352	0.5184
		<b>Highest</b>	<b>0.7960</b>	<b>0.5184</b>

## 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	0.8919	8.1600e-003	0.7070	4.0000e-005		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	1.1524	1.1524	1.1200e-003	0.0000	1.1803
Energy	0.0139	0.1203	0.0605	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	257.7275	257.7275	0.0128	3.9000e-003	259.2122

Mobile	0.2573	1.6580	2.6744	9.3700e-003	0.3493	9.3000e-003	0.3586	0.1020	8.7500e-003	0.1108	0.0000	863.6022	863.6022	0.0404	0.0000	864.6111
Waste						0.0000	0.0000		0.0000	0.0000	11.7349	0.0000	11.7349	0.6935	0.0000	29.0727
Water						0.0000	0.0000		0.0000	0.0000	2.3038	10.6253	12.9291	0.2375	5.7100e-003	20.5685
<b>Total</b>	<b>1.1631</b>	<b>1.7865</b>	<b>3.4418</b>	<b>0.0102</b>	<b>0.3493</b>	<b>0.0228</b>	<b>0.3722</b>	<b>0.1020</b>	<b>0.0223</b>	<b>0.1243</b>	<b>14.0387</b>	<b>1,133.1074</b>	<b>1,147.1461</b>	<b>0.9854</b>	<b>9.6100e-003</b>	<b>1,174.6449</b>

### 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	0.8919	8.1600e-003	0.7070	4.0000e-005		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	1.1524	1.1524	1.1200e-003	0.0000	1.1803
Energy	0.0112	0.0970	0.0498	6.1000e-004		7.7400e-003	7.7400e-003		7.7400e-003	7.7400e-003	0.0000	179.1802	179.1802	7.9300e-003	2.8200e-003	180.2183
Mobile	0.2573	1.6580	2.6744	9.3700e-003	0.3493	9.3000e-003	0.3586	0.1020	8.7500e-003	0.1108	0.0000	863.6022	863.6022	0.0404	0.0000	864.6111
Waste						0.0000	0.0000		0.0000	0.0000	11.7349	0.0000	11.7349	0.6935	0.0000	29.0727
Water						0.0000	0.0000		0.0000	0.0000	1.8430	9.0747	10.9177	0.1901	4.5700e-003	17.0325
<b>Total</b>	<b>1.1604</b>	<b>1.7632</b>	<b>3.4312</b>	<b>0.0100</b>	<b>0.3493</b>	<b>0.0209</b>	<b>0.3703</b>	<b>0.1020</b>	<b>0.0204</b>	<b>0.1224</b>	<b>13.5779</b>	<b>1,053.0095</b>	<b>1,066.5874</b>	<b>0.9330</b>	<b>7.3900e-003</b>	<b>1,092.1150</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.23	1.30	0.31	1.47	0.00	8.24	0.51	0.00	8.44	1.51	3.28	7.07	7.02	5.31	23.10	7.03

## 3.0 Construction Detail

### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
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1	Demolition	Demolition	1/1/2019	1/28/2019	5	20
2	Site Preparation	Site Preparation	1/29/2019	2/11/2019	5	10
3	Drainage/Utilities/Sub-Grade	Site Preparation	2/12/2019	2/25/2019	5	10
4	Foundations/Concrete Pour	Site Preparation	2/26/2019	3/11/2019	5	10
5	Grading/Excavation	Grading	3/12/2019	4/8/2019	5	20
6	Building Construction	Building Construction	4/9/2019	2/24/2020	5	230
7	Paving	Paving	2/25/2020	3/23/2020	5	20
8	Architectural Coating	Architectural Coating	3/24/2020	4/20/2020	5	20

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 1.7**

**Residential Indoor: 192,375; Residential Outdoor: 64,125; Non-Residential Indoor: 10,995; Non-Residential Outdoor: 3,665; Striped Parking**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	4.00	81	0.73
Demolition	Crushing/Proc. Equipment	1	6.00	85	0.78
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Sweepers/Scrubbers	1	4.00	64	0.46
Demolition	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Sweepers/Scrubbers	1	4.00	64	0.46
Site Preparation	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Drainage/Utilities/Sub-Grade	Sweepers/Scrubbers	1	4.00	64	0.46
Drainage/Utilities/Sub-Grade	Tractors/Loaders/Backhoes	1	4.00	97	0.37
Drainage/Utilities/Sub-Grade	Trenchers	1	4.00	78	0.50
Foundations/Concrete Pour	Cement and Mortar Mixers	1	8.00	9	0.56
Grading/Excavation	Excavators	2	8.00	158	0.38

Grading/Excavation	Graders	1	8.00	187	0.41
Grading/Excavation	Rubber Tired Dozers	0	8.00	247	0.40
Grading/Excavation	Sweepers/Scrubbers	1	4.00	64	0.46
Grading/Excavation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Sweepers/Scrubbers	1	4.00	64	0.46
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	4.00	80	0.38
Paving	Surfacing Equipment	1	4.00	263	0.30
Architectural Coating	Air Compressors	1	8.00	78	0.48

### Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	
Demolition		4	10.00	0.00	192.00	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
Drainage/Utilities/Sub-Grade		3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Foundations/Concrete Pour		1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading/Excavation		4	10.00	0.00	50.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction		7	102.00	23.00	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
Architectural Coating		1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

### 3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

### 3.2 Demolition - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0208	0.0000	0.0208	3.1500e-003	0.0000	3.1500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.4500e-003	0.0731	0.0728	1.1000e-004		5.0500e-003	5.0500e-003		4.9000e-003	4.9000e-003	0.0000	9.7461	9.7461	1.3600e-003	0.0000	9.7801
<b>Total</b>	<b>9.4500e-003</b>	<b>0.0731</b>	<b>0.0728</b>	<b>1.1000e-004</b>	<b>0.0208</b>	<b>5.0500e-003</b>	<b>0.0259</b>	<b>3.1500e-003</b>	<b>4.9000e-003</b>	<b>8.0500e-003</b>	<b>0.0000</b>	<b>9.7461</b>	<b>9.7461</b>	<b>1.3600e-003</b>	<b>0.0000</b>	<b>9.7801</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.8000e-004	0.0298	5.0900e-003	8.0000e-005	4.1000e-004	1.1000e-004	5.2000e-004	2.8000e-004	1.0000e-004	3.8000e-004	0.0000	7.4287	7.4287	3.9000e-004	0.0000	7.4383
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	1.1000e-004	1.0000e-005	1.1000e-004	1.2000e-004	1.0000e-005	1.2000e-004	0.0000	0.7253	0.7253	2.0000e-005	0.0000	0.7258
<b>Total</b>	<b>1.2600e-003</b>	<b>0.0301</b>	<b>8.0100e-003</b>	<b>9.0000e-005</b>	<b>5.2000e-004</b>	<b>1.2000e-004</b>	<b>6.3000e-004</b>	<b>4.0000e-004</b>	<b>1.1000e-004</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>8.1539</b>	<b>8.1539</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>8.1641</b>

#### Mitigated Construction On-Site



Off-Road	1.3000e-003	0.0120	0.0108	1.0000e-005		8.9000e-004	8.9000e-004		8.2000e-004	8.2000e-004	0.0000	1.2682	1.2682	4.0000e-004	0.0000	1.2783
<b>Total</b>	<b>1.3000e-003</b>	<b>0.0120</b>	<b>0.0108</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>8.9000e-004</b>	<b>8.9000e-004</b>	<b>0.0000</b>	<b>8.2000e-004</b>	<b>8.2000e-004</b>	<b>0.0000</b>	<b>1.2682</b>	<b>1.2682</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.2783</b>

**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	9.0000e-005	7.0000e-005	7.3000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1813	0.1813	1.0000e-005	0.0000	0.1815
<b>Total</b>	<b>9.0000e-005</b>	<b>7.0000e-005</b>	<b>7.3000e-004</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.1813</b>	<b>0.1813</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1815</b>

**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	2.5000e-004	3.9700e-003	0.0107	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2682	1.2682	4.0000e-004	0.0000	1.2783
<b>Total</b>	<b>2.5000e-004</b>	<b>3.9700e-003</b>	<b>0.0107</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>1.2682</b>	<b>1.2682</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.2783</b>

**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	9.0000e-005	7.0000e-005	7.3000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1813	0.1813	1.0000e-005	0.0000	0.1815
<b>Total</b>	<b>9.0000e-005</b>	<b>7.0000e-005</b>	<b>7.3000e-004</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.1813</b>	<b>0.1813</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1815</b>

**3.4 Drainage/Utilities/Sub-Grade - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	2.3800e-003	0.0218	0.0174	2.0000e-005		1.6300e-003	1.6300e-003		1.5000e-003	1.5000e-003	0.0000	2.0254	2.0254	6.4000e-004	0.0000	2.0414
<b>Total</b>	<b>2.3800e-003</b>	<b>0.0218</b>	<b>0.0174</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>1.6300e-003</b>	<b>1.6300e-003</b>	<b>0.0000</b>	<b>1.5000e-003</b>	<b>1.5000e-003</b>	<b>0.0000</b>	<b>2.0254</b>	<b>2.0254</b>	<b>6.4000e-004</b>	<b>0.0000</b>	<b>2.0414</b>

**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
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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
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	1.5000e-004	1.2000e-004	1.1700e-003	0.0000	4.0000e-005	0.0000	5.0000e-005	5.0000e-005	0.0000	5.0000e-005	0.0000	0.2901	0.2901	1.0000e-005	0.0000	0.2903
<b>Total</b>	<b>1.5000e-004</b>	<b>1.2000e-004</b>	<b>1.1700e-003</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.2901</b>	<b>0.2901</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2903</b>

**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	3.5000e-004	4.4200e-003	0.0170	2.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.0254	2.0254	6.4000e-004	0.0000	2.0414
<b>Total</b>	<b>3.5000e-004</b>	<b>4.4200e-003</b>	<b>0.0170</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>2.0254</b>	<b>2.0254</b>	<b>6.4000e-004</b>	<b>0.0000</b>	<b>2.0414</b>

**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	1.5000e-004	1.2000e-004	1.1700e-003	0.0000	1.6000e-004	0.0000	1.6000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.2901	0.2901	1.0000e-005	0.0000	0.2903
<b>Total</b>	<b>1.5000e-004</b>	<b>1.2000e-004</b>	<b>1.1700e-003</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.2901</b>	<b>0.2901</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2903</b>

### 3.5 Foundations/Concrete Pour - 2019

#### Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	2.9000e-004	1.8400e-003	1.5400e-003	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.2291	0.2291	2.0000e-005	0.0000	0.2297
<b>Total</b>	<b>2.9000e-004</b>	<b>1.8400e-003</b>	<b>1.5400e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2291</b>	<b>0.2291</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.2297</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.4000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1088	0.1088	0.0000	0.0000	0.1089
<b>Total</b>	<b>6.0000e-005</b>	<b>4.0000e-005</b>	<b>4.4000e-004</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.1088</b>	<b>0.1088</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1089</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.2291	0.2291	2.0000e-005	0.0000	0.2297
<b>Total</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.2291</b>	<b>0.2291</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.2297</b>							

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	4.4000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1088	0.1088	0.0000	0.0000	0.1089
<b>Total</b>	<b>6.0000e-005</b>	<b>4.0000e-005</b>	<b>4.4000e-004</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.1088</b>	<b>0.1088</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1089</b>

**3.6 Grading/Excavation - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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Category	tons/yr										MT/yr					
Fugitive Dust					3.5500e-003	0.0000	3.5500e-003	4.0000e-004	0.0000	4.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0115	0.1318	0.0936	1.8000e-004		5.7000e-003	5.7000e-003		5.2500e-003	5.2500e-003	0.0000	16.3811	16.3811	5.1800e-003	0.0000	16.5106
<b>Total</b>	<b>0.0115</b>	<b>0.1318</b>	<b>0.0936</b>	<b>1.8000e-004</b>	<b>3.5500e-003</b>	<b>5.7000e-003</b>	<b>9.2500e-003</b>	<b>4.0000e-004</b>	<b>5.2500e-003</b>	<b>5.6500e-003</b>	<b>0.0000</b>	<b>16.3811</b>	<b>16.3811</b>	<b>5.1800e-003</b>	<b>0.0000</b>	<b>16.5106</b>

**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	2.3000e-004	7.7700e-003	1.3300e-003	2.0000e-005	1.1000e-004	3.0000e-005	1.4000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	1.9346	1.9346	1.0000e-004	0.0000	1.9371
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	1.1000e-004	1.0000e-005	1.1000e-004	1.2000e-004	1.0000e-005	1.2000e-004	0.0000	0.7253	0.7253	2.0000e-005	0.0000	0.7258
<b>Total</b>	<b>6.1000e-004</b>	<b>8.0600e-003</b>	<b>4.2500e-003</b>	<b>3.0000e-005</b>	<b>2.2000e-004</b>	<b>4.0000e-005</b>	<b>2.5000e-004</b>	<b>1.9000e-004</b>	<b>4.0000e-005</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.6598</b>	<b>2.6598</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>2.6629</b>

**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					3.5500e-003	0.0000	3.5500e-003	4.0000e-004	0.0000	4.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3900e-003	0.0161	0.1177	1.8000e-004		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	16.3810	16.3810	5.1800e-003	0.0000	16.5106

Total	2.3900e-003	0.0161	0.1177	1.8000e-004	3.5500e-003	3.0000e-004	3.8500e-003	4.0000e-004	3.0000e-004	7.0000e-004	0.0000	16.3810	16.3810	5.1800e-003	0.0000	16.5106
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**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	2.3000e-004	7.7700e-003	1.3300e-003	2.0000e-005	2.4000e-004	3.0000e-005	2.7000e-004	7.0000e-005	3.0000e-005	1.0000e-004	0.0000	1.9346	1.9346	1.0000e-004	0.0000	1.9371
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8000e-004	2.9000e-004	2.9200e-003	1.0000e-005	4.0000e-004	1.0000e-005	4.1000e-004	1.2000e-004	1.0000e-005	1.2000e-004	0.0000	0.7253	0.7253	2.0000e-005	0.0000	0.7258
<b>Total</b>	<b>6.1000e-004</b>	<b>8.0600e-003</b>	<b>4.2500e-003</b>	<b>3.0000e-005</b>	<b>6.4000e-004</b>	<b>4.0000e-005</b>	<b>6.8000e-004</b>	<b>1.9000e-004</b>	<b>4.0000e-005</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.6598</b>	<b>2.6598</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>2.6629</b>

**3.7 Building Construction - 2019**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1792	1.7720	1.3378	2.1800e-003		0.1064	0.1064		0.0996	0.0996	0.0000	193.8738	193.8738	0.0477	0.0000	195.0658
<b>Total</b>	<b>0.1792</b>	<b>1.7720</b>	<b>1.3378</b>	<b>2.1800e-003</b>		<b>0.1064</b>	<b>0.1064</b>		<b>0.0996</b>	<b>0.0996</b>	<b>0.0000</b>	<b>193.8738</b>	<b>193.8738</b>	<b>0.0477</b>	<b>0.0000</b>	<b>195.0658</b>

**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	9.9000e-003	0.2809	0.0621	6.1000e-004	4.2800e-003	1.8000e-003	6.0800e-003	2.7600e-003	1.7200e-003	4.4800e-003	0.0000	58.5093	58.5093	3.6100e-003	0.0000	58.5994
Worker	0.0369	0.0281	0.2841	7.8000e-004	0.0105	5.5000e-004	0.0110	0.0113	5.1000e-004	0.0118	0.0000	70.6507	70.6507	2.0100e-003	0.0000	70.7011
<b>Total</b>	<b>0.0468</b>	<b>0.3090</b>	<b>0.3462</b>	<b>1.3900e-003</b>	<b>0.0148</b>	<b>2.3500e-003</b>	<b>0.0171</b>	<b>0.0140</b>	<b>2.2300e-003</b>	<b>0.0162</b>	<b>0.0000</b>	<b>129.1599</b>	<b>129.1599</b>	<b>5.6200e-003</b>	<b>0.0000</b>	<b>129.3004</b>

**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	0.0269	0.1715	1.3966	2.1800e-003		3.3900e-003	3.3900e-003		3.3900e-003	3.3900e-003	0.0000	193.8735	193.8735	0.0477	0.0000	195.0656
<b>Total</b>	<b>0.0269</b>	<b>0.1715</b>	<b>1.3966</b>	<b>2.1800e-003</b>		<b>3.3900e-003</b>	<b>3.3900e-003</b>		<b>3.3900e-003</b>	<b>3.3900e-003</b>	<b>0.0000</b>	<b>193.8735</b>	<b>193.8735</b>	<b>0.0477</b>	<b>0.0000</b>	<b>195.0656</b>

**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	9.9000e-003	0.2809	0.0621	6.1000e-004	8.6900e-003	1.8000e-003	0.0105	2.7600e-003	1.7200e-003	4.4800e-003	0.0000	58.5093	58.5093	3.6100e-003	0.0000	58.5994
Worker	0.0369	0.0281	0.2841	7.8000e-004	0.0394	5.5000e-004	0.0399	0.0113	5.1000e-004	0.0118	0.0000	70.6507	70.6507	2.0100e-003	0.0000	70.7011
<b>Total</b>	<b>0.0468</b>	<b>0.3090</b>	<b>0.3462</b>	<b>1.3900e-003</b>	<b>0.0481</b>	<b>2.3500e-003</b>	<b>0.0504</b>	<b>0.0140</b>	<b>2.2300e-003</b>	<b>0.0162</b>	<b>0.0000</b>	<b>129.1599</b>	<b>129.1599</b>	<b>5.6200e-003</b>	<b>0.0000</b>	<b>129.3004</b>

### 3.7 Building Construction - 2020

#### 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	0.0330	0.3284	0.2678	4.5000e-004		0.0190	0.0190		0.0177	0.0177	0.0000	38.9627	38.9627	9.6600e-003	0.0000	39.2041
<b>Total</b>	<b>0.0330</b>	<b>0.3284</b>	<b>0.2678</b>	<b>4.5000e-004</b>		<b>0.0190</b>	<b>0.0190</b>		<b>0.0177</b>	<b>0.0177</b>	<b>0.0000</b>	<b>38.9627</b>	<b>38.9627</b>	<b>9.6600e-003</b>	<b>0.0000</b>	<b>39.2041</b>

#### 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	1.6800e-003	0.0527	0.0114	1.2000e-004	8.7000e-004	2.4000e-004	1.1200e-003	5.6000e-004	2.3000e-004	8.0000e-004	0.0000	11.8633	11.8633	6.8000e-004	0.0000	11.8803
Worker	6.8800e-003	5.0800e-003	0.0520	1.5000e-004	2.1400e-003	1.1000e-004	2.2500e-003	2.3000e-003	1.0000e-004	2.4000e-003	0.0000	13.9798	13.9798	3.6000e-004	0.0000	13.9888

<b>Total</b>	<b>8.5600e-003</b>	<b>0.0578</b>	<b>0.0634</b>	<b>2.7000e-004</b>	<b>3.0100e-003</b>	<b>3.5000e-004</b>	<b>3.3700e-003</b>	<b>2.8600e-003</b>	<b>3.3000e-004</b>	<b>3.2000e-003</b>	<b>0.0000</b>	<b>25.8431</b>	<b>25.8431</b>	<b>1.0400e-003</b>	<b>0.0000</b>	<b>25.8692</b>
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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.4900e-003	0.0350	0.2852	4.5000e-004		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	38.9626	38.9626	9.6600e-003	0.0000	39.2040
<b>Total</b>	<b>5.4900e-003</b>	<b>0.0350</b>	<b>0.2852</b>	<b>4.5000e-004</b>		<b>6.9000e-004</b>	<b>6.9000e-004</b>		<b>6.9000e-004</b>	<b>6.9000e-004</b>	<b>0.0000</b>	<b>38.9626</b>	<b>38.9626</b>	<b>9.6600e-003</b>	<b>0.0000</b>	<b>39.2040</b>

**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	1.6800e-003	0.0527	0.0114	1.2000e-004	1.7700e-003	2.4000e-004	2.0200e-003	5.6000e-004	2.3000e-004	8.0000e-004	0.0000	11.8633	11.8633	6.8000e-004	0.0000	11.8803
Worker	6.8800e-003	5.0800e-003	0.0520	1.5000e-004	8.0400e-003	1.1000e-004	8.1500e-003	2.3000e-003	1.0000e-004	2.4000e-003	0.0000	13.9798	13.9798	3.6000e-004	0.0000	13.9888
<b>Total</b>	<b>8.5600e-003</b>	<b>0.0578</b>	<b>0.0634</b>	<b>2.7000e-004</b>	<b>9.8100e-003</b>	<b>3.5000e-004</b>	<b>0.0102</b>	<b>2.8600e-003</b>	<b>3.3000e-004</b>	<b>3.2000e-003</b>	<b>0.0000</b>	<b>25.8431</b>	<b>25.8431</b>	<b>1.0400e-003</b>	<b>0.0000</b>	<b>25.8692</b>

**3.8 Paving - 2020**

**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	0.0125	0.1326	0.1361	2.4000e-004		6.6700e-003	6.6700e-003		6.1300e-003	6.1300e-003	0.0000	20.7003	20.7003	6.6900e-003	0.0000	20.8677
Paving	2.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0147</b>	<b>0.1326</b>	<b>0.1361</b>	<b>2.4000e-004</b>		<b>6.6700e-003</b>	<b>6.6700e-003</b>		<b>6.1300e-003</b>	<b>6.1300e-003</b>	<b>0.0000</b>	<b>20.7003</b>	<b>20.7003</b>	<b>6.6900e-003</b>	<b>0.0000</b>	<b>20.8677</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.6000e-004	4.7100e-003	1.0000e-005	1.9000e-004	1.0000e-005	2.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	1.2651	1.2651	3.0000e-005	0.0000	1.2660
<b>Total</b>	<b>6.2000e-004</b>	<b>4.6000e-004</b>	<b>4.7100e-003</b>	<b>1.0000e-005</b>	<b>1.9000e-004</b>	<b>1.0000e-005</b>	<b>2.0000e-004</b>	<b>2.1000e-004</b>	<b>1.0000e-005</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>1.2651</b>	<b>1.2651</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.2660</b>

**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	2.9000e-003	0.0126	0.1684	2.4000e-004		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004	0.0000	20.7003	20.7003	6.6900e-003	0.0000	20.8677
Paving	2.2300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>5.1300e-003</b>	<b>0.0126</b>	<b>0.1684</b>	<b>2.4000e-004</b>		<b>3.9000e-004</b>	<b>3.9000e-004</b>		<b>3.9000e-004</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>20.7003</b>	<b>20.7003</b>	<b>6.6900e-003</b>	<b>0.0000</b>	<b>20.8677</b>

### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.2000e-004	4.6000e-004	4.7100e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.4000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	1.2651	1.2651	3.0000e-005	0.0000	1.2660
<b>Total</b>	<b>6.2000e-004</b>	<b>4.6000e-004</b>	<b>4.7100e-003</b>	<b>1.0000e-005</b>	<b>7.3000e-004</b>	<b>1.0000e-005</b>	<b>7.4000e-004</b>	<b>2.1000e-004</b>	<b>1.0000e-005</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>1.2651</b>	<b>1.2651</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.2660</b>

### **3.9 Architectural Coating - 2020**

#### 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	0.7224					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2300e-003	0.0225	0.0244	4.0000e-005		1.4800e-003	1.4800e-003		1.4800e-003	1.4800e-003	0.0000	3.4043	3.4043	2.6000e-004	0.0000	3.4109
<b>Total</b>	<b>0.7256</b>	<b>0.0225</b>	<b>0.0244</b>	<b>4.0000e-005</b>		<b>1.4800e-003</b>	<b>1.4800e-003</b>		<b>1.4800e-003</b>	<b>1.4800e-003</b>	<b>0.0000</b>	<b>3.4043</b>	<b>3.4043</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>3.4109</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.1000e-004	5.2300e-003	2.0000e-005	2.2000e-004	1.0000e-005	2.3000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	1.4057	1.4057	4.0000e-005	0.0000	1.4066
<b>Total</b>	<b>6.9000e-004</b>	<b>5.1000e-004</b>	<b>5.2300e-003</b>	<b>2.0000e-005</b>	<b>2.2000e-004</b>	<b>1.0000e-005</b>	<b>2.3000e-004</b>	<b>2.3000e-004</b>	<b>1.0000e-005</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>1.4057</b>	<b>1.4057</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4066</b>

**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	0.7224					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-004	1.7200e-003	0.0244	4.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	3.4043	3.4043	2.6000e-004	0.0000	3.4109
<b>Total</b>	<b>0.7228</b>	<b>1.7200e-003</b>	<b>0.0244</b>	<b>4.0000e-005</b>		<b>5.0000e-005</b>	<b>5.0000e-005</b>		<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>3.4043</b>	<b>3.4043</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>3.4109</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.1000e-004	5.2300e-003	2.0000e-005	8.1000e-004	1.0000e-005	8.2000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	1.4057	1.4057	4.0000e-005	0.0000	1.4066
<b>Total</b>	<b>6.9000e-004</b>	<b>5.1000e-004</b>	<b>5.2300e-003</b>	<b>2.0000e-005</b>	<b>8.1000e-004</b>	<b>1.0000e-005</b>	<b>8.2000e-004</b>	<b>2.3000e-004</b>	<b>1.0000e-005</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>1.4057</b>	<b>1.4057</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4066</b>

## 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	0.2573	1.6580	2.6744	9.3700e-003	0.3493	9.3000e-003	0.3586	0.1020	8.7500e-003	0.1108	0.0000	863.6022	863.6022	0.0404	0.0000	864.6111
Unmitigated	0.2573	1.6580	2.6744	9.3700e-003	0.3493	9.3000e-003	0.3586	0.1020	8.7500e-003	0.1108	0.0000	863.6022	863.6022	0.0404	0.0000	864.6111

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	93.21	62.14	46.67	189,672	189,672
Condo/Townhouse	587.94	391.96	294.38	1,196,390	1,196,390
Health Club	0.00	0.00	0.00		

Parking Lot	0.00	0.00	0.00		
Quality Restaurant	197.11	211.90	166.90	231,193	231,193
Regional Shopping Center	128.69	229.58	99.08	243,485	243,485
<b>Total</b>	<b>1,006.95</b>	<b>895.57</b>	<b>607.02</b>	<b>1,860,739</b>	<b>1,860,739</b>

### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Condo/Townhouse	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Quality Restaurant	9.50	7.30	7.30	12.00	69.00	19.00	38	18	44
Regional Shopping Center	9.50	7.30	7.30	16.30	64.70	19.00	54	35	11

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Condo/Townhouse	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Health Club	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Parking Lot	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Quality Restaurant	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Regional Shopping Center	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739

### 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Electricity Mitigated							0.0000	0.0000		0.0000	0.0000	68.2451	68.2451	5.8000e-003	7.8000e-004	68.6240
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	119.9197	119.9197	0.0102	1.3800e-003	120.5854
NaturalGas Mitigated	0.0112	0.0970	0.0498	6.1000e-004		7.7400e-003	7.7400e-003		7.7400e-003	7.7400e-003	0.0000	110.9351	110.9351	2.1300e-003	2.0300e-003	111.5943
NaturalGas Unmitigated	0.0139	0.1203	0.0605	7.6000e-004		9.6200e-003	9.6200e-003		9.6200e-003	9.6200e-003	0.0000	137.8078	137.8078	2.6400e-003	2.5300e-003	138.6268

## 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										M1/yr					
Apartments Low Rise	264544	1.4300e-003	0.0122	5.1900e-003	8.0000e-005		9.9000e-004	9.9000e-004		9.9000e-004	9.9000e-004	0.0000	14.1171	14.1171	2.7000e-004	2.6000e-004	14.2009
Condo/Townhouse	1.86297e+006	0.0101	0.0858	0.0365	5.5000e-004		6.9400e-003	6.9400e-003		6.9400e-003	6.9400e-003	0.0000	99.4154	99.4154	1.9100e-003	1.8200e-003	100.0062
Health Club	35887.5	1.9000e-004	1.7600e-003	1.4800e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.9151	1.9151	4.0000e-005	4.0000e-005	1.9265
Parking Lot	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
Quality Restaurant	403008	2.1700e-003	0.0198	0.0166	1.2000e-004		1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003	0.0000	21.5060	21.5060	4.1000e-004	3.9000e-004	21.6338
Regional Shopping Center	16008	9.0000e-005	7.8000e-004	6.6000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8543	0.8543	2.0000e-005	2.0000e-005	0.8593
<b>Total</b>		<b>0.0139</b>	<b>0.1203</b>	<b>0.0605</b>	<b>7.6000e-004</b>		<b>9.6200e-003</b>	<b>9.6200e-003</b>		<b>9.6200e-003</b>	<b>9.6200e-003</b>	<b>0.0000</b>	<b>137.8078</b>	<b>137.8078</b>	<b>2.6500e-003</b>	<b>2.5300e-003</b>	<b>138.6268</b>

### Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	206906	1.1200e-003	9.5300e-003	4.0600e-003	6.0000e-005		7.7000e-004	7.7000e-004		7.7000e-004	7.7000e-004	0.0000	11.0413	11.0413	2.1000e-004	2.0000e-004	11.1069
Condo/Townhouse	1.45084e+006	7.8200e-003	0.0669	0.0285	4.3000e-004		5.4100e-003	5.4100e-003		5.4100e-003	5.4100e-003	0.0000	77.4223	77.4223	1.4800e-003	1.4200e-003	77.8823
Health Club	29416.9	1.6000e-004	1.4400e-003	1.2100e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	1.5698	1.5698	3.0000e-005	3.0000e-005	1.5791
Parking Lot	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
Quality Restaurant	379068	2.0400e-003	0.0186	0.0156	1.1000e-004		1.4100e-003	1.4100e-003		1.4100e-003	1.4100e-003	0.0000	20.2285	20.2285	3.9000e-004	3.7000e-004	20.3487
Regional Shopping Center	12615	7.0000e-005	6.2000e-004	5.2000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6732	0.6732	1.0000e-005	1.0000e-005	0.6772
<b>Total</b>		<b>0.0112</b>	<b>0.0970</b>	<b>0.0499</b>	<b>6.1000e-004</b>		<b>7.7500e-003</b>	<b>7.7500e-003</b>		<b>7.7500e-003</b>	<b>7.7500e-003</b>	<b>0.0000</b>	<b>110.9351</b>	<b>110.9351</b>	<b>2.1200e-003</b>	<b>2.0300e-003</b>	<b>111.5943</b>

### 5.3 Energy by Land Use - Electricity

#### Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	54810.3	10.8148	9.2000e-004	1.2000e-004	10.8748
Condo/Townhouse	410052	80.9084	6.8800e-003	9.3000e-004	81.3576
Health Club	10962	2.1629	1.8000e-004	2.0000e-005	2.1750
Parking Lot	25918.2	5.1140	4.3000e-004	6.0000e-005	5.1424
Quality Restaurant	69552	13.7235	1.1700e-003	1.6000e-004	13.7997
Regional Shopping Center	36470.4	7.1961	6.1000e-004	8.0000e-005	7.2360





Landscaping	0.0214	8.1600e-003	0.7070	4.0000e-005		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003	0.0000	1.1524	1.1524	1.1200e-003	0.0000	1.1803
<b>Total</b>	<b>0.8919</b>	<b>8.1600e-003</b>	<b>0.7070</b>	<b>4.0000e-005</b>		<b>3.9000e-003</b>	<b>3.9000e-003</b>		<b>3.9000e-003</b>	<b>3.9000e-003</b>	<b>0.0000</b>	<b>1.1524</b>	<b>1.1524</b>	<b>1.1200e-003</b>	<b>0.0000</b>	<b>1.1803</b>

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	10.9177	0.1901	4.5700e-003	17.0325
Unmitigated	12.9291	0.2375	5.7100e-003	20.5685

### 7.2 Water by Land Use

#### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.847002 / 0.53398	1.5418	0.0277	6.7000e-004	2.4331

Condo/Townhouse	5.34263 / 3.36818	9.7251	0.1748	4.2000e- 003	15.3469
Health Club	0.0857576 / 0.0525614	0.1551	2.8100e- 003	7.0000e- 005	0.2453
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0.728481 / 0.0464088	1.0410	0.0238	5.7000e- 004	1.8060
Regional Shopping Center	0.257772 / 0.15799	0.4661	8.4300e- 003	2.0000e- 004	0.7373
<b>Total</b>		<b>12.9291</b>	<b>0.2375</b>	<b>5.7100e- 003</b>	<b>20.5686</b>

### Mitigated

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.677602 / 0.53398	1.3072	0.0222	5.3000e- 004	2.0206
Condo/Townhouse	4.2741 / 3.36818	8.2453	0.1399	3.3700e- 003	12.7453
Health Club	0.068606 / 0.0525614	0.1313	2.2400e- 003	5.0000e- 005	0.2035
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0.582785 / 0.0464088	0.8392	0.0191	4.6000e- 004	1.4512
Regional Shopping Center	0.206218 / 0.15799	0.3947	6.7500e- 003	1.6000e- 004	0.6118
<b>Total</b>		<b>10.9177</b>	<b>0.1901</b>	<b>4.5700e- 003</b>	<b>17.0325</b>

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	11.7349	0.6935	0.0000	29.0727
Unmitigated	11.7349	0.6935	0.0000	29.0727

**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	5.98	1.2139	0.0717	0.0000	3.0074
Condo/Townhouse	37.72	7.6568	0.4525	0.0000	18.9695
Health Club	8.27	1.6787	0.0992	0.0000	4.1590
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	2.19	0.4446	0.0263	0.0000	1.1014
Regional Shopping Center	3.65	0.7409	0.0438	0.0000	1.8356
<b>Total</b>		<b>11.7349</b>	<b>0.6935</b>	<b>0.0000</b>	<b>29.0727</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	5.98	1.2139	0.0717	0.0000	3.0074
Condo/Townhouse	37.72	7.6568	0.4525	0.0000	18.9695
Health Club	8.27	1.6787	0.0992	0.0000	4.1590
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	2.19	0.4446	0.0263	0.0000	1.1014
Regional Shopping Center	3.65	0.7409	0.0438	0.0000	1.8356
<b>Total</b>		<b>11.7349</b>	<b>0.6935</b>	<b>0.0000</b>	<b>29.0727</b>

## 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



# **Appendix A-15**

Health Risk Assessment – AERSCREEN  
Inputs – Offroad

Offroad

Start date and time 12/04/17 14:57:11

AERSCREEN 16216

Offroad

Offroad

----- DATA ENTRY VALIDATION -----

METRIC

ENGLISH

\*\* AREADATA \*\*

Emission Rate:	1.0000 g/s	7.937 lb/hr
Area Height:	3.89 meters	12.76 feet
Area Source Length:	365.00 meters	1197.51 feet
Area Source Width:	130.00 meters	426.51 feet
Vertical Dimension:	1.40 meters	4.59 feet
Model Mode:	URBAN	
Population:	233136	
Dist to Ambient Air:	1.0 meters	3. feet

\*\* BUILDING DATA \*\*

Offroad

No Building Downwash Parameters

\*\* TERRAIN DATA \*\*

No Terrain Elevations

Source Base Elevation: 0.0 meters 0.0 feet

Probe distance: 5000. meters 16404. feet

Flagpole Receptor Height: 1.5 meters 5. feet

No discrete receptors used

\*\* FUMIGATION DATA \*\*

No fumigation requested

\*\* METEOROLOGY DATA \*\*

Min/Max Temperature: 280.0 / 297.0 K 44.3 / 74.9 Deg F

Offroad

Minimum Wind Speed: 0.5 m/s

Anemometer Height: 10.000 meters

Dominant Surface Profile: Urban

Dominant Climate Type: Average Moisture

Surface friction velocity (u\*): not adjusted

DEBUG OPTION OFF

AERSCREEN output file:

Offroad.out

\*\*\* AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run

\*\*\*\*\*

Offroad

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

Season	Albedo	Bo	zo
Winter	0.35	1.50	1.000
Spring	0.14	1.00	1.000
Summer	0.16	2.00	1.000
Autumn	0.18	2.00	1.000

Creating met files aerscreen\_01\_01.sfc & aerscreen\_01\_01.pfl

Creating met files aerscreen\_02\_01.sfc & aerscreen\_02\_01.pfl

Creating met files aerscreen\_03\_01.sfc & aerscreen\_03\_01.pfl

Creating met files aerscreen\_04\_01.sfc & aerscreen\_04\_01.pfl

Buildings and/or terrain present or rectangular area source, skipping probe

FLOWSECTOR started 12/04/17 15:04:54

\*\*\*\*\*

Running AERMOD

Offroad

Processing Winter

Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 10

Offroad

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Running AERMOD

Processing Spring

Offroad  
Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*  
\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*  
\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 10

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

Offroad

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Running AERMOD

Processing Summer

Processing surface roughness sector 1

Offroad

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 10

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

Offroad

\*\*\*\*\*

Processing wind flow sector 4

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Running AERMOD

Processing Autumn

Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

Offroad

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 3

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 10

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 4

Offroad

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 15

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*  
\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 5

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 20

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*  
\*\*\* NONE \*\*\*

FLOWSECTOR ended 12/04/17 15:05:17

REFINE started 12/04/17 15:05:17

AERMOD Finishes Successfully for REFINE stage 3 Winter sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*  
\*\*\* NONE \*\*\*

REFINE ended 12/04/17 15:05:21

Offroad

\*\*\*\*\*

AERSCREEN Finished Successfully

With no errors or warnings

Check log file for details

\*\*\*\*\*

Ending date and time 12/04/17 15:05:21

# **Appendix A-16**

Health Risk Assessment – AERSCREEN  
Inputs – Onroad

Onroad

Start date and time 12/06/17 09:11:11

AERSCREEN 16216

Onroad

Onroad

----- DATA ENTRY VALIDATION -----

METRIC

ENGLISH

\*\* AREADATA \*\*

Emission Rate:	1.0000 g/s	7.937 lb/hr
Area Height:	2.55 meters	8.37 feet
Area Source Length:	483.00 meters	1584.65 feet
Area Source Width:	9.00 meters	29.53 feet
Vertical Dimension:	2.37 meters	7.78 feet
Model Mode:	URBAN	
Population:	233136	
Dist to Ambient Air:	1.0 meters	3. feet

\*\* BUILDING DATA \*\*

Onroad

No Building Downwash Parameters

\*\* TERRAIN DATA \*\*

No Terrain Elevations

Source Base Elevation: 0.0 meters 0.0 feet

Probe distance: 5000. meters 16404. feet

Flagpole Receptor Height: 1.5 meters 5. feet

No discrete receptors used

\*\* FUMIGATION DATA \*\*

No fumigation requested

\*\* METEOROLOGY DATA \*\*

Min/Max Temperature: 280.0 / 297.0 K 44.3 / 74.9 Deg F

Onroad

Minimum Wind Speed: 0.5 m/s

Anemometer Height: 10.000 meters

Dominant Surface Profile: Urban

Dominant Climate Type: Average Moisture

Surface friction velocity (u\*): not adjusted

DEBUG OPTION OFF

AERSCREEN output file:

Onroad.out

\*\*\* AERSCREEN Run is Ready to Begin

No terrain used, AERMAP will not be run

\*\*\*\*\*

Onroad

SURFACE CHARACTERISTICS & MAKEMET

Obtaining surface characteristics...

Using AERMET seasonal surface characteristics for Urban with Average Moisture

Season	Albedo	Bo	zo
Winter	0.35	1.50	1.000
Spring	0.14	1.00	1.000
Summer	0.16	2.00	1.000
Autumn	0.18	2.00	1.000

Creating met files aerscreen\_01\_01.sfc & aerscreen\_01\_01.pfl

Creating met files aerscreen\_02\_01.sfc & aerscreen\_02\_01.pfl

Creating met files aerscreen\_03\_01.sfc & aerscreen\_03\_01.pfl

Creating met files aerscreen\_04\_01.sfc & aerscreen\_04\_01.pfl

Buildings and/or terrain present or rectangular area source, skipping probe

FLOWSECTOR started 12/06/17 09:15:01

\*\*\*\*\*

Running AERMOD

Onroad

Processing Winter

Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Winter sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Running AERMOD

Processing Spring

Onroad  
Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Spring sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Running AERMOD

Processing Summer

Processing surface roughness sector 1

Onroad

\*\*\*\*\*

Processing wind flow sector 1

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Summer sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*

\*\*\* NONE \*\*\*

\*\*\*\*\*

Running AERMOD

Processing Autumn

Processing surface roughness sector 1

\*\*\*\*\*

Processing wind flow sector 1

Onroad

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*  
\*\*\* NONE \*\*\*

\*\*\*\*\*

Processing wind flow sector 2

AERMOD Finishes Successfully for FLOWSECTOR stage 2 Autumn sector 5

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*  
\*\*\* NONE \*\*\*

FLOWSECTOR ended 12/06/17 09:15:14

REFINE started 12/06/17 09:15:14

AERMOD Finishes Successfully for REFINE stage 3 Winter sector 0

\*\*\*\*\* WARNING MESSAGES \*\*\*\*\*  
\*\*\* NONE \*\*\*

REFINE ended 12/06/17 09:15:24

Onroad

\*\*\*\*\*

AERSCREEN Finished Successfully

With no errors or warnings

Check log file for details

\*\*\*\*\*

Ending date and time 12/06/17 09:15:24

# **Appendix A-17**

Health Risk Assessment – AERSCREEN  
Outputs – Offroad





# **Appendix A-18**

Health Risk Assessment – AERSCREEN  
Outputs – Onroad





# **Appendix A-19**

Health Risk Assessment – Cumulative

**Cumulative HRA**

Updated: 1/16/2018

To respond to City comment on the draft IS to include assessment of background risk on operational receptors.

blue = used for totals

TAC Source	Est. Cancer Risk	PM2.5 Concentration	Chronic HI	Notes
Union Pacific Railway	32.003	0.055	0.011	Link 332 (6ft elevation): 75 feet west
Mission Blvd	4.764	0.03	0.004	Link 478 (20ft elevation): 750 feet south
Mission Blvd	3.257	0.021	0.003	Link 478 (20ft elevation): 750 feet south
Generator 19504	0			No data, XXX feet west of site
Generator G9168	0.207	0	0	1,400 feet south
Generator 15973	14.31	0.025	0.005	2,000 feet south
<b>Total Risk</b>	<b>51.077</b>	<b>0.11</b>	<b>0.02</b>	
<b>BAAQMD Cumulative Thresholds</b>	<b>100</b>	<b>0.8</b>	<b>10</b>	
<b>Exceeds threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	

**Source**

Phil Martien, BAAQMD, in email to Tim Rimpo on 6/25/14. File used: *Rail-6ft.kmz*. See: \\Sfo-file01\projects\SFO\17xxxx\170627.00 - Fremont Niles Gateway\03 Working Documents\AQ-GHG\Correspondence  
 BAAQMD, 2012. File: *Alameda 20ft.kmz*. See: <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>  
 BAAQMD, 2012. File: *Alameda 20ft.kmz*. See: <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>  
 BAAQMD, 2012. File: *Alameda\_May\_2012.kmz*. See: <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>  
 BAAQMD, 2012. File: *Alameda\_May\_2012.kmz*. See: <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>  
 BAAQMD, 2012. File: *Alameda\_May\_2012.kmz*. See: <http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools>

BAAQMD 2017: [http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa\\_guidelines\\_may2017.pdf.pdf?la=en](http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017.pdf.pdf?la=en)

# Appendix B

Special-Status Plant and Animal Species



**TABLE B-1  
SPECIAL-STATUS SPECIES CONSIDERED FOR THE  
NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFG/Other <sup>b</sup>	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
<b>FEDERAL OR STATE LISTED SPECIES</b>				
<b>Plants</b>				
Palmate-bracted salty bird's-beak <i>Chloropyron palmatum</i>	FE/CE/1B.1	Chenopod scrub, valley and foothill grassland. Usually found on Pescadero silty clay which is alkaline, with <i>Distichlis</i> , <i>Frankenia</i> , etc. 5-155m.	<b>Absent.</b> Suitable habitat is not found in the project study area. No documented occurrences within 5 miles of the project site.	May – October
Robust spineflower <i>Chorizanthe robusta</i> var. <i>robusta</i>	FE/--/1B.1	Cismontane woodland, coastal dunes, coastal scrub, sandy or gravelly terraces and bluffs or in loose sand. 3-120 m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	April – September
Santa Cruz tarplant <i>Holocarpha macradenia</i>	FT/CE/1B.1	Coastal prairie, valley and foothill grassland. Found on light, sandy soil or sandy clay; often with non-natives. 10-260 m.	<b>Absent.</b> Suitable habitat is not found in the project study area. No documented occurrences within 5 miles of the project site.	June – October
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE/--/1B.1	Valley and foothill grassland, vernal pools, cismontane woodland, swales, low depressions, in open grassy areas. 1-445 m.	<b>Absent.</b> Suitable habitat is not found in the project study area. Nearest occurrence is documented 5 miles southwest of the project site.	March – July
California seablite <i>Suaeda californica</i>	FE/--/1B.1	High margins of coastal salt marshes and swamps in sandy soil. 0 – 5m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	July – October
<b>Invertebrates</b>				
Conservancy fairy shrimp <i>Branchinecta conservation</i>	FE/--	Conservancy fairy shrimp are endemic to vernal pools in California and this species is restricted to the Central Valley except for one population in the Central Coast in Ventura County.	<b>Absent.</b> Suitable habitat not found onsite.	November – April
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT/--	Ephemeral freshwater vernal pools.	<b>Absent.</b> Suitable habitat is not present in the project study area.	December – May
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE/--/--	Coastal scrub and bunchgrass grassland habitats, with larval foodplant, broadleaf stonecrop ( <i>Sedum spathulifolium</i> ). Adults nectar on bladder parsnip ( <i>Lomatium utriculatum</i> ), common yarrow ( <i>Achillea millefolium</i> ), coast rock cress ( <i>Arabis blepharophylla</i> ), San Francisco wallflower ( <i>Erysimum franciscanum</i> ), California buttercup ( <i>Ranunculus californicus</i> ), and wood strawberry ( <i>Fragaria vesca</i> ).	<b>Absent.</b> Suitable habitat for this species is not found in the project study area and supportive host plant and nectar plants not observed during reconnaissance survey.	March – April

**TABLE B-1 (Continued)**  
**SPECIAL-STATUS SPECIES CONSIDERED FOR THE**  
**NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFG/Other <sup>b</sup>	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
<b>Invertebrates (cont.)</b>				
Bay checkerspot butterfly <i>Euphydryas editha bayensis</i>	FT/*/--	Native grasslands on serpentine soils in San Francisco Bay area. Host plants: foothill plantain ( <i>Plantago erecta</i> ) (primary); denseflower Indian paintbrush ( <i>Castilleja densiflora</i> ) and owl's clover ( <i>C. exserta</i> ).	<b>Absent.</b> Suitable habitat for this species is not found in the project study area and supportive host plants not observed during reconnaissance survey.	March – May
vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE/--/--	This species inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water.	<b>Absent.</b> Suitable habitat not found onsite.	December – early spring (until vernal pools dry up)
<b>Fish</b>				
delta smelt <i>Hypomesus transpacificus</i>	FT/CE/--	Endemic to the Sacramento-San Joaquin Delta distributed from Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, and Solano Counties. Spawning occurs in brackish-water river channels and sloughs of the Delta.	<b>Absent.</b> Project study area located outside of specie's range.	--
Steelhead – Central CA Coast DPS <i>Oncorhynchus mykiss</i>	FT/--/--	Spawns and rears in coastal streams between the Russian River and Aptos Creek, as well as drainages tributary to San Francisco Bay, where gravelly substrate and shaded riparian habitat occurs. <sup>c</sup>	<b>Present.</b> Known seasonal occupant of Alameda Creek below the Sunol Dam to the mouth at San Francisco Bay.  Suitable habitat for this species is not found within the project site.	Year-round
longfin smelt <i>Spirinchus thaleichthys</i>	FC/ CT, CSC /--	Found throughout the nearshore coastal waters and open waters of San Francisco Bay-Delta including the river channels and sloughs of the Delta. Spawns in the Delta.	<b>Absent.</b> Project study area located outside of specie's range.	late summer
<b>Reptiles</b>				
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	FT/CT	Restricted to valley-foothill hardwood habitat of the coast ranges between Monterey and north San Francisco Bay. Inhabits south-facing slopes and ravines where shrubs form a vegetative mosaic with oak trees and grasses.	<b>Low.</b> Suitable foraging, dispersal, and refugia habitat is not present within the project study area. Occurrences documented within 5 miles of the project site are associated with foothill open space east of the project study area.	Year-round

**TABLE B-1 (Continued)**  
**SPECIAL-STATUS SPECIES CONSIDERED FOR THE**  
**NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFG/Other <sup>b</sup>	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
<b>Amphibians</b>				
California tiger salamander <i>Ambystoma californiense</i>	FT/CT, WL/--	Breed in vernal pools or temporary ponds in annual grasslands, or open woodlands. Adults typically use mammal burrows as refugia.	<b>Low.</b> Suitable grassland habitat with mammal burrows and seasonal ponds are not present within the project study area. Occurrences documented within 5 miles of the project site are located in foothill open space east of the project study area.	Year-round
<b>Amphibians (cont.)</b>				
California red-legged frog <i>Rana draytonii</i>	FT/CSC/--	Streams, freshwater pools, and ponds with overhanging vegetation. Also found in woods adjacent to streams. Requires permanent or ephemeral water sources such as reservoirs and slow moving streams and needs pools of >0.5 m depth for breeding.	<b>Low.</b> Suitable aquatic and upland dispersal habitat is not found in the project study area. Occurrences documented within 5 miles of the project site are associated with foothill open space east of the project study area and an urban ditch Union City.	Year-round
<b>Birds</b>				
tricolored blackbird <i>Agelaius tricolor</i>	--/CE,SSC	Nests in cattail, tule, blackberry thickets, or thistle patches adjacent to freshwater sources.	<b>Low (unlikely to nest).</b> May occur over the project site or in the adjacent Alameda Creek channel on a transient basis. Typical nesting vegetation not observed during reconnaissance survey. No previously documented to occur within Alameda Creek within the project study area.	Year-round
western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT/CSC/--	Sandy coastal beaches, salt pans, coastal dredged spoils sites, dry salt ponds, salt pond levees, and gravel bars. Nests in sandy substrate and forages in sandy marine and estuarine bodies.	<b>Absent (no potential to nest).</b> Snowy plovers nest abundantly in dry south bay salt ponds and on levees associated with them, but are not typically found outside these habitats. No suitable nesting habitat exists in the project study area. Nearest occurrence is located 5 miles southwest of the project site.	Year-round
western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT/CE/--	Woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes.	<b>Low (no potential to nest).</b> Uncommon to the region but may occur on a transient basis during migration. Regional occurrences are historical or located more than 5 miles from the project site.	Year-round
American peregrine falcon <i>Falco peregrinus anatum</i>	FD/CD, CFP /--	Nests near wetlands, lakes, rivers, or other water on cliffs, banks, human structures. Feeds on birds taken in flight.	<b>Low (unlikely to nest).</b> May occur in the project study area on a transient basis. More to common wetland and marsh habitats of the region.	Year-round

**TABLE B-1 (Continued)**  
**SPECIAL-STATUS SPECIES CONSIDERED FOR THE**  
**NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

<b>Common Name</b> <i>Scientific Name</i>	<b>Listing Status</b> USFWS/ CDFG/Other <sup>b</sup>	<b>Habitat Requirements</b>	<b>Potential to Occur in Project Study Area</b>	<b>Period of Identification / Flowering Period</b>
<b>Birds (cont.)</b>				
California black rail <i>Laterallus jamaicensis coturniculus</i>	--/CT/--	Salt marshes along large bays, also freshwater marshes.	<b>Low (unlikely to nest).</b> Only occurs in densely-vegetated tidal marsh habitat or freshwater marsh. Historical occurrence documented in Alameda Creek between Niles and Centerville (CDFW, 2017).  Suitable nesting habitat for this species not found in the project site.	Year-round
Ridgway's rail <i>Rallus obsoletus obsoletus</i>	FE/CE/--	Salt-water and brackish marshes with tidal sloughs.	<b>Absent (no potential to nest).</b> Only occurs in densely-vegetated tidal marsh habitat. Suitable nesting habitat for this species is not found in the project study area.	Year-round
Bank swallow (nesting) <i>Riparia riparia</i>	--/CT/--	Vertical banks and cliffs with sandy soil, near water. Nests in holes dug in cliffs and river banks.	<b>Low (unlikely to nest).</b> Suitable nesting habitat for this species is not found in the project study area. Nearest documented occurrence is 5 miles southeast of the project site in Coyote Hills Regional Park.	March – October (migration)
California least tern <i>Sterna antillarum</i>	FE/CE/--	Feeds in relatively shallow, near-shore waters, coastal freshwater ponds, channels, and lakes occupied by small fish. Colonial nesters on sand, gravel, or shell beaches where visibility is good.	<b>Absent (no potential to nest).</b> No nesting colonies are known to occur in the project study area. No occurrences are documented within 5 miles of the project site. Individuals may occur in the study area on a transient basis.	April – August
<b>Mammals</b>				
Saltmarsh harvest mouse <i>Reithrodontomys raviventris</i>	FE/CE/--	Salt marsh habitat dominated by pickleweed.	<b>Absent.</b> Suitable habitat for this species is not found in the project study area.	Year-round
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE/CT/--	Annual grasslands or grassy open stages with scattered shrubby vegetation and requires loose-textured sandy soils for burrowing, and for a suitable prey base.	<b>Absent.</b> The project area is located outside of the known range for this species. No occurrences documented within 5 miles of the project site.	Year-round
<b>OTHER SPECIAL STATUS SPECIES</b>				
<b>Plants</b>				
Santa Clara thorn-mint <i>Acanthomintha lanceolata</i>	--/--/4.2	Chaparral, cismontane woodland and coastal scrub, generally on serpentinite. 80 – 1200m.	<b>Absent.</b> Suitable habitat is not found in the project study area. Serpentine soils are not present. Nearest occurrences located more than 5 miles south and east of the project site in the open space foothills.	March – June
bent-flowered fiddleneck <i>Amsinckia lunaris</i>	--/--/1B.2	Coastal bluff scrub, cismontane woodland, and valley and foothill grassland. 30 – 680m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	March – June

**TABLE B-1 (Continued)**  
**SPECIAL-STATUS SPECIES CONSIDERED FOR THE**  
**NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFG/Other <sup>b</sup>	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
<b>Plants (cont.)</b>				
California androsace <i>Androsace elongata</i> ssp. <i>acuta</i>	--/--4.2	Chaparral, cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland; meadows and seeps. Highly localized and often overlooked. 150 – 1200m.	<b>Absent.</b> Suitable habitat is not found in the project study area. Not documented within 5 miles of the project site.	March – June
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	--/--1B.2	Playas, valley foothill grasslands, vernal pools/alkaline habitats. 1 – 170m.	<b>Absent.</b> Suitable habitat is not found in the project study area. Nearest occurrence is documented 5 miles southwest of the project site.	March – June
crownscale <i>Atriplex coronata</i> var. <i>coronata</i>	--/--4.2	Chenopod scrub, valley and foothill grassland, vernal pools; alkaline, often clay soils. 1 – 590m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	March – October
Brittlescale <i>Atriplex depressa</i>	--/--1B.2	Chenopod scrub, meadows, playas, valley and foothill grassland, vernal pools. Usually in alkali scalds or alkali clay in meadows or annual grassland; rarely associated with riparian, marshes, or vernal pools. 1-320 m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	April – October
Lesser saltscale <i>Atriplex minuscula</i>	--/--1B.1	Chenopod scrub, playas, valley and foothill grassland. In alkali sink and grassland in sandy, alkaline soils. 15-200m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	May – October
Big-scale balsamroot <i>Balsamorhiza</i> <i>macrolepis</i>	--/--1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 90-1555m.	<b>Absent.</b> Suitable habitat is not found in the project study area. Serpentine soils are not present.	March – June
Oakland star-tulip <i>Calochortus umbellatus</i>	--/--4.2	Chaparral, lower montane coniferous forest, broadleafed upland forest, valley and foothill grassland. Often found on serpentine. 100-700m.	<b>Absent.</b> Suitable habitat is not found in the project study area. Serpentine soils are not present.	March – May
Chaparral harebell <i>Campanula exigua</i>	--/--1B.2	Chaparral and rocky sites; usually found on serpentine soils in chaparral. 275-1250m.	<b>Low.</b> Suitable habitat is not found within the project study area. Serpentine soils are not present. Nearest occurrence is located 2 miles southeast of the project site in the open space foothills.	May – June
Cogdon's tarplant <i>Centromadia parryi</i> ssp. <i>cogdonii</i>	--/--1B.2	Valley and foothill grasslands/alkaline habitats, low water tolerance. 0 – 260m.	<b>Low.</b> Suitable habitat is not found within the project study area. Nearest occurrence is located 2 miles southeast of the project site in the open space foothills.	May – October, uncommon in November
Point Reyes bird's-beak <i>Chloropyron maritimum</i> ssp. <i>Palustre</i>	--/--1B.2	Coastal salt marshes and swamps. 0 – 220m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	June – October

**TABLE B-1 (Continued)**  
**SPECIAL-STATUS SPECIES CONSIDERED FOR THE**  
**NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFG/Other <sup>b</sup>	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
<b>Plants (cont.)</b>				
Santa Clara red ribbons <i>Clarkia concinna</i> ssp. <i>automixa</i>	--/--/4.3	Cismontane woodland, chaparral. Found on slopes and near drainages. 90-1500m.	<b>Low.</b> Suitable habitat is not found in the project study area. Nearest occurrence is historical and located within 1 mile of the project site in Niles Canyon. Other records are documented upstream in the same canyon where habitat conditions suitable for this species are present.	May – June
Hospital Canyon larkspur <i>Delphinium californicum</i> ssp. <i>interius</i>	--/--/1B.2	Chaparral, cismontane woodland; wet, boggy meadows, openings in soft chaparral habitat, woodland in canyons; shaded gullies, sometimes in thick undergrowth. 230 – 1095m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	April – June
western leatherwood <i>Dirca occidentalis</i>	--/--/1B.2	Chaparral, foothill woodland, mixed evergreen forest, broadleaved upland forest, closed-cone pine forest, north coastal coniferous forest, and wetland-riparian areas. Equally likely to occur in wetlands and non-wetlands. 12 – 560m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	January – March
Jepson's woolly sunflower <i>Eriophyllum jepsonii</i>	--/--/4.3	Coastal scrub, chaparral, cismontane woodland. Sometimes found on serpentine. 200-1025m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	April – June
Hoover's button-celery <i>Eryngium aristulatum</i> var. <i>hooveri</i>	--/--/1B.1	Found in alkaline depressions, vernal pools, roadside ditches and other freshwater wet places near the coast. 3 – 45m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	July
Jepson's coyote thistle <i>Eryngium jepsonii</i>	--/--/1B.2	Valley and foothill grasslands, vernal pools, and wetlands. 6 – 110m.	<b>Absent.</b> No suitable habitat is present in the project study area.	April – August
San Joaquin spearscale <i>Extriplex joaquinana</i>	--/--/1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland; seasonal wetlands or alkali sink scrub. 1 – 835m.	<b>Absent.</b> Suitable habitat is not found within the project study area. No occurrences documented within 5 miles of the project site.	April – October
Stinkbells <i>Fritillaria agrestis</i>	--/--/4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland. Clay substrate, sometimes on serpentinite. Most populations small. 10 – 1555m.	<b>Low.</b> Suitable habitat is not found within the project study area. Serpentine soils are not present.	May – June

**TABLE B-1 (Continued)**  
**SPECIAL-STATUS SPECIES CONSIDERED FOR THE**  
**NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

Common Name <i>Scientific Name</i>	Listing Status USFWS/ CDFG/Other <sup>b</sup>	Habitat Requirements	Potential to Occur in Project Study Area	Period of Identification / Flowering Period
<b>Plants (cont.)</b>				
fragrant fritillary <i>Fritillaria liliacea</i>	--/--1B.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; clayey soils, often serpentinite. 6 – 370m	<b>Low.</b> Suitable habitat is not found within the project study area. Serpentine soils are not present. No documented occurrences within 5 miles of the project site.	February – April
Diablo helianthella <i>Helianthella castanea</i>	--/--1B.2	On rocky soils in broadleaf upland forest, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. 20 – 960m.	<b>Low.</b> Suitable habitat is not found within the project study area. Single occurrence within 5 miles is located in Dry Creek Regional Park, 4.5 miles north of the project site.	March – June
Loma Prieta psoralea <i>Hotia strobilina</i>	--/--1B.1	Mixed evergreen forest and chaparral. Affinity to serpentine soil. 90 – 1170m.	<b>Absent.</b> Suitable habitat is present within the project area. Serpentine soils are not present. Not documented within 5 miles of the project area.	May – July
Bristly leptosiphon <i>Leptosiphon acicularis</i>	--/--4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Grassy areas, woodland, chaparral. 55-1500m.	<b>Low.</b> Suitable habitat is present within the project area. Single occurrence within 5 miles is located in the open space foothills south and east of the project site.	April – July
serpentine leptosiphon <i>Leptosiphon ambiguus</i>	--/--4.2	Cismontane woodland, coastal scrub, valley and foothill grassland, usually on sparse serpentinite substrate. 120 – 1130m.	<b>Low.</b> Suitable habitat is present within the project area. Serpentine soils are not present.	March – June
woolly-headed lessingia <i>Lessingia hololeuca</i>	--/--/3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland; clay, serpentinite soils. 15 – 305m.	<b>Low.</b> Suitable habitat is present within the project area. Serpentine soils are not present.	June – October
arcuate bush-mallow <i>Malacothamnus arcuatus</i>	--/--1B.2	Gravelly alluvium in chaparral and cismontane woodland. 15 – 355m.	<b>Absent.</b> No suitable habitat is present in the project study area.	April – September
Hall's bush-mallow <i>Malacothamnus hallii</i>	--/--1B.2	Chaparral. Some populations found on serpentine soils. 10-550m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	May – September
elongate copper moss <i>Mielichhoferia elongata</i>	--/--4.3	Metamorphic rock, usually acidic, usually vernal mesic, often roadsides, sometimes carbonate. Broadleaf upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, subalpine coniferous forest. 0 – 1960m.	<b>Low.</b> Suitable habitat is not found in the project study area.	Year-round
San Antonio Hills mondarella <i>Monderalla antonina</i> ssp. <i>Antonina</i>	--/--/3	Cismontane woodland, chaparral. Rocky slopes and ephemeral drainages. 320-1000m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	June – August

**TABLE B-1 (Continued)  
SPECIAL-STATUS SPECIES CONSIDERED FOR THE  
NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

<b>Common Name Scientific Name</b>	<b>Listing Status USFWS/ CDFG/Other<sup>b</sup></b>	<b>Habitat Requirements</b>	<b>Potential to Occur in Project Study Area</b>	<b>Period of Identification / Flowering Period</b>
<b>Plants (cont.)</b>				
woodland woollythreads <i>Monolopia gracilens</i>	--/--/1B.2	Chaparral, cismontane woodland. 500 – 1000m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	June – August
Patterson's navarretia <i>Navarretia paradoxiclora</i>	--/--/1B.3	Open, seasonally wet areas, meadows, serpentine soils. 150 – 450m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	May – July
Prostrate vernal pool navarretia <i>Navarretia prostrata</i>	--/--/1B.1	Coastal scrub, valley and foothill grassland, vernal pools. Found in alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. 15-1210m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	April – July
Michael's rein orchid <i>Piperia michaelii</i>	--/--/4.2	Foothill woodland, yellow pine forest, northern coastal scrub, coastal sage scrub, and closed-cone pine forest. 15 – 590m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	April – August
hairless popcorn-flower <i>Plagiobothrys glaber</i>	--/--/1A	Meadows and seeps, marshes and swamps. Coastal salt marshes and alkaline meadows. 15-180m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	March – May
Oregon polemonium <i>Polemonium carneum</i>	--/--/2B.2	Northern coastal scrub, coastal prairie and yellow pine forest. 50 – 2000m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	April – September
California alkali grass <i>Puccinellia simplex</i>	--/--/1B.2	Valley grassland and wetland riparian areas. 14 – 890m.	<b>Low.</b> Suitable habitat may occur in Alameda Creek within the study area though not within the project site. Nearest documented occurrence is upstream of the study area in Stoneybrook Canyon.	March – May
Lobb's aquatic buttercup <i>Ranunculus lobbii</i>	--/--/4.2	Valley grassland, foothill woodland, redwood forest, freshwater wetlands, wetland-riparian areas, and vernal pools. 12 – 810m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	February – May
chaparral ragwort <i>Senecio aphanactis</i>	--/--/2B.2	Foothill woodland, northern coastal scrub, coastal sage scrub. 15 – 1190m.	<b>Absent.</b> Suitable habitat is not found in the project study area.	January – April
maple-leaved checkerbloom <i>Sidalcea malachroides</i>	--/--/4.2	Broadleaved upland forest, coastal prairie, coastal scrub, North Coast coniferous forest. Woodlands and clearings near coast; often found in disturbed areas. 0-730m.	<b>Low.</b> Grassland within the project study area is unlikely to support this species. No wintering sites documented within 5 miles of the project site.	April – August
long-styled sand-spurrey <i>Spergularia macrotheca</i> var. <i>Longistyla</i>	--/--/1B.2	Alkaline meadows, seeps, marshes and swamps. 6 – 170m.	<b>Low.</b> Suitable habitat may occur in Alameda Creek within the study area though not within the project site.	February – May

**TABLE B-1 (Continued)**  
**SPECIAL-STATUS SPECIES CONSIDERED FOR THE**  
**NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

<b>Common Name</b> <i>Scientific Name</i>	<b>Listing Status</b> USFWS/ CDFG/Other <sup>b</sup>	<b>Habitat Requirements</b>	<b>Potential to Occur in Project Study Area</b>	<b>Period of Identification / Flowering Period</b>
<b>Plants (cont.)</b>				
Most beautiful jewel-flower <i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	--/--/1B.2	Chaparral, valley and foothill grassland, cismontane woodland, serpentine outcrops, and on ridges and slopes. 120-730 m.	<b>Low.</b> Historical occurrence documented in the project vicinity stating "habitat may still exist north of Niles (CDFW, 2017). No serpentine soils present in the project area. Suitable habitat not found in the project study area.	April - September
slender-leaved pondweed <i>Stuckenia filiformis</i> ssp. <i>alpina</i>	--/--/2B.2	Marshes and swamps, in shallow, clear water of lakes and drainage channels. 15 – 2310m.	<b>Low.</b> Historical occurrence documented in the vicinity of the Quarry Lakes Area of Alameda Creek Regional Trail (CDFW, 2017).  No suitable freshwater habitat is present in the project site.	May – July
Saline clover <i>Trifolium depauperatum</i>	--/--/1B.2	Marshes and swamps, valley and foothill grasslands, vernal pools. 0 – 300m.	<b>Low.</b> Grassland within the project study area is unlikely to support this species. No wintering sites documented within 5 miles of the project site.	April – June
caper-fruited tropidocarpum <i>Tropidocarpum caparideum</i>	--/--/1B.1	Valley and foothill grassland. Alkaline clay. 1-455m.	<b>Low.</b> Grassland within the project study area is unlikely to support this species. No wintering sites documented within 5 miles of the project site.	March – April
<b>Invertebrates</b>				
Monarch butterfly <i>Danaus plexippus</i> (wintering sites)	--*/--	Eucalyptus groves (winter sites).	<b>Low.</b> Several eucalyptus trees occur in the project study area. No wintering sites documented within 5 miles of the project site.	Winter
California brackishwater snail <i>Tryonia imitator</i>	--*/--	Found in permanently submerged areas in coastal lagoons, estuaries, and salt marshes.	<b>Absent.</b> Suitable habitat is not found in the project study area.	Year-round
<b>Amphibians</b>				
Foothill yellow-legged frog <i>Rana boylei</i>	--/CCT, CSC /--	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	<b>Low.</b> Known occupant of Alameda Creek upstream of the project study area.  Suitable habitat is not found within the project site.	Year-round
<b>Reptiles</b>				
western pond turtle <i>Emys marmorata</i>	--/CSC/--	Aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg-laying.	<b>Low.</b> Suitable habitat is present in Alameda Creek within the project study area.  Suitable habitat is not found within the project site.	Year-round

**TABLE B-1 (Continued)**  
**SPECIAL-STATUS SPECIES CONSIDERED FOR THE**  
**NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

<b>Common Name</b> <i>Scientific Name</i>	<b>Listing Status</b> USFWS/ CDFG/Other <sup>b</sup>	<b>Habitat Requirements</b>	<b>Potential to Occur in Project Study Area</b>	<b>Period of Identification / Flowering Period</b>
<b>Birds</b>				
Cooper's hawk <i>Accipiter cooperi</i>	--/ WL/--	Woodland, chiefly of open, interrupted or marginal type. Nest sites are mainly in riparian growths of deciduous trees but also relatively common in urban areas.	<b>Moderate (potential to nest).</b> Suitable nesting and foraging habitat is present within the project study area.	Year-round
Sharp-shinned hawk <i>Accipiter striatus</i>	--/WL/--	Woodland, hunt on forest edges. Breeds in deep forests and favors conifer trees to build nests in.	<b>Moderate (potential to nest).</b> Suitable nesting and foraging habitat is present within the project study area.	Year-round
Golden eagle <i>Aquila chrysaetos</i>	-/CFP/--	Rolling foothills with open grasslands, scattered trees, and cliff-walled canyons.	<b>Low (unlikely to nest).</b> Suitable nesting and foraging habitat is not present in the project vicinity. May occur over the project study on a transient basis. Species prefer less developed environment.	Year-round
Great egret <i>Ardea alba</i>	--*/-- Rookeries only	Nest colonially in groves of trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	<b>Low (potential to nest).</b> Likely to forage in Alameda Creek within the study area. Could nest in mature eucalyptus trees on the banks of Alameda Creek though established rookery site not observed during reconnaissance survey.	Year-round
Great blue heron <i>Ardea herodias</i>	--*/-- Rookeries only	Colonial nester in tall trees, cliff sides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	<b>Moderate (potential to nest).</b> Likely to forage in Alameda Creek within the study area. Could nest in mature eucalyptus trees on the banks of Alameda Creek. Rookery documented at Quarry Lakes 1.5 miles southwest of the project site. Established rookery site not observed during reconnaissance survey.	Year-round
Burrowing owl <i>Athene cunicularia</i>	--/CSC/--	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	<b>Low (unlikely to nest).</b> Suitable low grassland habitat with mammal burrows is not present in the project study area. May occur on a transient basis when migrating to wintering grounds. Rubble onsite among grass may be attractive to owls.	Winter
Ferruginous hawk <i>Buteo regalis</i>	--/WL/--	Uncommon winter resident and migrant at lower elevations and open grasslands in the Modoc Plateau, Central Valley, and Coast Ranges. Does not breed in California.	<b>Low (no potential to nest).</b> May occur over the project area on a transient basis in winter.	Winter

**TABLE B-1 (Continued)**  
**SPECIAL-STATUS SPECIES CONSIDERED FOR THE**  
**NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

<b>Common Name</b> <i>Scientific Name</i>	<b>Listing Status</b> USFWS/ CDFG/Other <sup>b</sup>	<b>Habitat Requirements</b>	<b>Potential to Occur in Project Study Area</b>	<b>Period of Identification / Flowering Period</b>
<b>Birds (cont.)</b>				
Northern harrier <i>Circus cyaneus</i>	--/CSC/--	Mostly nests in emergent vegetation, wet meadows or near rivers and lakes, but may nest in grasslands away from water.	<b>Low (no potential to nest).</b> Suitable tidal marsh habitat is not present in the project study area. May flyover study area on a transient basis. Dense development in the project study area would discourage regular presence in the area.	Year-round
White-tailed kite <i>Elanus leucurus</i>	--/FP/--	Dense-topped trees for nesting and perching; open grasslands, meadows, or marshes for foraging.	<b>Moderate (potential to nest).</b> Suitable nesting and foraging habitat is present in the study area. Dense development in the project study area may discourage regular presence in the area.	Year-round
Snowy egret <i>Egretta thula</i>	--/*/-- Rookeries only	Nest on the ground in dense marsh areas or in large trees 1.5-3 meters from the ground.	<b>Low (potential to nest).</b> Likely to forage in Alameda Creek within the study area. Could nest in mature eucalyptus trees on the banks of Alameda Creek though established rookery site not observed during reconnaissance survey.	Year-round
California horned lark <i>Eremophila alpestris actia</i>	--/WL/--	Short-grass prairie, annual grasslands, coastal plains, and open fields.	<b>Low (unlikely to nest).</b> Grassland within the project site is overgrown and not suitable for this species foraging or nesting. May occur in the study area on a transient basis.	Year-round
prairie falcon <i>Falco mexicanus</i>	--/WL/--	Uncommon permanent resident that ranges from southeastern deserts northwest throughout the Central Valley and along the inner Coast Ranges and Sierra Nevada. Distributed from annual grasslands to alpine meadows, but associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub areas.	<b>Low (unlikely to nest).</b> May occur over the project area on a transient basis but grassland within the project study area is not likely to attract this species.	Winter
Saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	--/CSC/--	Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting. Resident of San Francisco Bay region salt and fresh water marshes.	<b>Low (unlikely to nest).</b> Suitable habitat may occur in Alameda Creek. May occur in the study area on a transient basis.  Suitable habitat is not found within the project site.	Year-round
Alameda song sparrow <i>Melospiza melodia pusillula</i>	--/CSC/--	Salt marshes of central San Francisco Bay. Nests occur in salt marsh areas hidden by dense vegetation.	<b>Absent (no potential to nest).</b> Suitable habitat is not found within the project study area.	Year-round

**TABLE B-1 (Continued)**  
**SPECIAL-STATUS SPECIES CONSIDERED FOR THE**  
**NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

<b>Common Name</b> <i>Scientific Name</i>	<b>Listing Status</b> USFWS/ CDFG/Other <sup>b</sup>	<b>Habitat Requirements</b>	<b>Potential to Occur in Project Study Area</b>	<b>Period of Identification / Flowering Period</b>
<b>Birds (cont.)</b>				
black skimmer <i>Rynchops niger</i>	--/CSC/--	Open sandy beaches, gravel or shell bars with sparse vegetation, saltmarsh, or beach wrack.	<b>Absent (no potential to nest).</b> Suitable habitat is not found within the project study area. Regional occurrences are documented near the eastern shoreline of San Francisco Bay.	April – September
<b>Mammals</b>				
Pallid bat <i>Antrozous pallidus</i>	--/CSC/ WBWG- H	Day roosts in caves, crevices, mines, and hollow trees and buildings. Night roosts can occur in more open areas, like porches and open buildings.	<b>Low.</b> Suitable roost habitat is not found within the project study area. May forage within the Alameda Creek corridor within the study area. No documented occurrences within 5 miles of the project site.	Year-round
Berkeley kangaroo rat <i>Dipodomys heermanni berkeleyensis</i>	---/--/*	Open grassy hilltops and open spaces in chaparral and blue oak/digger pine woodlands. Needs fine, deep, well-drained soil for burrowing.	<b>Absent.</b> Suitable habitat not found within the project study area. No documented occurrences within 5 miles of the project site.	Year-round
western mastiff bat <i>Eumops perotis californicus</i>	--/CSC /WBWG-H	Primarily a cliff dwelling species with maternity roosts under exfoliating rock slabs, and crevices in large boulders and buildings. Foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland and agricultural areas.	<b>Low.</b> Suitable roost habitat is not found within the project study area. May forage within the Alameda Creek corridor within the study area. No documented occurrences within 5 miles of the project site.	Year-round
Hoary bat <i>Lasiurus cinereus</i>	--/*/ WBWG-M	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees, hidden from above with ground cover below. Also known to roost in buildings. Feeds primarily on moths.	<b>Low.</b> Potential roosting habitat exists in mature trees with dense understory remaining in the project study area. No documented occurrences within 5 miles of the project site.	Year-round
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	--/CSC/--	Forests with moderate canopy cover and brushy understory.	<b>Low.</b> Suitable habitat is not found in the project study area. No middens observed during the reconnaissance survey.	Year-round
yuma myotis <i>Myotis yumanensis</i>	--/*/ WBWG-L	Optimal habitats are open forests and woodlands with water sources to feed over. Roosts in buildings, trees, mines, caves, bridges, and rock crevices.	<b>Low.</b> Suitable roost habitat is not found within the project study area. May forage within the Alameda Creek corridor within the study area. Single documented occurrences within 5 miles of the project site is located in open space 4 miles east of the project study area..	Year-round

**TABLE B-1 (Continued)  
SPECIAL-STATUS SPECIES CONSIDERED FOR THE  
NILES GATEWAY MIXED-USE PROJECT STUDY AREA**

<b>Common Name Scientific Name</b>	<b>Listing Status USFWS/ CDFG/Other<sup>b</sup></b>	<b>Habitat Requirements</b>	<b>Potential to Occur in Project Study Area</b>	<b>Period of Identification / Flowering Period</b>
<b>Mammals (cont.)</b>				
Salt marsh wandering shrew <i>Sorex vagrans halicoetes</i>	--/CSC	Salt marshes of the south arm of San Francisco Bay. Found at medium to high marsh 6-8 ft above sea level. Often in band of marsh daily inundated by tides, or at slightly higher elevations with driftwood or other debris for cover among pickleweed.	<b>Absent.</b> Suitable habitat is not found in the project study area.	Year-round
American badger <i>Taxidea taxus</i>	--/CSC/--	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents.	<b>Low.</b> Suitable habitat is not found in the project study area.	Year-round

## NOTES:

<sup>a</sup> Abbreviations are as follows: ssp. = subspecies; var. = variety.

<sup>b</sup> Listing status codes are as follows:

FEDERAL: (U.S. Fish and Wildlife Service)

FE = Listed as Endangered (in danger of extinction) by the Federal Government

FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the Federal Government.

FC = Candidate for listing as Threatened or Endangered by the Federal Government

FD = Delisted by the Federal Government

FSC = Former Federal Species of Concern. The USFWS no longer lists Species of Concern but recommends that species considered to be at potential risk by a number of organizations and agencies be addressed during project environmental review. NMFS, however, still lists Species of Concern.

STATE: (California Department of Fish and Game)

CE = Listed as Endangered by the State of California

CT = Listed as Threatened by the State of California

CR = Listed as Rare by the State of California (plants only)

CD = Delisted by the State of California

CFP = Fully Protected by the State of California

CCE = Candidate for listing as Endangered by the State of California

CCT = Candidate for listing as Threatened by the State of California

CSC = California Species of Special Concern

\* = CDFG Special animal—identified on CDFW's Special Animals List.

California Native Plant Society

List 1A=Plants presumed extinct in California

List 1B=Plants rare, Threatened, or Endangered in California and elsewhere

List 2= Plants rare, Threatened, or Endangered in California but more common elsewhere

List 3= Plants about which more information is needed

An extension reflecting the level of threat to each species is appended to each rarity category as follows:

.1 – Seriously endangered in California

.2 – Fairly endangered in California

.3 – Not very endangered in California

WBWG = Western Bat Working Group:

Low = Stable population

Medium = Need more information about the species, possible threats, and protective actions to implement.

High= Imperiled or at high risk of imperilment.

<sup>c</sup> Although the southern limits of the federal listing for central California coast coho are at the San Lorenzo River, the State listing covers this species 'south of San Francisco Bay' as well.

SOURCE: USFWS, 2017; CDFW, 2017; CNPS, 2017