LSA

CARLSBAD
FRESNO
IRVINE
LOS ANGELES
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROSEVILLE
SAN LUIS OBISPO

MEMORANDUM

DATE: June 19, 2019

TO: Jennifer Ott, Deputy City Manager
John Stefanski, Management Analyst II

FROM: Theresa Wallace, AICP, Principal
Shanna Guiler, AICP, Associate/Environmental Planner

SUBJECT: California Environmental Quality Act (CEQA) Addendum for the Route 238 Development Project - Bunker Hill (Parcel Group 5)

This document, prepared pursuant to the California Environmental Quality Act (CEQA) and the regulations and policies of the City of Hayward, provides information and analysis concerning the Route 238 Development Project – Bunker Hill (Parcel Group 5) (proposed project). This document is an Addendum to the City of Hayward 2040 General Plan Environmental Impact Report[1] (GP EIR), which was certified by the City of Hayward in July 2014. This Addendum to the GP EIR evaluates whether changes to development assumptions included in the General Plan associated with the proposed project would result in new or substantially more adverse significant effects or require new mitigation measures not identified in the GP EIR. See Attachment A for a full description of the proposed project. The City of Hayward is the Lead Agency under CEQA. In accordance with CEQA Section 21093(b) and CEQA Guidelines Section 15152(a), this Addendum tiers off the GP EIR, certified in July 2014, which is hereby incorporated by reference.

INTRODUCTION

The proposed project area is approximately 37 acres in size and is comprised of several parcels bound by Carlos Bee Boulevard to the north, Harder Road to the south/east, Central Boulevard to the south and undeveloped land to the west.

The proposed project would result in the construction of up to 74 single-family residential units plus 8 accessory dwelling units (ADUs), approximately 10.5 acres of open space, a new segment of the Hayward Foothill Trail, and associated roadway and infrastructure improvements to serve the project site. The project would require a Zone Change, Site Plan Review, Tentative Tract Map, Precise Plan Review, Improvement Plans Review, Final Map, Grading Permit and Building Permit.

This Addendum is prepared pursuant to CEQA Guidelines Section 15164 which states: "The lead agency or a responsible agency shall prepare an addendum to a previously certified EIR if some

[1] Hayward, City of, 2014. *Final Environmental Impact Report City of Hayward General Plan*. May.

changes or additions are necessary, but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred." Section 15162 specifies that "no subsequent EIR shall be prepared for that project unless the lead agency determines … one or more of the following:"

1. Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete was adopted, shows any of the following:

    a. The project will have one or more significant effects not discussed in the previous EIR;

    b. Significant effects previously examined will be substantially more severe than shown in the previous EIR;

    c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

    d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Pursuant to CEQA Guidelines Section 15164(e), the purpose of this Addendum is to describe and evaluate the proposed project (Route 238 Development Project – Bunker Hill), assess the proposed modifications to the project evaluated in the GP EIR, and identify the reasons for the City's conclusion that changes to the proposed project and associated environmental effects do not meet the conditions described in CEQA Guidelines Section 15162 calling for preparation of a subsequent or supplemental EIR.

Attachment A to this Addendum provides a complete description of the proposed project, its location, existing site characteristics, proposed development, and required approvals and entitlements.

Attachment B to this Addendum provides the Environmental Checklist prepared for the project. This checklist provides information to: (1) compare the environmental impacts of the proposed project with impacts expected to result from development approved in the City of Hayward 2040 General

Plan and evaluated in the GP EIR; (2) demonstrate that the proposed project would not result in new or more severe significant environmental impacts; (3) provide new or revised mitigation measures not identified in the GP EIR; and (4) conclude that no substantial changes with respect to the circumstances under which the project would be undertaken since the GP EIR was certified resulted in new or more severe significant environmental effects.

COMPARISON TO THE CONDITIONS LISTED IN CEQA GUIDELINES SECTIONS 15162 AND 15163

The following discussion summarizes the reasons that a subsequent or supplemental EIR, pursuant to CEQA Guidelines Sections 15162 and 15163, is not required and an Addendum to the GP EIR is the appropriate CEQA document.

Substantial Changes

Per the analysis included in Attachment B, Environmental Checklist, the proposed modifications to the project evaluated in the GP EIR would not result in new significant impacts beyond those identified in the GP EIR, would not substantially increase the severity of impacts identified in the GP EIR, and would not require major revisions to the GP EIR. Therefore, the proposed changes to the project would be minor modifications, not substantial changes, and an Addendum is the appropriate document to address these minor modifications rather than a subsequent or supplemental EIR.

Substantial Changes in Circumstances

As described in the Environmental Checklist for each topic, environmental conditions in and around the project site have not changed such that implementation of the proposed minor modifications to the GP EIR would result in new significant environmental effects or a substantial increase in the severity of environmental effects identified in the GP EIR, and thus would not require major revisions to the GP EIR.

New Information

No new information of substantial importance, which was not known or could not have been known when the GP EIR was certified, has been identified which shows that the proposed modifications to the GP EIR associated with the proposed project would be expected to result in: (1) new significant environmental effects not identified in the GP EIR; (2) substantially more severe environmental effects than shown in the GP EIR; (3) mitigation measures or alternatives previously determined to be infeasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the City declines to adopt the mitigation measure or alternative; or (4) mitigation measures or alternatives which are considerably different from those analyzed in the GP EIR would substantially reduce one or more significant effects on the environment, but the City declines to adopt the mitigation measure or alternative. As described through the Environmental Checklist, no new or substantially more severe impacts are expected beyond those identified in the GP EIR. Impacts identified as a result of the proposed project, including potential impacts in different locations than were analyzed in the GP EIR, are not more severe than the impacts identified in the GP EIR, and therefore, fall under the previously identified impacts in the GP EIR. Mitigation measures

from the GP EIR have been modified to mitigate identified impacts; however, these mitigation measures are not considerably different than those analyzed in the GP EIR.

STANDARD CONDITIONS OF APPROVAL

Standard Conditions of Approval (SCAs) have been identified that incorporate development policies and standards from various plans, policies, and ordinances (e.g., Hayward Municipal Code, California Building Code, Uniform Fire Code, the Regional Water Quality Control Board's Municipal Regional Permit, etc.), which have been found to substantially mitigate environmental effects. The City of Hayward applies SCAs for all projects and amends these conditions as needed. As applicable, the SCAs are adopted as requirements of an individual project when it is approved by the City, and are designed to, and will, avoid or substantially reduce a project's environmental effects.

In reviewing project applications, the City determines which SCAs apply based upon the zoning district, community plan, and the type of permits/approvals required for the project. Depending on the specific characteristics of the project type and/or project site, the City will determine which SCAs apply to a specific project. Because these SCAs are mandatory requirements imposed on a citywide basis, environmental analyses assume that these SCAs will be imposed and implemented by the project, and are not imposed as mitigation measures under CEQA.

CONCLUSION

The proposed modifications to the GP EIR described in this Addendum would not require major revisions to the GP EIR due to new or substantially increased significant environmental effects. The analysis contained in the Environmental Checklist confirms that the modified project is within the scope of the GP EIR and will have no new or more severe significant effects and no new mitigation measures are required. Therefore, no subsequent or supplemental EIR or further CEQA review is required prior to approval of the proposed project, as described in this Addendum.

Attachments: A – Project Description
B – Environmental Checklist

ATTACHMENT A
PROJECT DESCRIPTION

The following describes the proposed Route 238 Property Development – Bunker Hill (Parcel Group 5) project (proposed project) that includes residential uses, new public streets, infrastructure improvements, and installation of a portion of the Hayward Foothill Trail on approximately 37 acres of land owned by the City of Hayward (City). In addition to the description of the proposed project itself, this section includes a summary description of the project's location and existing site characteristics. This project description is part of the preparation of an Addendum to the City of Hayward 2040 General Plan Environmental Impact Report[1] (GP EIR), certified by the City of Hayward in July 2014. The City is the CEQA lead agency for the proposed project.

PROJECT BACKGROUND

In the 1960s, the California Department of Transportation (Caltrans) purchased over 400 parcels in the Hayward foothills, east of Foothill and Mission Boulevards, for the construction of the Route 238 Bypass Freeway project. However, in 1971 the community filed a lawsuit to stop the project and it was eventually abandoned. Caltrans has been selling the State-owned properties within the right-of-way because they are no longer required for the freeway project.

In January 2016, the City of Hayward (City) negotiated a purchase and sale agreement with Caltrans to acquire several remaining parcel groups along the former freeway alignment. The City's goal is to develop these properties with uses that would be consistent with the comprehensive vision of the City's General Plan and to integrate these properties with the rest of the community. The acquisition and development of each of these parcel groups is independent from one another, and no part of any one development is related to or dependent on the development of any other group of parcels.

PROJECT SITE

The following section describes the location and site characteristics for the proposed project area and provides a brief overview of the existing land uses within and in the vicinity of the site.

Location and Surrounding Land Uses

The City of Hayward occupies approximately 64 square miles in southwestern Alameda County, approximately 14 miles south of Downtown Oakland, 20 miles southeast of Downtown San Francisco, and 25 miles north of Downtown San Jose. The City's planning area (Sphere of Influence) encompasses approximately 72 square miles and includes all land within the Hayward City limits and adjacent unincorporated county land, including Garin Regional Park, open space areas east of the City, portions of San Lorenzo and Castro Valley, and the communities of Hayward Acres, Cherryland, and Fairview.

[1] Hayward, City of, 2014. *Final Environmental Impact Report City of Hayward General Plan*. May.

The proposed project is located on the site known as Bunker Hill (Parcel Group 5), located northwest of Harder Road, approximately 1,000 feet east of Mission Boulevard and adjacent to and southwest of California State University, East Bay (CSU East Bay).

Regional vehicular access to the project site is provided by Interstate 580 (I-580) located approximately 2.5 miles north of the project site and State Highway 238 (SR 238) that traverses the City. Figures 1 and 2 (attached) show the regional and local context of the proposed project site.

Parcel Group 5 is primarily surrounded by low-density residential uses to the west and southwest. Several independently owned parcels are located within and adjacent to this parcel group. CSU East Bay sports fields are located east of the site, and multifamily residential uses are located north of the site, across Carlos Bee Boulevard.

Site Characteristics and Current Site Conditions

The proposed project area is approximately 37 acres in size and is comprised of several parcels bound by Carlos Bee Boulevard to the north, Harder Road to the southeast, Central Boulevard to the south, and undeveloped land to the west.

The project site primarily consists of undeveloped land with scattered residential development along Maitland Drive, Bunker Hill Boulevard, and Bunker Hill Court. Existing structures on the site include single-family homes and associated driveways, landscaping, and utilities. Some of the dwellings are vacant, while others are occupied by tenants. A total of 32 existing residences will be demolished in 2019 as part of a separate project. The buildings would be demolished prior to commencement of the development project described herein.

The project site includes undeveloped open space covered with mature trees. Two drainages are located on site; one drainage flows across the northwestern end of the site adjacent to Carlos Bee Boulevard, and the other drainage is located in the southeastern portion of the site, north of Harder Road. This small creek flows into Zeile Creek. The project site is characterized by steep terrain that slopes downhill to the west.

General Plan

The General Plan Land Use Map designates Parcel Group 5 as Suburban Density Residential (1.0 to 4.3 dwelling units per net acre) with a natural drainage designated as Parks and Recreation at the southern end of the site. The site is within the Hayward Foothills Trail Special Design District and is zoned as Residential Natural Preserve (minimum lot size 20,000 square feet, up to 2 dwelling units per acre), with the drainage zoned as Open Space. The purpose of the Hayward Foothills Trail Special Design District is to ensure development of a continuous trail along the 238 Bypass Land Use Study properties. The City of Hayward Zoning Ordinance outlines specific development standards and design guidelines for the trail with a general location.

The GP EIR analyzed implementation and buildout of the General Plan over a 26-year planning period. Although no specific development projects were proposed in conjunction with the General Plan, the GP EIR analyzed a development potential of approximately 7,475 additional single-family

dwelling units; 7,339 additional multi-family dwelling units; and 25,787 additional jobs. The jobs are generally categorized as follows: retail, service, manufacturing, wholesale, agricultural, and other.

As a largely built-out community, future development opportunities are limited to relatively small infill sites and the redevelopment of underutilized parcels. The development capacity assumptions are derived from already adopted plans and initiatives as well as housing, population, and employment projections issued by the Association of Bay Area Governments. Table A identifies the Hayward 2040 General Plan development capacity assumptions used in the GP EIR.

Table A: Existing and Proposed Development in the General Plan Planning Period

Land Use	Existing 2010	Proposed Through 2040	Net New Development
Single-Family Housing	30,989	38,461	7,472
Multi-Family Housing	20,395	27,794	7,399
Employment	76,067	101,854	25,787

Source: City of Hayward (July 2014).

PROPOSED PROJECT

The Bunker Hill (Parcel Group 5) Project would consist of the following components, described in greater detail below. The land use concept for the proposed project is shown in Figure 3 (attached).

- Up to 74 single-family residential units with 8 accessory dwelling units (ADUs);
- Approximately 10.50 acres of open space to preserve riparian areas;
- A new cul-de-sac road extending from Maitland Drive;
- A new roadway connection from Bunker Hill Road to Carlos Bee Boulevard;
- A new segment of the Hayward Foothill Trail, a 16-foot-wide multi-use trail; and
- Additional street improvements such as curbs, gutters, sidewalks, on-street parking bulb-outs, utilities, and lighting.

The proposed project is consistent with the intent of the Suburban Density designation and would provide a complete, walkable, sustainable neighborhood that would preserve view corridors and open space areas, and provide infrastructure and circulation improvements. No changes in General Plan land use designations would be required for the proposed project. Minor revisions to the Zoning Ordinance that are consistent with the General Plan may be needed to accommodate the proposed development intensity (e.g., minimum lot sizes), distribution, and layout within the project site.

Housing

The proposed project would include 74 single-family residential units with lots ranging in size from approximately 5,000 square feet to 24,000 square feet within the central portion of the project site. The average housing size would be 3,500 square feet and the average lot size would be 10,000 square feet, consistent with the City's General Plan. As described above, the project site contains 32 residential units, which will be demolished as part of a separate project, resulting in a net increase of approximately 50 residential units.

As part of the proposed project, the City is proposing that a portion of the units (approximately 10 percent or 8 units) be classified as "moderate income" affordable housing units, to be provided either as deed-restricted ADUs or through payment of affordable housing in-lieu fees.

Parking

Each housing unit would have a minimum two-car garage. In addition, approximately 50 on-street parking spaces would be provided on Bunker Hill Boulevard and 25 on-street parking spaces would be provided on Maitland Street. On-street parking would only be provided on the uphill side of the street.

Open Space and Pedestrian/Bicycle Connections

The proposed project would include 10.50 acres of dedicated open space located around the drainages at the northern and southern portions of the project site. Tree-lined streets with sidewalks would provide north/south connections throughout the project site.

Approximately 2,993 linear feet of the Hayward Foothill Trail would run along the northern boundary of the project site, connect to the CSUEB campus and then extend south along Bunker Hill Road to terminate at Harder Road. The trail would consist of a 16-foot-wide multi-use trail to accommodate pedestrians and bicyclists.

On-Site Pedestrian and Vehicle Circulation

Primary access to and through the project site would be via Bunker Hill Road, an existing two-lane road. Bunker Hill Road would be improved to provide two wider drive lanes, a 4-foot-wide sidewalk on one side of the roadway, landscaped planting strips on both sides of the roadway, and retaining walls, where required. In some locations, bulb-outs would be provided to accommodate on-street parking. A new access point at the intersection of Bunker Hill Road and Carlos Bee Boulevard would be provided, approximately 200 feet from the existing Tanglewood intersection.

Residential units in the southern portion of the project site would have access via Maitland Drive, which would be improved to provide two wider drive lanes, a sidewalk and planting strip on the north side of the roadway and a parking lane on the south side of the road. A new cul de sac extending off Maitland Drive would be provided to access several residential units proposed in the southwestern portion of the site.

Infrastructure Requirements

Bunker Hill Boulevard contains existing public utilities and would transect the site; therefore, the majority of the parcels have frontage on a public right-of-way containing public utilities. A description of utilities and infrastructure associated with the project is provided below.

Water

The project site is located in the 750-foot pressure zone of the City's water system. Existing 6-inch mains are located in Bunker Hill Boulevard, Central Boulevard, and Maitland Drive roadways, and an 8-inch main is located in Carlos Bee Boulevard. No water mains are located in Harder Road.

Approximately 2,400 linear feet of new 8-inch water main would be installed in Maitland Drive, connecting to the existing 6-inch water main in Central Boulevard at both ends of Maitland Drive. Approximately 2,500 linear feet of new 8-inch water main would be installed in Bunker Hill Drive, connecting to the existing 6-inch water main in Central Boulevard and to the existing 8-inch water main in Carlos Bee Boulevard at each end of Bunker Hill Drive and the proposed extension to Carlos Bee Boulevard.

Sewer Service

Wastewater collection is provided by the City. An existing 10-inch vitrified clay pipe (VCP) main is located in Carlos Bee Boulevard; however, it does not appear to be accessible from the site. Approximately 150 feet of 8-inch sanitary sewer pipe is located in Bunker Hill Boulevard and connects to the sewer main in Maitland Drive, approximately 160 feet lower in elevation. The existing homes on Bunker Hill Boulevard are currently on private septic systems.

Sewer improvements in Bunker Hill Boulevard would require the installation of 3,235 linear feet of 6- or 8-inch sewer main within the roadway and replacement of the existing 8-inch sewer main in the hillside between Bunker Hill Boulevard and Maitland Drive. The new sewer main would maintain the existing connection to Maitland Drive. An analysis of the available sewer capacity in the downstream mains has not been performed, but the additional capacity from the proposed development would not be a significant amount, and would be partially offset by the replacement of the existing mains. The existing downstream main is an 8-inch line.

Stormwater/Drainage

No storm drain infrastructure is located within Carlos Bee Boulevard or Harder Road. An existing 12-inch metal storm drain line is located in Maitland Drive below the project site. A natural drainage channel located in the northern end of the site currently captures runoff from Carlos Bee Boulevard. Development would be required to avoid the drainage channel.

Proposed development would be required to provide hydromodification of all proposed runoff, to ensure post-construction runoff levels are the same as existing runoff. Hydromodification would include stormwater detention located either in detention ponds along Bunker Hill Boulevard, downstream of the proposed project, or within oversized storm drain pipes within Bunker Hill Boulevard.

Gas and Electrical Improvements

Electric service is distributed to the site by overhead electric lines on joint utility poles. Bunker Hill Boulevard contains electric and communication lines. A Pacific Gas & Electric overhead transmission line is located within a 200-foot-wide easement adjacent to the northern boundary of the site.

Gas service is distributed to the site by underground mains. Bunker Hill Boulevard contains a 2-inch gas main, and a 1.25-inch gas main is located in Bunker Hill Court. A majority of the existing residences are served by a 0.75-inch gas line.

For the proposed project, approximately 100 feet of 2-inch gas main would need to be installed to complete the gas service in the south end of Maitland Drive by connecting to the 3-inch gas main in Central Boulevard.

Outdoor Lighting

Outdoor lighting would be in conformance with the City's Municipal Code. Lighting would be provided at intersections and along roadways where lighting is needed for public safety due to topographic constraints. Limited safety and security lighting and indirect shielded lighting would also be provided for the proposed trail, including but not limited to parking areas and walkways/trails, where appropriate.

Grading

Approximately 500 cubic yards of grading would be required within the public right-of-way for the proposed roadway section. Approximately 500 feet of 4-foot-high retaining wall would be required along the uphill side of Bunker Hill Boulevard, and approximately 300 feet of 4-foot-high retaining wall would be required along the uphill side of Maitland Drive. The resulting earthwork would consist primarily of cut material, which would need to be exported off site. Additional earthwork would likely be required for construction of the proposed residential units, depending on the design of the proposed units.

Construction

Development of the project would require removal of any remnants of the previous buildings located on the site (e.g., foundations, septic tanks) and the removal of all paving. Construction is anticipated to occur over 24 to 36 months starting in spring 2021. For the purpose of this Addendum, it is assumed that project construction would not require pile driving, but would utilize a typical mix of construction equipment for projects of a similar type and size, including graders, bulldozers, jackhammers, and cement mixers.

RELATED PROJECTS

When evaluating cumulative impacts, CEQA requires the use of either a list of past, present, and probable future projects, including projects outside the control of the lead agency, or a summary of projections in an adopted planning document, or some reasonable combination of the two approaches.

The cumulative analysis of this Addendum is consistent with Section 15130(b)(1) of the CEQA Guidelines as it is based on both a list of past, present and probable future development projects in the area (short-term cumulative development) and a summary of development projections. Cumulative impacts would most likely result from short-term and long-term development in the immediate vicinity of the proposed project. Where appropriate, this Addendum assesses the short-term and long-term cumulative impacts that would result from the project plus other projected development in the project vicinity. The following sections discuss the anticipated short-term and long-term development in the project vicinity.

Short-Term Development

As described above, the proposed project is anticipated to start construction in spring 2021, extending approximately 24 to 36 months. Other projects anticipated to be under construction concurrent with the proposed project, include other projects located within the Route 238 Study Area. These projects are located in the vicinity of the proposed project and could contribute to cumulative construction impacts. These projects are described below.

- **Parcel Group 6 (Quarry Site).** Parcel Group 6 is located north of Carlos Bee Boulevard, south of Highland Boulevard, approximately 1,000 feet northeast of Mission Boulevard and approximately 2,000 feet northwest of California State University East Bay (CSU East Bay). Proposed development at this site would include a maximum of 500 townhomes/multi-family units and 500 student-housing units, up to 10,000 square feet of retail/commercial space, passive open space, a neighborhood park, and associated roadway and infrastructure connections.

- **Parcel Group 7 (Mission Boulevard/Carlos Bee Boulevard).** Parcel Group 7 is located at the southeastern corner of Mission Boulevard and Carlos Bee Boulevard. Proposed development at this site would include a new auto dealership. The new auto dealership would consist of an approximately 65,000-square-foot facility that will include sales, service, and display. The new dealership would be located on the lower five acres of the site towards Mission Boulevard.

- **Parcel Group 8 (Grove Way/Foothill Boulevard)**. Parcel Group 8 is located at the northern end of the City, south of Grove Way and east of Foothill Boulevard. Proposed development at this site would include a mix of townhomes, commercial, multifamily high density residential and a large open space parkland.

- **Parcel Group 9 (Apple Avenue/Oak Street)**. Parcel Group 9 is located at the northern end of the City, immediately east of the I-580/SR 238 interchange, north of the Apple Avenue and Oak Street intersection. Proposed development at this site would include a 150-room hotel.

Long-Term Development

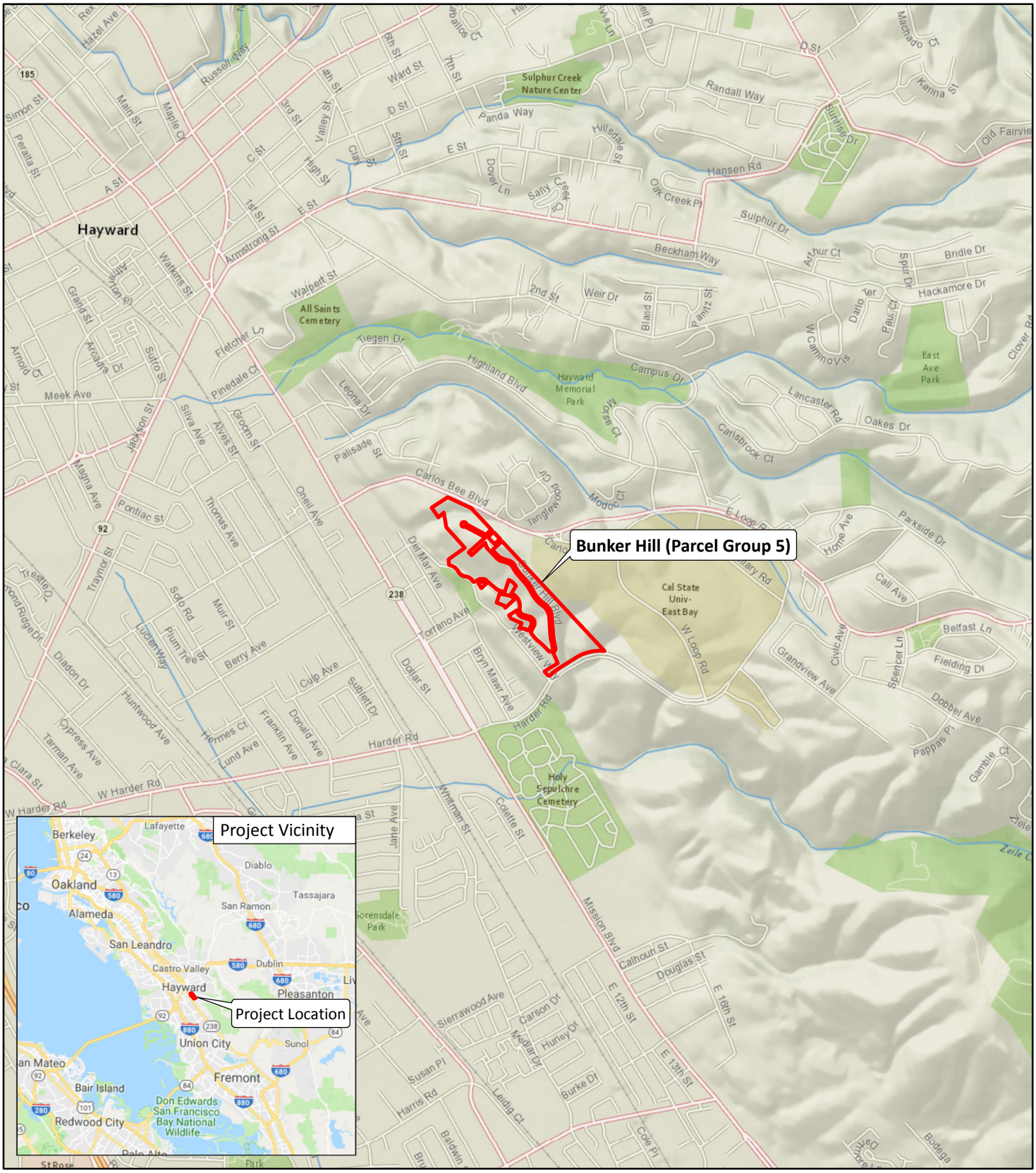
The potential development outlined in the 2014 General Plan was considered in the cumulative analysis in this Addendum, along with the specific projects identified above. Because the 2014 General Plan and the GP EIR developed growth forecasts through 2040 to account for growth within the General Plan Planning Area, including the project site, use of the development projections from these two documents is inherently cumulative, in that the projection considers impacts of

development generated by future planned uses. Since 2014, updated growth forecasts have projected slightly less growth within the City than was estimated in 2014, therefore use of the 2014 General Plan's assumptions is conservative, potentially overstating growth potential and intensity of environmental effects. Moreover, projects approved within the General Plan Planning Area have not exceeded the growth forecasts or developed in a way that would change the likely environmental impacts associated with future growth. Therefore, the cumulative effects of long-term development are fully reflected in the 2014 General Plan's growth forecasts and analyzed within this Addendum accordingly.

AMENDMENTS AND PERMITS

As part of the proposed project evaluated in this Addendum, the following approvals and permits would be required:

- Zone Change from RNP to PD to allow for an average lot size of 10,000 sq. ft.
- Site Plan Review
- Tentative Tract Map
- Precise Plan Review
- Improvement Plans review
- Final Map
- Grading Permit
- Building Permit



LSA

LEGEND

Parcel Group

FIGURE 1

N

0 1000 2000

FEET

Route 238 Property Development Project –
Bunker Hill (Parcel Group 5)
Hayward, California

Regional Location and Overview Map

SOURCE: Google Streets Map (2019); National Geographic (2019).

I:\DEW1701\GIS\Maps\CEQA - Parcel Group 5\Figure 1_Regional Location and Overview Map.mxd (5/15/2019)

LSA

LEGEND

Parcel Group

Parcel

N

0 200 400

FEET

FIGURE 2

Route 238 Property Development Project –
Bunker Hill (Parcel Group 5)
Hayward, California

Parcel Group 5 – Bunker Hill: Aerial

SOURCE: Microsoft Bing Basemap.

I:\DEW1701\GIS\Maps\CEQA - Parcel Group 5\Figure 2_Parcel Group 5 - Bunker Hill Aerial.mxd (5/15/2019)

- Total Units: 74
- Lot Size Range: 5,000-24,000 sf
- Average Housing Size: 3,500 sf

LSA

FIGURE 3

0 200 400
FEET

N

Route 238 Property Development Project
Bunker Hill (Parcel Group 5)
Conceptual Plan

SOURCE: DESIGN WORKSHOP, 2019.

P:\DEW1701 Route 238 Properties Master Plan\g\Environmental Constraints\Fig_3_Conceptual Plan-Bunker Hill\.ai (5/16/19)

This page intentionally left blank.

ATTACHMENT B
ENVIRONMENTAL CHECKLIST
PURSUANT TO CEQA GUIDELINES SECTION 15168

CEQA Guidelines 15168(c)(4) recommends using a written checklist or similar device to confirm whether the environmental effects of a subsequent activity were adequately covered in a program EIR. This checklist confirms that the Route 238 Property Development Project – Bunker Hill (proposed project) described in Attachment A is within the scope of the City of Hayward 2040 General Plan EIR[1] (GP EIR), certified by the City of Hayward in July 2014. The proposed project would not result in new or substantially more severe significant effects, and no new mitigation measures are required for the proposed project.

In accordance with CEQA Section 21093(b) and CEQA Guidelines Section 15152(a), this Addendum tiers off the GP EIR, which is hereby incorporated by reference.

This environmental checklist is used to: (1) compare the environmental impacts of the proposed project with impacts expected to result from the development approved in the City of Hayward 2040 General Plan and evaluated in the GP EIR; (2) identify whether the proposed project would result in new or more severe significant environmental impacts; (3) identify if new or revised mitigation measures would be required by the project sponsor; and (4) identity if substantial changes with respect to the circumstances under which the project would be undertaken since the GP EIR was certified would result in new or more severe significant environmental effects.

In summary, no new or more severe significant impacts were identified for the proposed project that were not identified and mitigated in the GP EIR, and no new mitigation measures would be required for the proposed project. In some cases, Standard Conditions of Approval have been identified to ensure compliance with development policies and standards from various plans, policies, and ordinances, which have been found to substantially mitigate environmental effects. For all environmental topics addressed in the following checklist, there have been no substantial changes in environmental circumstances that would result in new or more severe significant environmental effects than were identified and evaluated in the GP EIR. Therefore, no subsequent EIR or CEQA evaluation is required for the Route 238 Development Project – Bunker Hill project.

[1] Hayward, City of, 2014a. *Final Environmental Impact Report City of Hayward General Plan*. May.

This page intentionally left blank

1. AESTHETICS

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c. Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion

Scenic Vistas

The project area is within the heavily developed central portion of the City. However, approximately half of the land within the City of Hayward consists of water, baylands, and open space. Marshland along the shoreline creates the western boundary of the City, and rolling hills form the eastern boundary of the City. The higher elevation hillside areas and portions of the shoreline provide scenic vistas of San Francisco Bay. The developed areas of the City can block scenic views, including views of the East Bay Hills. The hillside areas of the City are generally characterized as having a rural character with larger lots and fewer tract-home developments.

The project site is located within the hillside area and is surrounded by residential, commercial, and university uses. Trees are scattered throughout the site. Dense riparian vegetation surrounds the natural drainages in the northwestern and southeastern ends of the site. The hillside location provides expansive views of the San Francisco Bay. In addition, due to its higher elevation, the currently vacant project site can be seen from Mission Boulevard, Carlos Bee Boulevard, and other surrounding roadways and residential uses.

Implementation of the proposed project would alter views toward the hillsides from nearby roadways. Due to the site topography, proposed residential development would be visible from area roadways and would change the existing vistas from undeveloped hillside to residential development. Similar to other development proposed with the City and within the City's hillside areas, the proposed project would be required to comply with General Plan policies related to scenic vistas, the City's Design Guidelines, and the City's Hillside Design and Urban/Wildland Interface Guidelines. Therefore, impacts associated with the proposed project would not result in new impacts to scenic vistas or substantially increase the severity of impacts identified in the GP EIR.

Scenic Resources

County designated-scenic highways within the City include I-580, I-880, and SR-92.[2] In addition, I-580, located just north of Hayward, is also eligible for State Scenic Highway designation.[3] None of these routes is located within proximity of the project site. Therefore, impacts associated with the proposed project would not result in new impacts to scenic resources or substantially increase the severity of impacts identified in the GP EIR.

Visual Character

The project site primarily consists of undeveloped land with scattered residential development and concentrated stands of mature trees. Existing structures on site include single-family homes and associated driveways, landscaping, and utilities. Two drainages are located on site; one drainage flows across the northwestern end of the site adjacent to Carlos Bee Boulevard, and the other drainage is located in the southeastern portion of the site, north of Harder Road. Development of the site with 82 new residential units (74 single-family residential units and 8 ADUs), along with associated landscaping and roadway improvements would alter the existing visual character of the site, changing from an open rural landscape to suburban development.

As outlined in the project description, the proposed project would include 10.50 acres of dedicated open space located around the drainages at the northern and southern portions of the project site, providing for the physical and visual separation of the proposed development from adjacent residential communities. All of the proposed lots would consist of larger, medium-density lots ranging in size from approximately 5,000 square feet to 24,000 square feet, within the central portion of the project site. Internal roadways would have landscaping. Pedestrian and circulation amenities would also contribute to the visual character and quality of the new development.

Existing trees would be retained to maintain the existing natural character of the site, where feasible. Incorporation of existing natural elements into project design, as proposed by the project, is typical of residential subdivisions in the City of Hayward and is required by policies included in the City's 2040 General Plan. Tree removal and replacement would be consistent with the City's Policy HQL-8.3 and the City's Hillside Design Guidelines.

In addition, much of the existing topography on the site would be retained, where feasible. The proposed project would comply with General Plan Policies LU-7.2, LU-7.3, LU-7.4, LU-7.5, NR-8.1 and NR-8.2, which require hillside developments to adhere to design guidelines that respect natural topography, minimize site grading, preserve scenic resources, and mitigate visual impacts.

Existing topographical and landscape features would be maintained and enhanced where feasible and open space buffers would visually separate the new development from existing adjacent developments. The change in character of the project site, once developed, would be visually compatible with surrounding development, particularly surrounding residential neighborhoods.

---

2 Hayward, City of, 2014b. *Hayward 2040 General Plan Background Report.*

3 California Department of Transportation, 2018. California Scenic Highway Mapping System, Alameda County. Website: www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm (accessed June 19, 2019).

Therefore, the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings and this impact would be less than significant. Therefore, the proposed project would not result in new impacts to visual character beyond those less-than-significant impacts identified in the GP EIR.

Light and Glare

Most homes emit some light and glare during day and evening hours, as is typical in a suburban environment. The proposed residential development would include indoor lighting and outdoor lighting for safety purposes. The proposed roadways, and pathways would also include outdoor lighting for safety purposes. At night these new sources of light would be visible from a distance; however, the addition of new light sources associated with the proposed project would generally blend in with surrounding development and would represent a continuation of existing residential development within this area of the City. Design Review of the proposed project would ensure that lighting within the project site is sufficient to protect public safety but does not excessively illuminate the surrounding area. Therefore, the proposed project would not create impacts related to light and glare that would be more severe than those identified in the GP EIR.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan, impacts on aesthetics and visual resources were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred related to visual resources. In addition, no revisions to the project or new information that could not have been known at the time the GP EIR was certified would lead to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

General Plan Policies

- *Policy LU-1.7 Design Guidelines. The City shall maintain and implement commercial, residential, industrial, and hillside design guidelines to ensure that future development complies with General Plan goals and policies.*

- *Policy LU-3.6 Residential Design Strategies. The City shall encourage residential developments to incorporate design features that encourage walking within neighborhoods by:*

    - *Creating a highly connected block and street network.*

    - *Designing new streets with wide sidewalks, planting strips, street trees, and pedestrian-scaled lighting.*

    - *Orienting homes, townhomes, and apartment and condominium buildings toward streets or public spaces.*

- *Locating garages for homes and townhomes along rear alleys (if available) or behind or to the side of the front façade of the home.*
- *Locating parking facilities below or behind apartment and condominium buildings.*
- *Enhancing the front façade of homes, townhomes, and apartment and condominium buildings with porches, stoops, balconies, and/or front patios.*
- *Ensuring that windows are provided on facades that front streets or public spaces.*

- *Policy LU-7.2 Ridgelines. The City shall discourage the placement of homes and structures near ridgelines to maintain natural open space and preserve views. If ridgeline development cannot be avoided, the City shall require grading, building, and landscaping designs that mitigate visual impacts and blend development with the natural features of the hillside.*
- *Policy LU-7.3 Hillside Street Layouts. The City shall require curvilinear street patterns in hillside areas to respect natural topography and minimize site grading.*
- *Policy LU-7.4 Hillside Street Design. The City shall encourage narrow streets in hillside areas. Streets should be designed with soft shoulders and drainage swales (rather than sidewalks with curb and gutters) to maintain the rural character of hillside areas and minimize grading impacts. The City shall prohibit parking along narrow street shoulders to provide space for residents to walk and ride horses.*
- *Policy LU-7.5 Clustered Developments. The City shall encourage the clustering of residential units on hillsides to preserve sensitive habitats and scenic resources as natural open space. Sensitive areas and scenic resources include woodlands, streams and riparian corridors, mature trees, ridgelines, and rock outcroppings.*
- *Policy NR-1.7 Native Tree Protection. The City shall encourage protection of mature, native tree species to the maximum extent practicable, to support the local ecosystem, provide shade, create windbreaks, and enhance the aesthetics of new and existing development.*
- *Policy NR-8.1 Hillside Residential Design Standards. The City shall regulate the design of streets, sidewalks, cluster home development, architecture, site design, grading, landscaping, utilities, and signage in hillside areas to protect aesthetics, natural topography, and views of surrounding open space through the continued Hillside Design and Urban/Wildland Interface Guidelines.*
- *Policy NR-8.2 Hillside Site Preparation Techniques. The City shall require low-impact site grading, soils, repair, foundation design, and other construction methods to be used on new residential structures and roadways above 250 feet in elevation to protect aesthetics, natural topography, and views of hillsides and surrounding open space.*

- *Policy M-3.6 Context Sensitive. The City shall consider the land use and urban design context of adjacent properties in both residential and business districts as well as urban, suburban, and rural areas when designing complete streets.*

- *Policy M-3.11 Adequate Street Canopy. The City shall ensure that all new roadway projects and major reconstruction projects provide for the development of an adequate street tree canopy.*

- *Policy M-5.5 Streetscape Design. The City shall require the pedestrian-oriented streets be designed and maintained to provide a pleasant environment for walking including shade trees; plantings; well-designed benches, trach receptacles, and other furniture; pedestrian-scaled lighting fixtures; wayfinding signage; integrated transit shelters; public art; and other amenities.*

- *Policy HQL-8.3 Trees of Significance. The City shall require the retention of trees of significance (such as heritage trees) by promoting stewardship and ensuring that project design provides for the retention of these trees wherever possible. Where tree removal cannot be avoided, the City shall require tree replacement or suitable mitigation.*

- *Policy ED-5.5 Quality Development. The City shall require new development to include quality site, architectural, and landscape design features to improve and protect the appearance and reputation of Hayward.*

- *Policy CS-1.10 Lighting. The City shall encourage property owners to use appropriate levels of exterior lighting to discourage criminal activity, enhance natural surveillance opportunities and reduce fear.*

Conclusion

The GP EIR adequately evaluated the aesthetic impacts of the proposed project. Therefore, potential impacts of the proposed project would be less than significant and additional mitigation is not required.

2. AGRICULTURE AND FORESTRY RESOURCES

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 the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
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?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

The City of Hayward and surrounding areas primarily consist of developed, urban land, with pockets of vacant properties; undeveloped bayshore and open space exists on the western and eastern margins of the City. No farmland designated by the California Department of Conservation Farmland Mapping and Monitoring Program (FMPP) is located within the City limits. Grazing land is located east of the City limits.[4] No forest lands or timberlands are located on or adjacent to the site.

[4] California Department of Conservation, Division of Land Resource Protection, 2014. *Alameda County Important Farmland 2014.* Available online at: www.conservation.ca.gov/dlrp/fmmp/Pages/Alameda.aspx (accessed June 19, 2019).

The project site is not used for agricultural production or forestry use nor is it located on a parcel under a Williamson Act contract. Additionally, the project site is not zoned for agricultural use. Therefore, the proposed project would have no impacts on agriculture or forestry resources.

Applicable Mitigation

No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Conclusion

The GP EIR adequately evaluated the agriculture and forestry impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

3. AIR QUALITY

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.

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b. 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?	☐	☐	☐	☒
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d. Result in other emissions (such as those leading to odors) affecting a substantial number of people?	☐	☐	☐	☒

Discussion

Parcel Group 5 is located with the San Francisco Bay Area Air Basin. The Bay Area Air Quality Management District (BAAQMD) is the regional government agency that monitors and regulates air pollution within the air basin. The Federal Clean Air Act and the California Clean Air Act mandate the control and reduction of specific air pollutants. Under these Acts, the U.S. Environmental Protection Agency and the California Air Resources Board have established ambient air quality standards for specific "criteria" pollutants, designed to protect public health and welfare. Primary criteria pollutants include carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), particulate matter (PM_{10}), sulfur dioxide (SO_2), and lead (Pb). Secondary criteria pollutants include ozone (O_3), and fine particulate matter ($PM_{2.5}$).

Based on the BAAQMD attainment status and ambient air quality monitoring data, ambient air quality in the vicinity of the project site has basically remained unchanged since approval of the GP EIR. However, the BAAQMD has made two key regulatory changes since the GP EIR was certified in 2014. The updated Clean Air Plan was adopted in April 2017 and revised BAAQMD CEQA Guidelines were adopted in May 2017. These changes in the project circumstances, as well as changes to the proposed project itself, are discussed and evaluated in the following section.

Clean Air Plan Consistency

An air quality plan describes air pollution control strategies to be implemented by a city, county, or region classified as a non-attainment area. The main purpose of an air quality plan is to bring an area into compliance with the requirements of federal and State air quality standards.

The GP EIR referenced the BAAQMD Bay Area 2010 Clean Air Plan to determine if the General Plan would conflict with or obstruct implementation of an applicable air quality plan. The GP EIR found that the General Plan would be substantially consistent with all applicable control measures in the Bay Area 2010 Clean Air Plan. However, the GP EIR determined that the General Plan would still have significant and unavoidable impacts associated with short-term construction and long-term operational emissions, as well as health risk exposure associated with toxic air contaminants and $PM_{2.5}$, and therefore, would not be considered to be fully consistent with the Clean Air Plan goals. As such, potential conflicts with the applicable air quality plan were considered to be significant.

The current BAAQMD clean air plan is the 2017 Clean Air Plan, adopted on April 19, 2017.[5] The 2017 Clean Air Plan provides a regional strategy to protect public health and protect the climate. To protect public health, the plan describes how the BAAQMD will continue progress toward attaining all State and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious greenhouse gas reduction targets for 2030 and 2050, and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve greenhouse gas (GHG) reduction targets.

The 2017 Clean Air Plan includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants. It also includes control measures to reduce emissions of methane and other "super-GHGs" that are potent climate pollutants in the near-term, and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

Consistency with the Clean Air Plan can be determined if a project does the following: (1) supports the goals of the Clean Air Plan; (2) includes applicable control measures from the Clean Air Plan; and (3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan. Because the 2017 Clean Air Plan is the most current clean air plan applicable to the region, the proposed project is evaluated for compliance with this plan below.

As discussed in the Project Description, the proposed project is consistent with the intent of the Suburban Density designation and would provide a complete, walkable, sustainable neighborhood with preservation of view corridors and open space areas, as well as infrastructure and circulation improvements. No changes in General Plan land use designations would be required for the proposed project. Minor revisions to the Zoning Ordinance that are consistent with the General Plan may be needed to accommodate the proposed development intensity (e.g. minimum lot sizes), distribution, and layout within the project site. Therefore, implementation of the proposed project would not substantially increase population, vehicle trips, or vehicle miles traveled (VMT). As such, the proposed project would not hinder the goals of the Clean Air Plan.

In addition, the proposed project would comply with all applicable control measures from the BAAQMD Clean Air Plan, as follows:

[5] Bay Area Air Quality Management District, 2017. *Bay Area 2017 Clean Air Plan*. April 19.

Stationary Source Control Measures. The stationary source measures, designed to reduce emissions from stationary sources such as metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by the BAAQMD and then enforced by BAAQMD Permit and Inspection programs. Since implementation of the proposed project would not include any stationary sources, the Stationary Source Measures of the Clean Air Plan are not applicable.

Transportation Control Measures. The BAAQMD identifies control measures as part of the Clean Air Plan to reduce ozone precursor emissions from stationary, area, mobile, and transportation sources. The Transportation Control Measures are designed to reduce emissions from motor vehicles by reducing vehicle trips and VMT in addition to vehicle idling and traffic congestion. The proposed project is consistent with the intent of the Suburban Density designation and would provide a complete, walkable, sustainable neighborhood with preservation of view corridors and open space areas, as well as infrastructure and circulation improvements. The proposed project would also include a new segment of the Hayward Foothill Trail, a 16-foot-wide multi-use trail, and additional street improvements such as curbs, gutters, sidewalks, on-street parking bulb-outs, utilities, and lighting. Therefore, the proposed project would support the ability to use alternative modes of transportation, would promote initiatives to reduce vehicle trips and vehicle miles traveled, and would increase the use of alternate means of transportation. Therefore, the proposed project would not conflict with the identified Transportation and Mobile Source Control Measures of the Clean Air Plan.

Energy Control Measures. The Clean Air Plan also includes Energy and Climate Control Measures, designed to reduce ambient concentrations of criteria pollutants and to reduce emissions of CO_2. Implementation of these measures is intended to promote energy conservation and efficiency in buildings throughout the community, promote renewable forms of energy production, reduce the "urban heat island" effect by increasing reflectivity of roofs and parking lots, and promote the planting of (low-volatile organic compound [VOC]-emitting) trees to reduce biogenic emissions, lower air temperatures, provide shade, and absorb air pollutants. The measures include voluntary approaches to reduce the heat island effect by increasing shading in urban and suburban areas through the planting of trees. Implementation of the proposed project would include paved areas that could result in a heating effect. The proposed project would include approximately 10.50 acres of open space to preserve riparian areas and would include a new segment of the Hayward Foothill Trail, a 16-foot-wide multi-use trail. In addition, the proposed project would be required to comply with the latest CALGreen standard building measures and Title 24 standards. Therefore, the proposed project would not conflict with the Energy and Climate Control Measures.

Building Control Measures. The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters, but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. As identified above, the proposed project would be required to comply with the latest CALGreen standard building measures and Title 24 standards. Therefore, the proposed project would not conflict with these measures.

Agriculture Control Measures. The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the proposed project does not include any agricultural activities, the Agriculture Control Measures of the Clean Air Plan are not applicable.

Natural and Working Lands Control Measures. The Natural and Working Lands Control Measures focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to adopt ordinances that promote urban-tree plantings. Since implementation of the proposed project would not include the disturbance of any rangelands or wetlands, the Natural and Working Lands Control Measures of the Clean Air Plan would not be applicable.

Waste Management Control Measures. The Waste Management Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The proposed project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the proposed project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

Water Control Measures. The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. Since these measures apply to POTWs and local government agencies, the Water Control Measures are not applicable to the proposed project.

Super GHG Control Measures. The Super-GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. As identified above, the proposed project would be required to comply with the latest CALGreen standard building measures and Title 24 standards reducing GHG emissions. In addition, as discussed in Section 8 of this Environmental Checklist, Greenhouse Gas Emissions, the proposed project would be consistent with the City's Climate Action Plan. Therefore, the proposed project would not conflict with the Super-GHG Control Measures.

As discussed above, implementation of the proposed project would not disrupt or hinder implementation of the applicable measures outlined in the Clean Air Plan, including Transportation and Mobile Source Control Measures, Land Use and Local Impact Measures, and Energy Measures. Therefore, the proposed project supports the goals of the Clean Air Plan and would not conflict with any of the control measures identified in the plan or designed to bring the region into attainment. The proposed project's potential conflicts with the applicable air quality plan would be less than significant. Therefore, the proposed project would not create impacts related to clean air plan consistency that would be more severe than impacts identified in the GP EIR.

Construction-Related Impacts

The GP EIR did not quantify construction emissions; however the GP EIR determined that implementation of the General Plan would involve construction of development projects that would result in the temporary generation of ROG, NO_x, PM_{10} and $PM_{2.5}$ emissions from site preparation (e.g., excavation, grading, and clearing), off-road equipment, material import/export, worker commute

exhaust emissions, paving, and other miscellaneous activities. The GP EIR found that emissions from individual construction projects could exceed BAAQMD project-level significance thresholds, and therefore, would result in a significant impact. The GP EIR determined that no additional measures are available that would reduce impacts from short-term construction emissions. All feasible construction emission reduction measures have been incorporated into the General Plan. Therefore, the GP EIR determined that this impact would remain significant and unavoidable.

During construction of the proposed project, short-term degradation of air quality may occur due to the release of particulate matter emissions (e.g., fugitive dust) generated by grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, ROG, directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and toxic air contaminants (TACs) such as diesel exhaust particulate matter.

Site preparation and project construction would involve grading, paving, and other activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The BAAQMD has established standard measures for reducing fugitive dust emissions (PM_{10}). With the implementation of these Basic Construction Mitigation Measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, ROGs and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the proposed project using the current California Emissions Estimator Model version 2016.3.2 (CalEEMod), consistent with BAAQMD recommendations. Project construction would begin in spring 2021 and would continue for approximately 24 to 36 months; therefore, to be conservative, this analysis assumes construction would occur for 24 months. Other specific construction details are not yet known; therefore, default assumptions (e.g., construction fleet activities) from CalEEMod were used. Construction-related emissions are presented in Table 1. CalEEMod output sheets are included in Appendix 1.

Table 1: Project Construction Emissions in Pounds Per Day

Project Construction	ROG	NO_x	Exhaust PM_{10}	Fugitive Dust PM_{10}	Exhaust $PM_{2.5}$	Fugitive Dust $PM_{2.5}$
Average Daily Emissions	4.8	18.2	0.7	1.8	0.6	0.6
BAAQMD Thresholds	54.0	54.0	54.0	BMP	82.0	BMP
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LSA (May 2019).
Notes: BMP = Best Management Practices

As shown in Table 1, construction emissions associated with the project would be less than significant for ROG, NO_x, $PM_{2.5}$, and PM_{10} exhaust emissions. The BAAQMD requires the implementation of BAAQMD Basic Construction Mitigation Measures (Best Management Practices), which would be required as a Standard Condition of Approval, to minimize construction fugitive dust impacts. These measures are required for all construction projects:

- In order to meet the BAAQMD fugitive dust threshold, the following BAAQMD Basic Construction Mitigation Measures shall be implemented:
    - All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
    - All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
    - All visible mud or dirt tracked-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.
    - All vehicle speeds on unpaved roads shall be limited to 15 mph.
    - 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.
    - Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 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.
    - 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.

- A publicly visible sign shall be posted with the telephone number and person to contact at the City of Hayward regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD phone number shall also be visible to ensure compliance with applicable regulations.

The proposed project would not create impacts related to construction-related air quality more severe than impacts identified in the GP EIR.

Regional Air Pollutant Emissions

The proposed project would develop the site with new housing, as well as new roadways and street improvements, a multi-use trail, and open space uses. The proposed project would result in mobile air quality emissions from increased vehicle trips and area source air quality impacts such as emissions generated from the use of landscaping equipment and water heating. The GP EIR determined that project-related operational emissions of the ozone precursors ROG and NO_X would be reduced on an annual basis over the General Plan implementation period, as compared with existing conditions. However, the GP EIR also determined that operational PM_{10} and $PM_{2.5}$ emissions would increase compared to baseline conditions. According to the GP EIR, while the General Plan would be consistent with all applicable control measures in the 2010 Bay Area Clean Air Plan, the rate of increase in VMT and vehicle trips under the General Plan would be higher than the rate of population increase by 2035. Therefore, the GP EIR found that impacts associated with long-term operational emissions under the General Plan would be a significant impact.

The GP EIR determined that no additional measures would substantially reduce impacts from long-term operational emissions. All feasible long-term operational emission reduction measures have been incorporated into the goals, policies, and programs in the General Plan. Therefore, the GP EIR determined that this impact would be significant and unavoidable.

Emission estimates for operation of the proposed project were calculated using CalEEMod. The daily and annual emissions associated with project operational trip generation, energy, and area sources are identified in Table 2 below for ROG, NO_x, CO, PM_{10}, and $PM_{2.5}$. CalEEMod output sheets are included in Appendix 1.

The results shown in Table 2 indicate that the proposed project would not exceed the significance criteria for daily or annual ROG, NO_2, PM_{10} or $PM_{2.5}$ emissions; therefore, the proposed project would not have a significant effect on regional air quality and mitigation would not be required. Therefore, the proposed project would not result in new or more significant operation-related air quality impacts, and these impacts would be less than significant.

Table 2: Project Operational Emissions

	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Emissions in Pounds Per Day					
Area Source Emissions	4.1	1.2	7.2	0.1	0.1
Energy Source Emissions	0.1	0.9	0.4	0.1	0.1
Mobile Source Emissions	1.2	4.7	12.1	3.9	1.1
Total Emissions	**5.4**	**6.7**	**19.7**	**4.4**	**1.3**
BAAQMD Threshold	54.0	54.0	N/A	82.0	54.0
Exceed?	**No**	**No**	**N/A**	**No**	**No**
Emissions in Tons Per Year					
Area Source Emissions	0.7	<0.1	0.6	<0.1	<0.1
Energy Source Emissions	<0.1	0.2	0.1	<0.1	<0.1
Mobile Source Emissions	0.2	0.8	2.1	0.7	0.2
Total Emissions	**0.9**	**1.0**	**2.8**	**0.7**	**0.2**
BAAQMD Threshold	10.0	10.0	N/A	15.0	10.0
Exceed?	**No**	**No**	**N/A**	**No**	**No**

Source: LSA (May 2019).

Local CO Impacts

The BAAQMD 2017 CEQA Guidelines establishes a screening methodology that provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD CEQA Guidelines, a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

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

Implementation of the proposed project would not conflict with the Alameda County Transportation Commission (ACTC) for designated roads or highways, a regional transportation plan, or other agency plans. Additionally, the proposed project is expected to generate approximately 63 AM peak hour trips and approximately 84 PM peak hour trips. Therefore, the proposed project would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour. The project site is not located in an area where mixing of air is limited. Therefore, because the project does not exceed the screening criteria, the project would not result in localized CO concentrations that would exceed State or federal standards and this potential impact would be less than significant. Therefore, the

proposed project would not create impacts related to local CO more severe than impacts identified in the GP EIR.

Local Community Risk and Hazard Impacts to Sensitive Receptors

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks.

According to the BAAQMD, a project would result in a significant impact if it would: individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10.0 in one million, increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient $PM_{2.5}$ increase greater than 0.3 micrograms per cubic meter ($\mu g/m^3$). A significant cumulative impact would occur if the project, in combination with other projects located within a 1,000-foot radius of the project site, would expose sensitive receptors to TACs resulting in an increased cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the hazard index (chronic), or an ambient $PM_{2.5}$ increase greater than 0.8 $\mu g/m^3$ on an annual average basis. Impacts from substantial pollutant concentrations are discussed below.

As discussed in the GP EIR, implementation of development projects consistent with the General Plan could involve siting of sensitive receptors near major roadways or near major stationary sources of TAC and $PM_{2.5}$ emissions, as well as the siting of potential new sources of these emissions. Such actions could increase community health risk exposure associated with these emissions. The GP EIR found that impacts associated with health risk exposure to TACs and $PM_{2.5}$ would be a significant impact.

The GP EIR included a Community Risk Reduction Strategy (CRRS) to address health risk exposure from existing and future sources of TAC and $PM_{2.5}$ within the Hayward Planning Area. As part of the development of the CRRS, an inventory of emissions sources was collected and dispersion modeling conducted to determine which areas of the Hayward Planning Area are exposed to higher concentrations of cancer risk associated with the inhalation of TACs and/or higher concentrations of $PM_{2.5}$. The modeling produced four maps for understanding how levels of cancer risk and $PM_{2.5}$ concentrations vary throughout the City, which is shown in Exhibits 1 through 4 in the Hayward Community Risk Reduction Plan Technical Support Documentation in the GP EIR Air Quality appendix. Based on Exhibits 1 through 4 of the Community Risk Reduction Plan Technical Support Documentation, Parcel Group 5 is located within a low health risk exposure area.

Parcel Group 5 is surrounded by residential and university uses. Construction of the proposed project may expose these surrounding sensitive receptors to airborne particulates, as well as a small quantity of construction equipment pollutants (i.e., usually diesel-fueled vehicles and equipment). However, construction contractors would be required to implement BAAQMD Basic Construction Mitigation Measures. With implementation of the Basic Construction Mitigation Measures, project construction emissions would be below BAAQMD significance thresholds. Once the project is constructed, the project would not be a source of substantial emissions. Therefore, implementation

of the proposed project would not result in new sources of TACs. In addition, as identified above, Parcel Group 5 is not located near existing major sources of TACs. Therefore, the project would not expose sensitive receptors or the general public to substantial levels of TACs and would remain a less-than-significant impact. The proposed project would not result in new or more significant air quality-related impacts to sensitive receptors.

Objectionable Odors

As discussed in the GP EIR, implementation of the General Plan could result in the exposure of sensitive receptors to odors, as well as the siting of new sources of odor. As discussed in the GP EIR, existing potential sources of odor in Hayward include the Hayward Wastewater Treatment Plant and Oro Loma Wastewater Treatment Plant. No other major odor sources are identified. Other minor sources of odor associated with typical land uses located in commercial and industrial areas in urban communities are currently present in Hayward, such as restaurants, auto repair facilities, gasoline stations, manufacturing plants, and other similar uses. However, the General Plan would not introduce new sensitive receptors adjacent to or near the wastewater treatment plants. In addition, no major new sources of odor are proposed or designated in the General Plan. Therefore, the GP EIR found that since the General Plan would contain specific policies that avoid or minimize odor-related air quality impacts associated with new development, odor-related impacts would be less than significant.

During construction of the proposed project, some odors may be present due to diesel exhaust. However, these odors would be temporary and limited to the construction period. The proposed project would not include any activities or operations that would generate objectionable odors and once operational, the project would not be a source of odors. Therefore, the proposed project would not create objectionable odors affecting a substantial number of people. Therefore, similar to the General Plan, the proposed project would not create objectionable odors affecting a substantial number of people, and no mitigation is required.

Applicable Mitigation

As described in the GP EIR, impacts related to air quality significant and unavoidable, after application of feasible mitigation. With implementation of BAAQMD Basic Construction Mitigation Measures, which would be required as a Standard Condition of Approval, the proposed project would not create impacts related to construction-related air quality more severe than impacts identified in the GP EIR and no mitigation is required.

Applicable Policies

General Plan Policies

- *Policy NR-2.1: Ambient Air Quality Standards. The City shall work with the California Air Resources Board and the Bay Area Air Quality Management District to meet State and Federal ambient air quality standards in order to protect all residents, from the health effects of air pollution.*

- *Policy NR-2.2: New Development. The City shall review proposed development applications to ensure projects incorporate feasible measures that reduce construction and operational emissions for reactive organic gases (ROG), nitrogen oxides (NO_x), and particulate matter (PM_{10} and $PM_{2.5}$) through project location and design.*

- *Policy NR-2.7: Coordination with Bay Area Air Quality Management District. The City shall coordinate with the Bay Area Air Quality Management District to ensure projects incorporate feasible mitigation measures to reduce greenhouse gas emissions and air pollution if not already provided for through project design.*

- *Policy NR-2.9: Fleet Operations. The City shall continue to purchase low-emission or zero-emission vehicles for the City's fleet and to use available clean fuel sources such as bio-diesel for trucks and heavy equipment.*

- *Policy NR-2.10: Zero-Emission and Low-Emission Vehicle Use. The City shall encourage the use of zero-emission vehicles, low-emission vehicles, bicycles and other non-motorized vehicles, and car-sharing programs by requiring sufficient and convenient infrastructure and parking facilities throughout the City.*

- *Policy NR-2.12: Preference for Reduced-Emission Equipment. The City shall give preference to contractors using reduced-emission equipment for City construction projects and contracts for services (e.g., garbage collection), as well as businesses that practice sustainable operations.*

- *Policy NR-2.15: Community Risk Reduction Strategy. The City shall maintain and implement the General Plan as Hayward's community risk reduction strategy to reduce health risks associated with toxic air contaminants (TACs) and fine particulate matter ($PM_{2.5}$) in both existing and new development.*

- *Policy NR-2.16: Sensitive Uses. The City shall minimize exposure of sensitive receptors to toxic air contaminants (TAC), fine particulate matter ($PM_{2.5}$), and odors to the extent possible, and consider distance, orientation, and wind direction when siting sensitive land uses in proximity to TAC- and $PM_{2.5}$-emitting sources and odor sources in order to minimize health risk.*

- *Policy NR-2.17: Source Reduction Measures. The City shall coordinate with and support the efforts of the Bay Area Air Quality Management District, the California Air Resources Board, the U.S. Environmental Protection Agency, and other agencies as appropriate to implement source reduction measures and best management practices that address both existing and new sources of toxic air contaminants (TAC) and fine particulate matter ($PM_{2.5}$), and odors.*

- *Policy NR-2.18: Exposure Reduction BMPs for New Receptors. The City shall require development projects to implement all applicable best management practices that will reduce exposure of new sensitive receptors (e.g., hospitals, schools, daycare facilities, elderly housing and convalescent facilities) to odors, toxic air contaminants (TAC), and fine particulate matter ($PM_{2.5}$).*

- *Policy NR-2.19: Exposure Reduction Measures for both Existing and New Receptors. The City shall work with area businesses, residents and partnering organizations to provide information about best management practices that can be implemented on a voluntary basis to reduce exposure of sensitive receptors to toxic air contaminants (TAC) and fine particulate matter ($PM_{2.5}$).*

- *Policy LU-1.1: Jobs-Housing Balance. The City shall support efforts to improve the jobs-housing balance of Hayward and other communities throughout the region to reduce automobile use, regional and local traffic congestion, and pollution.*

- *Policy LU-1.5: Transit-Oriented Development. The City shall support high-density transit-oriented development within the City's Priority Development Areas to improve transit ridership and to reduce automobile use, traffic congestion, and greenhouse gas emissions.*

- *Policy LU-1.6: Mixed-Use Neighborhoods. The City shall encourage the integration of a variety of compatible land uses into new and established neighborhoods to provide residents with convenient access to goods, services, parks and recreation, and other community amenities.*

- *Policy LU-1.9: Development Standards and Greenhouse Gas Emissions. The City shall explore the use of zoning and development standards that help reduce greenhouse gas emissions when preparing or updating plans and ordinances.*

- *Policy LU-1.12: Regional Planning. The City shall coordinate with regional and local agencies to prepare updates to regional growth plans and strategies, including the Bay Area's Regional Transportation Plan, Sustainable Communities Strategy, and Regional Housing Needs Allocation (RHNA).*

- *Policy LU-6.5: Incompatible Uses. The City shall protect the Industrial Technology and Innovation Corridor from the encroachment of uses that would impair industrial operations or create future land use conflicts.*

- *Policy PFS-2.5: Alternative Fuels. The City shall, wherever possible, require the use of alternative fuels in new services provided by City franchisees.*

- *Policy PFS-2.6: City Facilities Near Transit. When making decisions about where to rent or build new City facilities, the City shall give preference to locations that are accessible to an existing public transit line or ensure that public transit links (e.g. bus lines) are extended to the new locations.*

- *Policy HQL-7.5: Proximity to Pollution Sources. The City shall avoid locating new sensitive uses such as schools, childcare centers, and senior housing, to the extent feasible, in proximity to sources of pollution, odors, or near existing businesses that handle toxic materials. Where such uses are located in proximity to sources of air pollution, odors, or toxic materials, the City shall encourage building design, construction safeguards, and technological techniques to mitigate the negative impacts of hazardous materials and/or air pollution on indoor air quality.*

Conclusion

As previously discussed, based on the BAAQMD attainment status and ambient air quality monitoring data, ambient air quality in the vicinity of the project site has remained unchanged since approval of the GP EIR; therefore, baseline conditions related to air quality remain essentially unchanged. In addition, no new or more severe significant impacts would result from development of the proposed project as compared to the GP EIR. The GP EIR adequately evaluated the air quality impacts of the proposed project and with implementation of BAAQMD Basic Construction Mitigation Measures, air quality impacts associated with the proposed project would be less than significant. Therefore, no new or more severe impacts related to air quality would be associated with the proposed project.

4. BIOLOGICAL RESOURCES

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
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 Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
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 Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

Special-Status Species

Approximately 40 percent of the lands within the City are developed, recently disturbed, or ruderal. These developed, disturbed, and/or ruderal lands generally do not provide suitable habitat for special-status species. The Hayward Hills on the eastern side of the City and the baylands/salt marsh adjacent to the bay shoreline on the west provide suitable habitat for special-status species, as well as the riparian and woodland areas that cross through the City.[6]

The project site primarily consists of undeveloped land with scattered vacant structures, which will be removed as part of a separate project. Five vegetation communities or land cover types were identified to occur on the parcel group and include: non-native annual grassland, disturbed/ruderal, exotic woodland, developed (urban/landscaping), and riparian forest. Riparian forest is considered a

[6] Hayward, City of, 2014b, op. cit.

sensitive biological community. In addition, some purple needle grass (*Stipa pulchra*), was observed at the project site.

The California Natural Diversity Database (CNDDB) review conducted by LSA identified 47 special-status plant species that could potentially occur within 5 miles of the project site. However, the project site lacks suitable habitat for 36 of these special-status plant species. The remaining 11 special-status plant species that could potentially occur within the project site include: bent-flowered fiddleneck (*Amsinckia lunaris*), Big-scale balsamroot (*Balsamorhiza macrolepis*), round-leaved filaree (*California macrophylla*), Mount Diablo fairy-lantern (*Calochortus pulchellus*), Congdon's tarplant (*Centromadia parryi* subsp. *congdonii*), western leatherwood (*Dirca occidentalis*), Diablo helianthella (*Helianthella castanea*), Santa Cruz tarplant (*Holocarpha macradenia*), Northern California black walnut (*Juglans hindsii*), robust monardella (*Monardella villosa* subsp. *globosa*), and oval-leaved viburnum (*Viburnum ellipticum*).

The CNDDB review also identified special-status wildlife species that could potentially occur on the project site. Due to the previously disturbed nature of the project site, only two special-status wildlife species have the potential to occur on the project site: pallid bat (*Antrozous pallidus*) and western mastiff bat (*Eumops perotis*).

The grassland habitat within the project site was identified as having the potential to support rare plants including bent-flowered fiddleneck and round-leaved filaree. To determine if these plants were present on site, LSA conducted a rare plant survey at the site on April 20, 2018, to verify the potential for these plants. The survey included all grasslands on the site with the exception of those on the edges of woodlands. Grasslands on the edges of woodlands have the potential to provide habitat for big-scale balsamroot, Diablo helianthella, and robust monardella. However, these areas would not be developed as part of the proposed project, therefore, a rare plant survey for these species was not warranted.

The rare plant survey concluded that the grasslands on the site are dominated by non-native species including wild oats (*Avena barbata*), false brome (*Brachypodium distachyon*), rip gut brome (*Bromus diandrus*), and rose clover (*Trifolium hirtum*). Associated plant species include native plants, but their densities are less than what would constitute a natural community (>15% relative cover). None of the plants observed during the survey are considered rare. The associated plants include soap plant (*Chlorogalum pomeridianum*), buckwheat (*Eriogonum nudum*), California poppy (*Eschscholzia californica*), fennel (*Foeniculum vulgare*), cut-leaf geranium (*geranium dissectum*), prickly-ox tongue (*Helminthotheca echioides*), wild turnip (*Raphanus sativus*), blue eye grass (*Sisyrinchium bellum*) purple needle grass (*Stipa pulchra*), and vetch (*Vicia sativa*). These grasslands were classified as annual brome grasslands according to the second edition of *A Manual of California Vegetation* (California Native Plant Society 2009). Therefore, the on-site grasslands are not consisted a sensitive natural community and do not include rare plants that would require mitigation.

Trees associated with the riparian areas, and other landscaping trees and shrubs may provide nesting habitat for raptors, passerines, and other birds protected under the Migratory Bird Treaty Act and the California Fish and Game Code. Activities that may result in nest abandonment or mortality of eggs or young could result in significant impacts to protected bird species.

Implementation of the following Standard Condition of Approval, in compliance with the Migratory Bird Treaty Act and the California Fish and Game Code, would ensure that potential impacts to nesting birds and raptors during construction would be less than significant:

- Prior to any vegetation removal activities, the Project Applicant shall provide written evidence to the City that, if feasible, all vegetation removal shall be undertaken during the non-breeding season (i.e., September 1 to January 31) to avoid direct impacts to nesting birds. If such work is scheduled during the breeding season, and per the direction of the City, the Project Applicant shall retain a qualified biologist or ornithologist to conduct a pre-construction survey of all trees, shrubs, and other suitable nesting habitat in and within 200 feet of the limits of work to search for active nests of native birds. The pre-construction survey shall be conducted within 15 days prior to the start of work from March through May (since there is a higher potential for birds to initiate nesting during this period), and within 30 days prior to start of work from June through July. If active nests are found during the survey, the biologist or ornithologist shall determine an appropriately-sized buffer around the nest. No work shall be allowed within this buffer until the young have successfully fledged and are foraging independently. The size of the nest buffer shall be determined by a qualified biologist based on the nesting species and its sensitivity to disturbance. In general, buffer sizes of 250 feet for raptors and 50 feet for other birds have been used to prevent disturbance. These buffers may be increased or decreased, as appropriate, depending on the bird species and the level of disturbance anticipated or observed near the nest. Buffers shall be identified with environmentally sensitive area fencing placed at the edge of the buffer whenever possible. Given the urban nature of the site and high degree of disturbance already present, buffers may be adjusted to avoid blocking traffic, as needed.

If bats are roosting in buildings or trees within the project area or in the trees that are planned to be removed, potential disturbance or loss of roosting habitat could occur as a result of construction activity. Implementation of the following Standard Condition of Approval, in compliance with the Migratory Bird Treaty Act and the California Fish and Game Code, would ensure that potential impacts to roosting bats during construction would be less than significant:

- Before the spring breeding season and prior to construction, a qualified biologist shall conduct a survey for roosting bat habitat. The survey shall include work areas adjacent to appropriate roosting habitat that are accessible from public or project areas within 200 feet of a work area. For trees considered to have a high or moderate probability for bat roosting, acoustic monitoring shall be conducted before any construction activities begin during the breeding season to determine if there are any roosting sites present. Surveys shall be conducted at the appropriate times to maximize detectability. If an active roost or maternity roost is found within 100 feet of a work area, the limits of the work area will be clearly marked and a qualified biological monitor shall remain onsite during construction activities within the vicinity of the roost or maternity roost.

  The biologist shall ensure that construction activities to do not encroach upon the 100-foot buffer around an active roost or maternity colony site. Buffers shall remain in place until the qualified biologist has determined that bats have vacated the occupied roost sites. If buffer reductions are requested and approved, a monthly report shall be submitted to CDFW with all

of the information in the buffer reduction requests, monitoring results, and effects on bats. Reports shall be submitted for the duration of construction activities within buffer areas.

Trees containing maternity roosts shall not be removed during the breeding season (March 1 through August 31) to avoid disturbing females with young that cannot fly. No trees containing maternity roosts may be removed until the qualified biologist determines that breeding is complete and young are able to fly.

If fall/winter hibernacula cannot be avoided, humane techniques may be implemented to passively vacate bats from roosts. Methods to passively evict bats from tree roosts may include incrementally trimming limbs to alter the air flow and temperature around the roost feature where slight changes to the surrounding environment of roost features encourage bats to vacate roost features on their own. If acoustic monitoring detects that bats are using trees that need to be cut down, these trees shall be removed only after it has been confirmed that roosting bats have departed.

Sensitive Natural Communities

The California Department of Fish and Wildlife (CDFW) tracks the occurrences of plant communities that are either known or believed to be of high priority for inventory in the CNDDB. As described above, the riparian forest associated with the existing drainages on the site is considered a sensitive natural community. The proposed project has been designed to largely avoid the riparian forest areas within the project site. However, the proposed extension of Bunker Hill Road to connect to Carlos Bee Boulevard would require crossing of the existing drainage, and encroachment into the riparian area. The exact configuration of this crossing has not yet been determined.

Consistent with General Plan Policy NR-1.3, *Sensitive Species Identification, Mapping, and Avoidance,* the City will require a qualified biologist to identify, map, and make recommendations for avoiding all sensitive biological resources on the project site, including riparian vegetation and wetlands. In accordance with state and federal requirements, impacts to waters of the U.S. or State (e.g., fill in the creek) would require appropriate permits from the U.S. Army Corps of Engineers and the Regional Water Quality Control Board. In addition, if any vegetation removal or other work within the channel occurs, a Streambed Alteration Agreement would be required from the California Department of Fish and Wildlife. Regulatory permits would require compensation of wetlands at a minimum 1:1 ratio, to be compliant with the national "no net loss" policy. Potential indirect impacts to the drainage (e.g., degraded water quality due to construction-related runoff) would be avoided through implementation of Best Management Practices (BMPs) in accordance with RWQCB guidelines and the Construction General Permit (see Section 10.0, *Hydrology and Water Quality*). Required compliance with federal, State and local regulations regarding sensitive biological resources and wetland areas would ensure that the proposed project would result in less-than-significant impacts related to riparian habitat or other sensitive natural communities.

Wetlands

Although a formal delineation of the project site was not conducted as part of this assessment, the two creeks are likely jurisdictional under Section 404 of the Clean Water Act. No other wetlands are

located within the project site. As described above, the project has been designed to avoid largely avoid the riparian forest areas within the project site. As described above, the proposed roadway connection between Bunker Hill Road and Carlos Bee Boulevard would require crossing of the existing drainage and encroachment into the riparian area. Required compliance with federal, State and local regulations regarding sensitive biological resources and wetland areas would ensure that the proposed project would result in less-than-significant impacts to federally protected wetlands.

Wildlife Movement

On a local level, a variety of wildlife may use the riparian corridors on the project site to move through this section of the City, but residential activity, fences, and the general disturbance associated with urban life limit the value of this area to local wildlife. As described above, the proposed project has been designed to preserve the existing riparian corridors within the project site. Wildlife can continue to move through the area using the open space lands that would remain undeveloped. Therefore, the proposed project would not impact 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.

Existing trees are located throughout and around the project site. Trees and other landscape vegetation generally have the potential to support nests of common native bird species. All native birds, regardless of their regulatory status, are protected under the federal Migratory Bird Treaty Act and California Fish and Wildlife Code. If conducted during the breeding season (February through August), vegetation removal and construction activities could directly impact nesting birds by removing trees or vegetation that support active nests. Implementation of the Standard Condition of Approval described above would ensure that potential impacts to nesting birds and raptors during construction would be less than significant.

Local Polices or Ordinances

The City of Hayward Municipal Code, Chapter 10, Article 15 (Tree Preservation Ordinance) requires a permit for any person to remove any protected tree within the City of Hayward. As defined by the City's Municipal Code, Protected Trees include:

- Trees having a minimum trunk diameter of eight inches measured 54 inches above the ground. When measuring a multi-trunk tree, the diameters of the largest three trunks shall be added together.

- Street trees or other required trees such as those required as a condition of approval, Use Permit, or other Zoning requirement, regardless of size.

- All memorial trees dedicated by an entity recognized by the City, and all specimen trees that define a neighborhood or community.

- Trees of the following species that have reached a minimum of four inches diameter trunk size: Big Leaf Maple (*Acer macrophyllum*), California Buckeye (*Aesculus californica)*, Madrone (*Arbutus menziesii)*, Western Dogwood (*Cornus nuttallii)*, California Sycamore (*Platanus*

racemosa), Coast Live Oak (*Quercus agrifolia)*, Canyon Live Oak (*Quercus chrysolepis)*, Blue Oak (*Quercus douglassii)*, Oregon White Oak (*Quercus garryana)*, California Black Oak (*Quercus kelloggi)*, Valley Oak (*Quercus lobata)*, Interior Live Oak (*Quercus wislizeni)*, California Bay (*Umbellularia californica).*

- A tree or trees of any size planted as a replacement for a Protected Tree.

Any proposed tree removal on private property in conjunction with new development would be required to comply with Chapter 10, Article 15 of the Hayward Municipal Code (Tree Preservation Ordinance) which requires submittal of an Arborist Report and the issuance of a Tree Removal Permit. If approved, the project will be required to submit a landscaping plan that identifies replacement trees of equal value and other replacement measures. Compliance with the City's Tree Preservation Ordinance would ensure that the proposed project does not conflict with any local policies or ordinances protecting biological resources. This impact would be less than significant.

Habitat Conservation Plan or Natural Community Conservation Plan

The project site is not within any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. Therefore, the proposed project would have no impact.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan impacts on biological resources were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

General Plan Policies

- *Policy LU-1.2 Urban Limit Lines. The City shall maintain its established Urban Limit Lines to protect the Hayward shoreline and hillsides as natural open space and recreational resources.*

- *Policy LU-1.7 Design Guidelines. The City shall maintain and implement commercial, residential, industrial, and hillside design guidelines to ensure that future development complies with General Plan goals and policies.*

- *Policy LU-7.5 Clustered Developments. The City shall encourage the clustering of residential units on hillsides to preserve sensitive habitats and scenic resources as natural open space. Sensitive areas and scenic resources include woodlands, streams and riparian corridors, mature trees, ridgelines, and rock outcroppings.*

- *Policy NR-1.1 Native Wildlife Habitat Protection. The City shall limit or avoid new development that encroaches into important wildlife habitat; limits the range of listed or protected species; or creates barriers that cut off access to food, water, or shelter of listed or protected species.*

- *Policy NR-1.2 Sensitive Habitat Protection. The City shall protect sensitive biological resources, including State and Federally designated sensitive rate, threatened, and endangered plant, fish and wildlife species and their habitats from urban development and incompatible land uses.*

- *Policy NR-1.3 Sensitive Species Identification, Mapping, and Avoidance. The City shall require qualified biologists to identify, map, and make recommendations for avoiding all sensitive biological resources on the project site, including State and Federally sensitive, rare, threatened and endangered plant, fish and wildlife species and their habitats using methods and protocols in accordance with the U.S. Fish and Wildlife Services, California Department of Fish and Wildlife, and California Native Plant Society for all development applications proposed within sensitive biological resource areas.*

- *Policy NR-1.9 Native Plant Species Protection and Promotion. The City shall protect and promote native plant species in natural areas we well as in public landscaping.*

- *Policy NR-1.12 Riparian Corridor Habitat Protection. The City shall protect creek riparian habitats by:*

    - *Requiring sufficient setbacks for new development adjacent to creek slopes,*

    - *Requiring sensitive flood control designs to minimize habitat disturbance,*

    - *Maintaining natural and continuous creek corridor vegetation,*

    - *Protecting/replanting native trees, and*

    - *Protecting riparian plant communities from the adverse effects of increased stormwater runoff, sedimentation, erosion, pollution that may occur from improper development in adjacent areas.*

- *Policy PFS-5.8 Enhance Recreation and Habitat. The City shall require new stormwater drainage facilities to be designed to enhance recreation and habitat and shall work with HARD to integrate such facilities into existing parks and open space features.*

- *Policy HQL-8.3 Trees of Significance. The City shall require the retention of trees of significance (such as heritage trees) by promoting stewardship and ensuring that project design provides for the retention of these trees wherever possible. Where tree removal cannot be avoided, the City shall require tree replacement or suitable mitigation.*

Conclusion

The GP EIR adequately evaluated the biological resources impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

5. CULTURAL RESOURCES

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion

As part of the Environmental Constraints Analysis prepared for the proposed project (LSA 2018), LSA conducted background research to identify cultural resources within, and cultural resources studies of, the five parcel groups. The background research consisted of a cultural resources records search at the Northwest Information Center (NWIC), a records search of the Native American Heritage Commission's (NAHC) Sacred Lands File, and a literature review. Subsequent to this background research a cultural resources field survey was conducted. LSA's findings are documented in a cultural resources report[7] and are summarized below.

Significant cultural resources in the City include structures that may be eligible for the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), or otherwise listed on the City of Hayward List of Officially-Designated Architecturally and Historically Significant Buildings. Currently, 20 structures have been officially designated by the City as Historically or Architecturally Significant. Additionally, one structure is listed on the national register of historic landmarks.[8]

The City of Hayward is located within the historic territory of the Ohlone tribe. Native Americans occupied the general area between 5,000 and 7,000 years or possibly longer. The modern city of Hayward was settled in the 1850s due to the Gold Rush. The City contains one officially designated historic district and several other areas that could potentially be designated as historic districts.[9]

Based on a records search at NWIC, no cultural resources were recorded on Parcel Group 5. However, a review of previous cultural resources studies on file at the NWIC indicates a Caltrans cultural resources survey of Parcel Group 5. The 1986 Caltrans study, which reported the results of a historical architectural and archaeological field inventory, did not identify any cultural resources in Parcel Group 5. The Native American Heritage Commission (NAHC) was contacted in regards to the

7 LSA, 2018. *Cultural Resources Constraints Study, Route 238 Properties*.
8 Hayward, City of, 2014b, op. cit.
9 Ibid.

project. Frank Lienert, NAHC Associate Government Program Analyst, stated in a letter sent to LSA via email on March 1, 2018, that a search of the Sacred Lands File "had negative results" for the parcel groups.

LSA reviewed archaeological and environmental data for the project area to assess the potential for buried pre-contact archaeological deposits in the parcel groups. An inverse relationship exists between landform age and the potential for buried cultural deposits. Some landforms predate human occupation of the region and, as such, archaeological deposits on these landforms, if present, would occur at or near the surface. Parcel Group 5 is located on landforms that were formed before human occupation (Coast Range Ophiolite Complex [rh and gb]; Knoxville Formation [JKk]), and have a low potential for buried archaeological deposits.

Historic Resources

For a cultural resource to be considered a historical resource (i.e., eligible for listing in the California Register of Historical Resources [CRHR]), it generally must be 50 years or older. Under CEQA, historical resources can include pre-contact (i.e., Native American) archaeological deposits, historic-period archaeological deposits, historic buildings, and historic districts.

No known historic resources are associated with the project site or the adjacent parcels (City of Hayward Background Conditions Report, Figures 1-3 and 1-4, and Table 1-2). However, several mid-century single-family residences are located within this parcel group, however, which have not been formally evaluated for listing in either the NRHP and/or CRHR.

The City of Hayward Municipal Code, Chapter 10, Article 11 (Historic Preservation Ordinance) requires that development projects, involving structures or buildings at least 50 years in age or which are located within an historic district, conduct additional analysis to determine if an historical alteration permit and/or historical resource demolition or relocation permit is required. Such analysis includes an evaluation prepared by a qualified historic consultant consistent with the California Register Criteria for Evaluation and the adopted Hayward Historic Context Statement to determine historical significance. Consistent with the City's Historic Preservation Ordinance, it is unlawful for any person to tear down, demolish, remove or relocate an historical resource, a potentially significant historical resource, a designated historical resource, a resource that has been listed on the City's adopted survey list, or a resource that lies within an historic district, without first obtaining an historical resource demolition or relocation permit.

In the unlikely event that historic or archaeological resources are discovered during excavation, Standard Conditions of Approval for all development projects require the contractor to stop all work adjacent to the find and contact the City of Hayward Development Services Department to preserve and record the uncovered materials so it can be safely removed. Compliance with the City's Historic Preservation Ordinance would ensure that the proposed project would not result in an adverse change in the significance of a historical resource.

Prehistoric and Historical Archaeological Resources

No archaeological resources have been identified on the project site and the project site is not considered to be sensitive for archaeological resources. As described above, In the unlikely event that historic or archaeological resources are discovered during excavation, Standard Conditions of Approval for all development projects require the contractor to stop all work adjacent to the find and contact the City of Hayward Development Services Department to preserve and record the uncovered materials so it can be safely removed. Therefore, the proposed project would not lead to new or more severe impacts to archaeological resources beyond those identified in the GP EIR.

Disturbance of Human Remains

The potential to uncover human remains exists at locations throughout the Bay Area. Due to the existing urban nature of the area, it is not expected that the project would unearth artifacts or resources during project construction. However, as required by the City's Historic Preservation Ordinance (Chapter 10, Article 11 of the City of Hayward Municipal Code), the discovery of human remains shall be treated with respect and dignity and must fully comply with the California Native American Graves Protection and Repatriation Act and other appropriate laws. In the unlikely event that artifacts are uncovered during the construction of the proposed project the City would implement standard conditions of approval that are required of all ground-disturbing development projects within the City. Specifically, if human remains are encountered during construction activities, work would cease and the County Coroner would be notified immediately. A qualified archaeologist would also be contacted to assess the situation in consultation with the appropriate agencies. If the human remains are of Native American origin, the Coroner would notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission would provide recommendations for the proper treatment of the remains and associated grave goods. The City of Hayward would follow the recommendations from the Native American Heritage Commission or the archaeologist, as required. Therefore, no impacts to human remains interred outside of formal cemeteries would occur.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan impacts on historic and cultural resources were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

General Plan Policies

- *Policy LU-8.3 Historic Preservation Ordinance. The City shall maintain and implement its Historic Preservation ordinance to safeguard the heritage of the City and to preserve historic resources.*

- *Policy LU-8.4 Survey and Historic Reports. The City shall maintain and expand its records of reconnaissance surveys, evaluations, and historic reports completed for properties located within the City.*

- *Policy LU-8.6 Historic Preservation Standards and Guidelines. The City shall consider The Secretary of the Interior's Standards of the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings when evaluating development applications and City projects involving historic resources or development applications that may affect scenic views of the historic context of nearby historic resources.*

- *Policy LU-8.14 Demolition of Historic Resources. The City shall prohibit the demolition of historic resources unless one of the following findings can be made:*

    - *The rehabilitation and reuse of the resource is not structurally or economically feasible.*

    - *The demolition is necessary to protect the health, safety, and welfare of the public.*

    - *The public benefits of demolition outweigh the loss of the historic resource.*

- *Policy NR-7.1 Paleontological Resource Protection. The City shall prohibit any new public or private development that damages or destroys a historically- or prehistorically-significant fossil, ruin, or monument or any object of antiquity.*

- *Policy NR-7.2 Paleontological Resource Mitigation. The City shall develop or ensure compliance with protocols that protect or mitigate impacts to paleontological resources, including requiring grading and construction projects to cease activity when a paleontological resource is discovered so it can be safely removed.*

Conclusion

The GP EIR adequately evaluated the potential cultural resources impacts of the proposed project. Therefore, potential impacts would be less-than-significant and additional mitigation is not required.

6. ENERGY

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Discussion

Energy usage was evaluated in the GP EIR in Chapter 21.6, Energy, and the environmental and regulatory setting of the Hayward Planning Area with respect to energy conservation was described in detail in Section 7.6 Natural Resources: Energy Resources and Efficiency of the General Plan Background Report (City of Hayward, 2013). Pursuant to Section 15150 of the State CEQA Guidelines, the Background Report was incorporated into the GP EIR by reference.

Similar to build out of the General Plan, the proposed project would increase the demand for electricity, natural gas, and gasoline. The discussion and analysis provided below is based on data included in the CalEEMod output, which is included in Appendix A.

Construction-Period Energy Use

The anticipated construction schedule assumes that the proposed project would be built over 24 to 36 months. The proposed project would require grading, site preparation, and building activities during construction.

Construction of the proposed project would require energy for the manufacture and transportation of building materials, preparation of the site for grading activities, and building construction. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities. In order to increase energy efficiency on the site during project construction, the project would restrict equipment idling times to 5 minutes or less and would require construction workers to shut off idle equipment, as required by BAAQMD Basic Construction Mitigation Measures. Energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. Therefore, the proposed project would not result in new or more severe impacts related to energy than were identified in the GP EIR.

Operational Energy Use

Energy use consumed by the proposed project would be associated with natural gas use, electricity consumption, and fuel used for vehicle trips associated with the project. LSA estimated energy and natural gas consumption using default energy intensities by land use type in CalEEMod. In addition, the proposed buildings would comply with the latest CALGreen standard building measures and Title

24 standards, which were included in CalEEMod. Electricity and natural gas usage estimates associated with the proposed project are shown in Table 3.

In addition, the proposed project would result in energy usage associated with gasoline to fuel project-related trips. Based on CalEEMod, the proposed project would result in approximately 1,835,750 vehicle miles traveled (VMT) per year. The average fuel economy for light-duty vehicles (autos, pickups, vans, and SUVs) in the United States has steadily increased from about 14.9 miles per gallon (mpg) in 1980 to 22.0 mpg in 2015.[10] Therefore, using the USEPA fuel economy estimates for 2015, the proposed project would result in the consumption of approximately 83,443 gallons of gasoline per year. Table 3, below, shows the estimated potential increased electricity and natural gas demand associated with the proposed project.

Table 3: Estimated Annual Energy Use of Proposed Project

Land Use	Electricity Use (kWh per year)	Natural Gas Use (therms per year)	Gasoline (gallons per year)
Residential	654,564	34,714	83,443
Parking	10,500	0	0
Open Space	0	0	0
Total	**665,064**	**34,717**	**83,443**

Source: LSA (May 2019).

As shown in Table 3, the estimated potential increased electricity demand associated with the proposed project would be 665,064 kilowatt-hours (kWh) per year. In 2017, California consumed approximately 288,614 gigawatt-hours (GWh) or 288,614,000,000 kWh.[11] Of this total, Alameda County consumed 11,113 GWh or 11,112,655,423 kWh.[12] Therefore, electricity demand associated with the proposed project would be approximately 0.01 percent of Alameda County's total electricity demand.

In addition, as shown in Table 3, the estimated potential increased natural gas demand associated with the proposed project would be 34,714 therms per year. In 2017, California consumed approximately 12,571 million terms or 12,571,000,000 therms, while Alameda County consumed approximately 379 million therms or approximately 379,032,277 therms.[13] Therefore, natural gas demand associated with the proposed project would only be approximately 0.01 percent of Alameda County's total natural gas demand.

---

10 U.S. Department of Transportation. Bureau of Transportation Statistics. "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." Website: www.bts.gov/archive/publications/national_transportation_statistics/table_04_23 (accessed June 19, 2019).

11 California Energy Commission, 2017a. Energy Consumption Data Management Service. Electricity Consumption by County. Website: www.ecdms.energy.ca.gov/elecbycounty.aspx (accessed June 19, 2019).

12 Ibid.

13 California Energy Commission, 2017b. Energy Consumption Data Management Service. Gas Consumption by County. Website: www.ecdms.energy.ca.gov/gasbycounty.aspx (accessed June 19, 2019).

In addition, the proposed project would result in energy usage associated with gasoline to fuel project-related trips. As shown above in Table 3, vehicle trips associated with the proposed project would consume approximately 83,443 gallons of gasoline per year. In 2015, vehicles in California consumed approximately 15.1 billion gallons of gasoline.[14] Therefore, gasoline demand generated by vehicle trips associated with the proposed project would be a minimal fraction of gasoline and diesel fuel consumption in California.

The proposed project would develop the site with new housing, as well as new roadways and street improvements, a multi-use trail, and open space. The expected energy consumption during operation of the proposed project would be consistent with typical usage rates for single-family residential uses; however, energy consumption is largely a function of personal choice and the physical structure and layout of buildings. The proposed project would be consistent with the intent of the Suburban Density designation and would provide a complete, walkable, sustainable neighborhood with preservation of view corridors and open space areas, as well as infrastructure and circulation improvements. The proposed project would also include a new segment of the Hayward Foothill Trail, a 16-foot-wide multi-use trail, and additional street improvements such as curbs, gutters, sidewalks, on-street parking bulb-outs, utilities, and lighting. Therefore, the proposed project would support the ability to use alternative modes of transportation, would promote initiatives to reduce vehicle trips and vehicle miles traveled, and would increase the use of alternate means of transportation, which would allow for a decreased dependence on nonrenewable energy resources.

In addition, as indicated above, the proposed project would be constructed to the latest CALGreen standard building measures and Title 24 standards, which would help to reduce energy and natural gas consumption. Therefore, the proposed project would implement the General Plan's energy-related policies that promote jobs-housing balance, growth and infill development, green building and landscaping, complete neighborhoods, energy efficiency, and bicycling, walking, and transit amenities, and parks access. As such , the proposed project would not result in the wasteful, inefficient or unnecessary consumption of fuel or energy and would incorporate renewable energy or energy efficiency measures into building design, equipment use, and transportation. Therefore, the proposed project would not result in new or more severe impacts related to energy than were identified in the GP EIR.

Conflict or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency

In 2002, the Legislature passed Senate Bill 1389, which required the California Energy Commission (CEC) to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission (ZE) vehicles and their

[14] California Energy Commission, 2017c. California Gasoline Data, Facts, and Statistics. Available online at: www.energy.ca.gov/almanac/transportation_data/gasoline (accessed June 19, 2019).

infrastructure needs, and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

The CEC recently adopted the 2017 Integrated Energy Policy Report.[15] The 2017 Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs. The 2017 Integrated Energy Policy Report covers a broad range of topics, including implementation of Senate Bill 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas (in response to Senate Bill 1383), updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency.

As indicated above, energy usage on the project site during construction would be temporary in nature. In addition, energy usage associated with operation of the proposed project would be relatively small in comparison to the State's available energy sources and energy impacts would be negligible at the regional level. Because California's energy conservation planning actions are conducted at a regional level, and because the project's total impact to regional energy supplies would be minor, the proposed project would not conflict with California's energy conservation plans as described in the CEC's 2017 Integrated Energy Policy Report. Thus, as shown above, the project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and not result in any irreversible or irretrievable commitments of energy. Therefore, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Impacts would be less than significant. Therefore, the proposed project would not result in new or more severe impacts related to energy efficiency than were identified in the GP EIR.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan impacts on energy were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

General Plan Policies

- *Policy LU-1.1: Jobs-Housing Balance. The City shall support efforts to improve the jobs-housing balance of Hayward and other communities throughout the region to reduce automobile use, regional and local traffic congestion, and pollution.*

[15] California Energy Commission, 2017d. *2017 Integrated Energy Policy Report, Publication Number: CEC-100-2017-001-CMF*.

- *Policy LU-1.3: Growth and Infill Development. The City shall direct local population and employment growth toward infill development sites within the City, especially the catalyst and opportunity sites identified in the Economic Development Strategic Plan.*

- *Policy LU-1.6: Mixed-Use Neighborhoods. The City shall encourage the integration of a variety of compatible land uses into new and established neighborhoods to provide residents with convenient access to goods, services, parks and recreation, and other community amenities.*

- *Policy LU-1.8: Green Building and Landscaping Requirements. The City shall maintain and implement green building and landscaping requirements for private- and public-sector development to:*

    - *Reduce the use of energy, water, and natural resources.*

    - *Minimize the long-term maintenance and utility expenses of infrastructure, buildings, and properties.*

    - *Create healthy indoor environments to promote the health and productivity of residents, workers, and visitors.*

    - *Encourage the use of durable, sustainably-sourced, and/or recycled building materials.*

    - *Reduce landfill waste by promoting practices that reduce, reuse, and recycle solid waste.*

- *Policy LU-3.1: Complete Neighborhoods. The City shall promote efforts to make neighborhoods more complete by encouraging the development of a mix of complementary uses and amenities that meet the daily needs of residents. Such uses and amenities may include parks, community centers, religious institutions, daycare centers, libraries, schools, community gardens, and neighborhood commercial and mixed-use developments.*

- *Policy NR-2.6: Greenhouse Gas Reduction in New Development. The City shall reduce potential greenhouse gas emissions by discouraging new development that is primarily dependent on the private automobile; promoting infill development and/or new development that is compact, mixed use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; and improving the regional jobs/housing balance ratio.*

- *Policy NR-4.1: Energy Efficiency Measures. The City shall promote the efficient use of energy in the design, construction, maintenance, and operation of public and private facilities, infrastructure, and equipment.*

- *Policy NR-4.3: Efficient Construction and Development Practices. The City shall encourage construction and building development practices that maximize the use of renewable resources and minimize the use of non-renewable resources throughout the life-cycle of a structure.*

- *Policy NR-4.11: Green Building Standards. The City shall require newly constructed or renovated public and private buildings and structures to meet energy efficiency design and operations standards with the intent of meeting or exceeding the State's zero net energy goals by 2020.*

- *Policy NR-4.12: Urban Forestry. The City shall encourage the planting of native and diverse tree species to reduce heat island effect, reduce energy consumption, and contribute to carbon mitigation.*

- *Policy NR-4.13: Energy Use Data. The City shall consider requiring disclosure of energy use and/or an energy rating for single family homes, multifamily properties, and commercial buildings at certain points or thresholds. The City shall encourage residents to voluntarily share their energy use data and/or ratings with the City as part of collaborative efficiency efforts.*

- *Policy NR-4.15: Energy Efficiency Programs. The City shall promote the use of the Energy Star Portfolio Manager program and energy benchmarking training programs for nonresidential building owners.*

- *Policy PFS-2.7: Energy Efficient Buildings and Infrastructure. The City shall continue to improve energy efficiency of City buildings and infrastructure through implementation of the Municipal Green Building Ordinance, efficiency improvements, equipment upgrades, and installation of clean, renewable energy systems.*

- *Policy M-1.6: Bicycling, Walking, and Transit Amenities. The City shall encourage the development of facilities and services, (e.g., secure term bicycle parking, street lights, street furniture and trees, transit stop benches and shelters, and street sweeping of bike lanes) that enable bicycling, walking, and transit use to become more widely used modes of transportation and recreation.*

- *Policy M-3.8: Connections with New Development. The City shall ensure that new commercial and residential development projects provide frequent and direct connections to the nearest bikeways, pedestrian ways, and transit facilities.*

- *Policy M-3.9: Private Complete Streets. The City shall encourage large private developments (e.g., office parks, apartment complexes, retail centers) to provide internal complete streets that connect to the existing public roadway system and provide a seamless transition to existing and planned transportation facilities.*

- *Policy M-6.2: Encourage Bicycle Use. The City shall encourage bicycle use in all neighborhoods, especially where short trips are most common.*

- *Policy M-6.5: Connections between New Development and Bikeways. The City shall ensure that new commercial and residential development projects provide frequent and direct connections to the nearest bikeways and do not interfere with existing and proposed bicycle facilities.*

- *Policy HQL-2.1: Physical Activity and the Built Environment. The City shall support new developments or infrastructure improvements in existing neighborhoods that enable people to drive less and walk, bike, or take public transit more.*

- *Policy HQL-10.7: Parks Access. The City shall work with HARD to ensure that new parks are accessible to pedestrians and bicyclists, and are connected with transit, to the extent feasible.*

Conclusion

The GP EIR adequately evaluated the energy impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

7. GEOLOGY AND SOILS

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Directly or indirectly cause 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.	☐	☐	☐	☒
ii. Strong seismic ground shaking?	☐	☐	☐	☒
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv. Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating direct or indirect substantial risks to life or property?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Discussion

Information for this section was obtained from maps and publications published from the United States Geological Survey (USGS), the California Geological Survey (CGS), the Association of Bay Area Governments (ABAG), the City of Hayward General Plan, the GP EIR, and the Preliminary Geotechnical Investigation prepared for the project site.[16]

A portion of the City is underlain with soft alluvial soils and artificial fill along the bay and on slopes in the Hayward Hills. During large earthquakes, saturated fill is susceptible to ground shaking and liquefaction-associated hazards and the slopes are susceptible to earthquake-induced landslides.

[16] ENGEO, 2017. *Route 238 Bypass – Group 5, Hayward, California, Preliminary Geotechnical Exploration*. May 17.

Potential seismic hazards in the City also include surface rupture, ground shaking, liquefaction, lateral spreading, and fault creep.[17, 18]

A Preliminary Geotechnical Exploration[19] prepared for the site included soil borings, excavation of test pits, and excavation of exploratory trenches to evaluate subsurface conditions and geologic hazards. The Preliminary Geotechnical Exploration provided preliminary recommendations that have been incorporated into the planning of the project to address geologic hazards, including maintaining a setback of 50 feet from identified fault traces for structures intended for human occupancy. Other preliminary geotechnical recommendations were provided for selection of engineered fill materials, site preparation (e.g., removal of debris and loose/compressible soil), removal of existing fill and landslide materials, construction on slopes (e.g., grading of slopes, slope setbacks, debris benches and drainage terraces, toe keyways, and subsurface drainage facilities), placement of fill, and surface drainage.

Seismicity and Seismic Hazards

Fault Rupture. The City is located within a seismically active region of the San Francisco Bay area. Several major earthquake faults in the region, including the San Andreas, Hayward, and Calaveras Faults, could generate strong earthquakes in the vicinity of the parcel groups. The Hayward Fault traverses the City in a northwest to southeast direction and is considered a seismically active fault under the Alquist-Priolo Earthquake Fault Zoning Act. The Alquist-Priolo program requires the California Geologic Survey (CGS) to establish regulatory zones around fault traces that are considered active and sufficiently defined (i.e., located). These active faults are considered to have the potential for surface fault rupture hazards and pose a hazard to structures. The Chabot and Carlos Bee Faults run parallel to the Hayward Fault and are located approximately 0.6 and 0.2 mile east of the Hayward Fault, respectively. These two faults are considered inactive. [20]

The site is adjacent to and within the designated Alquist-Priolo Earthquake Fault Zone for the Hayward Fault. Fault-related ground rupture is likely at the site, and relatively narrow zones of faulting have been observed in exploratory trenches at the site. The observed faulting is likely occurring on secondary fault splays associated with the eastern extension of the Hayward fault. Consistent with the Alquist-Priolo Earthquake Fault Zoning Act requirements and the City's General Plan Policy HAZ-2.4, the proposed project has been designed to maintain a setback of 50 feet from identified fault traces for structures intended for human occupancy.

Further, the City requires projects to comply with the 2016 California Building Code (Title 24, California Code of Regulations),[21] which provides for stringent construction requirements on projects in areas of high seismic risk based on numerous inter-related factors. Seismic hazards cannot be completely eliminated, even with implementation of advanced building practices.

---

17 Hayward, City of, 2014b, op. cit.

18 Fault creep is slow, constant slippage that can occur on some active faults without there being an earthquake.

19 ENGEO, 2017, op. cit.

20 Hayward, City of, 2014b, op. cit.

21 Hayward, City of. Municipal Code, Chapter 9, Article 1.

However, the seismic design standards of the 2016 California Building Code (CBC) are intended to prevent catastrophic building failure in the most severe earthquakes currently anticipated.

A site-specific geotechnical investigation would be performed for the proposed project as required by State regulations, and the City of Hayward General Plan policies. Implementation of a site-specific geotechnical investigation, and compliance with geotechnical recommendations and the CBC during design and construction would ensure that the potential impacts associated with fault rupture would be less than significant.

Strong Seismic Ground Shaking. As described above, multiple active faults have the potential to generate strong to very strong ground shaking at the project site. The Working Group on California Earthquake Probabilities and the USGS have predicted a 14.3 percent probability of a 6.7 magnitude (Mw, or Moment Magnitude) or greater earthquake on the Hayward Fault, a 7.4 percent chance on the Calaveras Fault, and a total probability of 72 percent that an earthquake of that magnitude will occur on one of the regional San Francisco Bay Area faults during that time. The risk of ground shaking impacts is reduced through adherence to the design and materials standards set forth in building codes.

As described above, the proposed project would be required to comply with the 2016 California Building Code and the geotechnical recommendations identified in the site-specific geotechnical investigation. Compliance with geotechnical recommendations and the CBC during design and construction would ensure that the potential impacts associated with ground shaking would be less than significant.

Seismic-Related Ground Failure and Liquefaction. The potential for different types of ground failure to occur during a seismic event is discussed below.

> ***Liquefaction Potential.*** Soil liquefaction is a phenomenon primarily associated with saturated soil layers located close to the ground surface. These soils lose strength during ground shaking. Due to the loss of strength, the soil may move both horizontally and vertically. In areas where sloping ground or open slope faces are present, this mobility can result in lateral spreading. Soils that are most susceptible to liquefaction are clean, loose, uniformly graded, saturated, fine-grained sands that are relatively close to the ground surface. However, loose sands that contain a significant amount of fines (silt and clay) may also liquefy. Potentially liquefiable soil was not identified within any of the borings drilled at the site as part of the Preliminary Geotechnical Investigation and the State of California Seismic Hazard Zones Map does not show areas susceptible to liquefaction within the project site. Therefore, the potential for liquefaction at the project site is considered low and impacts related to liquefaction would be less-than-significant.
>
> ***Lateral Spreading.*** Lateral spreading involves lateral ground movements caused by seismic shaking. These lateral ground movements are often associated with a weakening or failure of an embankment or soil mass overlying a layer of liquefied or weak soils. Due to the presence of shallow bedrock at the majority of the site, the potential for lateral spreading is considered to be low. Therefore, the potential for impacts related to lateral spreading would be less than significant.

Ground Lurching Ground lurching is a result of the rolling motion imparted to the ground surface during energy released by an earthquake. Such rolling motion can cause ground cracks to form in weaker soils. The potential for the formation of these cracks is considered greater at contacts between deep alluvium and bedrock. Such an occurrence is possible at the site as in other locations in the Bay Area, but based on the site location, the offset is expected to be minor. Therefore, potential impacts related to ground lurching would be less than significant.

Landslides. Slope failure can occur as either rapid movement of large masses of soil or imperceptibly slow movement of soils on slopes. The project site is located on sloped terrain with known landslides. The State of California Seismic Hazard Zones Map shows the majority of the project site with areas susceptible to earthquake-induced landslides.

The Preliminary Geotechnical Investigation includes recommendations to reduce the potential impacts associated with landslides, including: (1) removal of landslide material; (2) over excavation and rebuilding of graded slopes, as needed; and/or (3) slope setbacks for habitable structures. The design and construction of the project in accordance with geotechnical recommendations would reduce potential impacts related to landslides to a less-than-significant level.

Erosion/Loss of Top Soil

The development of the project site would involve construction activities such as grading and excavation, which could result in temporary soil erosion when the disturbed soils are exposed to wind or rainfall. Because the proposed project would involve over one acre of land disturbance, it would be required to comply with the State Water Resources Control Board's Construction General Permit, which requires the preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would include erosion control best management practices that would minimize erosion during construction. Policy NR-6.5 of the General Plan also requires that the City control site preparation procedures and construction phasing to reduce erosion and exposure of soils to the maximum extent possible. Upon completion of construction, the project site would be covered with structures, pavement, and landscaping and would not include areas of exposed soil. Therefore, the proposed project would result in less-than-significant impacts related to soil erosion or loss of top soil.

Unstable and Expansive Soils

Unstable Soil. The project site would not be subject to lateral spreading, but does have the potential for seismically-induced landslides. The design and construction of the project in accordance with geotechnical recommendations would reduce potential impacts related to landslides to a less-than-significant level.

Subsidence/Soil Collapse. Subsidence can result from the removal of subsurface water resulting in either gradual depression or catastrophic collapse of the ground surface. The proposed project would not utilize groundwater at the project site. Dewatering is not anticipated during project construction. Therefore, potential impacts related to subsidence/soil collapse would be less than significant.

Expansive Soils. Expansive soils are characterized by the potential for shrinking and swelling as the moisture content of the soil decreases and increases, respectively. The changes in soil volume can result in substantial cosmetic and structural damage to buildings and hardscape developed over expansive soils. Expansive soils are typically fine grained with high clay content. Potentially expansive clay has been observed in various locations at the surface and in several test pits. In addition, existing fill at the project site could undergo vertical movement that is not easily characterized and could ultimately be inadequate to effectively support potential building and fill loads.

The Preliminary Geotechnical Investigation includes recommendations to reduce the potential impacts associated with expansive soil, including: (1) using a rigid mat foundation that is designed to resist the settlement and heave of expansive soil; (2) deepening the foundations to below the zone of moisture fluctuation (i.e., by using deep footings or drilled piers); and/or (3) using mat or footings at normal shallow depths but bottomed on a layer of select fill having a low expansion potential. In addition, the proposed project would be required to comply with the 2016 California Building Code and the geotechnical recommendations identified in the site-specific geotechnical investigation. Compliance with geotechnical recommendations and the CBC during design and construction would ensure that the potential impacts associated with expansive soils would be less than significant.

Septic Tanks/Wastewater Disposal

Development of the proposed project would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore the proposed project would have no impact related to septic tanks or alternative waste water disposal systems.

Paleontological Resources

The project site rests upon sediments and bedrock comprised of Holocene to Late Pleistocene Surficial Sediments, the Late Jurassic to early Cretaceous Knoxville Formation, the Late Jurassic to Cretaceous Franciscan Assemblage, and the Late Jurassic Coast Range Ophiolite Complex. The geology of the project site primarily consists of igneous and metamorphic rock units from the Franciscan Assemblage and Coast Range Ophiolite Complex. The most northern section of this site, between Carlos Bee Boulevard and Bunker Hill Court, contains the Knoxville Formation. The Coast Range Ophiolite Complex and the Franciscan Assemblage igneous and metamorphic rocks have no paleontological sensitivity, while the Knoxville Formation has high paleontological sensitivity.

Only ground disturbance in areas of the Knoxville Formation would reach paleontologically sensitive deposits and have the potential to impact scientifically significant paleontological resources. In the event that paleontological resources are discovered during construction, Standard Conditions of Approval for all development projects require the contractor to stop all work adjacent to the find and contact the City of Hayward Development Services Department to preserve and record the uncovered materials so it can be safely removed. Compliance with the City's standard conditions of approval would ensure that the proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan impacts related to geology, soils, minerals and paleontological resources were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

General Plan Policies

- *Policy LU-7.1 Slopes. The City shall prohibit the construction of buildings on unstable and steep slopes (slopes greater than 25 percent).*

- *Policy LU-7.2 Ridgelines. The City shall discourage the placement of homes and structures near ridgelines to maintain natural open space and preserve views. If ridgeline development cannot be avoided, the City shall require grading, building, and landscaping designs that mitigate visual impacts and blend development with the natural features of the hillside.*

- *Policy LU-7.3 Hillside Street Layouts. The City shall require curvilinear street patterns in hillside areas to respect natural topography and minimize site grading.*

- *Policy LU-7.4 Hillside Street Design. The City shall encourage narrow streets in hillside areas. Streets should be designed with soft shoulders and drainage swales (rather than sidewalks with curb and gutters) to maintain the rural character of hillside areas and minimize grading impacts. The City shall prohibit parking along narrow street shoulders to provide space for residents to walk and ride horses.*

- *Policy NR-6.4 Minimizing Grading. The City shall minimize grading and, where appropriate, consider requiring onsite retention and settling basins.*

- *Policy NR-6.5 Erosion Control. The City shall concentrate new urban development in areas that are the least susceptible to soil erosion into water bodies in order to reduce water pollution.*

- *Policy NR-8.2 Hillside Site Preparation Techniques. The City shall require low-impact site-grading, soils repair, foundation design, and other construction methods to be used on new residential structures and roadways above 250 feet in elevation to protect aesthetics, natural topography, and views of hillsides and surrounding open space.*

- *Policy HAZ-2.1 Seismic Safety Codes and Provisions. The City shall enforce the seismic safety provisions of the Building Code and Alquist-Priolo Special Studies Zone Act to minimize earthquake-related hazards in new construction, particularly as they relate to high occupancy structures or buildings taller than 50 feet in height.*

- *Policy HAZ-2.2 Geologic Investigations. The City shall require a geologic investigation for new construction on sites within (or partially within) the following zones:*
    - *Fault Zone (see Figure 9.2-1 in the Hazards Background Report)*
    - *Liquefaction Zone (see Figure 9.2-2 in the Hazards Background Report)*
    - *Landslide Zone (see Figure 9.2-3 in the Hazards Background Report)*

  A licensed geotechnical engineer shall conduct the investigation and prepare a written report of findings and recommended mitigation measures to minimize potential risks related to seismic and geologic hazards.

- *Policy HAZ-2.3 Fault Zone Assumption. The City shall assume that all sites within (or partially within) any fault zone are underlain by an active fault trace until a geotechnical investigation by a licensed geotechnical engineer provides otherwise.*

- *Policy HAZ-2.4 New Buildings in a Fault Zone. The City shall prohibit the placement of any building designed for human occupancy over active faults. All buildings shall be set back from active faults by at least 50 feet. The City may require a greater setback based on the recommendations of the licensed geotechnical engineer evaluating the site and the project.*

- *Policy HAZ-2.6 Infrastructure and Utilities. The City shall require infrastructure and utility lines that cross faults to include design features to mitigate potential fault displacement impacts and restore service in the event of major fault displacement. Mitigation measures may include plans for damage isolation or temporary bypass by using standard isolation valves, flexible hose or conduit, and other techniques and equipment.*

Conclusion

The GP EIR adequately evaluated the geology and soils impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

8. GREENHOUSE GAS EMISSIONS

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
g. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
h. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Discussion

Greenhouse gas emissions (GHGs) associated with the General Plan are evaluated in Chapter 10, Global Climate Change and Greenhouse Gas Emissions, of the GP EIR. The following includes a discussion of the potential impacts related to GHG emissions associated with the General Plan as compared to the proposed project.

GHGs are present in the atmosphere naturally, and are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. However, over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global climate change. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur Hexafluoride (SF_6)

While GHGs produced by human activities include naturally-occurring GHGs such as CO_2, CH_4, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere. Certain other gases, such as water vapor, are short-lived in the atmosphere compared to those GHGs that remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this analysis, the term “GHGs” will refer collectively to the six gases identified in the bulleted list provided above.

Construction Greenhouse Gas Emissions

As discussed in the GP EIR, construction activities would generate GHG emissions through the use of on- and off-road construction equipment in new development projects. While no project-specific details were known at the time the GP EIR was prepared, short-term construction emissions were estimated for worst-case, average annual levels of development assumed to occur under the General Plan through the year 2040. Average annual development assumptions were estimated by dividing the net increase in residential units and commercial building square feet associated with build out of the General Plan by 25 years. Construction emissions were estimated for this annualized average level development within the first full calendar year after anticipated General Plan adoption in order to obtain a "worst case" estimate of average annual construction-related GHG emissions. The GP EIR determined that total construction-related GHG emissions in 2015 would be approximately 1,186 metric tons (MT) of CO_2e per year.

The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are encouraged to quantify and disclose GHG emissions that would occur during construction. Using CalEEMod, it is estimated that the proposed project would generate approximately 1,369.6 MT CO_2e during construction of the project and approximately 684.8 MT CO_2e per year. In addition, when considered over the 30-year life of the project, the amortized construction emissions would be approximately 45.7 MT of CO_2e per year. Annual construction-related GHG emissions associated with the proposed project would be lower than the estimated average annual construction-related GHG emissions identified in the GP EIR. In addition, implementation of BAAQMD's Basic Construction Mitigation Measures would reduce construction-related GHG emissions by reducing the amount of construction vehicle idling and by requiring the use of properly maintained equipment. As noted above, the BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions; therefore, project construction impacts associated with GHG emissions would be considered less than significant. Construction of the proposed project would not result in new or more severe impacts related to construction-period GHG emissions than identified in the GP EIR.

Operational Greenhouse Gas Emissions

The GP EIR estimated operational emissions from existing development in Hayward in the years 2005 and 2010, as well as projected "Business As Usual" GHG emissions associated with forecasted growth in the City's population and employment in 2020, 2040 and 2050. The 2020, 2040 and 2050 projections reflect both existing and proposed land uses and population and employment growth assumed in the proposed General Plan, but do not take into account any specific GHG reduction measures associated with State or federal legislative actions or the City's 2009 CAP. The GP EIR found that any impacts resulting from GHG associated with implementation of the General Plan would be less than significant.

Development of the proposed project would contribute to the GHG emissions identified in the GP EIR. Long-term operation of the proposed project would generate GHG emissions from area and mobile sources, and indirect emissions from sources associated with energy consumption. Mobile-source emitters of GHGs would include project-generated vehicle trips associated with visitor trips

to the project site. Area-source emissions would be associated with activities such as landscaping and maintenance on the project site, and other sources.

The proposed project would develop the site with new housing as well as new roadways and street improvements, a multi-use trail, and open space uses. The proposed project is consistent with the intent of the Suburban Density designation and would provide a complete, walkable, sustainable neighborhood with preservation of view corridors and open space areas, as well as infrastructure and circulation improvements. The proposed project would also include a new segment of the Hayward Foothill Trail, a 16-foot-wide multi-use trail, and additional street improvements such as curbs, gutters, sidewalks, on-street parking bulb-outs, utilities, and lighting. Therefore, the proposed project would support the ability to use alternative modes of transportation, would promote initiatives to reduce vehicle trips and vehicle miles traveled, and would increase the use of alternate means of transportation, which would help reduce GHG emissions.

Following guidance from the BAAQMD, GHG emissions were estimated for the proposed project using CalEEMod. Table 4 shows the calculated GHG emissions for the proposed project. Motor vehicle emissions are the largest source of GHG emissions for the project at approximately 66 percent of the total. Energy use is the next largest category at 27 percent of CO_2e emissions. Solid waste and water use are about 3 percent and 1 percent of the total emissions, respectively. In addition, area sources are approximately 1 percent of the total emissions. CalEEMod output sheets are included in Appendix 1.

Table 4: Operational Greenhouse Gas Emissions

Emissions Source Category	Operational Emissions (Metric Tons per Year)				
	CO_2	CH_4	N_2O	CO_2e	Percent of Total Project Emissions
Area	8.0	<0.1	<0.1	8.0	1
Energy	284.4	<0.1	<0.1	286.2	27
Mobile	706.5	<0.1	0.0	707.1	66
Waste	20.2	1.2	0.0	50.1	4
Water	14.3	0.2	<0.1	20.0	2
Total Operational				**1,071.4**	**100**
BAAQMD Threshold				**1,100**	**-**
Exceed?				**No**	**-**

Source: LSA (May 2019).

According to the BAAQMD, a project would result in a less-than-significant GHG impact if it would:

- Result in operational-related greenhouse gas emissions of less than 1,100 metric tons of CO_2e a year; or
- Result in operational-related greenhouse gas emissions of less than 4.6 metric tons of CO_2e per service population (residents plus employees).

Based on the analysis results, the proposed project would generate approximately 1,071.4 MT CO_2e which would be below the BAAQMD's numeric threshold of 1,100 MT CO_2e. Therefore, operation of the proposed project would not generate significant GHG emissions that would have a significant effect on the environment and would have a less than significant impact related to operational GHG emissions. Operation of the proposed project would not result in new or more severe impacts related to GHG emissions than identified in the GP EIR.

Consistency with Greenhouse Gas Reduction Plans

The City of Hayward adopted the 2009 Climate Action Plan (CAP) to reduce GHG emissions communitywide. The 2009 CAP was designed to reduce communitywide emissions 12.5 percent below 2005 levels by the year 2020, and to set the City on a course to achieve a long-term emission reduction goal of 82.5 percent below 2005 levels by the year 2050.

As discussed in the GP EIR, the General Plan integrates and updates the comprehensive, community-wide GHG emission reduction strategy contained in the City's 2009 CAP to achieve a GHG emission reduction target of 20 percent below 2005 levels by the year 2020. The proposed General Plan also recommends longer-term goals for GHG reductions of 61.7 percent below 2005 levels by the year 2040 and 82.5 percent below 2005 levels by the year 2050. The GP EIR summarizes the total GHG emission reductions from both State and Federal regulatory actions, as well as locally based GHG emission reductions required to achieve the targets for 2020, 2040 and 2050 in Table 10.2 of the GP EIR. Legislative-adjusted projected emissions take into account GHG emission reductions as a result of State and Federal regulatory actions. Additional net GHG emission reductions would be required to meet the proposed targets for 2020, 2040 and 2050; however, the GP EIR determined that the scale of reductions required to achieve the much more aggressive longer-term emission reduction goals will require significant improvements in the availability and/or cost of technology, as well as potential increased reductions from ongoing State and Federal legislative actions.

As discussed in the GP EIR, the General Plan contains a comprehensive strategy that achieves a communitywide GHG emission reduction target of 20 percent below 2005 levels by the year 2020, and sets the City on course toward achieving ongoing GHG emission reductions in the future through the year 2050. Thus, the GP EIR determined that the General Plan would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. In addition, the GP EIR determined that estimated GHG emissions per service population in 2020, 2040 and 2050 would be below the BAAQMD-recommended threshold of 6.6 MT CO_2e per service population per year. Thus, the GP EIR determined that the General Plan would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment and impacts would be less than significant.

As indicated above, the proposed project would develop the site with new housing as well as new roadways and street improvements, a multi-use trail, and open space.. The proposed project is consistent with the intent of the Suburban Density designation and would provide a complete, walkable, sustainable neighborhood with preservation of view corridors and open space areas, as well as infrastructure and circulation improvements. The proposed project would also include a new segment of the Hayward Foothill Trail, a 16-foot-wide multi-use trail, and additional street improvements such as curbs, gutters, sidewalks, on-street parking bulb-outs, utilities, and lighting.

Therefore, the proposed project would support the ability to use alternative modes of transportation, would promote initiatives to reduce vehicle trips and vehicle miles traveled, and would increase the use of alternate means of transportation, which would help reduce GHG emissions.

Therefore, the proposed project would implement appropriate GHG reduction strategies and would not conflict with applicable plan, policy, or regulations pertaining to GHGs. Therefore, the proposed project would not result in new significant impacts beyond those identified in the GP EIR. No new mitigation measures are required.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan impacts on greenhouse gas emissions were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

General Plan Objectives

- *Policy NR-2.6: Greenhouse Gas Reduction in New Development. The City shall reduce potential greenhouse gas emissions by discouraging new development that is primarily dependent on the private automobile; promoting infill development and/or new development that is compact, mixed use, pedestrian friendly, and transit oriented; promoting energy-efficient building design and site planning; and improving the regional jobs/housing balance ratio.*

- *Policy NR-2.7: Coordination with Bay Area Air Quality Management District. The City shall coordinate with the Bay Area Air Quality Management District to ensure projects incorporate feasible mitigation measures to reduce greenhouse gas emissions and air pollution if not already provided for through project design.*

- *Policy NR-2.10: Zero-Emission and Low-Emission Vehicle Use. The City shall encourage the use of zero-emission vehicles, low-emission vehicles, bicycles and other non-motorized vehicles, and car-sharing programs by requiring sufficient and convenient infrastructure and parking facilities throughout the City.*

- *Policy NR-4.1: Energy Efficiency Measures. The City shall promote the efficient use of energy in the design, construction, maintenance, and operation of public and private facilities, infrastructure, and equipment.*

- *Policy NR-4.3: Efficient Construction and Development Practices. The City shall encourage construction and building development practices that maximize the use of renewable resources and minimize the use of nonrenewable resources throughout the life-cycle of a structure.*

- *Policy NR-4.11: Green Building Standards. The City shall require newly constructed or renovated public and private buildings and structures to meet energy efficiency design and operations standards with the intent of meeting or exceeding the State's zero net energy goals by 2020.*

- *Policy NR-4.12: Urban Forestry. The City shall encourage the planting of native and diverse tree species to reduce heat island effect, reduce energy consumption, and contribute to carbon mitigation.*

- *Policy NR-4.1:3 Energy Use Data. The City shall consider requiring disclosure of energy use and/or an energy rating for single family homes, multifamily properties, and commercial buildings at certain points or thresholds. The City shall encourage residents to voluntarily share their energy use data and/or ratings with the City as part of collaborative efficiency efforts.*

- *Policy LU-1.1: Jobs-Housing Balance. The City shall support efforts to improve the jobs-housing balance of Hayward and other communities throughout the region to reduce automobile use, regional and local traffic congestion, and pollution.*

- *Policy LU-1.6: Mixed-Use Neighborhoods. The City shall encourage the integration of a variety of compatible land uses into new and established neighborhoods to provide residents with convenient access to goods, services, parks and recreation, and other community amenities.*

- *Policy LU-1.8: Green Building and Landscaping Requirements. The City shall maintain and implement green building and landscaping requirements for private- and public-sector development to:*

    - *Reduce the use of energy, water, and natural resources.*

    - *Minimize the long-term maintenance and utility expenses of infrastructure, buildings, and properties.*

    - *Create healthy indoor environments to promote the health and productivity of residents, workers, and visitors.*

    - *Encourage the use of durable, sustainably-sourced, and/or recycled building materials.*

    - *Reduce landfill waste by promoting practices that reduce, reuse, and recycle solid waste.*

- *Policy M-1.4: Multimodal System Extensions. The City shall require all new development that proposes or is required to construct or extend streets to develop a transportation network that complements and contributes to the City's multimodal system, maximizes connections, and minimizes barriers to connectivity.*

- *Policy M-1.6: Bicycling, Walking, and Transit Amenities. The City shall encourage the development of facilities and services, (e.g., secure term bicycle parking, street lights, street furniture and trees, transit stop benches and shelters, and street sweeping of bike lanes) that*

enable bicycling, walking, and transit use to become more widely used modes of transportation and recreation.

- *Policy M-5.1: Pedestrian Needs. The City shall consider pedestrian needs, including appropriate improvements to crosswalks, signal timing, signage, and curb ramps, in long-range planning and street design.*

- *Policy M-5.2: Pedestrian System. The City shall strive to create and maintain a continuous system of connected sidewalks, pedestrian paths, creekside walks, and utility greenways throughout the City that facilitates convenient and safe pedestrian travel, connects neighborhoods and centers, and is free of major impediments and obstacles.*

- *Policy M-5.4: Sidewalk Design. The City shall require that sidewalks, wherever possible, be developed at sufficient width to accommodate pedestrians including the disabled; a buffer separating pedestrians from the street and curbside parking; amenities; and allow for outdoor uses such as cafes.*

- *Policy M-5.5: Streetscape Design. The City shall require that pedestrian-oriented streets be designed and maintained to provide a pleasant environment for walking including shade trees; plantings; well-designed benches, trash receptacles, and other furniture; pedestrian-scaled lighting fixtures; wayfinding signage; integrated transit shelters; public art; and other amenities.*

- *Policy M-6.5: Connections between New Development and Bikeways. The City shall ensure that new commercial and residential development projects provide frequent and direct connections to the nearest bikeways and do not interfere with existing and proposed bicycle facilities.*

- *Policy PFS-7.12: Construction and Demolition Waste Recycling. The City shall require demolition, remodeling and major new development projects to salvage or recycle asphalt and concrete and all other non-hazardous construction and demolition materials to the maximum extent practicable.*

Conclusion

The GP EIR adequately evaluated the greenhouse gas emissions impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

9. HAZARDS AND HAZARDOUS MATERIALS

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g. Expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Discussion

Transport, Use, Storage, and Disposal of Hazardous Materials

The proposed project would demolish the existing structures on the project site and construct, a residential subdivision that includes single-family homes, dedicated open space, and a trail. Residential land uses typically do not involve transport, use, or disposal of significant quantities of hazardous materials. Generally, small quantities of hazardous materials, such as paints, cleaning chemicals, and fertilizers, are used in residential subdivisions for routine maintenance. Therefore, a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials would not occur and potential impacts related to operational use of hazardous materials would be less than significant.

During project construction, hazardous materials such as fuel, lubricants, paint, sealants, and adhesives would be transported and used at the project site. The proposed project would be required to comply with federal, State, and local regulations regarding the transportation, use, and

disposal of hazardous materials, including preparation and implementation of an SWPPP, which requires implementation of control measures for hazardous material storage and soil stockpiles, inspections, maintenance, and training, and containment of releases to prevent runoff into existing storm collection systems or waterways. In addition, Policy HAZ-6.8 of the City's General Plan indicates that the City shall promote the safe transport of hazardous materials through Hayward by maintaining formally-designated hazardous material carrier routes to direct hazardous materials away from populated and other sensitive areas, and prohibiting the parking of vehicles transporting hazardous materials on City streets. Compliance with existing regulations and implementation of the SWPPP during construction would ensure that potential impacts associated with hazardous material use, transport, and disposal are considered less than significant.

Release of Hazardous Materials and Risk of Upset

The proposed residential subdivision would not involve storage or use of hazardous materials (except for small quantities for routine maintenance as described above) or generation of significant hazardous wastes. As such, potential significant impacts related to a foreseeable upset would not be expected.

During construction, hazardous materials such as fuel, lubricants, paint, sealants, and adhesives would be transported and used at the project site. Management of these materials at the project site would be subject to the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. Compliance with the Construction General Permit would require preparation and implementation of an SWPPP designed to reduce the risk of spills or leaks from the reaching the environment. The SWPPP would also include a Spill Response Plan to address minor spills of hazardous materials. Compliance with SWPPP requirements would ensure that potential significant hazards associated with routine transport, use, or disposal of hazardous materials during and after construction would be less than significant.

A Phase I Environmental Site Assessment[22] (ESA) was prepared for the project site. The Phase I ESA evaluated the potential for past land uses to have impacted the environmental condition of the site through the review of historical information sources (e.g., historic aerial photos and maps) and government databases that list hazardous materials release sites and facilities that handle hazardous materials.

The Phase I ESA recommended that a Phase II ESA be conducted to evaluate the potential presence of contaminated fill materials on the site that would be disturbed during construction. The Phase II ESA should include testing of the site for the presence of Naturally-Occurring Asbestos (NOA) based on the proximity of the project site to nearby parcels where the potential for NOA to be present was identified as a potential concern. If NOA is identified, project development would be required to comply with the BAAQMD's Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations. The BAAQMD would be required to approve an asbestos dust mitigation plan.

[22] ENGEO, 2016. *Phase I Environmental Site Assessment, Route 238 Bypass, Group 5, Hayward, California*. April 1.

If the Phase II ESA identifies soil and/or groundwater contamination at levels exceeding regulatory screening levels for the proposed land use (e.g., the Regional Water Board's Environmental Screening Levels [ESLs]), the Project Applicant would be required to submit it to the appropriate regulatory oversight agency (e.g., Alameda County Environmental Health Department [ACDEH], Regional Water Board, or DTSC) for review. The Phase II ESA would recommend corrective actions to address the identified contamination, including developing and implementing a Soil Management Plan (SMP) and/or a Remedial Action Plan (RAP) for the remediation of contaminated soil and/or groundwater, if required by a regulatory oversight agency. Any corrective actions would be performed under the oversight of the applicable regulatory oversight agencies, and clearance for the proposed land use would need to be obtained from the applicable regulatory oversight agencies.

Construction and /or operation of the proposed project could expose workers and/or the public to potentially contaminated soil, groundwater, and vapors associated with. ..The public and/or the environment could be affected by the release of hazardous materials from the project site into the environment, by: (1) exposing workers and/or the public to potentially contaminated soil, groundwater, and vapors during construction and/or operation of the project; or (2) exposing workers and/or the public to hazardous building materials during demolition of existing structures.

Policy HAZ-6.2 of the City's General Plan requires that environmental investigations be prepared before discretionary project approvals are issued by the City in order to ensure that the presence of hazardous materials and/or waste contamination would not have the potential to affect the environment or the health and safety of future property owners or users.

Compliance with all applicable local, State, and federal regulations and standards pertaining to the release of hazardous materials and risk of upset would ensure that impacts associated with the release of hazardous materials would be less than significant.

Emission of Hazardous Materials within 0.25 miles of a School

Harder Elementary School, located at 495 Wyeth Road, is approximately 2,800 feet southwest of the project site and California State University East Bay (CSU East Bay) is located adjacent to the project site on the east. Other schools in the vicinity of the project site include Bret Hart Middle School, Hayward High School, Moreau Catholic High School, and St. Clement Elementary School. No other schools were identified within a quarter-mile of the project site.[23] As discussed above, the potential for a hazardous materials release during construction and operation activities would be less than significant following required compliance with existing regulations. Therefore, the proposed project would result in a less-than-significant impact to existing or proposed school facilities from the emission of hazardous materials.

Hazardous Materials Site Pursuant to Government Code Section 65962.5

Government Code Section 65962.5 requires the Cal/EPA to develop, at least annually, an updated list of hazardous materials release sites known as the Cortese List. The project site was not identified on the Cortese List or other hazardous material release databases during review of regulatory

[23] Hayward, City of, 2014. *Hayward 2040 General Plan Background Report*. January.

records for the Phase I ESA. Therefore, no impacts associated with locating a project on a site included on a list of hazardous materials is expected to occur.

Aviation Hazards

The project site is not located in the vicinity of a private airstrip or within the Airport Influence Area of the Hayward Executive Airport, and therefore the project would not result in impacts related to aviation hazards.

Emergency Response or Evacuation Plan

The proposed project involves a residential subdivision on contiguous parcels and would not impair implementation of or interfere with the City of Hayward Local Hazard Mitigation Plan or the Alameda County Local Hazard Mitigation Plan. The proposed project would not impair implementation of, or interfere with, emergency response or evacuation plans because the proposed project would not alter the existing streets surrounding the project site, which could be used for emergency access or evacuation. If the City is successful in negotiating the acquisition of land from CSU East Bay for construction of the Bunker Hill road extension to Carlos Bee Boulevard, the proposed project would add this emergency response and/or evacuation route to/from the Bunker Hill neighborhood. The proposed project would involve limited short-term use of City streets for delivery of construction equipment and supplies, and commuting workers. During construction activities, all construction equipment would be stored on the project site. Therefore, potential impacts to emergency evacuation routes or emergency response plans from the proposed project are considered less than significant.

Wild Fire

The project site is located within the wildland urban interface as identified by the Hayward Fire Department.[24] In 1993, the City adopted the Hillside Design and Wildland/Urban Interface Guidelines[25] to address potential fire hazards for developments in the hills. The Guidelines include standards for street and sidewalks that allow for fire truck access, cluster home development to make efficient use of hillside space, and architectural and site design that allow for fire setbacks and environmental disaster mitigation. The Guidelines also establish two structure categories for the urban/wildland interface: Category I structures located on sites where maximum built-in fire protection measures are necessary due to nearby steep slopes for wildland fuel loading, and Category II structures located on sites within the remaining portions of the urban/wildland interface. Both Category I and II structures must meet or exceed the minimum California Fire Safe Guidelines and include sprinkler systems, double-paned windows, decks made from non-combustible materials, fire-resistant planting, and other fire safe design elements. The Fire Department designates which sites or lots should comply with the Category I or Category II building construction standards. Compliance with the City's Hillside Design and Wildland/Urban Interface Guidelines would ensure potential impacts related to wildland fires would be less than significant.

[24] Hayward, City of, 2014b, op. cit.

[25] Hayward, City of, 1993. Hillside Design and Wildland/Urban Interface Guidelines. February 16.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan impacts related to hazards and hazardous materials were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

General Plan Policies

- *Policy NR-6.15 Native Vegetation Planting. The City shall encourage private property owners to plant native or drought-tolerant vegetation in order to preserve the visual character of the area and reduce the need for toxic sprays and groundwater supplements.*

- *Policy HAZ-5.1 Wildland/Urban Interface Guidelines. The City shall maintain and implement Wildland/Urban Interface Guidelines for new development within fire hazard areas.*

- *Policy HAZ-5.2 Fire Prevention Codes. The City shall enforce fire prevention codes that require property owners to reduce wildfire hazards on their property.*

- *Policy HAZ-5.3 Defensible Space and Fuel Reduction. The City shall promote defensible space concepts to encourage property owners to remove overgrown vegetation and to reduce fuel loads on hillside properties, especially near structures and homes.*

- *Policy HAZ-6.1 Hazardous Materials Program. The City shall maintain its status as a Certified Unified Program agency and implement the City's Unified Hazardous Materials and Hazardous Waste Management Program, which includes:*

    - *Hazardous Materials Release Response Plans and Inventories (Hazardous Materials Business Plans – HBMP);*

    - *California Accidental Release Prevention (CalARP) Program;*

    - *Underground Storage Tank (UST) Program;*

    - *Above-ground Petroleum Storage Act (APSA) Program, including Spill Prevention, Control, and Countermeasure (SPCC) Plans;*

    - *Hazardous Waste Generator Program;*

    - *On-site Hazardous Waste Treatment (Tiered Permit) Program; and*

    - *California Fire Code Hazardous Material Management Plans (HMMP) and Hazardous Materials Inventory Statements (HMIS).*

- *Policy HAZ-6.2 Site Investigations. The City shall require site investigations to determine the presence of hazardous materials and/or waste contamination before discretionary project approvals are issued by the City. The City shall require appropriate measures to be taken to protect the health and safety of site users and the greater Hayward community.*

- *Policy HAZ-6.3 Permit Requirements. The City shall direct the Fire Chief (or their designee) and the Planning Director (or their designee) to evaluate all project applications that involve hazardous materials, electronic waste, medical waste, and other hazardous waste to determine appropriate permit requirements and procedures.*

- *Policy HAZ-6.7 Agency Coordination. The City shall coordinate with State, Federal, and local agencies to develop and promote best practices related to the use, storage, transportation and disposal of hazardous materials.*

- *Policy HAZ-6.8 Truck Routes. The City shall maintain designated truck routes for the transportation of hazardous materials through the City of Hayward. The City shall discourage truck routes passing through residential neighborhoods to the maximum extent feasible.*

- *Policy HQL-7.3 Home Use of Hazardous Materials. The City shall encourage and educate residents, non-profits, and businesses to implement integrated pest management principles, and reduce or discontinue the use of pesticides, herbicides, and toxic cleaning substances.*

- *Policy HQL-7.5 Proximity to Pollution Sources. The City shall avoid locating new sensitive uses such as schools, childcare centers, and senior housing, to the extent feasible, in proximity to sources of pollution, odors, or near existing businesses that handle toxic materials, Where such uses are located in proximity to sources of air pollution, odors, or toxic materials, the City shall encourage building design, construction safeguards, and technological techniques to mitigate the negative impacts of hazardous materials and/or air pollution on indoor air quality.*

- *Policy HQL-9.5 Hazards Resiliency. The City shall continue to assess and monitor risks from local environmental (e.g., flooding, earthquake) and man-made hazards and work with community groups and State and regional agencies to prepare residents, businesses, and visitors in the event of an incident.*

- *Policy HQL-9.8 Climate Adaptation in Plans. The City shall address climate adaptation in all disaster preparedness and emergency response plans.*

- *Policy M-4.5 Emergency Access. The City shall develop a roadway system that is redundant (i.e., include multiple alternative routes) to the extent feasible to ensure mobility in the event of emergencies.*

Conclusion

The GP EIR adequately evaluated the impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

10. HYDROLOGY AND WATER QUALITY

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater?	☐	☐	☐	☒
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site? i. result in substantial erosion or siltation on- or off-site; ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or iv. impede or redirect flood flows?	☐	☐	☐	☒
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Discussion

Water Quality Standards

Construction. Construction and demolition activities for the proposed project would involve disturbing, grading, and excavating soil, which could result in temporary erosion and movement of sediments into the storm drain system, particularly during precipitation events. The potential for chemical releases is present at most construction sites due to the use of paints, solvents, fuels, lubricants, and other hazardous materials associated with heavy construction equipment. Once released, these hazardous materials could be transported to nearby surface waterways in stormwater runoff, wash water, and dust control water, potentially reducing the quality of the receiving waters. The release of sediments and other pollutants during construction and demolition could adversely affect water quality in receiving waters.

The proposed project would disturb greater than 1 acre of land, and therefore would be required to obtain coverage under the Construction General Permit (State Water Board Order 2009-0009-DW).[26] On-site construction activities subject to the Construction General Permit include clearing, grading, excavation, and soil stockpiling. As stated above, State Water Resources Control Board's Construction General Permit also requires the development of an SWPPP by a Qualified SWPPP Developer. An SWPPP identifies all potential pollutants and their sources, including erosion, sediments, and construction materials and must include a list of BMPs to reduce the discharge of construction-related stormwater pollutants. An SWPPP must include a detailed description of controls to reduce pollutants and outline maintenance and inspection procedures. Typical sediment and erosion BMPs include protecting storm drain inlets, establishing and maintaining construction exits and perimeter controls to avoid tracking sediment off-site onto adjacent roadways. An SWPPP also defines proper building material staging and storage areas, paint and concrete washout areas, describes proper equipment/vehicle fueling and maintenance practices, measures to control equipment/vehicle washing and allowable non-stormwater discharges, and includes a spill prevention and response plan.

Temporary dewatering may be required during construction activities involving excavation. Dewatering effluent may have high turbidity and could contain contaminants. Turbid and/or contaminated groundwater could cause degradation of the receiving water quality if discharged directly to storm drains or surface water without treatment. The discharge of dewatering effluent would be subject to permits from the City of Hayward or the Regional Water Board, depending if the discharge were to the sanitary sewer or storm drain system, respectively. The Construction General Permit allows the discharge of dewatering effluent if the water is properly filtered or treated, using appropriate technology. If the dewatering activity is deemed by the Regional Water Board not to be covered by the Construction General Permit, then the discharger could potentially prepare a Report of Waste Discharge, and if approved by the Regional Water Board, be issued site-specific Waste Discharge Requirements (WDRs) under NPDES regulations. If it is infeasible to meet the requirements of the Construction General Permit, acquire site-specific WDRs, or meet the City of Hayward's wastewater discharge requirements, the construction contractor would be required to transport the dewatering effluent off-site for treatment and disposal.

Required compliance with State and local regulations regarding stormwater and dewatering during construction would ensure that the proposed project would result in less-than-significant impacts to water quality during construction.

Operation. Because the project would replace over 10,000 square feet of existing impervious surface area, the project would be required to comply with Provision C.3 requirements of the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (MRP).[27] The project would result in alteration of over 50 percent of the existing impervious surface of the project site, and

[26] State Water Resources Control Board Division of Water Quality, 2009. Construction General Permit Fact Sheet. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ.

[27] San Francisco Bay Regional Water Quality Control Board, 2015. San Francisco Bay Region Municipal Regional Stormwater NPDES Permit, Order No. R2-2015-0049, NPDES Permit No. CAS612008, November 19.

therefore all new and replaced impervious surfaces would require treatment under the MRP. Provision C.3 of the MRP requires implementation of low impact development (LID) source control, site design, and stormwater treatment for regulated projects. LID employs principles such as preserving and recreating natural landscape features and minimizing impervious surfaces to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes. Additionally, Policy NR-6.6 of the City's General Plan requires the City to promote stormwater management techniques that minimize surface water runoff and impervious ground surface, including requiring LID techniques.

Provision C.3.g of the MRP pertains to hydromodification management.[28] The MRP requires that regulated projects which create and/or replace over 1 acre of impervious surface and increase the amount of impervious surface compared to the existing condition include measures to address hydromodification to ensure that stormwater discharges do not cause an increase in the erosion potential of the receiving stream. Increases in runoff flow and volume must be managed so that the post-project runoff does not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The proposed project would be subject to hydromodification management requirements because the proposed project would increase the amount of impervious surface compared to the existing condition, and stormwater runoff from the project site is eventually discharged into natural creeks, which are susceptible to erosion. Hydromodification management controls may include the installation of retention/detention systems (e.g., swales, basins, ponds, or cisterns) which would reduce runoff rates and volumes.

Additionally, Policies NR-6.4, NR-6.5, and NR-6.6 of the City's General Plan requires the implementation of BMPs to minimize erosion, sedimentation, and water quality degradation resulting from the construction of new impervious surfaces. Policy PFS-5.3 of the City's General Plan requires new development projects to prepare drainage studies to assess storm runoff impacts on the local and regional storm drain and flood control system, and to develop recommended detention and drainage facilities to ensure that increased risks of flooding do not result from development and to prevent increased erosion and siltation of creek beds and banks.

Required compliance with applicable regulations and implementation of City policies, as described above, would reduce potential impacts to water quality from operation of the project to a less-than significant level.

[28] Hydromodification or hydrograph modification causes streambank erosion, channelization, increased flood flows, and other physical modifications that can adversely impact aquatic ecosystems due to increased sedimentation and reduced water quality (e.g., higher water temperatures, lower dissolved oxygen concentrations).

Deplete Groundwater Supplies

Due to site topography, dewatering during construction activities is unlikely to be required. If performed, construction-related dewatering would be temporary and limited to areas of excavation on the project site and would not substantially contribute to depletion of groundwater supplies.

Operation of the proposed project would not involve dewatering or the use of groundwater as potable water, because potable water is supplied to the project site by the City of Hayward. The project site is predominantly undeveloped, and partially covering undeveloped areas with impervious surfaces, as proposed by the project, could reduce infiltration of rainfall and runoff, which in turn could adversely affect aquifer recharge and groundwater supplies. In accordance with the requirements of Provision C.3 of the MRP, site design and treatment measures must be implemented at the project site to encourage infiltration of storm water runoff. Site design and treatment measures may include detention and retention basins, stormwater harvesting, vegetated swales and planters, and pervious pavements. A Storm Water Control Plan that specifies the types of infiltration-based site design and treatment measures to be incorporated into the project would be required by the City prior to construction. Implementation of infiltration-based site design and treatment measures, as required by the MRP and the City, would reduce potential impacts to groundwater supplies to a less-than-significant level.

Drainage Pattern and Surface Run-off

The proposed project would not alter the course of a stream or river. The proposed project has been designed to preserve the existing drainages on the project site. However, the project would alter drainage patterns by creating new landscaped areas and impermeable pavement surfaces. As discussed above, the proposed project would be required to comply with the hydromodification requirements of the MRP and Policies NR-6.6 and NR-6.8 of the City's General Plan. The Project Applicant would be required to prepare a drainage study to ensure that the changes in drainage patterns resulting from the project would not adversely impact storm drain and flood control systems or cause erosion and siltation of creek beds and banks.

Required compliance with applicable regulations and implementation of City policies, as described above, would reduce potential impacts of the project related to changes in drainage patterns to a less-than-significant level.

Flood Hazard, Tsunami, Seiche Zones

Based on the distance from the Bay and elevation of the project site, coastal hazards, such as sea level rise, seiche, tsunami, or extreme high tides, would not pose a threat of flooding for the proposed project. The project site is not located within 100-year flood hazard zones as mapped by the Federal Emergency Management Agency (FEMA);[29] however, 100-year flood hazard zones mapped by FEMA are located along Ward Creek, downstream of the project site. The project site is

[29] Federal Emergency Management Agency, 2018. Flood Map Services Center, Hayward CA. Website: msc.fema.gov/portal/search?AddressQuery=Hayward%20CA#searchresultsanchor (accessed June 19, 2019).

also not located within a dam failure inundation area.[30] Therefore, the project would not result in impacts related to flooding, inundation by tsunami, or seiche.

Conflict with Water Quality Control Plan or Sustainable Groundwater Management Plan

As discussed above, due to the size of the proposed project, construction and operation of the project would be subject to State and regional requirements related to stormwater runoff and any contaminated groundwater. Required compliance with State and local regulations regarding stormwater and dewatering during construction would ensure that the proposed project would not conflict or obstruct implementation of a water quality control plan or sustainable groundwater management plan. As a result, a less-than-significant impact would occur.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan impacts related to hydrology and water quality were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

General Plan Policies and Actions

- *Policy LU-1.8 Green Building and Landscaping Requirements. The City shall maintain and implement green building and landscaping requirements for private- and public-sector development to:*
    - *Reduce the use of energy, water, and natural resources.*
    - *Minimize the long-term maintenance and utility expenses of infrastructure, buildings, and properties.*
    - *Create healthy indoor environments to promote the health and productivity of residents, workers, and visitors.*
    - *Encourage the use of durable, sustainably-sources, and/or recycled building materials.*
    - *Reduce landfill waste by promoting practices that reduce, reuse, and recycle solid waste.*
- *Policy NR-1.12 Riparian Corridor Habitat Protection. The City shall protect creek riparian habitats by:*
    - *Requiring sufficient setbacks for new development adjacent to creek slopes,*
    - *Requiring sensitive flood control designs to minimize habitat disturbance,*

[30] Hayward, City of, 2014b, op. cit.

- *Maintaining natural and continuous creek corridor vegetation,*
- *Protecting/replanting native trees, and*
- *Protecting riparian plant communities from the adverse effects of increased stormwater runoff, sedimentation, erosion, pollution that may occur from improper development in adjacent areas.*

- *Policy LU-1.10 Infrastructure Capacities. The City shall ensure that adequate infrastructure capacities are available to accommodate planned growth throughout the City.*
- *Policy NR-6.4 Minimize Grading. The City shall minimize grading and, where appropriate, consider requiring onsite retention and settling basins.*
- *Policy NR-6.5 Erosion Control. The City shall concentrate new urban development in areas that are least susceptible to soil erosion into water bodies in order to reduce water pollution.*
- *Policy NR-6.6 Stormwater Management. The City shall promote stormwater management techniques that minimize surface water runoff and impervious ground surfaces in public and private developments, including requiring the use of Low-Impact Development (LID) techniques to best manage stormwater through conservation, onsite filtration, and water recycling.*
- *Policy NR-6.8 NPDES Permit Compliance. The City shall continue to comply with the San Francisco Bay Region National Pollutant Discharge Elimination System (NPDES) Municipal Regional Stormwater Permit.*
- *Policy NR-6.15 Native Vegetation Planting. The City shall encourage private property owners to plant native or drought-tolerant vegetation in order to preserve the visual character of the area and reduce the need for toxic sprays and groundwater supplements.*
- *Policy HAZ-2.7 Dam Failure. The City shall coordinate with agencies responsible for the maintenance of the South Reservoir Dam, the Del Valle Dam, and other small dams along Alameda Creek to ensure that dam infrastructure is maintained and enhanced to withstand potential failure during an earthquake.*
- *Policy HAZ-3.2 Development in Flood Plains. The City shall implement Federal, State, and local requirements related to new construction in flood plain areas to ensure that future flood risks to life and property are minimized.*
- *Policy HAZ-3.3 Flood Plain Management Ordinance. The City shall maintain and enforce a Flood Plain Management Ordinance to:*
  - *Promote public health, safety, and general welfare by minimizing public and private losses due to floods;*
  - *Implement the Cobey-Alquist Flood Plain Management Act, and*

- *Comply with the eligibility requirements of the National Flood Insurance Program.*

- *Policy PFS-3.9 High Quality Service Provision. The City shall provide water service that meets or exceeds State and Federal drinking water standards.*

- *Policy PFS-4.1 Sewer Collection System Master Plan. The City shall maintain and implement the Sewer Collection System Master Plan.*

- *Policy PFS-4.2 Water Pollution Control Facility Master Plan. The City shall maintain and implement the Water Pollution Control Facility Master Plan.*

- *Policy PFS-5.1 Accommodate New and Existing Development. The City shall work with the Alameda County Flood Control and Water Conservation District to expand and maintain major stormwater drainage facilities to accommodate the needs of existing and planned development.*

- *Policy PFS-5.3 Watershed Drainage Plans. The City shall require developers of proposed large development projects to prepare watershed drainage plans. Drainage plans shall define needed drainage improvements per City standards, estimate construction costs for these improvements, and be implemented through the Stormwater Management and Urban Runoff Control Program and Alameda Countywide Clean Water Program.*

- *Policy PFS-5.4 Green Stormwater Infrastructure. The City shall encourage "green infrastructure" design and Low Impact Development (LID) techniques for stormwater facilities (i.e., using vegetation and soil to manage stormwater) to achieve multiple benefits (e.g., preserving and creating open space, improving runoff water quality).*

- *Policy PFS-5.6 Grading Projects. The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage.*

- *Policy PFS-5.7 Diversion. The City shall require new development to be designed to prevent the diversion of stormwater onto neighboring parcels.*

- *Policy PFS-5.8 Enhance Recreation and Habitat. The City shall require new stormwater drainage facilities to be designed to enhance recreation and habitat and shall work with HARD to integrate such facilities into existing parks and open space features.*

- *Policy HQL-7.3 Home Use of Hazardous Materials. The City shall encourage and educate residents, non-profits, and businesses to implement integrated pest management principles, and reduce or discontinue the use of pesticides, herbicides, and toxic cleaning substances.*

Conclusion

The GP EIR adequately evaluated the impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

11. LAND USE AND PLANNING

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Discussion

Divide an Established Community

Projects that have the potential to physically divide an established community include projects such as new freeways and highways, major arterials, streets, and railroad lines. The proposed project would result in the development of vacant parcels within the project site. The proposed project would not remove any public access, including pedestrian and bicycle access. The proposed project would not result in a barrier within the project site that would impede access, nor would it result in a removal of a major means of access. Therefore, the proposed project would not inhibit public connectivity, and would not physically divide an established community. Therefore, this impact would not result in new or more significant impacts beyond those analyzed in the GP EIR.

Conformance with Land Use Plans

The General Plan Land Use Map designates the project site as Suburban Density Residential (1.0 to 4.3 dwelling units per net acre) with a natural drainage designated as Parks and Recreation at the southern end of the site. The site is within the Hayward Foothills Trail Special Design District and is zoned as Residential Natural Preserve (minimum lot size 20,000 square feet, up to 2 dwelling units per acre), with the drainage zoned as Open Space. The purpose of the Hayward Foothills Trail Special Design District is to ensure development of a continuous trail along the 238 Bypass Land Use Study properties.

The proposed project is consistent with the type and intensity of development allowed within the General Plan Land Use Designation. Additionally, the proposed project would comply with the City's Hillside Design and Urban/Wildland Interface Guidelines, as well as, General Plan policies, which promote grading, landscaping, street design, and clustering of development in hillside areas to protect aesthetics, natural topography and views of surrounding open space. The proposed project would not require changes to General Plan land use designations; however, minor revisions to the Zoning Ordinance that are consistent with the General Plan may be needed to accommodate the proposed development intensity (e.g. minimum lot sizes), distribution, and layout within the project site. The City of Hayward Planning Commission and City of Hayward City Council would consider approving these minor zoning revisions as part of their review of the proposed project. Therefore,

the proposed project would not result in new or more severe impacts related to conformity with land use plans beyond those already analyzed in the GP EIR.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan impacts related to land use and planning were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

- *Policy LU-1.3 Growth and Infill Development. The City shall direct local population and employment growth toward infill development sites within the City, especially the catalyst and opportunity sites identified in the Economic Development Strategic Plan.*

- *Policy LU-1.7 Design Guidelines. The City shall maintain and implement commercial, residential, industrial, and hillside design guidelines to ensure that future development complies with General Plan goals and policies.*

- *Policy LU-2.14 University-Oriented Uses. The City shall support the development of university-oriented uses, including student and faculty housing, satellite campuses and university-oriented retail and service uses, within the City's Priority Development Areas (excluding the Cannery Transit Neighborhood).*

- *Policy LU-3.1 Complete Neighborhoods. The City shall promote efforts to make neighborhoods more complete by encouraging the development of a mix of complementary uses and amenities that meet the daily needs of residents. Such uses and amenities may include parks, community centers, religious institutions, daycare centers, libraries, schools, community gardens, and neighborhood commercial and mixed-use developments.*

- *Policy LU-3.6 Residential Design Strategies. The City shall encourage residential developments to incorporate design features that encourage walking within neighborhoods by:*

    - *Creating a highly connected block and street network.*

    - *Designing new streets with wide sidewalks, planting strips, street trees, and pedestrian-scaled lighting.*

    - *Orienting homes, townhomes, and apartment and condominium buildings toward streets or public spaces.*

    - *Locating garages for homes and townhomes along rear alleys (if available) or behind or to the side of the front façade of the home.*

    - *Locating parking facilities below or behind apartment and condominium buildings.*

- *Enhancing the front façade of homes, townhomes, and apartment and condominium buildings with porches, stoops, balconies, and/or front patios.*
- *Ensuring that windows are provided on facades that front streets or public spaces.*

- *Policy LU-3.6 Residential Design Strategies. The City shall encourage residential developments to incorporate design features that encourage walking within neighborhoods by:*
  - *Creating a highly connected block and street network.*
  - *Designing new streets with wide sidewalks, planting strips, street trees, and pedestrian-scaled lighting.*
  - *Orienting homes, townhomes, and apartment and condominium buildings toward streets or public spaces.*
  - *Locating garages for homes and townhomes along rear alleys (if available) or behind or to the side of the front façade of the home.*
  - *Locating parking facilities below or behind apartment and condominium buildings.*
  - *Enhancing the front façade of homes, townhomes, and apartment and condominium buildings with porches, stoops, balconies, and/or front patios.*
  - *Ensuring that windows are provided on facades that front streets or public spaces.*

- *Policy LU-7.2 Ridgelines. The City shall discourage the placement of homes and structures near ridgelines to maintain natural open space and preserve views. If ridgeline development cannot be avoided, the City shall require grading, building, and landscaping designs that mitigate visual impacts and blend development with the natural features of the hillside.*

- *Policy LU-7.3 Hillside Street Layouts. The City shall require curvilinear street patterns in hillside areas to respect natural topography and minimize site grading.*

- *Policy LU-7.4 Hillside Street Design. The City shall encourage narrow streets in hillside areas. Streets should be designed with soft shoulders and drainage swales (rather than sidewalks with curb and gutters) to maintain the rural character of hillside areas and minimize grading impacts. The City shall prohibit parking along narrow street shoulders to provide space for residents to walk and ride horses.*

- *Policy LU-7.5 Clustered Developments. The City shall encourage the clustering of residential units on hillsides to preserve sensitive habitats and scenic resources as natural open space. Sensitive areas and scenic resources include woodlands, streams and riparian corridors, mature trees, ridgelines, and rock outcroppings.*

- *Policy NR-6.8 NPDES Permit Compliance. The City shall continue to comply with the San Francisco Bay Region National Pollutant Discharge Elimination System (NPDES) Municipal Regional Stormwater Permit.*

- *Policy NR-8.1 Hillside Residential Design Standards. The City shall regulate the design of streets, sidewalks, cluster home development, architecture, site design, grading, landscaping, utilities, and signage in hillside areas to protect aesthetics, natural topography, and views of surrounding open space through the continued Hillside Design and Urban/Wildland Interface Guidelines.*

- *Policy NR-8.2 Hillside Site Preparation Techniques. The City shall require low-impact site grading, soils, repair, foundation design, and other construction methods to be used on new residential structures and roadways above 250 feet in elevation to protect aesthetics, natural topography, and views of hillsides and surrounding open space.*

- *Policy M-1.3 Multimodal Connections. The City shall implement a multimodal system that connects residents to activity centers throughout the City, such as commercial centers and corridors, employment centers, transit stops/stations, the airport, schools, parks, recreation area, and other attractions.*

- *Policy M-1.4 Multimodal System Extensions. The City shall require all new development that proposes or is required to construct or extend streets to develop a transportation network that complements and contributes to the City's multimodal system, maximizes connections, and minimizes barriers to connectivity.*

- *Policy M-1.6 Bicycling, Walking and Transit Amenities. The City shall encourage the development of facilities and services (e.g., secure term bicycle parking, street lights, street furniture and trees, transit stop benches and shelters, and street sweeping of bike lanes) that enable bicycling, walking, and transit use to become more widely used modes of transportation and recreation.*

- *Policy M-1.7 Eliminate Gaps. The City shall strive to create a more comprehensive multimodal transportation system by eliminating gaps in roadways, bikeways, and pedestrian networks, increasing transit access in underserved areas, and removing natural and man-made barriers to accessibility and connectivity.*

- *Policy M-3.6 Context Sensitive. The City shall consider the land use and urban design context of adjacent properties in both residential and business districts as well as urban, suburban, and rural areas when designing complete streets.*

- *Policy M-3.8 Connections with New Development. The City shall ensure that new commercial and residential development projects provide frequent and direct connections to the nearest bikeways, pedestrian ways and transit facilities.*

- *Policy M-5.2 Pedestrian System. The City shall strive to create and maintain a continuous system of connected sidewalks, pedestrian paths, creekside walks, and utility greenways through the*

City that facilitates convenient and safe pedestrian travel, connects neighborhoods and centers, and is free of major impediments and obstacles.

- *Policy M-6.1 Bikeway System. The City shall maintain and implement the Hayward Bicycle Master Plan.*
- *Policy M-6.5 Connections between New Development and Bikeways. The City shall ensure that new commercial and residential development projects provide frequent and direct connections to the nearest bikeways, and do not interfere with existing and proposed bicycle facilities.*
- *Policy HAZ-2.7 Dam Failure. The City shall coordinate with agencies responsible for the maintenance of the South Reservoir Dam, the Del Valle Dam, and other small dams along Alameda Creek to ensure that dam infrastructure is maintained and enhanced to withstand potential failure during an earthquake.*
- *Policy HAZ-3.3 Flood Plain Management Ordinance. The City shall maintain and enforce a Flood Plain Management Ordinance to:*
    - *Promote public health, safety, and general welfare by minimizing public and private losses due to floods;*
    - *Implement the Cobey-Alquist Flood Plain Management Act, and*
    - *Comply with the eligibility requirements of the National Flood Insurance Program.*
- *PFS-1.3 Public Facility Master Plans. The City shall maintain and implement public facility master plans to ensure compliance with appropriate regional, State, and Federal laws; the use of modern and cost-effective technologies and best management practices; and compatibility with current land use policy.*
- *PFS-3.2 Urban Water Management Plan. The City shall maintain and implement the Urban Water Management Plan, including water conservation strategies and programs, as required by the Urban Water Management Planning Act.*
- *PFS-3.14 Water Conservation Standards. The City shall comply with provisions of the State's 20x2020 Water Conservation Plan (California Water Resources Control Board, 2010).*
- *Policy PFS-5.1 Accommodate New and Existing Development. The City shall work with the Alameda County Flood Control and Water Conservation District to expand and maintain major stormwater drainage facilities to accommodate the needs of existing and planned development.*
- *Policy PFS-5.3 Watershed Drainage Plans. The City shall require developers of proposed large development projects to prepare watershed drainage plans. Drainage plans shall define needed drainage improvements per City standards, estimate construction costs for these improvements,*

and be implemented through the Stormwater Management and Urban Runoff Control Program and Alameda Countywide Clean Water Program.

- *Policy PFS-5.8 Enhance Recreation and Habitat. The City shall require new stormwater drainage facilities to be designed to enhance recreation and habitat and shall work with HARD to integrate such facilities into existing parks and open space features.*

- *Policy PFS-7.3 Landfill Capacity. The City shall continue to coordinate with the Alameda County Waste Management Authority to ensure adequate landfill capacity in the region of the duration of the contract with its landfill franchise.*

- *Policy PFS-7.4 Solid Waste Diversion. The City shall comply with State goals regarding diversion from landfill, and strive to comply with the provisions approved by the Alameda County Waste Management Authority.*

Conclusion

The GP EIR adequately evaluated the potential land use impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

12. MINERAL RESOURCES

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion

Mineral resources that exist or existed within the City limits include stone, limestone, clay, fire clay, halite, and salt. The La Vista Quarry, located to the east of Mission Boulevard and Tennyson Road, is designated as a mineral resource site of regional significance; however, all operations at the La Vista Quarry site have been terminated due to depletion of aggregate resources. No other significant mineral resources are located within the City.[31] As such, implementation of the proposed project would have no impacts on mineral resources.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan, impacts related to mineral resources were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

- *Policy NR-5.1 Mineral Resource Protection. The City shall protect mineral resources in undeveloped areas that have been classified by the State Mining and Geology Board as having statewide or regional significance for possible future extraction by limiting new residential or urban uses that would be incompatible with mining and mineral extraction operations.*

Conclusion

The GP EIR adequately evaluated the mineral resource impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

[31] Hayward, City of, 2014b, op. cit.

13. NOISE

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c. For a project located within the vicinity of a private airstrip an airport land use plan or, where such a plan has not been adopted, within 2 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?	☐	☐	☐	☒

Discussion

The predominant sources of noise include traffic noise from major roadways, freight and passenger trains, and aircraft. Noise generated by industrial facilities and other stationary sources contribute to the ambient noise levels in their general area.[32] Table 5 summarizes the modeled existing traffic noise levels on roadway segments that are in close proximity to Parcel Group 5. The information in Table 5 is summarized from Table 9-11 in the Hayward 2040 General Plan Background Report. The segment of Mission Boulevard from Carlos Bee Boulevard to Harder Road is in close proximity to Parcel Group 5. Existing noise levels along this stretch of roadway are 72 dB from 50 feet from the roadway centerline. The segment of Carlos Bee Boulevard from Mission Boulevard to CSU East Bay/Hayward Boulevard runs along the northern side of Parcel Group 5.

Table 5: Summary of Modeled Existing Traffic Noise Levels of Roadways Adjacent to Parcel Group 5

Roadway Segment	Location	dB at 50 feet from Roadway Centerline	Feet from Roadway Centerline (Distance to Noise Contours)			
			70 dBA	65 dBA	60 dBA	55 dBA
Mission Boulevard	Carlos Bee Boulevard to Harder Road	72	74	234	739	2,337
Carlos Bee Boulevard	Mission Boulevard to CSU East Bay/Hayward Boulevard	67	25	80	254	804

Source: *Hayward 2040 General Plan Background Report* (2014).

[32] Hayward, City of, 2014b, op. cit.

As shown in Table 5, existing uses along Mission Boulevard experience relatively high levels of ambient noise due to heavy vehicular traffic.

Certain land uses are considered more sensitive to noise than others. Examples of these include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. Parcel Group 5 is surrounded by residential and university uses.

The Hayward Executive Airport, located in the northwestern portion of the City, also generates noise from flight operations. However, the parcel group is located outside of the Hayward Executive Airport influence area.[33]

Construction-Period Impacts

The Hayward Municipal Code limits construction activities to between the hours of 7:00 a.m. and 7:00 p.m. on Monday through Saturday and between the hours of 10:00 a.m. and 6:00 p.m. on Sundays and holidays. In addition, the Hayward Municipal Code limits noise levels generated by an individual device or piece of equipment to no more than 83 dBA at a distance of 25 feet from the source and the noise level at any point outside of the property plane[34] shall not exceed 86 dBA.

The GP EIR determined that implementation of projects under the General Plan would involve construction that would result in temporary noise generated primarily from the use of heavy-duty construction equipment. The GP EIR identified that construction activities associated with future planned development could include site preparation (e.g., excavation, grading), laying of concrete foundations, paving, equipment installation, finishing, and cleanup. These activities typically involve the use of noise-generating equipment such as cranes, excavators, dozers, graders, dump trucks, generators, backhoes, compactors, and loaders.

As discussed in the GP EIR, with regard to construction noise, the site preparation phase typically results in the most noise generated from the use of heavy-duty equipment such as excavators, graders, dozers, loaders, and trucks. Based on typical equipment noise levels and accounting for typical usage factors of individual pieces of equipment associated with a typical site preparation phase of construction, the GP EIR determined that construction noise could result in noise levels of up to 93 dB L_{eq} and 97 dB L_{max} at 25 feet from a typical construction site, which would exceed the limits allowed by the adopted Municipal Code.

The GP EIR identified Mitigation 15-1, which would limit construction activities to the less sensitive times of the day, require site-specific noise studies to reduce potential impacts, and preparation and adoption of a Construction Noise Control Ordinance that would apply to all construction projects, including discretionary projects. With adoption of the General Plan Policies and implementation program, the GP EIR concluded that exposure of sensitive receptors located near construction activities to excessive noise levels would be avoided or reduced to a less-than significant level.

---

33 Alameda County Community Development Agency, 2012. *Hayward Executive Airport - Airport Land Use Compatibility Plan.*

34 According to the City of Hayward Municipal Code, "property plane" means a vertical plane including the property line, which determines the property boundaries in space.

Parcel Group 5 is primarily surrounded by low-density residential uses to the west and southwest. Several independently owned parcels are located within and adjacent to this parcel group. CSU East Bay sports fields are located east of the site, and multifamily residential uses are located north of the site, across Carlos Bee Boulevard.

The Hayward Municipal Code also limits noise levels generated by an individual device or piece of equipment to no more than 83 dBA at a distance of 25 feet from the source and the noise level at any point outside of the property plane shall not exceed 86 dBA. The project's construction noise levels could result in an exceedance of the City's allowable construction noise levels from construction equipment and could result in a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. Consistent with Mitigation 15-1 identified in the GP EIR, and General Plan Policies HAZ-8.17, *Community Noise Control Ordinance,* HAZ-8.20, *Construction Noise Study,* HAZ-8.21, *Construction and Maintenance Noise Limits,* and HAZ-8.24, *Construction Noise Control Ordinance,* the City will require a noise impact assessment for the proposed project, which will determine construction noise impacts, will limit the hours of construction to less sensitive hours of the day, and will enforce the Construction Noise Control Ordinance to minimize noise impacts associated with construction. In compliance with these policies and Mitigation 15-1, the following Standard Condition of Approval for project construction would be implemented to ensure potential construction period noise impacts for the indicated sensitive receptors would be less than significant.

- The project contractor shall implement the following best management practice measures during construction of the project:
    - Equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
    - Place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the active project site.
    - Locate equipment staging in areas that would create the greatest possible distance between construction-related noise sources and noise-sensitive receptors nearest the active project site during all project construction.
    - Construction haul trucks and materials delivery traffic shall avoid residential areas whenever feasible.
    - Prohibit extended idling time of internal combustion engines.
    - Ensure simultaneous operation of multiple pieces of construction equipment would not occur near noise-sensitive receptors. The construction contractor shall limit the use of construction equipment within 20 feet of noise-sensitive receptors to one piece of equipment at a time.

- Ensure that all general construction related activities are restricted to between the hours of 7:00 a.m. and 7:00 p.m. on Monday through Saturday and between the hours of 10:00 a.m. and 6:00 p.m. on Sundays and holidays.

- Temporary noise control blanket barriers shall be installed in a manner to shield adjacent land uses

- All noise-sensitive receptors located within 500 feet of the project site shall be sent a notice regarding the construction schedule. A sign legible at a distance of 50 feet shall also be posted at the project site. All notices and the signs shall indicate the dates and durations of construction activities, as well as provide a telephone number for a "noise disturbance coordinator."

- Designate a "disturbance coordinator" at the City of Hayward who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g., starting too early, bad muffler) and would determine and implement reasonable measures warranted to correct the problem, and ensure noise levels do not exceed noise ordinance standards.

Implementation of the above best management practices would limit construction activities to the less noise-sensitive periods of the day and would reduce construction impacts to the extent feasible. With implementation of this Standard Condition of Approval, the proposed project would not create impacts related to construction noise more severe than impacts identified in the GP EIR.

Vibration Impacts

The GP EIR determined that construction activities due to implementation of the General Plan could result in the temporary ground vibration from the use of heavy-duty construction equipment as well as long-term exposure to ground vibration from sources such as trains, busses, and the Bay Area Rapid Transit (BART). The GP EIR also indicated that the General Plan contains policies that require construction activities located in close proximity to existing sensitive land uses, as well as new development projects located in close proximity to vibration noise sources, to conduct vibration noise studies. Noise studies would determine vibration impacts, and the City would require all feasible mitigation to be implemented to ensure that no damage or disturbance to structures or sensitive receptors would occur. Therefore, the GP EIR determined that new development would not be exposed to excessive levels of vibration and this impact would be less than significant.

Typical sources of groundborne vibration are construction activities (e.g., pavement breaking and operating heavy-duty earthmoving equipment), and occasional traffic on rough roads. In general, groundborne vibration from standard construction practices is only a potential issue when within 25 feet of sensitive uses. Groundborne vibration levels from construction activities very rarely reach levels that can damage structures; however, these levels are perceptible near the active construc-tion site. With the exception of old buildings built prior to the 1950s or buildings of historic significance, potential structural damage from heavy construction activities rarely occurs. When roadways are smooth, vibration from traffic (even heavy trucks) is rarely perceptible.

The proposed project is not located within close proximity to major vibration sources (e.g., railroads, freeways, BART lines). In addition, the streets surrounding the project area are paved, smooth, and unlikely to cause significant groundborne vibration. In addition, the rubber tires and suspension systems of buses and other on-road vehicles make it unusual for on-road vehicles to cause groundborne noise or vibration problems. It is, therefore, assumed that no such vehicular vibration impacts would occur and, therefore, no vibration impact analysis of on-road vehicles is necessary. Therefore, once constructed, the proposed project would not contain uses that would generate groundborne vibration. This impact would be less than significant.

Construction Vibration. Construction of the project could result in the generation of groundborne vibration. This construction vibration impact analysis discusses the level of human annoyance using vibration levels in VdB and will assess the potential for building damages using vibration levels in PPV (in/sec) because vibration levels calculated in RMS are best for characterizing human response to building vibration, while vibration level in PPV is best used to characterize potential for damage. The Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment guidelines indicate that a vibration level up to 102 VdB (an equivalent to 0.5 in/sec in PPV) is considered safe for buildings consisting of reinforced concrete, steel, or timber (no plaster), and would not result in any construction vibration damage. For a non-engineered timber and masonry building, the construction vibration damage criterion is 94 VdB (0.2 in/sec in PPV).

Table 6 shows the PPV and VdB values at 25 feet from a construction vibration source. As shown in Table 6, bulldozers and other heavy-tracked construction equipment (except for pile drivers and vibratory rollers) generate approximately 87 VdB of groundborne vibration when measured at 25 feet, based on the Transit Noise and Vibration Impact Assessment. At this level, groundborne vibration has the potential to result in annoyance to residents and workers, but would not cause any damage to the buildings.

Table 6: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 feet	
	PPV (in/sec)	L_V (VdB)[a]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Sources: *Transit Noise and Vibration Impact Assessment* (FTA 2018).

[a] RMS vibration velocity in decibels (VdB) is 1 µin/sec.

µin/sec = micro-inches per second
FTA = Federal Transit Administration
in/sec = inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

Construction vibration, similar to vibration from other sources, would not have any significant effects on outdoor activities (e.g., those outside of residential buildings in the project vicinity). Outdoor site preparation for the proposed project is expected to include the use of bulldozers and loaded trucks. The greatest levels of vibration are anticipated to occur during the site preparation phase. All other phases are expected to result in lower vibration levels. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project boundary (assuming the construction equipment would be used at or near the project boundary) because vibration impacts occur normally within the buildings. The formula for vibration transmission is provided below.

$$L_v dB\ (D) = L_v dB\ (25\ feet) - 30\ Log\ (D/25)$$
$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

As identified above, Parcel Group 5 is primarily surrounded by low-density residential uses to the west and southwest. Several independently owned parcels are located within and adjacent to this parcel group. CSU East Bay sports fields are located east of the site, and multifamily residential uses are located north of the site, across Carlos Bee Boulevard. Based on distance attenuation, groundborne vibration levels associated with heavy construction equipment would exceed the FTA threshold of 94 VdB (0.2 in/sec PPV) for building damage when heavy construction equipment is used within 15 feet of existing structures.

Consistent with General Plan Policy HAZ-8.22, *Vibration Impact Assessment,* the City will require a vibration impact assessment for the proposed project, which will determine vibration impacts. Under this policy, the City would require all measures to reduce impacts associated with vibration noise and vibration damage to buildings, if deemed necessary. In compliance with General Plan Policy HAZ-8.22, as a Standard Condition of Approval for the proposed project, the City will require that the use of heavy construction equipment within 15 feet of existing structures be prohibited. With implementation of this Standard Condition of Approval, potential construction-related vibration impacts would not occur and therefore would not result in a new or worsening impact than those identified in the GP EIR.

Implementation of the Standard Condition of Approval described above would ensure that construction vibration levels would be below the FTA threshold of 94 VdB (0.2 in/sec PPV) for building damage. Although construction vibration levels at the adjacent sensitive receptors would have the potential to result in annoyance, these vibration levels would no longer occur once construction of the project is completed. Therefore, impacts associated with construction vibration would be considered less than significant. With implementation of Standard Conditions of Approval, the proposed project would not create impacts related to construction vibration more severe than impacts identified in the GP EIR.

Traffic Noise Impacts

As identified in the GP EIR, future planned development with implementation of the General Plan could be exposed to existing community noise as well as increases in traffic noise due to anticipated traffic increases on transportation networks within the Planning Area. In addition, existing develop-

ment within the Planning Area may also be exposed to increases in traffic noise as a result of the General Plan.

The GP EIR modeled existing and future traffic noise levels throughout the City to determine the anticipated traffic noise levels along major roadways. Based on the modeling, future projected traffic volumes on modeled roadways would result in some level of traffic noise increase in most cases (in some cases traffic-related noise decreases slightly). The GP EIR identified increases in traffic noise that ranges from 3 dB up to an approximate 15 dB increase. Based on human perception of noise increase, 3 decibels is perceived as barely noticeable. Thus, with regard to traffic noise specifically, a noticeable increase in noise (i.e., 3 dB or greater), for the purposes of this analysis, would be considered a substantial increase in noise.

The GP EIR identified Mitigation 15-2, which requires all new development to comply with the City's noise standards, noise mitigation procedures, and sensitive land use siting policies. Mitigation 15-2 would require new projects to evaluate noise exposure and provide mitigation measures to reduce noise exposure at sensitive land uses and meet noise standards for the specific project type. Therefore, Mitigation 15-2 requires project-level noise studies to comply with adopted noise standards to ensure that individuals are not exposed to excessive noise levels.

Implementation of the proposed project would result in new daily trips on local roadways in the project site vicinity. As indicated above, a characteristic of sound is that a doubling of a noise source is required in order to result in a perceptible (3 dBA or greater) increase in the resulting noise level. The proposed project would generate approximately 866 average daily trips. Based on the Hayward 2040 General Plan Background Report, the adjacent Carlos Bee Boulevard carries approximately 16,100 average daily trips. Project trips would represent a small increase in noise level, up to approximately 0.2 dBA CNEL based on the following equation:

$$Change\ in\ (dBA) = 10 * log_{10}\left(\frac{Current\ Volume}{Future\ Volume}\right)$$

Project daily trips would not result in a perceptible noise increase along any roadway segment in the project vicinity and therefore, would be less than significant. Therefore, the proposed project would not create impacts related to traffic noise more severe than impacts identified in the GP EIR.

Stationary Noise Impacts

Stationary and area sources include landscape and building maintenance activities, stationary mechanical equipment (e.g., pumps, generators, heating, ventilation, and air conditioning [HVAC] units), garbage collection activities, commercial and industrial activities, and other stationary and area sources such as people's voices, amplified music, and public address systems.

As discussed in the GP EIR, adoption of the General Plan would include policies that require project-level noise studies to be conducted for projects prone to high noise exposure. The noise studies would evaluate noise standard compliance of the project as well as provide mitigation measures to reduce noise exposure and meet City noise goals, policies, and standards. Based on the type of

development that would occur with implementation of the proposed General Plan (e.g., mostly residential and commercial), it is anticipated that stationary sources would be generally minor (e.g., HVAC units, loading docks, yard maintenance equipment) and would be able to meet adopted noise standards and policies with implementation of feasible mitigation, as recommended by project-level studies. Therefore, the GP EIR determined that additional stationary sources that result from implementation of the General Plan would comply with all City noise standards, and future or existing sensitive receptors would not be exposed to excessive noise levels from these types of sources.

Implementation of the proposed project would generate minimal onsite stationary noise sources, primarily from mechanical equipment, including HVAC equipment, as HVAC equipment is typically the primary noise source associated with residential uses. HVAC equipment is often mounted on rooftops, located on the ground, or located within mechanical rooms. The noise sources could take the form of fans, pumps, air compressors, chillers, or cooling towers. HVAC operations would be required to meet all noise standards.

Precise details of HVAC equipment, including future location and sizing, are unknown at this time; therefore, for purposes of this analysis, 75 dBA at 3 feet was assumed to represent HVAC-related noise.[35] As identified above, Parcel Group 5 is primarily surrounded by low-density residential uses to the west and southwest. Several independently owned parcels are located within and adjacent to this parcel group. CSU East Bay sports fields are located east of the site, and multifamily residential uses are located north of the site, across Carlos Bee Boulevard. This analysis assumes that the closest existing sensitive receptors would be located approximately 20 feet from proposed new residences. Adjusted for distance to the nearest off-site sensitive receptors, the off-site residences would be exposed to a noise level of 59 dBA L_{max} generated by HVAC equipment. It is assumed that, as a worst-case scenario, HVAC equipment would operate continuously through the day, evening, and night, however this noise level would not exceed the City's noise level standards for residential land uses. The proposed project could also generate noise associated with landscaping and garbage collection activities; however, these noise levels would be required to comply with the Municipal Code. Therefore, the project would not expose persons to noise levels in excess of noise standards and noise impacts would be less than significant. Therefore, the proposed project would not create impacts related to stationary noise sources more severe than impacts identified in the GP EIR.

Land Use Compatibility

The City sets forth normally acceptable noise level standards for exterior noise and land use compatibility and interior noise exposure of new development. The normally acceptable exterior noise level for single-family residential land uses is up to 60 dBA L_{dn}. The normally acceptable interior noise level for residential units is 45 dBA L_{dn}. The noise environment at Parcel Group 5 is dominated by vehicle traffic on Carlos Bee Boulevard and Mission Boulevard. The traffic noise modeling presented in Table 5 indicates that traffic noise level would be approximately 72 dBA L_{dn} at 50 feet from Mission Boulevard and approximately 67 dBA L_{max} at 50 feet from Carlos Bee Boulevard. Parcel Group 5 is located approximately 150 feet south of Carlos Bee Boulevard and over 1,000 feet east of Mission Boulevard. Therefore, based on distance attenuation, the closest proposed residence would

35 Trane, 2002. *Sound Data and Application Guide for the New and Quieter Air-Cooled Series R Chiller*.

be subject to traffic noise levels of approximately 57 dBA L_{dn}. Based on the City's noise compatibility standards, this noise level is considered normally acceptable for single-family residential land uses, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements. Therefore, the proposed project would meet the City's noise compatibility standards for single-family residential land uses. Therefore, the proposed project would meet the City's exterior noise compatibility standards for single-family residential land uses and would be considered to have an acceptable exterior noise level for the primary open space areas for the residences. In addition, based on standard exterior to interior noise attenuation rates, with windows closed, the interior noise level of 45 dBA L_{dn} would be met. Therefore, this impact would be less than significant. Therefore, the proposed project would not create impacts related to noise and land use compatibility more severe than impacts identified in the GP EIR.

Aircraft Noise Source Impacts

The Hayward Executive Airport, located in the northwestern portion of the City, also generates noise from flight operations. However, the parcel group is located outside of the Hayward Executive Airport influence area.[36] Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels due to the proximity of a public or public use airport. This impact would be less than significant. Therefore, the proposed project would not create impacts related to aircraft noise more severe than impacts identified in the GP EIR.

Applicable Mitigation

Mitigation 15-1. The proposed General Plan includes Goal HAZ-8; Policies HAZ-8.17, HAZ-8.20, HAZ-8.21, and HAZ-8.24; and Implementation Program HAZ 7, which establish the overall goal and intentions of the City with regards to construction-related noise. Policy HAZ-8.17 refers to a community noise control ordinance for the purposes of regulating community noise levels. The City has adopted Section 4-1.03.4 of the Municipal Code (Construction and Alteration of Structures; Landscaping Activities), which states that individual devices/pieces of construction equipment are not to exceed 83 dB at a distance of 25 feet from the source and 86 dB at any point of the property plane Monday through Saturday from 7:00 AM to 7:00 PM and Sundays from 10:00 AM to 6:00 PM, "unless otherwise provided pursuant to a duly-issued permit or a condition of approval." Thus, while the code establishes specific standards to reduce construction noise from typical construction activities, it may not apply to all development projects requiring discretionary approval. However, Policy HAZ-8.24 establishes the City's intent to develop specific construction noise standards, and Implementation Program HAZ-7 would result in the preparation and adoption of a Construction Noise Control Ordinance that would apply to all construction projects, including discretionary projects.

Policy HAZ-8.20 establishes that a site-specific noise study may be required by the City for discretionary projects requiring land use entitlements. In addition, Policy HAZ-8.21 establishes limits on construction noise-generating activities to the less sensitive times of the day, when people are less likely to be disturbed.

[36] Alameda County Community Development Agency, 2012, op. cit.

Adoption of these proposed General Plan policies and implementation program would ensure that exposure of sensitive receptors located near construction activities to excessive noise levels would be avoided or reduced to a ***less-than significant level.***

Mitigation 15-2. The implementation of the proposed policies and standards included in Tables 15.5 and 15.6 above would require all new development to comply with the City's noise standards, noise mitigation procedures, and sensitive land use siting policies. The proposed policies would require new projects to evaluate noise exposure and provide mitigation measures, if applicable, to reduce noise exposure at sensitive land uses and meet noise standards for the specific project type. Therefore, conducting project-level noise studies to comply with adopted noise standards would ensure that individuals are not exposed to excessive noise levels.

Although adoption of the proposed policies would ensure that new development would comply with adopted noise standards and, therefore, would not expose new receptors to excessive noise levels, the proposed General Plan would still result in increases in traffic-related noise (i.e., increases of 3 or more dB and up to 15 dB in some areas of the City). As a result, project-generated increases in noise would result in a substantial permanent increase in community noise levels that could adversely affect existing receptors.

Much of the City is already built out, and anticipated growth under the proposed General Plan is expected to occur as infill, primarily in PDAs located near transit stations, in the City's downtown, and along major corridors. The ability of the City to reduce adverse effects of increased traffic noise on existing receptors by either constructing sound barriers or walls, or requiring new development to construct these sound walls, is constrained by a number of factors. First, many existing homes and other sensitive uses front on major traffic corridors from which the increased traffic noise is generated, and construction of new sound walls would be infeasible or incompatible with these developed uses. Second, the proposed General Plan contains Policy LU-4.10 (New Sound Walls and Fences), which discourages the construction of new sound walls and fences along corridors, and encourages new developments to front corridors whenever feasible. There are no additional, feasible measures or policies that would reduce this impact. Therefore, this impact would remain ***significant and unavoidable.***

Applicable Policies

General Plan Policies

- *Policy HAZ-8.1: Locating Noise Sensitive Uses. The City shall strive to locate noise sensitive uses, (e.g., residences, schools, hospitals, libraries, religious institutions, and convalescent homes) away from major sources of noise.*

- *Policy HAZ-8.2: Noise Study and Mitigation. The City shall require development projects in areas where they may be exposed to major noise sources (e.g., roadways, rail lines, and aircraft or other non-transportation noise sources) to conduct a project level environmental noise analysis. The noise analysis shall determine noise exposure and noise standard compatibility with respect to the noise standards identified in Table HAZ-1 and shall incorporate noise mitigation when*

located in noise environments that are not compatible with the proposed uses of the project. The City shall use Table HAZ-1 (Exterior Noise Standards for Various Land Uses) and Figure HAZ-1 (Future Noise Contour Maps) to determine potential noise exposure impacts, noise compatibility thresholds, and the need for mitigation. The City shall determine mitigation measures based on project-specific noise studies, and may include sound barriers, building setbacks, the use of closed windows and the installation of heating and air conditioning ventilation systems, and the installation of noise attenuating windows and wall/ceiling insulation.

- *Policy HAZ-8.5: Residential Noise Standards. The City shall require the design of new residential development to comply with the following noise standards:*
    - *The maximum acceptable interior noise level for all new residential units (single-family, duplex, mobile home, multi-family, and mixed use units) shall be an L_{dn} of 45 dB with windows closed.*
    - *For project locations that are primarily exposed to aircraft, train, and BART noise, the maximum instantaneous noise level in bedrooms shall not exceed 50dB(A) at night (10:00 p.m. to 7:00 a.m.), and the maximum instantaneous noise level in all interior rooms shall not exceed 55dB(A) during the day (7:00 a.m. to 10:00 p.m.) with windows closed.*
    - *The maximum acceptable exterior noise level for the primary open space area of a detached single-family home, duplex or mobile home, which is typically the backyard or a fenced side yard, shall be an L_{dn} of 60 dB. This standard shall be measured at the approximate center of the primary open space area. This standard does not apply to secondary open space areas, such as front yards, balconies, stoops, and porches.*
    - *The maximum acceptable exterior noise level for the primary open space area of townhomes and multi-family apartments or condominiums (private rear yards for townhomes; and common courtyards, roof gardens, or gathering spaces for multi-family projects) shall be an L_{dn} of 65 dB. This standard shall be measured at the approximate center of the primary open space area. This standard does not apply to secondary open space areas, such as front yards, balconies, stoops, and porches.*
    - *The maximum acceptable exterior noise level for the primary open space area of urban residential infill and mixed-use projects (private rear yards for townhomes; and common courtyards, roof gardens, or gathering spaces for multi-family or mixed-use projects) shall be an L_{dn} of 70 dB. Urban residential infill would include all types of residential development within existing or planned urban areas (such as Downtown, The Cannery Neighborhood, and the South Hayward BART Urban Neighborhood) and along major corridors (such as Mission Boulevard). This standard shall be measured at the approximate center of the primary open space area. This standard does not apply to secondary open space areas, such as front yards, balconies, stoops, and porches.*

- *Policy HAZ-8.8: Park Noise. The City shall coordinate with the Hayward Area Recreation and Park District (HARD) and the East Bay Regional Park District (EBRPD) to establish and enforce hours of operation for park and recreational facilities near residential homes.*

- *Policy HAZ-8.17: Community Noise Control Ordinance. The City shall maintain, implement, and enforce a community noise control ordinance to regulate noise levels from public and private properties, vehicles, construction sites, and landscaping activities.*

- *Policy HAZ-8.20: Construction Noise Study. The City may require development projects subject to discretionary approval to assess potential construction noise impacts on nearby sensitive uses and to minimize impacts on those uses, to the extent feasible.*

- *Policy HAZ-8.21: Construction and Maintenance Noise Limits. The City shall limit the hours of construction and maintenance activities to the less sensitive hours of the day (7:00 a.m. to 7:00 p.m. Monday through Saturday and 10:00 a.m. to 6:00 p.m. on Sundays and holidays).*

- *Policy HAZ-8.22: Vibration Impact Assessment. The City shall require a vibration impact assessment for proposed projects in which heavy-duty construction equipment would be used (e.g., pile driving, bulldozing) within 200 feet of an existing structure or sensitive receptor. If applicable, the City shall require all feasible mitigation measures to be implemented to ensure that no damage or disturbance to structures or sensitive receptors would occur.*

- *Policy HAZ-8.24: Construction Noise Control Ordinance. The City shall develop noise control standards to regulate noise levels generated from temporary construction and landscaping activities.*

- *Implementation Program HAZ 7: Construction Noise Control Ordinance. The City shall prepare and adopt a Construction Noise Control Ordinance to regulate the noise levels generated from temporary construction and landscaping activities. The ordinance shall include decibel level thresholds that should not be exceeded for construction equipment as well as establish appropriate hours and reduction measures for construction and landscaping activities to minimize impacts on nearby sensitive receptors.*

Conclusion

The GP EIR adequately evaluated the potential noise impacts of the proposed project and, with implementation of Standard Conditions of Approval, the proposed project would not result in significant noise impacts and there would be no new or more severe impacts related to noise than those analyzed in the GP EIR.

14. POPULATION AND HOUSING

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Induce substantial unplanned 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)?	☐	☐	☐	☒
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

Population Growth

The proposed project would generate housing-related population growth by adding up to 82 single-family residential units (74 single-family residential units and 8 ADUs) to the City's housing stock. The Housing Element states that the City had an average of 3.12 persons per household. Based upon an average of 3.12 persons per household, the proposed project would increase the City's population by approximately 256 residents. This increase represents about 0.17 percent of the City's total estimated 2012 population (147,119). The estimated population generated by the project (256 residents) would represent approximately 0.14 percent of the City's projected 2040 population (183,533). The population growth anticipated between 2012 and 2040 is expected to be 36,420; population associated with the project would represent 0.70 percent of the anticipated growth.

The proposed project is located within the city limits of the City of Hayward. The site is identified in the General Plan for mixed-use development and the density and intensity of development is consistent with the General Plan Land Use designation. The extension of infrastructure onto the project site, including roadways and utilities that would only serve the proposed development, would not contribute to or cause additional growth to occur outside of the City boundaries or elsewhere within the vicinity of the project site, as the project site is surrounded by existing development.

The proposed project would not induce substantial unanticipated population growth in the City, and the population increase would fall within the increase identified in the City's General Plan, including the Housing Element. Therefore, the proposed project would not result in new or more significant population growth than was analyzed and described in the GP EIR.

Displacement of Existing People or Housing

As outlined in the project description, existing structures on site include single-family homes and associated driveways, landscaping, and utilities; however, these structures would be demolished as part of a separate project. Demolition would be completed prior to commencement of the proposed project. Therefore, the proposed project would not displace substantial numbers of existing housing

or people, such that replacement housing would need to be constructed elsewhere. This potential impact would be considered less than significant. Therefore, the proposed project would not result in new or more significant housing impacts than were analyzed and described in the GP EIR.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan impacts related to population and housing were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

General Plan Policies

- *Policy LU-1.2 Urban Limit Lines. The City shall maintain its established Urban Limit Lines to protect the Hayward shoreline and hillsides as natural open space and recreational resources.*

- *Policy LU-1.3 Growth and Infill Development. The City shall direct local population and employment growth toward infill development sites within the City, especially the catalyst and opportunity sites identified in the Economic Development Strategic Plan.*

Conclusion

The GP EIR adequately evaluated the potential population and housing impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

15. PUBLIC SERVICES

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☐	☒
ii. Police protection?	☐	☐	☐	☒
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☒	☐
v. Other public facilities?	☐	☐	☐	☒

Discussion

Fire and Police Protection

The proposed project would increase demand for fire protection, police and emergency medical services due to the increased population and development at the project site. However, the increase in demand is expected to be incremental, and is not expected to require construction of a new police or fire station to serve the project.

Development associated with the proposed project would be constructed in conformance with current building codes, which require features to reduce potential fire hazards. The Hayward Police Department (HPD) would also review project design to ensure it incorporates appropriate safety features to minimize criminal activity.

General Plan policies ensure that the City reviews HPD and HPFD staffing levels to ensure the availability of adequate police and fire manpower and service facilities. Additionally, General Plan policies would prevent future growth that exceeds the community capability to provide service, including fire and police services. The implementation of these policies would ensure that adequate capital improvements are made to accommodate the increased demand for police and fire protection services. Therefore, because development associated with the proposed project is within the amount analyzed by the GP EIR, potential impacts associated with an increase in demand for police and fire protection services are considered less than significant and need no further mitigation.

Schools

The proposed project would include 82 new residential units (74 single-family residential units and 8 ADUs). Using student yield rates provided by HUSD[37] (see Table 7), the project site could generate approximately 35 students.

Table 7: Student Generation Rates

Grade Level	Proposed Dwelling Units	Student Generation Rate Used by School District for Residential Developments	Additional Students Generated by Proposed Project
Elementary (K-6)	82	0.243	20
Middle (7-8)	82	0.063	5
High (9-12)	82	0.119	10
Total	**82**	**0.425**	**35**

Source: Government Financial Strategies, Inc. (2007).

As described in the Background Report prepared for the 2040 General Plan, HUSD operates 22 elementary, five middle, and four high schools. Burbank Elementary School and Cherryland Elementary School are the only overcrowded schools. However, the total number of elementary students is far below capacity, similar to middle and high schools.

The additional 35 school students would not likely exceed the current capacities available within HUSD District. Due to RUSD's recent declining enrollment, planned new facilities would not likely be needed to accommodate additional students generated by the proposed project. In order to fund the development and construction of new school facilities, HUSD receives $3.20 per square foot of new residential development and $0.51 per square foot of new commercial development. These fees were adopted on December 12, 2012, and are the maximum allowed by State law.

New residential projects in Hayward are subject to statutory fees established by the State, which in turn would be used to fund new school facilities. General Plan policies would require the City to ensure that schools are available to serve new development, to the extent allowed by State law. The implementation of these policies would ensure the planning of new school facilities to accommodate projected increases in student enrollment. The payment by developers of statutory fees would provide funding for planned school projects. Therefore, because the level of development and projected population growth associated with the proposed project is consistent with that analyzed in the GP EIR, implementation of the proposed project would not result in demand for school services beyond existing or planned capacity of the Hayward Unified School District.

[37] Government Financial Strategies, Inc. 2007. *Hayward Unified School District Developer Fee Justification Study*. January. Available online at: haywardusd-ca.schoolloop.com/file/1285481586257/1431759928851/1644746751803374982.pdf (accessed June 19, 2019).

Parks

The proposed project would include approximately 10.5-acres of dedicated open space located around the drainage at the northern and southern portions of the project and approximately 2,993 linear feet of the Hayward Foothill Trail. The Hayward Area Recreation District (HARD) uses a standard of 5 acres per 1,000 residents district-wide (see Policy HQL-10.2). The proposed project would generate an estimated population of 256; given the HARD park standards, as well as the amount of park acreage included in the project, the proposed project would meet the City's standard and would increase the amount of parks acreage available to City residents. Therefore, because the proposed project would contribute to the total open space within the City and would not result in an increase in population above what was already analyzed in the GP EIR, the proposed project would result in a reduced impact related to the provision of parks.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan impacts related to public services were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

General Plan Policies

- *Policy LU-1.3 Growth and Infill Development. The City shall direct local population and employment growth toward infill development sites within the City, especially the catalyst and opportunity sites identified in the Economic Development Strategic Plan.*

- *Policy LU-3.1 Complete Neighborhoods. The City shall promote efforts to make neighborhoods more complete by encouraging the development of a mix of complementary uses and amenities that meet the daily needs of residents. Such uses and amenities may include parks, community centers, religious institutions, daycare centers, libraries, schools, community gardens, and neighborhood commercial and mixed-use developments.*

- *Policy LU-3.2 Centralized Amenities. The City shall encourage the development of neighborhood amenities and complementary uses in central locations of the neighborhood whenever feasible.*

- *Policy LU-7.6 Open Space Access. The City shall require new hillside development to provide public trail access (as appropriate) to adjacent greenways, open space corridors, and regional parks.*

- *Policy HAZ-5.1 Wildland/Urban Interface Guidelines. The City shall maintain and implement Wildland/Urban Interface Guidelines for new development within fire hazard areas.*

- *Policy HAZ-5.2 Fire Prevention Codes. The City shall enforce fire prevention codes that require property owners to reduce wildfire hazards on their property.*

- *Policy HAZ-5.3 Defensible Space and Fuel Reduction. The City shall promote defensible space concepts to encourage property owners to remove overgrown vegetation and to reduce fuel loads on hillside properties, especially near structures and homes.*

- *Policy CS-1.9 Crime Prevention Through Environmental Design. The City shall continue to include the Police Department in the review of development projects to promote the implementation of Crime Prevention Through Environmental Design (CPTED) principles.*

- *Policy CS-1.10 Lighting. The City shall encourage property owners to use appropriate levels of exterior light to discourage criminal activity, enhance natural surveillance opportunities, and reduce fear.*

- *Policy CS-1.11 Technology. The City shall encourage and support the use of technology (such as private surveillance cameras, deployed public camera systems, theft-prevention devices, emergency call boxes, alarms, and motion-sensor lighting) to discourage crime.*

- *Policy CS-2.2 Police Strategic Plan. The City shall maintain and implement a Police Department Strategic Plan to:*

    - *Set near-term goals for the Department in response to a dynamic and changing environment.*

    - *Align police services with the community's desires and expectations.*

    - *Accurately assess the operational needs of the Police Department to best serve the Hayward community.*

- *Policy CS-2.3 Police Staffing. The City shall maintain optimum staffing levels for both sworn police officers and civilian support staff in order to provide quality police services to the community.*

- *Policy CS-2.4 Response Time for Priority 1 Calls. The City shall strive to arrive at the scene of Priority 1 Police Calls within 5 minutes of dispatch, 90 percent of the time.*

- *Policy CS-2.5 Police Equipment and Facilities. The City shall ensure that Police equipment and facilities are provided and maintained to meet modern standards of safety, dependability, and efficiency.*

- *Policy CS-2.6 Police Facilities Master Plan. The City shall maintain and implement a Police Department Facilities Master Plan that serves as the long-term plan for providing the Police Department with state-of-the-art equipment and facilities, including police headquarters, polices substations, training facilities, detention facilities, shooting ranges, and emergency operations centers.*

- *Policy CS-2.13 Community Facilities Districts. The City shall consider the establishment of community facilities districts to ensure the new development does not constrain the City's ability to provide adequate police services to the Hayward community.*

- *Policy CS-2.14 Development Fees. The City shall consider the establishment of development impact fees to help fund Police Department operations.*

- *Policy CS-3.2 Fire and Building Codes. The City shall adopt and enforce fire and building codes.*

- *Policy CS-3.3 Development Review. The City shall continue to include the Fire Department in in the review of development proposals to ensure projects adequately address fire access and building standards.*

- *Policy CS-3.4 Adequate Water Supply for Fire Suppression. The City shall require new development projects to have adequate water supplies to meet the fire-suppression needs of the project without compromising existing fire suppression services to existing uses.*

- *Policy CS-3.5 Water Supply Infrastructure. The City shall require development to construct and install fire suppression infrastructure and equipment needed to serve the project.*

- *Policy CS-3.7 Removal of Fire Hazards. The City shall maintain code enforcement programs that require private and public property owners to minimize fire risks by:*

    - *Maintaining buildings and properties to prevent blighted conditions,*

    - *Removing excessive or overgrown vegetation (e.g., trees, shrubs, weeds), and*

    - *Removing litter, rubbish, and illegally dumped items from properties*.

- *Policy CS-4.1 Fire Strategic Plan. The City shall maintain and implement a Fire Department Strategic Plan to:*

    - *Set near-term goals for the Department in response to a dynamic and changing environment.*

    - *Align fire and emergency medical services with the community's desires and expectations.*

    - *Accurately assess the operational needs of the Fire Department to best serve the Hayward community.*

- *Policy CS-4.2 Fire Department Staffing. The City shall maintain optimum staffing levels for sworn, civilian, and support staff, in order to provide quality fire protection and emergency medical services to the community.*

- *Policy CS-4.3 Fire Department Response Times. The City shall maintain the ability to respond to fire and emergency medical calls based on the following standards:*

- *The first unit shall arrive on scene within five minutes of dispatch, 90 percent of the time.*
- *All remaining units shall arrive on scene within 8 minutes of dispatch.*

- *Policy CS-4.4 Timing of Services. The City shall ensure that growth and development does not outpace the expansion of Hayward Fire Department staffing and the development of strategically located and fully equipped fire stations.*
- *Policy CS-4.7 Fire Facilities Master Plan. The City shall develop, maintain, and implement Fire Department Facilities Master Plan that serves as the long-term for providing the Fire Department with state-of-the-art equipment and facilities.*
- *Policy CS-4.11 Community Facilities Districts. The City shall consider the establishment of community facilities districts to ensure the new development does not constrain the City's ability to provide adequate fire services to the Hayward community.*
- *Policy CS-4.12 Development Fees. The City shall consider the establishment of development impact fees to help fund Fire Department operations.*
- *Policy HQL-5.3 Eyes on the Street. The City shall promote urban design principles that support active use of public spaces in neighborhoods, commercial areas, and employment centers at all times of day. Active use of public spaces provides "eyes-on-the-street" to enhance public safety in these areas.*
- *Policy HQL-5.4 Safety Measures. The City shall improve safety and the perception of safety by requiring adequate lighting, street visibility, and defensible spaces within new development projects.*
- *Policy HQL-10.1 Parks and Recreation Master Plan. The City shall with HARD to maintain and implement the Parks and Recreation Master Plan.*
- *Policy HQL-10.2 Parks Standard. The City shall seek to increase the number of parks throughout the City by working with HARD to achieve and maintain the following park standards per 1,000 Hayward residents:*
  - *Two acres of local parks,*
  - *Two acres of school parks,*
  - *Three acres of regional parks,*
  - *One mile of trails and linear parks, and*
  - *Five acres of parks district-wide.*

- *Policy HQL-10.3 Miniparks and Tot Lots. The City shall encourage the creation and maintenance of neighborhood "miniparks" and tot lots through partnerships with private, non-profit, and business interests in areas where it is not possible to meet HARD standards related to park size.*

- *Policy HQL-10.12 Maximum Park Dedications. The City shall maintain park dedication requirements and in lieu fees for new residential development at the maximum allowed under State law.*

- *Policy HQL-11.1 Recreational Corridors. The City shall establish and maintain an integrated recreational corridor system that connects regional trails (e.g., Bay Trail, the San Francisco Bay Area Water Trail, San Lorenzo Creek Trail, Ridge Trail, the Juan Bautista DeAnza National Historic Trail), Baylands (i.e., Hayward Regional Shoreline), local creeks and open space corridors, hillside areas, and EBRPD and HARD parks.*

- *Policy HQL-11.2 Greenway Corridors. The City shall coordinate with HARD and the EBRPD to consider additional greenway linkages along fault line corridors and in other areas (e.g., rail line, creek, and utility corridors) to encourage walking and cycling and to provide improved access to activity centers.*

- *Policy HQL-11.3 Creekside Paths and Trails. The City shall seek to accentuate, "daylight", and "green" creeks, culverts, and underground drainage infrastructure through infrastructure improvements and the development review process to establish or extend pathways and trails.*

- *Policy EDL-3.11 School Impact Fees. The City shall coordinate with school districts to ensure that the impacts of new development are identified and mitigated through the payment of school impact fees in accordance with State law.*

- *Policy EDL-6.1 Standard for Library Space. The City shall strive to expand library space within the community to meet t maintain a minimum standard of 0.75 square feet of space per 1,000 residents (excluding school and college libraries).*

- *Policy EDL-6.8 Library Impact Fee. The City shall consider the establishment of a library impact fee for new residential construction.*

Conclusion

The GP EIR adequately evaluated the potential public services impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

16. RECREATION

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐

Discussion

As discussed in Section 14 of this Environmental Checklist, Public Services, the proposed project would include 10.5 acres of open space, which would include dedicated open space along the site's drainages, tree-lined streets with sidewalks, and approximately 2,993 linear feet of the Hayward Foothill Trail. Therefore, the proposed project would result in reduced impacts to existing neighborhood and regional park facilities compared to those identified in the GP EIR.

Applicable Mitigation

No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Conclusion

The GP EIR adequately evaluated the potential recreation impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

17. TRANSPORTATION

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b. Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	☐	☐	☐	☒
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d. Result in inadequate emergency access?	☐	☐	☐	☒

Discussion

This section summarizes the findings of the Transportation Impact Analysis (TIA)[38] completed for the proposed project, as well as the analysis included in the GP EIR. The TIA report is available as part of the project file. As discussed in more detail below, no new or substantially more severe impacts related to traffic or circulation impacts were identified for the proposed project as compared to the 2040 General Plan.

Significance Criteria

The City of Hayward has not yet adopted VMT impact criteria per S.B. 743 legislation, which has set a 2020 date for adoption. Therefore, this analysis uses level of service according to the City's criteria.

Policy M-4.3 in the City's 2040 General Plan requires intersections to maintain a peak-hour level of service (LOS) of E or better for signalized intersections during the peak commute periods, except when a LOS F may be acceptable due to costs of mitigation or when there would be other unacceptable impacts (e.g., right-of-way acquisition, degradation of the pedestrian environment). In addition, the proposed project would have a significant impact on traffic and circulation of an intersection already operating at LOS F under an Existing or No Project scenario if the addition of project traffic results in an increase of 5.0 seconds or more in the intersections average control delay.

At unsignalized intersections, the proposed project's impact is based on LOS and delay, and whether any of the following are met: (1) traffic signal warrant; (2) pedestrian signal warrant; or (3) all-way stop warrant. Note that solely triggering a warrant does not constitute a significant impact, but the relevant jurisdiction at an intersection will, at its discretion, determine whether or not a signal will be installed.

[38] Kittleson & Associates, Inc., 2019. *Transportation Impact Analysis, Route 238 Property Development Project (Parcel Group 5 and Parcel Group 6)*, Hayward, California. June 18.

GP EIR

The GP EIR analyzed transportation and circulation conditions in the Plan Area under four different scenarios, which represent two time periods (existing conditions and Year 2035) using the Alameda County Transportation Commission (CTC) Countywide Model with Association of Bay Area Governments (ABAG) Projections 2009 to forecast regional growth totals. In addition, the traffic model was adjusted to include network modifications as part of the 2035 baseline conditions that were not previously included in the Alameda CTC countywide model assumptions.

The impact analysis included AM and PM Peak hour traffic conditions at 42 key intersections, 13 freeway segments and 32 roadway segments. The following scenarios were analyzed for the intersection analysis: (1) Existing Conditions; (2) 2035 No Project Conditions (includes anticipated future cumulative growth under the previous City of Hayward GP, as well as future planned local and regional transportation improvements); and (3) 2035 Project Conditions (includes cumulative growth under the 2040 GP, as well as future planned local and regional transportation improvements).

As noted in the GP EIR, the development program represents buildout of the adopted GP through 2035. The land use data for the 2040 GP was categorized into total households, single-family dwelling units, multi-family dwelling units, total employment, and employment by sector (retail, service, manufacturing, wholesale, and other) by traffic analysis zone (TAZ) for input to the model. A memorandum detailing the assumed development levels at all the sites, comparisons to land use densities assumed as part of the GP EIR, and changes to TAZs used in the City's traffic model is provided in Appendix H of the TIA.

The GP EIR identified two significant transportation and circulation impacts associated with implementation of the General Plan:

- **Impact 18-1: Project Intersection Impacts.** Under the 2035 Project condition, implementation of the GP would result in traffic volumes that exceed the City standard for intersection performance. According to City guidelines, this change due to the proposed General Plan would potentially constitute a considerable project contribution to the significant cumulative impact.

- **Impact 18-2: Cumulative Intersection Impacts.** Future growth in Hayward and the region would result in substandard intersection LOS under 2035 conditions with or without the project. These changes constitute a significant cumulative impact.

Mitigation Measures 18-1 and 18-2 identified intersection improvements to reduce traffic impacts; however, even with implementation of mitigation, impacts at some intersections remained significant and unavoidable.

Parcel Group 5

As outlined in Attachment A, Project Description, the proposed project would include development of up to 82 residential units (74 single-family residential units and 8 ADUs). Vehicular access would be provided via two intersections along Central Boulevard/Westview Way, which allow access to

Mission Boulevard (via a side-street-stop right-in-right-out intersection) and Harder Road (via a side-street-stop full-access intersection). In addition, two separate evacuation lanes to Carlos Bee Boulevard would be provided.

Automobile trip generation for the proposed project was derived from average rates, regression equations, and adjustments contained in the Institute of Transportation Engineer's (ITE) Trip Generation Manual 10th Edition. As shown in Table 8, the proposed project would generate about 63 vehicle trips during the AM peak hour and 84 vehicle trips during the PM peak hour.

Table 8: Project Vehicle Trip Generation

Land Use	Size		Daily	Weekday AM Peak Hour			Weekday PM Peak Hour		
				In	*Out*	*Total*	*In*	*Out*	*Total*
Single-Family Detached Housing (ITE Code 210)	82	DU	866	16	47	63	53	31	84

Source: Kittleson & Associates (2019).
DU = Dwelling Units

Automobile Level of Service. The results of the twelve intersections analyzed for the AM and PM peak hour are presented in Table 9. The table also compares the change in delay between the Existing and Existing Plus Project conditions.

As shown in Table 9, Intersection 10 (Mission Blvd. and Torrano Avenue South) operates unacceptably at LOS F during the AM and PM peak hour under Existing Conditions. No increase in delay is expected under Existing Plus Project conditions. Therefore, the impact at this intersection would be less than significant.

Intersection 7 (Overlook Ave. & Carlos Bee Blvd.) degrades from an acceptable LOS E to an unacceptable LOS F during the AM peak hour. However, peak hour signal warrants are not met. Therefore, the impact at this intersection would be less than significant.

All other study intersections continue to operate acceptably during both the AM and PM peak hours with the addition of project traffic. Therefore, the proposed project would not result in significant impacts at any of the study intersections under Existing Plus Project conditions.

Table 9: LOS Analysis - Existing and Existing Plus Project

#	Intersection	Control[1]	Peak Hour	Existing		Existing Plus Project		Delay Delta[2]
				Delay[2]	LOS	Delay[2]	LOS	
1	Mission Blvd. & Fletcher Ln.	Signal	AM	27.8	C	28.1	C	0.3
			PM	24.4	C	24.6	C	0.2
2	Mission Blvd. & Highland Blvd./Sycamore Ave.	Signal	AM	11.0	B	11.0	B	0.0
			PM	12.4	B	12.4	B	0.0
3	Mission Blvd. & Palisade St.	TWSC	AM	19.9	C	20.2	C	0.3
			PM	28.3	D	28.6	D	0.3
4	Mission Blvd & Carlos Bee Blvd/Orchard Ave.	Signal	AM	41.3	D	42.1	D	0.8
			PM	37.6	D	38.9	D	1.3
5	Overlook Ave. & Carlos Bee Blvd.	TWSC	AM	48.7	E	**52.7**	**F**	4.0
			PM	25.7	D	27.1	D	1.4
6	Carlos Bee Blvd. & Hayward Blvd.	Signal	AM	29.5	C	29.6	C	0.1
			PM	29.4	C	29.4	C	0.0
7	Mission Blvd. & Central Blvd.	TWSC	AM	16.0	C	16.0	C	0.0
			PM	23.4	C	23.4	C	0.0
8	Mission Blvd. & Berry Ave.	Signal	AM	14.4	B	14.4	B	0.0
			PM	13.1	B	13.0	B	-0.1
9	Mission Blvd. & Torrano Ave. (N)	TWSC	AM	20.8	C	20.8	C	0.0
			PM	15.8	C	15.8	C	0.0
10	Mission Blvd. & Torrano Ave. (S)	TWSC	AM	**143.0**	**F**	**143.0**	**F**	0.0
			PM	**611.0**	**F**	**611.0**	**F**	0.0
11	Mission Blvd. & Harder Rd.	Signal	AM	45.3	D	45.7	D	0.4
			PM	46.7	D	47.0	D	0.3
12	Westview Way & Harder Rd.	TWSC	AM	9.2	A	10.1	B	0.9
			PM	11.6	B	12.1	B	0.5

Source: Kittleson & Associates, Inc. (2019).
Bold signifies unacceptable operations. Shading signifies a significant impact.
[1] AWSC = All-way stop control; TWSC = Two-way stop control
[2] Delay is measured in seconds per vehicle.

Cumulative Year 2035 Conditions. The potential impacts to the transportation system were evaluated for the Cumulative Year 2035 Condition using projected peak hour traffic volumes derived from the Hayward General Plan Update version of the Alameda CTC Countywide Model.[39] Given that some level of development at the project site was assumed for the General Plan buildout and the City model, the Cumulative 2035 Plus Project analysis assesses the difference in development under the proposed project as compared to General Plan land use densities. Therefore, the increase in traffic between Cumulative 2035 and Cumulative 2035 Plus Project scenarios has the potential to be less than the increases experienced under the Existing Plus Project scenario.

Both Parcel Group 5 and Parcel Group 6 were analyzed as a single project under the Cumulative Plus Project scenario. A memorandum detailing the assumed development levels at all the sites,

[39] Note that while the model version used for the TIA is the 2035 Citywide General Plan Model with ABAG Projections 2009, the Alameda CTC Countywide Model has been extended to 2040 and includes less conservative ABAG Plan Bay Area projections. However, to compare impacts to those identified in the GP EIR, it was determined, in coordination with City staff, that the GP Model should be used for this study.

comparisons to land use densities assumed as part of the GP EIR, and changes to TAZs used in the City's traffic model are provided in Appendix H of the TIA.

Table 10 presents the Cumulative 2035 and Cumulative 2035 Plus Project delays and LOS for the study intersections. The table also compares the change in delay between the two scenarios. The traffic generated by the proposed Projects is expected to result in significant impacts at several additional intersections under the Cumulative 2035 Plus Project condition than were identified in the 2014 GP EIR. Mitigation Measures 18-1 and 18-2 identified in the GP EIR will be updated to address these additional intersections, as described below.

As shown in Table 10, significant cumulative impacts are as follows:

- Intersection 1 (Mission Blvd & Fletcher Ln) would operate unacceptably (LOS F) under Cumulative 2035 conditions and under Cumulative 2035 Plus Project conditions, with a delay increase of more than 5 seconds in the AM peak hour.

- Intersection 3 (Mission Blvd & Palisade St) is unsignalized with right-in and right-out stop control and would operate unacceptably (LOS F) under Cumulative 2035 conditions and under Cumulative 2035 Plus Project conditions, with a delay increase of more than 5 seconds in the AM and PM peak hour. In the AM peak hour, the signal warrant is met. The peak hour signal warrant is not met during the PM peak hour; therefore, the PM peak hour impact at this intersection would be less than significant.

- Intersection 4 (Mission Blvd & Carlos Bee Blvd./Orchard Ave.) would operate acceptably (LOE E) under Cumulative 2035 conditions; under Cumulative 2035 Plus Project conditions, the LOS would degrade to LOS F in the PM peak hour.

- Intersection 11 (Mission Blvd. & Harder Road) would operate unacceptably (LOS F) under Cumulative 2035 conditions and Cumulative 2035 Plus Project conditions, with a delay increase of more than 5 seconds in the PM peak hour.

All other study intersections continue to operate acceptably during both the AM and PM peak hours under Cumulative 2035 Plus Project conditions.

The traffic generated by the proposed project is expected to result in significant impacts at four intersections under the Cumulative 2035 Plus Project condition. These impacts fall under the significant cumulative transportation impacts identified in the GP EIR as Impact 18-1, *Project Intersection Impacts,* and Impact 18-2, *Cumulative Intersection Impacts.* Mitigation Measure 18-2 identified in the GP EIR have been modified to incorporate mitigation for these impacts, as described below. Mitigated LOS worksheets are provided in Appendix J of the TIA.

Table 10: LOS Analysis – Cumulative and Cumulative Plus Project

#	Intersection	Control[1]	Peak Hour	Cumulative		Cumulative Plus Project		Delay Delta[2]
				Delay[2]	LOS	Delay[2]	LOS	
1	Mission Blvd. & Fletcher Ln.	Signal	AM	**117.8**	**F**	**129.7**	**F**	11.9
			PM	57.7	E	68.0	E	10.3
2	Mission Blvd. & Highland Blvd./ Sycamore Ave.	Signal	AM	12.7	B	12.9	B	0.2
			PM	10.2	B	10.5	B	0.3
3	Mission Blvd. & Palisade St.	TWSC	AM	**63.6**	**F**	**178.2**	**F**	114.6
			PM	**112.8**	**F**	**181.8**	**F**	69.0
4	Mission Blvd & Carlos Bee Blvd/Orchard Ave.	Signal	AM	54.5	D	57.5	E	3.0
			PM	78.7	E	**83.9**	**F**	5.2
5	Overlook Ave. & Carlos Bee Blvd.[3]	TWSC	AM	**144.7**	**F**	15.8	C	-128.9
			PM	**69.4**	**F**	12.6	B	-56.8
6	Carlos Bee Blvd. & Hayward Blvd.	Signal	AM	51.2	D	51.7	D	0.5
			PM	40.7	D	42.0	D	1.3
7	Mission Blvd. & Central Blvd.	TWSC	AM	26.8	D	26.9	D	0.1
			PM	31.8	D	32.2	D	0.4
8	Mission Blvd. & Berry Ave.	Signal	AM	77.9	E	78.9	E	1.0
			PM	16.0	B	17.2	B	1.2
9	Mission Blvd. & Torrano Ave. (N)	TWSC	AM	40.4	E	42.3	E	1.9
			PM	19.4	C	19.5	C	0.1
10	Mission Blvd. & Torrano Ave. (S)	TWSC	AM	**2352.8**	**F**	**2352.8**	**F**	0.0
			PM	**1994.5**	**F**	**1994.5**	**F**	0.0
11	Mission Blvd. & Harder Rd.	Signal	AM	**93.7**	**F**	**96.0**	**F**	2.3
			PM	**96.2**	**F**	**101.9**	**F**	5.7
12	Westview Way & Harder Rd.	TWSC	AM	10.1	B	10.2	B	0.1
			PM	21.1	C	21.6	C	0.5

Source: Kittleson & Associates, Inc. (2019).
Bold signifies unacceptable operations. Shading signifies a significant impact.
[1] AWSC = All-way stop control; TWSC = Two-way stop control
[2] Delay is measured in seconds per vehicle.
[3] This intersection will be a right-in-right-out intersection with project implementation. A new signalized full-access intersection will be constructed approximately 250 feet to the east.

New Project Access Points. The proposed project would include a new roadway connection from Bunker Hill Road to Carlos Bee Boulevard (a new side-street, stop-controlled intersection). Table 11 shows the delays and LOS for this new roadway connection under Existing Plus Project and Cumulative 2035 Plus Project conditions. As shown in Table 11, the proposed project intersection is expected to operate at an acceptable LOS during both the AM and PM peak hours.

Table 11: LOS Analysis – New Project Intersection

Scenario	Intersection	Control[1]	Peak Hour	Delay[2]	LOS
Existing Plus Project	Bunker Hill Blvd. & Carlos Bee Blvd.	TWSC	AM	17.4	C
			PM	15.8	C
Cumulative Year 2035 Plus Project	Bunker Hill Blvd. & Carlos Bee Blvd.	TWSC	AM	17.8	C
			PM	15.9	C

Source: Kittleson & Associates, Inc. (2019)
[1] TWSC = Two-way stop control
[2] Delay is measured in seconds per vehicle.

Transit, Bicycle and Pedestrian Facilities

The proposed project would include installation of bicycle and pedestrian facilities and connections to existing facilities to promote alternative modes of transportation. As described in Attachment A, the proposed project would include installation of a new segment of the Hayward Foothill Trail, which would be located along the northern boundary of the project site, connecting to the CSU East Bay campus and then extending south along Bunker Hill Road to terminate at Harder Road. The trail would consist of a 16-foot-wide multi-use trail to accommodate pedestrians and bicyclists. In addition, street improvements such as curbs, sidewalks, on-street parking bulb-outs, and lighting would be included. Tree-lined streets with sidewalks would provide north/south connections throughout the project site. The new access at Bunker Hill Road would be improved to a 4-foot-wide sidewalk on one side of the roadway and landscaped planting strips on both sides of the roadway. In some locations, bulb-outs would be provided.

The City of Hayward is currently preparing the Hayward Bicycle and Pedestrian Master Plan Update, with an expected completion date of October 2019. At this time, planned bikeways are preliminary, however, current plans include proposed Class IV (separated bikeways) along Carlos Bee Boulevard and along Harder Road, which intersects with Westview Way and provides access to the project site. The proposed project would include direct vehicular access points and generate additional vehicle trips along roadways with these planed bikeways. Consistent with General Plan policies supporting alternative modes, the City would require implementation of treatments to improve bicyclist conditions in these locations, as part of the design review process and conditions of approval for the proposed project. Potential treatments could include: (1) installation of driveway conflict paint along bikeways at intersections along Carlos Bee Boulevard and Harder Road; and (2) installation signage at project access points.

As noted in the GP EIR, buildout of the General Plan area is not anticipated to generate transit ridership that would exceed the available capacity of the transit system. In addition, the proposed project is not expected to result in any impacts at intersections used by local transit, such as AC Transit buses, that cannot be feasibly mitigated with signal timing adjustments, restriping within the existing right-of-way, or signalization.

Therefore, implementation of the proposed project would not conflict with plans, programs and policies regarding bicycle, pedestrian, or transit facilities, or decrease the performance and safety of such facilities. Therefore, impacts to bicyclists, pedestrians, and transit service providers resulting

from implementation of the proposed project would remain less than significant and the proposed project would not result in new or more severe impacts related to alternative forms of transportation beyond those identified in the GP EIR.

Air Traffic Patterns

The project site is not located in the vicinity of a private airstrip or within the Airport Influence Area of the Hayward Executive Airport, and therefore the project would not result in impacts related to air traffic patterns.

Design Features

As described in Attachment A, Project Description, the proposed project would include tree-lined streets with sidewalks to provide north/south connections throughout the project site. Bunker Hill Road would be improved to provide two wider drive lanes, a 4-foot-wide sidewalk on one side of the roadway, landscaped planting strips on both sides of the roadway, and retaining wall, where required. In some locations, bulb-outs would be provided to accommodate on-street parking. A new access point at the intersection of Bunker Hill Road and Carlos Bee Boulevard would be provided, approximately 200 feet from the existing Tanglewood intersection.

Maitland Drive would be improved to provide two wider drive lanes, a sidewalk and planting strip on the north side of the roadway and a parking lane on the south side of the road. A new cul de sac extending off of Maitland Drive would be installed to provide access to several residential units proposed in the southwestern portion of the site.

As described in the TIA, the proposed project would include a new roadway connection from Bunker Hill Road to Carlos Bee Boulevard, providing direct access to the project site. Alternative access points are also available via Westview Way and Central Boulevard to Maitland Drive. Given the multiple access routes to and from the project site along local residential roads, the proposed project could increase diverted or pass-through traffic on these adjacent roadways. Generally, pass-through vehicle concerns can be addressed with traffic calming measures to slow vehicles down to safer speeds. The City of Hayward would explore options for implementing traffic calming techniques (such as narrowing lanes or roadways, installing lateral shifts, or installing speed bumps) on streets surrounding the project sites, as part of the design review process and conditions of approval for the proposed project.

The proposed project would be required to comply with General Plan policies promoting a safe, multi-modal transportation system, the City's Design Guidelines, and the City's Hillside Design and Urban/Wildland Interface Guidelines. Potential design issues would be addressed through the design review process of the proposed project. Therefore, the proposed project would have a less-than-significant impact related to design hazards.

Emergency Access

General Plan Policies M-1.1, M-1.2, M-1.3, M-1.7, M-3.8 and M-4.5 would require the management and development of the local roadway system to support the Land Use Element, which would mitigate impacts to the emergency access system. Specifically, General Plan Policy M-4.5 requires

the City to develop a roadway system that is redundant (i.e., includes multiple alternative routes) to the extent feasible to ensure mobility in the event of emergencies. Additionally, the City has implemented, and will continue to implement, traffic signal system upgrades that help to facilitate more efficient emergency vehicle access and give priority to emergency vehicles. In addition, through design review, emergency services would review proposed plans to ensure that emergency vehicle access and circulation is adequate. Therefore, the proposed project would not result in new or more severe impacts beyond those already analyzed in the GP EIR.

Consistency with Adopted Policies

The Circulation Element of the City's General Plan provides the policy framework for the regulation and development of transportation systems, balancing demands for moving people and goods through the City while promoting multi-modal transportation. The General Plan contains goals and specific recommendations for facilitating traffic circulation, maintaining an acceptable level of service at signalized intersections, traffic demand management programs, parking management, and improving transit service and facilities for non-motorized transportation.

Policy M-4.3 established that the lowest acceptable LOS at a signalized intersection is LOS E (delay per vehicle greater than 55 seconds but less than 80 seconds) during the peak commute periods, except when a LOS F may be acceptable due to costs of mitigation or when there would be other unacceptable impacts. Additionally, Policy M-1.5 allows for flexible LOS standards as part of a multimodal system approach. Hayward does not have an LOS standard for unsignalized intersections. The proposed project would be required to abide by these and all other applicable goals and policies in the adopted General Plan.

Applicable Mitigation

Below are mitigation measures that were included in the GP EIR. In some cases, the language of the mitigation measures has been updated or modified as a result of the project, or because specific mitigation measures have already been implemented. Double-underlined text represents language that has been added to the mitigation measure, and text with ~~strikethrough~~ represents language that has been deleted from the mitigation measure. Mitigation for intersections that are not relevant to the proposed project have not been included below for the sake of brevity and clarity. Only mitigation for those intersections affected by the proposed project have been described below.

Mitigation 18-2. Make the following intersection improvements:

(c) Intersection 8: Mission Boulevard / Carlos Bee Boulevard.

(1) Optimize signal cycle length to 115 seconds.

(2) Restripe the outer westbound through lane as a shared through/right turn lane.

With implementation of this mitigation the intersection would operate at acceptable and better than pre-project conditions at LOS E (61.1 seconds of delay) during the PM peak hour ~~reduce conditions to LOS E with 73.8 seconds of delay during the PM peak hour and reduce the impact to a~~

~~***less-than-significant*** level with the new General Plan Policy of allowing LOS E.~~ This mitigation measure can be implemented within the existing curb-to-curb right-of-way. The proposed mitigation is considered feasible. Implementing this mitigation would result in a ***less-than-significant*** cumulative impact.

(n) Intersection 9: Mission Blvd. / Harder Rd (Parcel Groups 5 and 6 TIA Intersection #11). Re-optimize signal timing splits to provide additional green time for eastbound left turn and westbound left turn movements. With this improvement, the intersection would operate at better than pre-project conditions at LOS F (91.4 seconds of delay) during the PM peak hour. The proposed mitigation is considered feasible. Implementing this mitigation would result in a ***less-than-significant*** cumulative impact.

(o) Intersection 30: Mission Blvd. / Fletcher Lane (Parcel Groups 5 and 6 TIA Intersection #1). Install an eastbound left turn pocket and restripe the current eastbound shared left/through lane to a dedicated through lane. With this improvement, the intersection would operate at better than pre-project conditions at LOS F (100.8 seconds of delay) during the AM peak hour. The proposed mitigation is considered feasible. Implementing this mitigation would result in a ***less-than-significant*** cumulative impact.

(p) Intersection 43: Mission Blvd. / Palisade St. (Parcel Groups 5 and 6 TIA Intersection #3). Signalize northbound and westbound (right-out) movements at the intersection (southbound direction remains uncontrolled with the Mission Boulevard median retained). With this improvement, the intersection would operate at acceptable and better than pre-project conditions at LOS A (7.0 seconds of delay) during the AM peak hour. In addition, signalization would result in acceptable operations during the PM peak hour. Implementing this mitigation would result in a ***less-than-significant*** cumulative impact.

Applicable Policies

- *Policy M-1.1 Transportation System. The City shall provide a safe and efficient transportation system for the movement of people, goods, and services through and within Hayward.*

- *Policy M-1.2 Multimodal Choices. The City shall promote the development of an integrated, multi-modal transportation system that offers desirable choices among modes including pedestrian ways, public transportation, roadways, bikeways, rail and aviation.*

- *Policy M-1.3 Multimodal Connections. The City shall implement a multimodal system that connects residents to activity centers throughout the City, such as commercial centers and corridors, employment centers, transit stops/stations, the airport, schools, parks, recreation area, and other attractions.*

- *Policy M-1.4 Multimodal System Extensions. The City shall require all new development that proposes or is required to construct or extend streets to develop a transportation network that complements and contributes to the City's multimodal system, maximizes connections, and minimizes barriers to connectivity.*

- *Policy M-1.5 Flexible LOS Standard. The City shall consider flexible Level of Service (LOS) standards, as part of a multimodal system approach for projects that increase transit-ridership, biking, and walking in order to reduce air pollution, energy consumption, and greenhouse gas emissions.*

- *Policy M-1.6 Bicycling, Walking and Transit Amenities. The City shall encourage the development of facilities and services (e.g., secure term bicycle parking, street lights, street furniture and trees, transit stop benches and shelters, and street sweeping of bike lanes) that enable bicycling, walking, and transit use to become more widely used modes of transportation and recreation.*

- *Policy M-1.7 Eliminate Gaps. The City shall strive to create a more comprehensive multimodal transportation system by eliminating gaps in roadways, bikeways, and pedestrian networks, increasing transit access in underserved areas, and removing natural and man-made barriers to accessibility and connectivity.*

- *Policy M-3.1 Serving All Users. The City shall provide safe, comfortable, and convenient travel along and across streets to serve all users, including pedestrians, the disabled, bicyclists, and motorists, movers of commercial goods, and users, and operators of public transportation.*

- *Policy M-3.2 Non-Auto Needs. The City shall consider the needs of transit riders, pedestrians, people in wheelchairs, cyclists, and others in long-range planning and street design.*

- *Policy M-3.6 Context Sensitive. The City shall consider the land use and urban design context of adjacent properties in both residential and business districts as well as urban, suburban, and rural areas when designing complete streets.*

- *Policy M-3.8 Connections with New Development. The City shall ensure that new commercial and residential development projects provide frequent and direct connections to the nearest bikeways, pedestrian ways and transit facilities.*

- *Policy M-3.10 Motorists, Bicyclists, and Pedestrian Conflicts. The City shall develop safe and convenient bikeways and pedestrian crossings that reduce conflicts between pedestrians, bicyclists, and motor vehicles on streets, multi-use trails and sidewalks.*

- *Policy M-312 Americans with Disabilities Act Compliance. The City shall continue to implement the Americans with Disabilities Act when designing, constructing, or improving transportation facilities.*

- *Policy M-4.3 Level of Service. The City shall maintain a minimum vehicle Level of Service E at signalized intersections during the peak commute periods except when a LOS F may be acceptable due to costs of mitigation or when there would be other unacceptable impacts, such as right-of-way acquisition or degradation of the pedestrian environment due to increased crossing distances or unacceptable crossing delays.*

- *Policy M-4.5 Emergency Access. The City shall develop a roadway system that is redundant (i.e., includes multiple alternative routes) to the extent feasible to ensure mobility in the event of emergencies.*

- *Policy M-5.1 Pedestrian Needs. The City shall consider pedestrian needs, including appropriate improvements to crosswalks, signal timing, signage, and curb ramps, in long-range planning and street design.*

- *Policy M-5.2 Pedestrian System. The City shall strive to create and maintain a continuous system of connected sidewalks, pedestrian paths, creekside walks, and utility greenways through the City that facilitates convenient and safe pedestrian travel, connects neighborhoods and centers, and is free of major impediments and obstacles.*

- *Policy M-5.7 Safe Sidewalks. The City shall develop safe and convenient pedestrian facilities that are universally accessible, adequately illuminated, and properly designed to reduce conflicts between motor vehicles and pedestrians.*

- *Policy M-6.1 Bikeway System. The City shall maintain and implement the Hayward Bicycle Master Plan.*

- *Policy M-6.5 Connections between New Development and Bikeways. The City shall ensure that new commercial and residential development projects provide frequent and direct connections to the nearest bikeways, and do not interfere with existing and proposed bicycle facilities.*

- *Policy M-7.1 Transit System. The City shall support a connected transit system by improving connections between transit stops/stations and roadways, bikeways, and pedestrian facilities.*

- *Policy M-7.6 Safe System. The City shall work with AC Transit, BART, and Amtrak to maintain a safe, clean, comfortable, and rider-friendly waiting environment at all transit stops within the City.*

- *Policy M-7.9 Development Impacts on Transit. The City shall require developers of large projects to identify and address, as feasible, the potential impacts of their projects on AC Transit ridership and bus operations as part of the project review and approval process.*

- *Policy M-11.1 Good Movement. The City shall provide an efficient transportation system for the movement of goods and services through and within Hayward, while meeting the safety and mobility needs of all roadway users.*

Conclusion

The GP EIR adequately evaluated the transportation impacts of the proposed project. Significant impacts under the Cumulative 2035 Plus Project Condition were identified at three intersections previously evaluated in the GP EIR and one intersection not analyzed as part of the GP EIR. These impacts fall under the significant cumulative transportation impacts identified in the GP EIR as Impact 18-1 and Impact 18-2. Mitigation Measures 18-1 and 18-2, as modified above, are proposed

to reduce significant impacts at study area intersections to less than significant. Where mitigation measures have been determined to be infeasible, impacts remain significant and unavoidable, consistent with the findings in the GP EIR. Therefore, there would be no new impacts related to traffic and circulation associated with the proposed project.

18. TRIBAL CULTURAL RESOURCES

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or	☐	☐	☐	☒
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Discussion

As previously discussed in Section 5 of this Environmental Checklist, Cultural Resources, the GP EIR determined that impacts to cultural and historic resources would be reduced to less-than-significant levels with implementation of General Plan policies. This finding applies to tribal cultural resources. Therefore, the proposed project would not result in new or more severe impacts to tribal cultural resources than were identified in the GP EIR.

Applicable Mitigation

No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

General Plan Policies

- *Policy NR-7.1 Paleontological Resource Protection. The City shall prohibit any new public or private development that damages or destroys a historically- or prehistorically-significant fossil, ruin, or monument or any object of antiquity.*

- *Policy NR-7.2 Paleontological Resource Mitigation. The City shall develop or ensure compliance with protocols that protect or mitigate impacts to paleontological resources, including requiring grading and construction projects to cease activity when a paleontological resource is discovered so it can be safely removed.*

Conclusion

The GP EIR adequately evaluated the potential tribal cultural resources impacts for the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

19. UTILITIES AND SERVICE SYSTEMS

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c. 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?	☐	☐	☐	☒
d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

Construction of New or Expanded Utility Facilities

The City is responsible for collection and treatment of wastewater within the community and the East Bay Dischargers Authority (EBDA) is responsible for disposal of the treated wastewater. Wastewater is collected and transported via underground sewer lines to the City of Hayward Water Pollution Control Facility (WPCF) located at the terminus of Enterprise Avenue in western Hayward. The City's wastewater collection system includes about 320 miles of sewer mains, 9 sewage lift stations, and 4.2 miles of force mains.

Wastewater from the proposed project would be treated at the WPCF in accordance with the existing NPDES permit. The approximately 82 new project residences (74 single-family residential units and 8 ADUs) would contribute an estimated additional average base wastewater flow of 29,520 gallons per day (gpd). The City of Hayward 2015 Urban Water Management Plan estimates that Hayward currently collects and treats 10.1 mgd of wastewater.[40] The Hayward WPCF is permitted to provide treatment for up to 18.5 million gallons per day (mgd), which is anticipated to be reached by 2035. The proposed project would generate less than 0.2 percent of the total permitted daily treatment capacity of the WPFC. Therefore, the Hayward WPFC has adequate capacity to serve the project site.

[40] Hayward, City of, 2016. *City of Hayward Urban Management Plan*. June.

As described in Attachment A, sewer improvements in Bunker Hill Boulevard would require the installation of 3,235 linear feet of 6- or 8-inch sewer main within the roadway and replacement of the existing 8-inch sewer main in the hillside between Bunker Hill Boulevard and Maitland Drive. The new sewer main would maintain the existing connection to Maitland Drive. Site-specific plans would be reviewed and approved by the City, consistent with the City's Municipal Code and General Plan Policy PFS-4.9, to ensure the provision of adequate wastewater service prior to issuance of building permits. Implementation of the proposed project would not result in a significant environmental impact related to the extension of water or wastewater lines.

Refer to Section 10, Hydrology and Water Quality, for a discussion of impacts to the storm drain system, which would be less than significant for the proposed project. As such, the proposed project would not result in any new or more significant impacts than identified in the GP EIR.

For the proposed project, approximately 100 feet of 2-inch gas main would need to be installed to complete the gas service in the south end of Maitland Drive by connecting to the 3-inch gas main in Central Boulevard. Bunker Hill Boulevard contains electric and communication lines.

The proposed project is consistent with the type and intensity of development analyzed in the GP EIR. Therefore, the proposed project would not result in new or more severe impacts related to expanded water, wastewater, stormwater, electric power natural gas, or telecommunication facilities beyond those analyzed in the GP EIR.

Water Supply

The City of Hayward provides water service for residential, commercial, industrial, governmental, and fire suppression uses. The City owns and operates its own water distribution system. The water supplied to Hayward is predominantly from the Sierra Nevada Range, delivered through the Hetch-Hetchy aqueducts, but also includes some treated water produced by the San Francisco Public Utilities Commission (SFPUC) from its local watershed and facilities in Alameda County. The City's agreement with SPUC allows the City of Hayward to buy sufficient water to serve its needs. However, during drought years the City has to reduce water use based on a formula established by SFPUC. The City has emergency water supplies through connections with the Alameda County Water District (ACWD) and the East Bay Municipal Utility District (EBMUD), and short-term use emergency wells, in case of disruption of delivery from SFPUC.

The 2015 City of Hayward Urban Management Plan[41] estimates the projected demand for potable water for the City to be 8,820 million gallons (approximately 24.2 million gallons per day [mgd]) in 2035. The proposed project would generate approximately 32,800 gallons per day (gpd) of water demand. The proposed project's increase in water demand would represent less than 0.14 percent of the demand anticipated through the year 2035 in the City's Urban Management Plan. Water demand projections identified in the City's Urban Management Plan incorporate anticipated development factors within the City, affecting both residential and non-residential sectors, including the potential development of approximately 1,250 new housing units within the Route 238 Planning Area, in which the proposed project is located.

41 Hayward, City of, 2016, op. cit.

As outlined in Attachment A, Project Description, approximately 2,400 linear feet of new 8-inch water main would be installed in Maitland Drive, connecting to the existing 6-inch water main in Central Boulevard at both ends of Maitland Drive. Approximately 2,500 linear feet of new 8-inch water main would be installed in Bunker Hill Drive, connecting to the existing 6-inch water main in Central Boulevard and to the existing 8-inch water main in Carlos Bee Boulevard at each end of Bunker Hill Drive and the proposed extension to Carlos Bee Boulevard.

General Plan Policies NR-4.3, NR-6.9, NR-6.15, and NR-6.16 require water conservation, use of renewable resources, and native landscaping to reduce water use. The City has also adopted indoor water use efficiency standards for new construction, which mandate installation of the most water-conserving fixtures that are available and which have been shown to work effectively. In addition, the City must approve all connections to the water and sewer system, and new water meters need to be installed before water service can be activated. Compliance with the approval and permitting requirements of the City, which would be incorporated into the conditions of approval for the proposed project, would ensure that no new impacts associated with water services would result from the proposed project.

The GP EIR determined that buildout of the General Plan would have a less-than-significant impact on water supplies. Therefore, because the proposed project would include development consistent with the type and intensity of development evaluated in the GP EIR and the City's 2015 Urban Management Plan, the proposed project would not result in greater impacts than those already identified by the GP EIR.

Solid Waste

The California Integrated Waste Management Board estimates waste generation of approximately 12 pounds per day for single-family homes.[42] Using this rate, the proposed project would generate 888 pounds of waste per day. This waste generation represents approximately 0.004 percent of the permitted daily throughput (11,150 tons/day) at the Altamont Landfill facility[43] and approximately 0.018 percent of the permitted daily throughput (2,150 tons/day) at the Vasco Road Landfill.[44] Additionally, the proposed project's solid waste contribution would be minimized by the provision of recycling and green waste collection service. Therefore, because the proposed project would include development consistent with the type and intensity of development evaluated in the GP EIR, the proposed project would not result in greater impacts than those already identified by the GP EIR.

Applicable Mitigation

As described in the GP EIR, 2040 General Plan impacts related to utilities and service systems were determined to be less than significant and no mitigation measures were identified. No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project,

42 CalRecycle. Estimated Solid Waste Generation Rates Website: www2.calrecycle.ca.gov/WasteCharacterization/General/Rates (accessed June 19, 2019).

43 CalRecycle, 2019a. SWIS Facility Detail: Altamont Landfill & Resource Recovery (01-AA-0009). Website: www2.calrecycle.ca.gov/swfacilities/Directory/01-AA-0009 (accessed June 19, 2019).

44 CalRecycle, 2019b. SWIS Facility Detail: Vasco Road Sanitary Landfill (01-AA-001). Website: www2.calrecycle.ca.gov/swfacilities/Directory/01-AA-0010 (accessed June 19, 2019).

nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Applicable Policies

- *Policy NR-4.3 Efficient Construction and Development Practices. The City shall encourage construction and building development practices that maximize the use of renewable resources and minimize the use of non-renewable resources throughout the life-cycle of a structure.*

- *Policy NR-6.9 Water Conservation. The City shall require water customers to actively conserve water year-round, and especially during drought years.*

- *Policy NR-6.15 Native Vegetation Planting. The City shall encourage private property owners to plant native or drought-tolerant vegetation in order to preserve the visual character of the area and reduce the need for toxic sprays and groundwater supplements.*

- *Policy NR-6.16 Landscape Ordinance Compliance. The City shall continue to implement the Bay-Friendly Water Efficient Landscape Ordinance.*

- *Policy PFS-1.2 Priority for Infrastructure. The City shall give high priority in capital improvement programming to funding rehabilitation or replacement of critical infrastructure that has reached the end of its useful life or has capacity constraints.*

- *Policy PFS-1.3 Public Facility Master Plans. The City shall maintain and implement public facility master plans to ensure compliance with appropriate regional, State, and Federal laws; the use of modern and cost-effective technologies and best management practices; and compatibility with current land use policy.*

- *Policy PFS-1.4 Development Fair Share. The City shall, through a combination of improvement fees and other funding mechanisms, ensure that new development pays its fair share of providing new public facilities and services and/or the costs of expanding/upgrading existing facilities and services impacted by new development (e.g., water, wastewater, stormwater drainage).*

- *Policy PFS-3.1 Water Distribution System Master Plan. The City shall maintain and implement the Water Distribution System Master Plan.*

- *Policy PFS-3.2 Urban Water Management Plan. The City shall maintain and implement the Urban Water Management Plan, including water conservation strategies and programs, as required by the Urban Water Management Planning Act.*

- *Policy PFS-3.8 Water Treatment Capacity and Infrastructure. In the event that San Francisco Public Utilities Commission is unable to provide water that meets drinking water standards, the City shall plan, secure funding for, and procure sufficient water treatment capacity and infrastructure to meet projected water demands.*

- *Policy PFS-3.13 New Development. The City shall ensure that water supply capacity is in place prior to granting building permits for new development.*

- *Policy PFS-3.14 Water Conservation Standards. The City shall comply with provisions of the State's 20x2020 Water Conservation Plan (California Water Resources Control Board, 2010).*

- *Policy PFS-4.1 Sewer Collection System Master Plan. The City shall maintain and implement the Sewer Collection System Master Plan.*

- *Policy PFS-4.2 Water Pollution Control Facility Master Plan. The City shall maintain and implement the Water Pollution Control Facility Master Plan.*

- *Policy PFS-4.9 Service New and Existing Development. The City shall ensure the provision of adequate wastewater service to all new development, before new developments are approved, and support the extension of wastewater service to existing developed areas where this service is lacking.*

- *Policy PFS-5.1 Accommodate New and Existing Development. The City shall work with the Alameda County Flood Control and Water Conservation District to expand and maintain major stormwater drainage facilities to accommodate the needs of existing and planned development.*

- *Policy PFS-5.3 Watershed Drainage Plans. The City shall require developers of proposed large development projects to prepare watershed drainage plans. Drainage plans shall define needed drainage improvements per City standards, estimate construction costs for these improvements, and be implemented through the Stormwater Management and Urban Runoff Control Program and Alameda Countywide Clean Water Program.*

- *Policy PFS-5.4 Green Stormwater Infrastructure. The City shall encourage "green infrastructure" design and Low Impact Development (LID) techniques for stormwater facilities (i.e., using vegetation and soil to manage stormwater) to achieve multiple benefits (e.g., preserving and creating open space, improving runoff water quality).*

- *Policy PFS-5.6 Grading Projects. The City shall impose appropriate conditions on grading projects performed during the rainy season to ensure that silt is not conveyed to storm drainage.*

- *Policy PFS-5.7 Diversion. The City shall require new development to be designed to prevent the diversion of stormwater onto neighboring parcels.*

- *Policy PFS-7.1 Mandatory Collection. The City shall continue to require weekly solid waste collection through the City.*

- *Policy PFS-7.2 Adequate Services. The City shall monitor its solid waste and recycling services franchisee to ensure that services provided are adequate to meet the needs of the community and to meet the provisions of the City's Franchise Agreement.*

- *Policy PFS-7.3 Landfill Capacity. The City shall continue to coordinate with the Alameda County Waste Management Authority to ensure adequate landfill capacity in the region for the duration of the contract with its landfill franchisee.*

- *Policy PFS-7.4 Solid Waste Diversion. The City shall comply with State goals regarding diversion from landfill, and strive to comply with the provisions approved by the Alameda County Waste Management Authority.*

- *Policy PFS-7.12 Construction and Demolition Waste Recycling. The City shall require demolition, remodeling, and major new development projects to salvage or recycle asphalt and concrete and all other non-hazardous construction and demolition materials to the maximum extent practicable.*

- *Policy PFS-7.13 Residential Recycling. The City shall encourage increased participation in residential recycling programs, and strive to comply with the recycling provisions approved by the Alameda County Waste Management Authority Board. The City shall work with StopWaste.org to monitor participation in residential recycling programs and educate the community regarding actual composition of waste sent to landfills.*

- *Policy CS-3.4 Adequate Water Supply for Fire Suppression. The City shall require new development projects to have adequate water supplies to meet the fire-suppression needs of the projects without compromising existing fire suppression services to existing uses.*

Conclusion

The GP EIR adequately evaluated the potential utilities impacts for the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

20. WILDFIRE

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Discussion

As previously discussed in Section 9 of this Environmental Checklist, Hazards and Hazardous Materials, the proposed project would be located within the wildland urban interface as identified by the Hayward Fire Department. The proposed project would be required to comply with the Hillside Design and Wildland/Urban Interface Guidelines,[45] which include standards for street and sidewalks that allow for fire truck access, cluster home development to make efficient use of hillside space, and architectural and site design that allow for fire setbacks and environmental disaster mitigation. Compliance with the City's Hillside Design and Wildland/Urban Interface Guidelines would ensure potential impacts related to wildland fires would be less than significant.

Applicable Mitigation

No substantial changes in environmental circumstances have occurred for this topic, nor revisions to the project, nor new information that could not have been known at the time the GP EIR was certified leading to new or more severe significant impacts, and no new mitigation measures are required.

Conclusion

The GP EIR adequately evaluated the potential wildfire impacts of the proposed project. Therefore, potential impacts would be less than significant and additional mitigation is not required.

[45] Hayward, City of, 1993, op. cit.

This page intentionally left blank.

LIST OF PREPARERS

LSA Associates, Inc.
157 Park Place
Point Richmond, California 94801
Laura Lafler, Principal-in-Charge
Shanna Guiler, AICP, Associate, Project Manager
Patty Linder, Graphics and Production
Charis Hanshaw, Document Management

5084 N. Fruit Avenue, Suite 103
Fresno, California 93711

Amy Fischer, Principal, Air Quality & Noise Specialist
Cara Carlucci, Air Quality and Noise Specialist

Kittleson & Associates, Inc.
155 Grand Avenue, Suite 900
Oakland, California 94612
Damian Stefanakis, Principal Planner
Michael Sahimi, Transportation Engineer

This page intentionally left blank.

REFERENCES

Alameda County Community Development Agency, 2012. *Hayward Executive Airport - Airport Land Use Compatibility Plan*.

Bay Area Air Quality Management District, 2017. *Bay Area 2017 Clean Air Plan*. April 19.

California Department of Conservation, Division of Land Resource Protection, 2014. *Alameda County Important Farmland 2014.* Available online at: www.conservation.ca.gov/dlrp/fmmp/Pages/Alameda.aspx (accessed June 19, 2019).

California Department of Transportation, 2018. California Scenic Highway Mapping System, Alameda County. Website: www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm (accessed June 19, 2019).

California Energy Commission, 2017a. Energy Consumption Data Management Service. Electricity Consumption by County. Website: www.ecdms.energy.ca.gov/elecbycounty.aspx (accessed June 19, 2019).

California Energy Commission, 2017b. Energy Consumption Data Management Service. Gas Consumption by County. Website: www.ecdms.energy.ca.gov/gasbycounty.aspx (accessed June 19, 2019).

California Energy Commission, 2017c. California Gasoline Data, Facts, and Statistics. Available online at: www.energy.ca.gov/almanac/transportation_data/gasoline (accessed June 19, 2019).

California Energy Commission, 2017d. *2017 Integrated Energy Policy Report, Publication Number: CEC-100-2017-001-CMF*.

CalRecycle, 2019a. SWIS Facility Detail: Altamont Landfill & Resource Recovery (01-AA-0009). Website: www2.calrecycle.ca.gov/swfacilities/Directory/01-AA-0009 (accessed June 19, 2019).

CalRecycle, 2019b. SWIS Facility Detail: Vasco Road Sanitary Landfill (01-AA-001). Website: www2.calrecycle.ca.gov/swfacilities/Directory/01-AA-0010 (accessed June 19, 2019).

CalRecyle. Estimated Solid Waste Generation Rates Website: www2.calrecycle.ca.gov/WasteCharacterization/General/Rates (accessed June 19, 2019).

ENGEO, 2016. *Phase I Environmental Site Assessment, Route 238 Bypass, Group 5, Hayward, California*. April 1.

ENGEO, 2017. *Route 238 Bypass – Group 5, Hayward, California, Preliminary Geotechnical Exploration*. May 17.

Federal Emergency Management Agency, 2018. Flood Map Services Center, Hayward CA. Website: msc.fema.gov/portal/search?AddressQuery=Hayward%20CA#searchresultsanchor (accessed June 19, 2019).

Government Financial Strategies, Inc. 2007. *Hayward Unified School District Developer Fee Justification Study*. January. Available online at: haywardusd-ca.schoolloop.com/file/1285481586257/1431759928851/1644746751803374982.pdf (accessed June 19, 2019).

Hayward, City of, 1993. Hillside Design and Wildland/Urban Interface Guidelines. February 16.

Hayward, City of, 2014. *Hayward 2040 General Plan Background Report*. January.

Hayward, City of, 2014a. *Final Environmental Impact Report City of Hayward General Plan*. May.

Hayward, City of, 2014b. *Hayward 2040 General Plan Background Report.*

Hayward, City of, 2016. *City of Hayward Urban Management Plan*. June.

Hayward, City of. Municipal Code, Chapter 9, Article 1.

Kittleson & Associates, Inc., 2019. *Transportation Impact Analysis, Route 238 Property Development Project (Parcel Group 5 and Parcel Group 6)*, Hayward, California. June 18.

LSA, 2018. *Cultural Resources Constraints Study, Route 238 Properties*.

San Francisco Bay Regional Water Quality Control Board, 2015. San Francisco Bay Region Municipal Regional Stormwater NPDES Permit, Order No. R2-2015-0049, NPDES Permit No. CAS612008, November 19.

State Water Resources Control Board Division of Water Quality, 2009. Construction General Permit Fact Sheet. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ.

Trane, 2002. *Sound Data and Application Guide for the New and Quieter Air-Cooled Series R Chiller*.

U.S. Department of Transportation. Bureau of Transportation Statistics. "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." Website: www.bts.gov/archive/publications/national_transportation_statistics/table_04_23 (accessed June 19, 2019).

APPENDIX 1

AIR QUALITY AND GREENHOUSE GAS EMISSIONS DATA

This page intentionally left blank

Route 238 Property Development – Bunker Hill (Parcel Group 5)

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	82.00	Dwelling Unit	26.00	147,600.00	235
Parking Lot	75.00	Space	0.50	30,000.00	0
City Park	10.50	Acre	10.50	457,380.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	328.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Route 238 Property Development – Bunker Hill (Parcel Group 5) - Bay Area AQMD Air District, Annual

Project Characteristics - CO2 intensity factor based on 5-year average, PG&E, 2015

Land Use - The project would include up to 82 single-family residential units, 75 onstreet parking spaces, and approxiamtely 10.5 acres of open space

Construction Phase - Construction is anticipated to occur over 24 to 36 months starting in spring 2021.

Grading - Approximately 1,300 cubic yards of exported soil

Vehicle Trips - Based on trip generation for proposed project

Construction Off-road Equipment Mitigation - BAAQMD Basic Construction Mitigation Measures

Mobile Land Use Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	55.00	30.00
tblConstructionPhase	NumDays	740.00	370.00
tblConstructionPhase	NumDays	50.00	30.00
tblConstructionPhase	NumDays	75.00	30.00
tblConstructionPhase	NumDays	55.00	30.00
tblConstructionPhase	PhaseEndDate	3/7/2025	4/28/2023
tblConstructionPhase	PhaseEndDate	10/4/2024	2/3/2023
tblConstructionPhase	PhaseEndDate	7/9/2021	6/11/2021
tblConstructionPhase	PhaseEndDate	12/3/2021	9/3/2021
tblConstructionPhase	PhaseEndDate	12/20/2024	3/17/2023
tblConstructionPhase	PhaseEndDate	8/20/2021	7/23/2021
tblConstructionPhase	PhaseStartDate	12/21/2024	3/20/2023
tblConstructionPhase	PhaseStartDate	12/4/2021	9/6/2021
tblConstructionPhase	PhaseStartDate	8/21/2021	7/26/2021
tblConstructionPhase	PhaseStartDate	10/5/2024	2/6/2023
tblConstructionPhase	PhaseStartDate	7/10/2021	6/14/2021

tblGrading	AcresOfGrading	75.00	187.50
tblGrading	MaterialExported	0.00	1,300.00
tblLandUse	LotAcreage	26.62	26.00
tblLandUse	LotAcreage	0.68	0.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	328.8
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	10.56
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	10.56
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	10.56

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2949	2.9512	2.1516	5.0900e-003	0.5715	0.1259	0.6974	0.2394	0.1169	0.3563	0.0000	456.0618	456.0618	0.0874	0.0000	458.2478
2022	0.3431	3.2323	3.0379	8.7500e-003	0.3163	0.1090	0.4252	0.0859	0.1025	0.1884	0.0000	794.1144	794.1144	0.0904	0.0000	796.3732
2023	1.0967	0.4437	0.5465	1.2800e-003	0.0378	0.0178	0.0555	0.0102	0.0166	0.0268	0.0000	114.4711	114.4711	0.0185	0.0000	114.9325
Maximum	**1.0967**	**3.2323**	**3.0379**	**8.7500e-003**	**0.5715**	**0.1259**	**0.6974**	**0.2394**	**0.1169**	**0.3563**	**0.0000**	**794.1144**	**794.1144**	**0.0904**	**0.0000**	**796.3732**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2949	2.9512	2.1516	5.0900e-003	0.3181	0.1259	0.4440	0.1243	0.1169	0.2412	0.0000	456.0614	456.0614	0.0874	0.0000	458.2475
2022	0.3431	3.2323	3.0379	8.7500e-003	0.3163	0.1090	0.4252	0.0859	0.1025	0.1884	0.0000	794.1140	794.1140	0.0904	0.0000	796.3728
2023	1.0967	0.4437	0.5465	1.2800e-003	0.0378	0.0178	0.0555	0.0102	0.0166	0.0268	0.0000	114.4710	114.4710	0.0185	0.0000	114.9325
Maximum	**1.0967**	**3.2323**	**3.0379**	**8.7500e-003**	**0.3181**	**0.1259**	**0.4440**	**0.1243**	**0.1169**	**0.2412**	**0.0000**	**794.1140**	**794.1140**	**0.0904**	**0.0000**	**796.3728**

Route 238 Property Development – Bunker Hill (Parcel Group 5) - Bay Area AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**27.38**	**0.00**	**21.51**	**34.32**	**0.00**	**20.15**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**5-3-2021**	**8-2-2021**	1.2790	1.2790
2	**8-3-2021**	**11-2-2021**	1.2170	1.2170
3	**11-3-2021**	**2-2-2022**	0.9626	0.9626
4	**2-3-2022**	**5-2-2022**	0.8751	0.8751
5	**5-3-2022**	**8-2-2022**	0.9000	0.9000
6	**8-3-2022**	**11-2-2022**	0.9025	0.9025
7	**11-3-2022**	**2-2-2023**	0.8654	0.8654
8	**2-3-2023**	**5-2-2023**	1.1905	1.1905
		Highest	1.2790	1.2790

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.1889	0.0176	1.3126	1.4800e-003		0.1047	0.1047		0.1047	0.1047	10.4231	3.5553	13.9784	0.0207	6.0000e-004	14.6723
Energy	0.0187	0.1599	0.0681	1.0200e-003		0.0129	0.0129		0.0129	0.0129	0.0000	284.3901	284.3901	0.0123	5.2100e-003	286.2488
Mobile	0.1970	0.8721	2.2372	8.3200e-003	0.7443	6.8100e-003	0.7511	0.1998	6.3600e-003	0.2061	0.0000	764.4965	764.4965	0.0266	0.0000	765.1602
Waste						0.0000	0.0000		0.0000	0.0000	20.2179	0.0000	20.2179	1.1948	0.0000	50.0890
Water						0.0000	0.0000		0.0000	0.0000	1.6950	12.6001	14.2951	0.1752	4.3400e-003	19.9686
Total	**1.4046**	**1.0497**	**3.6178**	**0.0108**	**0.7443**	**0.1245**	**0.8687**	**0.1998**	**0.1240**	**0.3238**	**32.3360**	**1,065.0421**	**1,097.3780**	**1.4295**	**0.0102**	**1,136.1389**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7063	0.0130	0.6123	7.0000e-005		3.8600e-003	3.8600e-003		3.8600e-003	3.8600e-003	0.0000	7.9571	7.9571	1.0900e-003	1.3000e-004	8.0225
Energy	0.0187	0.1599	0.0681	1.0200e-003		0.0129	0.0129		0.0129	0.0129	0.0000	284.3901	284.3901	0.0123	5.2100e-003	286.2488
Mobile	0.1912	0.8373	2.1026	7.6900e-003	0.6832	6.3300e-003	0.6895	0.1834	5.9100e-003	0.1893	0.0000	706.4570	706.4570	0.0250	0.0000	707.0812
Waste						0.0000	0.0000		0.0000	0.0000	20.2179	0.0000	20.2179	1.1948	0.0000	50.0890
Water						0.0000	0.0000		0.0000	0.0000	1.6950	12.6001	14.2951	0.1752	4.3400e-003	19.9686
Total	**0.9163**	**1.0102**	**2.7830**	**8.7800e-003**	**0.6832**	**0.0231**	**0.7063**	**0.1834**	**0.0227**	**0.2061**	**21.9129**	**1,011.4044**	**1,033.3173**	**1.4084**	**9.6800e-003**	**1,071.4101**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**34.77**	**3.76**	**23.07**	**18.85**	**8.21**	**81.42**	**18.70**	**8.21**	**81.70**	**36.36**	**32.23**	**5.04**	**5.84**	**1.48**	**4.63**	**5.70**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/3/2021	6/11/2021	5	30	
2	Site Preparation	Site Preparation	6/14/2021	7/23/2021	5	30	
3	Grading	Grading	7/26/2021	9/3/2021	5	30	
4	Building Construction	Building Construction	9/6/2021	2/3/2023	5	370	
5	Paving	Paving	2/6/2023	3/17/2023	5	30	
6	Architectural Coating	Architectural Coating	3/20/2023	4/28/2023	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0.5

Residential Indoor: 298,890; Residential Outdoor: 99,630; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,800 (Architectural Coating – sqft)

OffRoad Equipment

Route 238 Property Development – Bunker Hill (Parcel Group 5) - Bay Area AQMD Air District, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	129.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	234.00	89.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	47.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0475	0.4716	0.3235	5.8000e-004		0.0233	0.0233		0.0216	0.0216	0.0000	51.0012	51.0012	0.0144	0.0000	51.3601
Total	**0.0475**	**0.4716**	**0.3235**	**5.8000e-004**		**0.0233**	**0.0233**		**0.0216**	**0.0216**	**0.0000**	**51.0012**	**51.0012**	**0.0144**	**0.0000**	**51.3601**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	4.8000e-004	5.0500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5030	1.5030	3.0000e-005	0.0000	1.5038
Total	**6.9000e-004**	**4.8000e-004**	**5.0500e-003**	**2.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.5030**	**1.5030**	**3.0000e-005**	**0.0000**	**1.5038**

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	0.0475	0.4716	0.3235	5.8000e-004		0.0233	0.0233		0.0216	0.0216	0.0000	51.0011	51.0011	0.0144	0.0000	51.3600
Total	**0.0475**	**0.4716**	**0.3235**	**5.8000e-004**		**0.0233**	**0.0233**		**0.0216**	**0.0216**	**0.0000**	**51.0011**	**51.0011**	**0.0144**	**0.0000**	**51.3600**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	4.8000e-004	5.0500e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.5030	1.5030	3.0000e-005	0.0000	1.5038
Total	**6.9000e-004**	**4.8000e-004**	**5.0500e-003**	**2.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.5030**	**1.5030**	**3.0000e-005**	**0.0000**	**1.5038**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0583	0.6075	0.3173	5.7000e-004		0.0307	0.0307		0.0282	0.0282	0.0000	50.1536	50.1536	0.0162	0.0000	50.5591
Total	**0.0583**	**0.6075**	**0.3173**	**5.7000e-004**	**0.2710**	**0.0307**	**0.3017**	**0.1490**	**0.0282**	**0.1772**	**0.0000**	**50.1536**	**50.1536**	**0.0162**	**0.0000**	**50.5591**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	5.7000e-004	6.0600e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1500e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.8036	1.8036	4.0000e-005	0.0000	1.8046
Total	**8.3000e-004**	**5.7000e-004**	**6.0600e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1500e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.8036**	**1.8036**	**4.0000e-005**	**0.0000**	**1.8046**

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					0.1220	0.0000	0.1220	0.0670	0.0000	0.0670	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0583	0.6075	0.3173	5.7000e-004		0.0307	0.0307		0.0282	0.0282	0.0000	50.1535	50.1535	0.0162	0.0000	50.5590
Total	**0.0583**	**0.6075**	**0.3173**	**5.7000e-004**	**0.1220**	**0.0307**	**0.1526**	**0.0670**	**0.0282**	**0.0952**	**0.0000**	**50.1535**	**50.1535**	**0.0162**	**0.0000**	**50.5590**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	5.7000e-004	6.0600e-003	2.0000e-005	2.1300e-003	1.0000e-005	2.1500e-003	5.7000e-004	1.0000e-005	5.8000e-004	0.0000	1.8036	1.8036	4.0000e-005	0.0000	1.8046
Total	**8.3000e-004**	**5.7000e-004**	**6.0600e-003**	**2.0000e-005**	**2.1300e-003**	**1.0000e-005**	**2.1500e-003**	**5.7000e-004**	**1.0000e-005**	**5.8000e-004**	**0.0000**	**1.8036**	**1.8036**	**4.0000e-005**	**0.0000**	**1.8046**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1898	0.0000	0.1898	0.0604	0.0000	0.0604	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7425	81.7425	0.0264	0.0000	82.4034
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.1898**	**0.0298**	**0.2195**	**0.0604**	**0.0274**	**0.0878**	**0.0000**	**81.7425**	**81.7425**	**0.0264**	**0.0000**	**82.4034**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.1000e-004	0.0174	3.7100e-003	5.0000e-005	1.0900e-003	5.0000e-005	1.1400e-003	3.0000e-004	5.0000e-005	3.5000e-004	0.0000	4.8797	4.8797	2.5000e-004	0.0000	4.8859
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	9.2000e-004	6.4000e-004	6.7300e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	2.0040	2.0040	4.0000e-005	0.0000	2.0051
Total	**1.4300e-003**	**0.0181**	**0.0104**	**7.0000e-005**	**3.4600e-003**	**7.0000e-005**	**3.5300e-003**	**9.3000e-004**	**6.0000e-005**	**9.9000e-004**	**0.0000**	**6.8837**	**6.8837**	**2.9000e-004**	**0.0000**	**6.8910**

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					0.0854	0.0000	0.0854	0.0272	0.0000	0.0272	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0629	0.6960	0.4632	9.3000e-004		0.0298	0.0298		0.0274	0.0274	0.0000	81.7424	81.7424	0.0264	0.0000	82.4033
Total	**0.0629**	**0.6960**	**0.4632**	**9.3000e-004**	**0.0854**	**0.0298**	**0.1152**	**0.0272**	**0.0274**	**0.0546**	**0.0000**	**81.7424**	**81.7424**	**0.0264**	**0.0000**	**82.4033**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.1000e-004	0.0174	3.7100e-003	5.0000e-005	1.0900e-003	5.0000e-005	1.1400e-003	3.0000e-004	5.0000e-005	3.5000e-004	0.0000	4.8797	4.8797	2.5000e-004	0.0000	4.8859
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	9.2000e-004	6.4000e-004	6.7300e-003	2.0000e-005	2.3700e-003	2.0000e-005	2.3900e-003	6.3000e-004	1.0000e-005	6.4000e-004	0.0000	2.0040	2.0040	4.0000e-005	0.0000	2.0051
Total	**1.4300e-003**	**0.0181**	**0.0104**	**7.0000e-005**	**3.4600e-003**	**7.0000e-005**	**3.5300e-003**	**9.3000e-004**	**6.0000e-005**	**9.9000e-004**	**0.0000**	**6.8837**	**6.8837**	**2.9000e-004**	**0.0000**	**6.8910**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0808	0.7409	0.7045	1.1400e-003		0.0407	0.0407		0.0383	0.0383	0.0000	98.4458	98.4458	0.0238	0.0000	99.0396
Total	**0.0808**	**0.7409**	**0.7045**	**1.1400e-003**		**0.0407**	**0.0407**		**0.0383**	**0.0383**	**0.0000**	**98.4458**	**98.4458**	**0.0238**	**0.0000**	**99.0396**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0120	0.3951	0.0986	1.0200e-003	0.0248	8.6000e-004	0.0257	7.1700e-003	8.2000e-004	8.0000e-003	0.0000	98.0969	98.0969	4.8200e-003	0.0000	98.2174
Worker	0.0305	0.0211	0.2231	7.3000e-004	0.0786	5.1000e-004	0.0791	0.0209	4.7000e-004	0.0214	0.0000	66.4316	66.4316	1.4900e-003	0.0000	66.4689
Total	**0.0425**	**0.4161**	**0.3217**	**1.7500e-003**	**0.1034**	**1.3700e-003**	**0.1048**	**0.0281**	**1.2900e-003**	**0.0294**	**0.0000**	**164.5285**	**164.5285**	**6.3100e-003**	**0.0000**	**164.6863**

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	0.0808	0.7409	0.7044	1.1400e-003		0.0407	0.0407		0.0383	0.0383	0.0000	98.4457	98.4457	0.0238	0.0000	99.0395
Total	**0.0808**	**0.7409**	**0.7044**	**1.1400e-003**		**0.0407**	**0.0407**		**0.0383**	**0.0383**	**0.0000**	**98.4457**	**98.4457**	**0.0238**	**0.0000**	**99.0395**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0120	0.3951	0.0986	1.0200e-003	0.0248	8.6000e-004	0.0257	7.1700e-003	8.2000e-004	8.0000e-003	0.0000	98.0969	98.0969	4.8200e-003	0.0000	98.2174
Worker	0.0305	0.0211	0.2231	7.3000e-004	0.0786	5.1000e-004	0.0791	0.0209	4.7000e-004	0.0214	0.0000	66.4316	66.4316	1.4900e-003	0.0000	66.4689
Total	**0.0425**	**0.4161**	**0.3217**	**1.7500e-003**	**0.1034**	**1.3700e-003**	**0.1048**	**0.0281**	**1.2900e-003**	**0.0294**	**0.0000**	**164.5285**	**164.5285**	**6.3100e-003**	**0.0000**	**164.6863**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2428	301.2428	0.0722	0.0000	303.0471
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2428**	**301.2428**	**0.0722**	**0.0000**	**303.0471**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0343	1.1445	0.2836	3.0900e-003	0.0759	2.2800e-003	0.0782	0.0220	2.1800e-003	0.0241	0.0000	297.1187	297.1187	0.0141	0.0000	297.4711
Worker	0.0870	0.0578	0.6270	2.1600e-003	0.2404	1.5400e-003	0.2419	0.0640	1.4100e-003	0.0654	0.0000	195.7529	195.7529	4.0900e-003	0.0000	195.8550
Total	**0.1213**	**1.2023**	**0.9106**	**5.2500e-003**	**0.3162**	**3.8200e-003**	**0.3201**	**0.0859**	**3.5900e-003**	**0.0895**	**0.0000**	**492.8716**	**492.8716**	**0.0182**	**0.0000**	**493.3261**

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	0.2218	2.0300	2.1272	3.5000e-003		0.1052	0.1052		0.0990	0.0990	0.0000	301.2425	301.2425	0.0722	0.0000	303.0467
Total	**0.2218**	**2.0300**	**2.1272**	**3.5000e-003**		**0.1052**	**0.1052**		**0.0990**	**0.0990**	**0.0000**	**301.2425**	**301.2425**	**0.0722**	**0.0000**	**303.0467**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0343	1.1445	0.2836	3.0900e-003	0.0759	2.2800e-003	0.0782	0.0220	2.1800e-003	0.0241	0.0000	297.1187	297.1187	0.0141	0.0000	297.4711
Worker	0.0870	0.0578	0.6270	2.1600e-003	0.2404	1.5400e-003	0.2419	0.0640	1.4100e-003	0.0654	0.0000	195.7529	195.7529	4.0900e-003	0.0000	195.8550
Total	**0.1213**	**1.2023**	**0.9106**	**5.2500e-003**	**0.3162**	**3.8200e-003**	**0.3201**	**0.0859**	**3.5900e-003**	**0.0895**	**0.0000**	**492.8716**	**492.8716**	**0.0182**	**0.0000**	**493.3261**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0197	0.1798	0.2031	3.4000e-004		8.7500e-003	8.7500e-003		8.2300e-003	8.2300e-003	0.0000	28.9756	28.9756	6.8900e-003	0.0000	29.1479
Total	**0.0197**	**0.1798**	**0.2031**	**3.4000e-004**		**8.7500e-003**	**8.7500e-003**		**8.2300e-003**	**8.2300e-003**	**0.0000**	**28.9756**	**28.9756**	**6.8900e-003**	**0.0000**	**29.1479**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4700e-003	0.0849	0.0244	2.9000e-004	7.3000e-003	1.0000e-004	7.3900e-003	2.1100e-003	9.0000e-005	2.2000e-003	0.0000	27.7684	27.7684	1.1600e-003	0.0000	27.7973
Worker	7.8200e-003	4.9900e-003	0.0555	2.0000e-004	0.0231	1.4000e-004	0.0233	6.1500e-003	1.3000e-004	6.2800e-003	0.0000	18.1015	18.1015	3.5000e-004	0.0000	18.1104
Total	**0.0103**	**0.0898**	**0.0799**	**4.9000e-004**	**0.0304**	**2.4000e-004**	**0.0307**	**8.2600e-003**	**2.2000e-004**	**8.4800e-003**	**0.0000**	**45.8700**	**45.8700**	**1.5100e-003**	**0.0000**	**45.9077**

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	0.0197	0.1798	0.2031	3.4000e-004		8.7500e-003	8.7500e-003		8.2300e-003	8.2300e-003	0.0000	28.9756	28.9756	6.8900e-003	0.0000	29.1479
Total	**0.0197**	**0.1798**	**0.2031**	**3.4000e-004**		**8.7500e-003**	**8.7500e-003**		**8.2300e-003**	**8.2300e-003**	**0.0000**	**28.9756**	**28.9756**	**6.8900e-003**	**0.0000**	**29.1479**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.4700e-003	0.0849	0.0244	2.9000e-004	7.3000e-003	1.0000e-004	7.3900e-003	2.1100e-003	9.0000e-005	2.2000e-003	0.0000	27.7684	27.7684	1.1600e-003	0.0000	27.7973
Worker	7.8200e-003	4.9900e-003	0.0555	2.0000e-004	0.0231	1.4000e-004	0.0233	6.1500e-003	1.3000e-004	6.2800e-003	0.0000	18.1015	18.1015	3.5000e-004	0.0000	18.1104
Total	**0.0103**	**0.0898**	**0.0799**	**4.9000e-004**	**0.0304**	**2.4000e-004**	**0.0307**	**8.2600e-003**	**2.2000e-004**	**8.4800e-003**	**0.0000**	**45.8700**	**45.8700**	**1.5100e-003**	**0.0000**	**45.9077**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0155	0.1529	0.2188	3.4000e-004		7.6500e-003	7.6500e-003		7.0400e-003	7.0400e-003	0.0000	30.0403	30.0403	9.7200e-003	0.0000	30.2832
Paving	6.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0162**	**0.1529**	**0.2188**	**3.4000e-004**		**7.6500e-003**	**7.6500e-003**		**7.0400e-003**	**7.0400e-003**	**0.0000**	**30.0403**	**30.0403**	**9.7200e-003**	**0.0000**	**30.2832**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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-004	3.8000e-004	4.2700e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.3924	1.3924	3.0000e-005	0.0000	1.3931
Total	**6.0000e-004**	**3.8000e-004**	**4.2700e-003**	**2.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.3924**	**1.3924**	**3.0000e-005**	**0.0000**	**1.3931**

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	0.0155	0.1529	0.2188	3.4000e-004		7.6500e-003	7.6500e-003		7.0400e-003	7.0400e-003	0.0000	30.0403	30.0403	9.7200e-003	0.0000	30.2832
Paving	6.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0162**	**0.1529**	**0.2188**	**3.4000e-004**		**7.6500e-003**	**7.6500e-003**		**7.0400e-003**	**7.0400e-003**	**0.0000**	**30.0403**	**30.0403**	**9.7200e-003**	**0.0000**	**30.2832**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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-004	3.8000e-004	4.2700e-003	2.0000e-005	1.7800e-003	1.0000e-005	1.7900e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.3924	1.3924	3.0000e-005	0.0000	1.3931
Total	**6.0000e-004**	**3.8000e-004**	**4.2700e-003**	**2.0000e-005**	**1.7800e-003**	**1.0000e-005**	**1.7900e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.3924**	**1.3924**	**3.0000e-005**	**0.0000**	**1.3931**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0453					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8700e-003	0.0195	0.0272	4.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	3.8299	3.8299	2.3000e-004	0.0000	3.8356
Total	**1.0481**	**0.0195**	**0.0272**	**4.0000e-005**		**1.0600e-003**	**1.0600e-003**		**1.0600e-003**	**1.0600e-003**	**0.0000**	**3.8299**	**3.8299**	**2.3000e-004**	**0.0000**	**3.8356**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	1.8900e-003	1.2000e-003	0.0134	5.0000e-005	5.5700e-003	3.0000e-005	5.6100e-003	1.4800e-003	3.0000e-005	1.5100e-003	0.0000	4.3629	4.3629	8.0000e-005	0.0000	4.3651
Total	**1.8900e-003**	**1.2000e-003**	**0.0134**	**5.0000e-005**	**5.5700e-003**	**3.0000e-005**	**5.6100e-003**	**1.4800e-003**	**3.0000e-005**	**1.5100e-003**	**0.0000**	**4.3629**	**4.3629**	**8.0000e-005**	**0.0000**	**4.3651**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0453					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8700e-003	0.0195	0.0272	4.0000e-005		1.0600e-003	1.0600e-003		1.0600e-003	1.0600e-003	0.0000	3.8299	3.8299	2.3000e-004	0.0000	3.8356
Total	**1.0481**	**0.0195**	**0.0272**	**4.0000e-005**		**1.0600e-003**	**1.0600e-003**		**1.0600e-003**	**1.0600e-003**	**0.0000**	**3.8299**	**3.8299**	**2.3000e-004**	**0.0000**	**3.8356**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	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	1.8900e-003	1.2000e-003	0.0134	5.0000e-005	5.5700e-003	3.0000e-005	5.6100e-003	1.4800e-003	3.0000e-005	1.5100e-003	0.0000	4.3629	4.3629	8.0000e-005	0.0000	4.3651
Total	**1.8900e-003**	**1.2000e-003**	**0.0134**	**5.0000e-005**	**5.5700e-003**	**3.0000e-005**	**5.6100e-003**	**1.4800e-003**	**3.0000e-005**	**1.5100e-003**	**0.0000**	**4.3629**	**4.3629**	**8.0000e-005**	**0.0000**	**4.3651**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Integrate Below Market Rate Housing

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive 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	0.1912	0.8373	2.1026	7.6900e-003	0.6832	6.3300e-003	0.6895	0.1834	5.9100e-003	0.1893	0.0000	706.4570	706.4570	0.0250	0.0000	707.0812
Unmitigated	0.1970	0.8721	2.2372	8.3200e-003	0.7443	6.8100e-003	0.7511	0.1998	6.3600e-003	0.2061	0.0000	764.4965	764.4965	0.0266	0.0000	765.1602

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	865.92	865.92	865.92	1,999,935	1,835,750
Total	865.92	865.92	865.92	1,999,935	1,835,750

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Parking Lot	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Single Family Housing	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	99.1885	99.1885	8.7500e-003	1.8100e-003	99.9465
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	99.1885	99.1885	8.7500e-003	1.8100e-003	99.9465
NaturalGas Mitigated	0.0187	0.1599	0.0681	1.0200e-003		0.0129	0.0129		0.0129	0.0129	0.0000	185.2017	185.2017	3.5500e-003	3.4000e-003	186.3022
NaturalGas Unmitigated	0.0187	0.1599	0.0681	1.0200e-003		0.0129	0.0129		0.0129	0.0129	0.0000	185.2017	185.2017	3.5500e-003	3.4000e-003	186.3022

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	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
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
Single Family Housing	3.47055e+006	0.0187	0.1599	0.0681	1.0200e-003		0.0129	0.0129		0.0129	0.0129	0.0000	185.2017	185.2017	3.5500e-003	3.4000e-003	186.3022
Total		**0.0187**	**0.1599**	**0.0681**	**1.0200e-003**		**0.0129**	**0.0129**		**0.0129**	**0.0129**	**0.0000**	**185.2017**	**185.2017**	**3.5500e-003**	**3.4000e-003**	**186.3022**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	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
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
Single Family Housing	3.47055e+006	0.0187	0.1599	0.0681	1.0200e-003		0.0129	0.0129		0.0129	0.0129	0.0000	185.2017	185.2017	3.5500e-003	3.4000e-003	186.3022
Total		**0.0187**	**0.1599**	**0.0681**	**1.0200e-003**		**0.0129**	**0.0129**		**0.0129**	**0.0129**	**0.0000**	**185.2017**	**185.2017**	**3.5500e-003**	**3.4000e-003**	**186.3022**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	10500	1.5660	1.4000e-004	3.0000e-005	1.5780
Single Family Housing	654564	97.6225	8.6100e-003	1.7800e-003	98.3686
Total		**99.1885**	**8.7500e-003**	**1.8100e-003**	**99.9465**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	10500	1.5660	1.4000e-004	3.0000e-005	1.5780
Single Family Housing	654564	97.6225	8.6100e-003	1.7800e-003	98.3686
Total		**99.1885**	**8.7500e-003**	**1.8100e-003**	**99.9465**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive 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	0.7063	0.0130	0.6123	7.0000e-005		3.8600e-003	3.8600e-003		3.8600e-003	3.8600e-003	0.0000	7.9571	7.9571	1.0900e-003	1.3000e-004	8.0225
Unmitigated	1.1889	0.0176	1.3126	1.4800e-003		0.1047	0.1047		0.1047	0.1047	10.4231	3.5553	13.9784	0.0207	6.0000e-004	14.6723

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	0.1045					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5827					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.4833	0.0106	0.7028	1.4500e-003		0.1014	0.1014		0.1014	0.1014	10.4231	2.5592	12.9823	0.0197	6.0000e-004	13.6522
Landscaping	0.0184	7.0300e-003	0.6098	3.0000e-005		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	0.9961	0.9961	9.6000e-004	0.0000	1.0201
Total	**1.1890**	**0.0176**	**1.3126**	**1.4800e-003**		**0.1047**	**0.1047**		**0.1047**	**0.1047**	**10.4231**	**3.5553**	**13.9784**	**0.0207**	**6.0000e-004**	**14.6723**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1045					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5827					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.0000e-004	6.0100e-003	2.5600e-003	4.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	6.9610	6.9610	1.3000e-004	1.3000e-004	7.0024
Landscaping	0.0184	7.0300e-003	0.6098	3.0000e-005		3.3700e-003	3.3700e-003		3.3700e-003	3.3700e-003	0.0000	0.9961	0.9961	9.6000e-004	0.0000	1.0201
Total	**0.7063**	**0.0130**	**0.6123**	**7.0000e-005**		**3.8600e-003**	**3.8600e-003**		**3.8600e-003**	**3.8600e-003**	**0.0000**	**7.9571**	**7.9571**	**1.0900e-003**	**1.3000e-004**	**8.0225**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.2951	0.1752	4.3400e-003	19.9686
Unmitigated	14.2951	0.1752	4.3400e-003	19.9686

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 12.5106	6.5304	5.8000e-004	1.2000e-004	6.5804
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	5.34263 / 3.36818	7.7647	0.1746	4.2200e-003	13.3883
Total		**14.2951**	**0.1752**	**4.3400e-003**	**19.9686**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 12.5106	6.5304	5.8000e-004	1.2000e-004	6.5804
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	5.34263 / 3.36818	7.7647	0.1746	4.2200e-003	13.3883
Total		**14.2951**	**0.1752**	**4.3400e-003**	**19.9686**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	20.2179	1.1948	0.0000	50.0890
Unmitigated	20.2179	1.1948	0.0000	50.0890

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.9	0.1827	0.0108	0.0000	0.4526
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	98.7	20.0352	1.1841	0.0000	49.6364
Total		**20.2179**	**1.1949**	**0.0000**	**50.0890**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.9	0.1827	0.0108	0.0000	0.4526
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	98.7	20.0352	1.1841	0.0000	49.6364
Total		**20.2179**	**1.1949**	**0.0000**	**50.0890**

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

Route 238 Property Development – Bunker Hill (Parcel Group 5)

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	82.00	Dwelling Unit	26.00	147,600.00	235
Parking Lot	75.00	Space	0.50	30,000.00	0
City Park	10.50	Acre	10.50	457,380.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	328.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity factor based on 5-year average, PG&E, 2015

Land Use - The project would include up to 82 single-family residential units, 75 onstreet parking spaces, and approxiamtely 10.5 acres of open space

Construction Phase - Construction is anticipated to occur over 24 to 36 months starting in spring 2021.

Grading - Approximately 1,300 cubic yards of exported soil

Vehicle Trips - Based on trip generation for proposed project

Construction Off-road Equipment Mitigation - BAAQMD Basic Construction Mitigation Measures

Mobile Land Use Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	55.00	30.00
tblConstructionPhase	NumDays	740.00	370.00
tblConstructionPhase	NumDays	50.00	30.00
tblConstructionPhase	NumDays	75.00	30.00
tblConstructionPhase	NumDays	55.00	30.00
tblConstructionPhase	PhaseEndDate	3/7/2025	4/28/2023
tblConstructionPhase	PhaseEndDate	10/4/2024	2/3/2023
tblConstructionPhase	PhaseEndDate	7/9/2021	6/11/2021
tblConstructionPhase	PhaseEndDate	12/3/2021	9/3/2021
tblConstructionPhase	PhaseEndDate	12/20/2024	3/17/2023
tblConstructionPhase	PhaseEndDate	8/20/2021	7/23/2021
tblConstructionPhase	PhaseStartDate	12/21/2024	3/20/2023
tblConstructionPhase	PhaseStartDate	12/4/2021	9/6/2021
tblConstructionPhase	PhaseStartDate	8/21/2021	7/26/2021
tblConstructionPhase	PhaseStartDate	10/5/2024	2/6/2023
tblConstructionPhase	PhaseStartDate	7/10/2021	6/14/2021

tblGrading	AcresOfGrading	75.00	187.50
tblGrading	MaterialExported	0.00	1,300.00
tblLandUse	LotAcreage	26.62	26.00
tblLandUse	LotAcreage	0.68	0.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	328.8
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	10.56
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	10.56
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	10.56

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2890	47.5752	31.6096	0.0698	18.2141	2.0454	20.2595	9.9699	1.8818	11.8517	0.0000	6,978.2802	6,978.2802	1.9643	0.0000	6,997.7338
2022	2.6640	24.7267	23.6994	0.0689	2.5247	0.8381	3.3628	0.6833	0.7886	1.4719	0.0000	6,886.1948	6,886.1948	0.7646	0.0000	6,905.3086
2023	70.0079	21.4758	22.9649	0.0675	2.5247	0.7190	3.2437	0.6833	0.6764	1.3597	0.0000	6,746.9928	6,746.9928	0.7399	0.0000	6,765.4899
Maximum	**70.0079**	**47.5752**	**31.6096**	**0.0698**	**18.2141**	**2.0454**	**20.2595**	**9.9699**	**1.8818**	**11.8517**	**0.0000**	**6,978.2802**	**6,978.2802**	**1.9643**	**0.0000**	**6,997.7338**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2890	47.5752	31.6096	0.0698	8.2777	2.0454	10.3231	4.5080	1.8818	6.3898	0.0000	6,978.2802	6,978.2802	1.9643	0.0000	6,997.7338
2022	2.6640	24.7267	23.6994	0.0689	2.5247	0.8381	3.3628	0.6833	0.7886	1.4719	0.0000	6,886.1948	6,886.1948	0.7646	0.0000	6,905.3086
2023	70.0079	21.4758	22.9649	0.0675	2.5247	0.7190	3.2437	0.6833	0.6764	1.3597	0.0000	6,746.9928	6,746.9928	0.7399	0.0000	6,765.4899
Maximum	**70.0079**	**47.5752**	**31.6096**	**0.0698**	**8.2777**	**2.0454**	**10.3231**	**4.5080**	**1.8818**	**6.3898**	**0.0000**	**6,978.2802**	**6,978.2802**	**1.9643**	**0.0000**	**6,997.7338**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	42.71	0.00	36.99	48.18	0.00	37.20	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	88.9483	1.7143	116.6790	0.2073		15.5784	15.5784		15.5784	15.5784	1,671.0238	518.6706	2,189.6944	2.0779	0.1179	2,276.7804
Energy	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771
Mobile	1.2450	4.6460	12.8009	0.0484	4.2486	0.0374	4.2860	1.1366	0.0349	1.1715		4,897.4136	4,897.4136	0.1618		4,901.4585
Total	**90.2959**	**7.2365**	**129.8528**	**0.2613**	**4.2486**	**15.6867**	**19.9353**	**1.1366**	**15.6842**	**16.8208**	**1,671.0238**	**6,534.7138**	**8,205.7376**	**2.2611**	**0.1384**	**8,303.5160**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0965	1.1572	7.2345	7.2500e-003		0.1247	0.1247		0.1247	0.1247	0.0000	1,389.8000	1,389.8000	0.0382	0.0253	1,398.2805
Energy	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771
Mobile	1.2129	4.4665	11.9668	0.0447	3.8998	0.0347	3.9345	1.0433	0.0324	1.0757		4,525.1001	4,525.1001	0.1518		4,528.8951
Total	**5.4120**	**6.4999**	**19.5742**	**0.0575**	**3.8998**	**0.2303**	**4.1301**	**1.0433**	**0.2280**	**1.2713**	**0.0000**	**7,033.5297**	**7,033.5297**	**0.2114**	**0.0458**	**7,052.4526**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**94.01**	**10.18**	**84.93**	**77.98**	**8.21**	**98.53**	**79.28**	**8.21**	**98.55**	**92.44**	**100.00**	**-7.63**	**14.29**	**90.65**	**66.93**	**15.07**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/3/2021	6/11/2021	5	30	
2	Site Preparation	Site Preparation	6/14/2021	7/23/2021	5	30	
3	Grading	Grading	7/26/2021	9/3/2021	5	30	
4	Building Construction	Building Construction	9/6/2021	2/3/2023	5	370	
5	Paving	Paving	2/6/2023	3/17/2023	5	30	
6	Architectural Coating	Architectural Coating	3/20/2023	4/28/2023	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0.5

Residential Indoor: 298,890; Residential Outdoor: 99,630; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,800 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	129.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	234.00	89.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	47.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**		**1.5513**	**1.5513**		**1.4411**	**1.4411**		**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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
Worker	0.0482	0.0282	0.3685	1.1900e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		118.7939	118.7939	2.6600e-003		118.8603
Total	**0.0482**	**0.0282**	**0.3685**	**1.1900e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**118.7939**	**118.7939**	**2.6600e-003**		**118.8603**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**		**1.5513**	**1.5513**		**1.4411**	**1.4411**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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
Worker	0.0482	0.0282	0.3685	1.1900e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		118.7939	118.7939	2.6600e-003		118.8603
Total	**0.0482**	**0.0282**	**0.3685**	**1.1900e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**118.7939**	**118.7939**	**2.6600e-003**		**118.8603**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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
Worker	0.0579	0.0338	0.4421	1.4300e-003	0.1479	9.3000e-004	0.1488	0.0392	8.6000e-004	0.0401		142.5527	142.5527	3.1900e-003		142.6324
Total	**0.0579**	**0.0338**	**0.4421**	**1.4300e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.6000e-004**	**0.0401**		**142.5527**	**142.5527**	**3.1900e-003**		**142.6324**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**8.1298**	**2.0445**	**10.1743**	**4.4688**	**1.8809**	**6.3497**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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
Worker	0.0579	0.0338	0.4421	1.4300e-003	0.1479	9.3000e-004	0.1488	0.0392	8.6000e-004	0.0401		142.5527	142.5527	3.1900e-003		142.6324
Total	**0.0579**	**0.0338**	**0.4421**	**1.4300e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.6000e-004**	**0.0401**		**142.5527**	**142.5527**	**3.1900e-003**		**142.6324**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.6502	0.0000	12.6502	4.0259	0.0000	4.0259			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**12.6502**	**1.9853**	**14.6356**	**4.0259**	**1.8265**	**5.8524**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0335	1.1378	0.2398	3.3700e-003	0.0751	3.5700e-003	0.0787	0.0206	3.4100e-003	0.0240		361.1612	361.1612	0.0179		361.6092
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
Worker	0.0643	0.0376	0.4913	1.5900e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		158.3919	158.3919	3.5400e-003		158.4804
Total	**0.0978**	**1.1754**	**0.7311**	**4.9600e-003**	**0.2394**	**4.6000e-003**	**0.2440**	**0.0642**	**4.3600e-003**	**0.0685**		**519.5531**	**519.5531**	**0.0215**		**520.0896**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.6926	0.0000	5.6926	1.8117	0.0000	1.8117			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**5.6926**	**1.9853**	**7.6779**	**1.8117**	**1.8265**	**3.6382**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0335	1.1378	0.2398	3.3700e-003	0.0751	3.5700e-003	0.0787	0.0206	3.4100e-003	0.0240		361.1612	361.1612	0.0179		361.6092
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
Worker	0.0643	0.0376	0.4913	1.5900e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		158.3919	158.3919	3.5400e-003		158.4804
Total	**0.0978**	**1.1754**	**0.7311**	**4.9600e-003**	**0.2394**	**4.6000e-003**	**0.2440**	**0.0642**	**4.3600e-003**	**0.0685**		**519.5531**	**519.5531**	**0.0215**		**520.0896**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.2760	9.1974	2.1688	0.0243	0.6025	0.0199	0.6224	0.1734	0.0191	0.1925		2,571.7310	2,571.7310	0.1207		2,574.7486
Worker	0.7524	0.4397	5.7478	0.0186	1.9223	0.0121	1.9344	0.5099	0.0111	0.5210		1,853.1853	1,853.1853	0.0414		1,854.2209
Total	**1.0284**	**9.6371**	**7.9166**	**0.0429**	**2.5247**	**0.0320**	**2.5567**	**0.6833**	**0.0302**	**0.7135**		**4,424.9163**	**4,424.9163**	**0.1621**		**4,428.9695**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.2760	9.1974	2.1688	0.0243	0.6025	0.0199	0.6224	0.1734	0.0191	0.1925		2,571.7310	2,571.7310	0.1207		2,574.7486
Worker	0.7524	0.4397	5.7478	0.0186	1.9223	0.0121	1.9344	0.5099	0.0111	0.5210		1,853.1853	1,853.1853	0.0414		1,854.2209
Total	**1.0284**	**9.6371**	**7.9166**	**0.0429**	**2.5247**	**0.0320**	**2.5567**	**0.6833**	**0.0302**	**0.7135**		**4,424.9163**	**4,424.9163**	**0.1621**		**4,428.9695**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.2574	8.7167	2.0397	0.0240	0.6025	0.0173	0.6197	0.1734	0.0165	0.1900		2,546.6861	2,546.6861	0.1154		2,549.5712
Worker	0.7003	0.3944	5.2963	0.0179	1.9223	0.0118	1.9341	0.5099	0.0109	0.5208		1,785.1752	1,785.1752	0.0372		1,786.1052
Total	**0.9577**	**9.1111**	**7.3360**	**0.0419**	**2.5247**	**0.0291**	**2.5538**	**0.6833**	**0.0274**	**0.7107**		**4,331.8612**	**4,331.8612**	**0.1526**		**4,335.6764**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.2574	8.7167	2.0397	0.0240	0.6025	0.0173	0.6197	0.1734	0.0165	0.1900		2,546.6861	2,546.6861	0.1154		2,549.5712
Worker	0.7003	0.3944	5.2963	0.0179	1.9223	0.0118	1.9341	0.5099	0.0109	0.5208		1,785.1752	1,785.1752	0.0372		1,786.1052
Total	**0.9577**	**9.1111**	**7.3360**	**0.0419**	**2.5247**	**0.0291**	**2.5538**	**0.6833**	**0.0274**	**0.7107**		**4,331.8612**	**4,331.8612**	**0.1526**		**4,335.6764**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1929	6.7362	1.8363	0.0233	0.6025	7.6600e-003	0.6102	0.1734	7.3300e-003	0.1808		2,475.0447	2,475.0447	0.0986		2,477.5107
Worker	0.6538	0.3547	4.8846	0.0172	1.9223	0.0116	1.9338	0.5099	0.0107	0.5205		1,716.7381	1,716.7381	0.0334		1,717.5732
Total	**0.8467**	**7.0909**	**6.7209**	**0.0405**	**2.5247**	**0.0192**	**2.5440**	**0.6833**	**0.0180**	**0.7013**		**4,191.7829**	**4,191.7829**	**0.1320**		**4,195.0838**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1929	6.7362	1.8363	0.0233	0.6025	7.6600e-003	0.6102	0.1734	7.3300e-003	0.1808		2,475.0447	2,475.0447	0.0986		2,477.5107
Worker	0.6538	0.3547	4.8846	0.0172	1.9223	0.0116	1.9338	0.5099	0.0107	0.5205		1,716.7381	1,716.7381	0.0334		1,717.5732
Total	**0.8467**	**7.0909**	**6.7209**	**0.0405**	**2.5247**	**0.0192**	**2.5440**	**0.6833**	**0.0180**	**0.7013**		**4,191.7829**	**4,191.7829**	**0.1320**		**4,195.0838**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0437					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0764**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.0419	0.0227	0.3131	1.1000e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		110.0473	110.0473	2.1400e-003		110.1009
Total	**0.0419**	**0.0227**	**0.3131**	**1.1000e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**110.0473**	**110.0473**	**2.1400e-003**		**110.1009**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0437					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0764**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.0419	0.0227	0.3131	1.1000e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		110.0473	110.0473	2.1400e-003		110.1009
Total	**0.0419**	**0.0227**	**0.3131**	**1.1000e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**110.0473**	**110.0473**	**2.1400e-003**		**110.1009**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	69.6849					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**69.8766**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.1313	0.0713	0.9811	3.4600e-003	0.3861	2.3200e-003	0.3884	0.1024	2.1400e-003	0.1046		344.8149	344.8149	6.7100e-003		344.9827
Total	**0.1313**	**0.0713**	**0.9811**	**3.4600e-003**	**0.3861**	**2.3200e-003**	**0.3884**	**0.1024**	**2.1400e-003**	**0.1046**		**344.8149**	**344.8149**	**6.7100e-003**		**344.9827**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	69.6849					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**69.8766**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.1313	0.0713	0.9811	3.4600e-003	0.3861	2.3200e-003	0.3884	0.1024	2.1400e-003	0.1046		344.8149	344.8149	6.7100e-003		344.9827
Total	**0.1313**	**0.0713**	**0.9811**	**3.4600e-003**	**0.3861**	**2.3200e-003**	**0.3884**	**0.1024**	**2.1400e-003**	**0.1046**		**344.8149**	**344.8149**	**6.7100e-003**		**344.9827**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Integrate Below Market Rate Housing

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2129	4.4665	11.9668	0.0447	3.8998	0.0347	3.9345	1.0433	0.0324	1.0757		4,525.1001	4,525.1001	0.1518		4,528.8951
Unmitigated	1.2450	4.6460	12.8009	0.0484	4.2486	0.0374	4.2860	1.1366	0.0349	1.1715		4,897.4136	4,897.4136	0.1618		4,901.4585

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	865.92	865.92	865.92	1,999,935	1,835,750
Total	865.92	865.92	865.92	1,999,935	1,835,750

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Parking Lot	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Single Family Housing	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771
NaturalGas Unmitigated	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	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
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
Single Family Housing	9508.35	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771
Total		**0.1025**	**0.8763**	**0.3729**	**5.5900e-003**		**0.0709**	**0.0709**		**0.0709**	**0.0709**		**1,118.6296**	**1,118.6296**	**0.0214**	**0.0205**	**1,125.2771**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	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
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
Single Family Housing	9.50835	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771
Total		**0.1025**	**0.8763**	**0.3729**	**5.5900e-003**		**0.0709**	**0.0709**		**0.0709**	**0.0709**		**1,118.6296**	**1,118.6296**	**0.0214**	**0.0205**	**1,125.2771**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0965	1.1572	7.2345	7.2500e-003		0.1247	0.1247		0.1247	0.1247	0.0000	1,389.8000	1,389.8000	0.0382	0.0253	1,398.2805
Unmitigated	88.9483	1.7143	116.6790	0.2073		15.5784	15.5784		15.5784	15.5784	1,671.0238	518.6706	2,189.6944	2.0779	0.1179	2,276.7804

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1928					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	84.9780	1.6362	109.9037	0.2070		15.5409	15.5409		15.5409	15.5409	1,671.0238	506.4706	2,177.4944	2.0662	0.1179	2,264.2864
Landscaping	0.2047	0.0781	6.7753	3.6000e-004		0.0375	0.0375		0.0375	0.0375		12.2000	12.2000	0.0118		12.4941
Total	**88.9483**	**1.7143**	**116.6790**	**0.2073**		**15.5784**	**15.5784**		**15.5784**	**15.5784**	**1,671.0238**	**518.6706**	**2,189.6944**	**2.0779**	**0.1179**	**2,276.7804**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1928					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1263	1.0791	0.4592	6.8900e-003		0.0873	0.0873		0.0873	0.0873	0.0000	1,377.6000	1,377.6000	0.0264	0.0253	1,385.7864
Landscaping	0.2047	0.0781	6.7753	3.6000e-004		0.0375	0.0375		0.0375	0.0375		12.2000	12.2000	0.0118		12.4941
Total	**4.0965**	**1.1572**	**7.2345**	**7.2500e-003**		**0.1247**	**0.1247**		**0.1247**	**0.1247**	**0.0000**	**1,389.8000**	**1,389.8000**	**0.0382**	**0.0253**	**1,398.2805**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Route 238 Property Development – Bunker Hill (Parcel Group 5)

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	82.00	Dwelling Unit	26.00	147,600.00	235
Parking Lot	75.00	Space	0.50	30,000.00	0
City Park	10.50	Acre	10.50	457,380.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	328.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Route 238 Property Development – Bunker Hill (Parcel Group 5) - Bay Area AQMD Air District, Winter

Project Characteristics - CO2 intensity factor based on 5-year average, PG&E, 2015

Land Use - The project would include up to 82 single-family residential units, 75 onstreet parking spaces, and approxiamtely 10.5 acres of open space

Construction Phase - Construction is anticipated to occur over 24 to 36 months starting in spring 2021.

Grading - Approximately 1,300 cubic yards of exported soil

Vehicle Trips - Based on trip generation for proposed project

Construction Off-road Equipment Mitigation - BAAQMD Basic Construction Mitigation Measures

Mobile Land Use Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	55.00	30.00
tblConstructionPhase	NumDays	740.00	370.00
tblConstructionPhase	NumDays	50.00	30.00
tblConstructionPhase	NumDays	75.00	30.00
tblConstructionPhase	NumDays	55.00	30.00
tblConstructionPhase	PhaseEndDate	3/7/2025	4/28/2023
tblConstructionPhase	PhaseEndDate	10/4/2024	2/3/2023
tblConstructionPhase	PhaseEndDate	7/9/2021	6/11/2021
tblConstructionPhase	PhaseEndDate	12/3/2021	9/3/2021
tblConstructionPhase	PhaseEndDate	12/20/2024	3/17/2023
tblConstructionPhase	PhaseEndDate	8/20/2021	7/23/2021
tblConstructionPhase	PhaseStartDate	12/21/2024	3/20/2023
tblConstructionPhase	PhaseStartDate	12/4/2021	9/6/2021
tblConstructionPhase	PhaseStartDate	8/21/2021	7/26/2021
tblConstructionPhase	PhaseStartDate	10/5/2024	2/6/2023
tblConstructionPhase	PhaseStartDate	7/10/2021	6/14/2021

tblGrading	AcresOfGrading	75.00	187.50
tblGrading	MaterialExported	0.00	1,300.00
tblLandUse	LotAcreage	26.62	26.00
tblLandUse	LotAcreage	0.68	0.50
tblProjectCharacteristics	CO2IntensityFactor	641.35	328.8
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	9.91	10.56
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	8.62	10.56
tblVehicleTrips	WD_TR	1.89	0.00
tblVehicleTrips	WD_TR	9.52	10.56

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2937	47.6106	31.5956	0.0677	18.2141	2.0454	20.2595	9.9699	1.8818	11.8517	0.0000	6,766.9613	6,766.9613	1.9649	0.0000	6,786.5919
2022	2.7228	24.8851	23.6415	0.0668	2.5247	0.8387	3.3635	0.6833	0.7892	1.4725	0.0000	6,680.5332	6,680.5332	0.7713	0.0000	6,699.8150
2023	70.0165	21.5917	22.8571	0.0655	2.5247	0.7193	3.2441	0.6833	0.6767	1.3600	0.0000	6,549.2525	6,549.2525	0.7447	0.0000	6,567.8699
Maximum	**70.0165**	**47.6106**	**31.5956**	**0.0677**	**18.2141**	**2.0454**	**20.2595**	**9.9699**	**1.8818**	**11.8517**	**0.0000**	**6,766.9613**	**6,766.9613**	**1.9649**	**0.0000**	**6,786.5919**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.2937	47.6106	31.5956	0.0677	8.2777	2.0454	10.3231	4.5080	1.8818	6.3898	0.0000	6,766.9613	6,766.9613	1.9649	0.0000	6,786.5919
2022	2.7228	24.8851	23.6415	0.0668	2.5247	0.8387	3.3635	0.6833	0.7892	1.4725	0.0000	6,680.5332	6,680.5332	0.7713	0.0000	6,699.8150
2023	70.0165	21.5917	22.8571	0.0655	2.5247	0.7193	3.2441	0.6833	0.6767	1.3600	0.0000	6,549.2525	6,549.2525	0.7447	0.0000	6,567.8699
Maximum	**70.0165**	**47.6106**	**31.5956**	**0.0677**	**8.2777**	**2.0454**	**10.3231**	**4.5080**	**1.8818**	**6.3898**	**0.0000**	**6,766.9613**	**6,766.9613**	**1.9649**	**0.0000**	**6,786.5919**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	42.71	0.00	36.98	48.18	0.00	37.20	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	88.9483	1.7143	116.6790	0.2073		15.5784	15.5784		15.5784	15.5784	1,671.0238	518.6706	2,189.6944	2.0779	0.1179	2,276.7804
Energy	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771
Mobile	1.0714	4.8843	12.8605	0.0453	4.2486	0.0376	4.2862	1.1366	0.0351	1.1717		4,586.6525	4,586.6525	0.1648		4,590.7717
Total	**90.1222**	**7.4749**	**129.9124**	**0.2582**	**4.2486**	**15.6869**	**19.9354**	**1.1366**	**15.6844**	**16.8210**	**1,671.0238**	**6,223.9527**	**7,894.9765**	**2.2641**	**0.1384**	**7,992.8292**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0965	1.1572	7.2345	7.2500e-003		0.1247	0.1247		0.1247	0.1247	0.0000	1,389.8000	1,389.8000	0.0382	0.0253	1,398.2805
Energy	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771
Mobile	1.0397	4.6843	12.1183	0.0419	3.8998	0.0349	3.9347	1.0433	0.0326	1.0759		4,237.2164	4,237.2164	0.1552		4,241.0965
Total	**5.2388**	**6.7178**	**19.7257**	**0.0547**	**3.8998**	**0.2305**	**4.1303**	**1.0433**	**0.2282**	**1.2715**	**0.0000**	**6,745.6460**	**6,745.6460**	**0.2148**	**0.0458**	**6,764.6540**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**94.19**	**10.13**	**84.82**	**78.82**	**8.21**	**98.53**	**79.28**	**8.21**	**98.55**	**92.44**	**100.00**	**-8.38**	**14.56**	**90.51**	**66.93**	**15.37**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/3/2021	6/11/2021	5	30	
2	Site Preparation	Site Preparation	6/14/2021	7/23/2021	5	30	
3	Grading	Grading	7/26/2021	9/3/2021	5	30	
4	Building Construction	Building Construction	9/6/2021	2/3/2023	5	370	
5	Paving	Paving	2/6/2023	3/17/2023	5	30	
6	Architectural Coating	Architectural Coating	3/20/2023	4/28/2023	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 187.5

Acres of Paving: 0.5

Residential Indoor: 298,890; Residential Outdoor: 99,630; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,800 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	129.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	234.00	89.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	47.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411		3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**		**1.5513**	**1.5513**		**1.4411**	**1.4411**		**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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
Worker	0.0511	0.0348	0.3447	1.1000e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.4305	109.4305	2.4800e-003		109.4924
Total	**0.0511**	**0.0348**	**0.3447**	**1.1000e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**109.4305**	**109.4305**	**2.4800e-003**		**109.4924**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1651	31.4407	21.5650	0.0388		1.5513	1.5513		1.4411	1.4411	0.0000	3,747.9449	3,747.9449	1.0549		3,774.3174
Total	**3.1651**	**31.4407**	**21.5650**	**0.0388**		**1.5513**	**1.5513**		**1.4411**	**1.4411**	**0.0000**	**3,747.9449**	**3,747.9449**	**1.0549**		**3,774.3174**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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
Worker	0.0511	0.0348	0.3447	1.1000e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.4305	109.4305	2.4800e-003		109.4924
Total	**0.0511**	**0.0348**	**0.3447**	**1.1000e-003**	**0.1232**	**7.8000e-004**	**0.1240**	**0.0327**	**7.1000e-004**	**0.0334**		**109.4305**	**109.4305**	**2.4800e-003**		**109.4924**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809		3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**18.0663**	**2.0445**	**20.1107**	**9.9307**	**1.8809**	**11.8116**		**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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
Worker	0.0613	0.0418	0.4137	1.3200e-003	0.1479	9.3000e-004	0.1488	0.0392	8.6000e-004	0.0401		131.3166	131.3166	2.9700e-003		131.3909
Total	**0.0613**	**0.0418**	**0.4137**	**1.3200e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.6000e-004**	**0.0401**		**131.3166**	**131.3166**	**2.9700e-003**		**131.3909**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	3.8882	40.4971	21.1543	0.0380		2.0445	2.0445		1.8809	1.8809	0.0000	3,685.6569	3,685.6569	1.1920		3,715.4573
Total	**3.8882**	**40.4971**	**21.1543**	**0.0380**	**8.1298**	**2.0445**	**10.1743**	**4.4688**	**1.8809**	**6.3497**	**0.0000**	**3,685.6569**	**3,685.6569**	**1.1920**		**3,715.4573**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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
Worker	0.0613	0.0418	0.4137	1.3200e-003	0.1479	9.3000e-004	0.1488	0.0392	8.6000e-004	0.0401		131.3166	131.3166	2.9700e-003		131.3909
Total	**0.0613**	**0.0418**	**0.4137**	**1.3200e-003**	**0.1479**	**9.3000e-004**	**0.1488**	**0.0392**	**8.6000e-004**	**0.0401**		**131.3166**	**131.3166**	**2.9700e-003**		**131.3909**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.6502	0.0000	12.6502	4.0259	0.0000	4.0259			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265		6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**12.6502**	**1.9853**	**14.6356**	**4.0259**	**1.8265**	**5.8524**		**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0344	1.1644	0.2575	3.3200e-003	0.0751	3.6300e-003	0.0788	0.0206	3.4700e-003	0.0241		355.0556	355.0556	0.0188		355.5254
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
Worker	0.0681	0.0464	0.4596	1.4600e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		145.9073	145.9073	3.3000e-003		145.9899
Total	**0.1025**	**1.2108**	**0.7171**	**4.7800e-003**	**0.2394**	**4.6600e-003**	**0.2441**	**0.0642**	**4.4200e-003**	**0.0686**		**500.9629**	**500.9629**	**0.0221**		**501.5152**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.6926	0.0000	5.6926	1.8117	0.0000	1.8117			0.0000			0.0000
Off-Road	4.1912	46.3998	30.8785	0.0620		1.9853	1.9853		1.8265	1.8265	0.0000	6,007.0434	6,007.0434	1.9428		6,055.6134
Total	**4.1912**	**46.3998**	**30.8785**	**0.0620**	**5.6926**	**1.9853**	**7.6779**	**1.8117**	**1.8265**	**3.6382**	**0.0000**	**6,007.0434**	**6,007.0434**	**1.9428**		**6,055.6134**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0344	1.1644	0.2575	3.3200e-003	0.0751	3.6300e-003	0.0788	0.0206	3.4700e-003	0.0241		355.0556	355.0556	0.0188		355.5254
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
Worker	0.0681	0.0464	0.4596	1.4600e-003	0.1643	1.0300e-003	0.1653	0.0436	9.5000e-004	0.0445		145.9073	145.9073	3.3000e-003		145.9899
Total	**0.1025**	**1.2108**	**0.7171**	**4.7800e-003**	**0.2394**	**4.6600e-003**	**0.2441**	**0.0642**	**4.4200e-003**	**0.0686**		**500.9629**	**500.9629**	**0.0221**		**501.5152**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.2924	9.2765	2.4928	0.0237	0.6025	0.0206	0.6231	0.1734	0.0197	0.1931		2,506.4816	2,506.4816	0.1306		2,509.7462
Worker	0.7971	0.5431	5.3776	0.0171	1.9223	0.0121	1.9344	0.5099	0.0111	0.5210		1,707.1157	1,707.1157	0.0386		1,708.0814
Total	**1.0894**	**9.8196**	**7.8704**	**0.0408**	**2.5247**	**0.0327**	**2.5574**	**0.6833**	**0.0309**	**0.7142**		**4,213.5974**	**4,213.5974**	**0.1692**		**4,217.8277**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.2924	9.2765	2.4928	0.0237	0.6025	0.0206	0.6231	0.1734	0.0197	0.1931		2,506.4816	2,506.4816	0.1306		2,509.7462
Worker	0.7971	0.5431	5.3776	0.0171	1.9223	0.0121	1.9344	0.5099	0.0111	0.5210		1,707.1157	1,707.1157	0.0386		1,708.0814
Total	**1.0894**	**9.8196**	**7.8704**	**0.0408**	**2.5247**	**0.0327**	**2.5574**	**0.6833**	**0.0309**	**0.7142**		**4,213.5974**	**4,213.5974**	**0.1692**		**4,217.8277**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.2727	8.7824	2.3434	0.0234	0.6025	0.0179	0.6204	0.1734	0.0171	0.1906		2,481.6663	2,481.6663	0.1247		2,484.7848
Worker	0.7439	0.4870	4.9348	0.0165	1.9223	0.0118	1.9341	0.5099	0.0109	0.5208		1,644.5333	1,644.5333	0.0346		1,645.3980
Total	**1.0166**	**9.2694**	**7.2781**	**0.0399**	**2.5247**	**0.0297**	**2.5544**	**0.6833**	**0.0280**	**0.7113**		**4,126.1996**	**4,126.1996**	**0.1593**		**4,130.1827**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.2727	8.7824	2.3434	0.0234	0.6025	0.0179	0.6204	0.1734	0.0171	0.1906		2,481.6663	2,481.6663	0.1247		2,484.7848
Worker	0.7439	0.4870	4.9348	0.0165	1.9223	0.0118	1.9341	0.5099	0.0109	0.5208		1,644.5333	1,644.5333	0.0346		1,645.3980
Total	**1.0166**	**9.2694**	**7.2781**	**0.0399**	**2.5247**	**0.0297**	**2.5544**	**0.6833**	**0.0280**	**0.7113**		**4,126.1996**	**4,126.1996**	**0.1593**		**4,130.1827**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**		**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2050	6.7690	2.0809	0.0227	0.6025	8.0100e-003	0.6105	0.1734	7.6500e-003	0.1811		2,412.4878	2,412.4878	0.1059		2,415.1352
Worker	0.6969	0.4378	4.5322	0.0159	1.9223	0.0116	1.9338	0.5099	0.0107	0.5205		1,581.5549	1,581.5549	0.0310		1,582.3286
Total	**0.9018**	**7.2068**	**6.6131**	**0.0386**	**2.5247**	**0.0196**	**2.5443**	**0.6833**	**0.0183**	**0.7016**		**3,994.0426**	**3,994.0426**	**0.1369**		**3,997.4638**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
Total	**1.5728**	**14.3849**	**16.2440**	**0.0269**		**0.6997**	**0.6997**		**0.6584**	**0.6584**	**0.0000**	**2,555.2099**	**2,555.2099**	**0.6079**		**2,570.4061**

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2050	6.7690	2.0809	0.0227	0.6025	8.0100e-003	0.6105	0.1734	7.6500e-003	0.1811		2,412.4878	2,412.4878	0.1059		2,415.1352
Worker	0.6969	0.4378	4.5322	0.0159	1.9223	0.0116	1.9338	0.5099	0.0107	0.5205		1,581.5549	1,581.5549	0.0310		1,582.3286
Total	**0.9018**	**7.2068**	**6.6131**	**0.0386**	**2.5247**	**0.0196**	**2.5443**	**0.6833**	**0.0183**	**0.7016**		**3,994.0426**	**3,994.0426**	**0.1369**		**3,997.4638**

3.6 Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694		2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0437					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0764**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**		**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.0447	0.0281	0.2905	1.0200e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		101.3817	101.3817	1.9800e-003		101.4313
Total	**0.0447**	**0.0281**	**0.2905**	**1.0200e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**101.3817**	**101.3817**	**1.9800e-003**		**101.4313**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0327	10.1917	14.5842	0.0228		0.5102	0.5102		0.4694	0.4694	0.0000	2,207.5841	2,207.5841	0.7140		2,225.4336
Paving	0.0437					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0764**	**10.1917**	**14.5842**	**0.0228**		**0.5102**	**0.5102**		**0.4694**	**0.4694**	**0.0000**	**2,207.5841**	**2,207.5841**	**0.7140**		**2,225.4336**

3.6 Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.0447	0.0281	0.2905	1.0200e-003	0.1232	7.4000e-004	0.1240	0.0327	6.8000e-004	0.0334		101.3817	101.3817	1.9800e-003		101.4313
Total	**0.0447**	**0.0281**	**0.2905**	**1.0200e-003**	**0.1232**	**7.4000e-004**	**0.1240**	**0.0327**	**6.8000e-004**	**0.0334**		**101.3817**	**101.3817**	**1.9800e-003**		**101.4313**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	69.6849					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
Total	**69.8766**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**		**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.1400	0.0879	0.9103	3.1900e-003	0.3861	2.3200e-003	0.3884	0.1024	2.1400e-003	0.1046		317.6627	317.6627	6.2200e-003		317.8181
Total	**0.1400**	**0.0879**	**0.9103**	**3.1900e-003**	**0.3861**	**2.3200e-003**	**0.3884**	**0.1024**	**2.1400e-003**	**0.1046**		**317.6627**	**317.6627**	**6.2200e-003**		**317.8181**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	69.6849					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708	0.0000	281.4481	281.4481	0.0168		281.8690
Total	**69.8766**	**1.3030**	**1.8111**	**2.9700e-003**		**0.0708**	**0.0708**		**0.0708**	**0.0708**	**0.0000**	**281.4481**	**281.4481**	**0.0168**		**281.8690**

3.7 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.1400	0.0879	0.9103	3.1900e-003	0.3861	2.3200e-003	0.3884	0.1024	2.1400e-003	0.1046		317.6627	317.6627	6.2200e-003		317.8181
Total	**0.1400**	**0.0879**	**0.9103**	**3.1900e-003**	**0.3861**	**2.3200e-003**	**0.3884**	**0.1024**	**2.1400e-003**	**0.1046**		**317.6627**	**317.6627**	**6.2200e-003**		**317.8181**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Walkability Design

Improve Destination Accessibility

Integrate Below Market Rate Housing

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0397	4.6843	12.1183	0.0419	3.8998	0.0349	3.9347	1.0433	0.0326	1.0759		4,237.2164	4,237.2164	0.1552		4,241.0965
Unmitigated	1.0714	4.8843	12.8605	0.0453	4.2486	0.0376	4.2862	1.1366	0.0351	1.1717		4,586.6525	4,586.6525	0.1648		4,590.7717

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	865.92	865.92	865.92	1,999,935	1,835,750
Total	865.92	865.92	865.92	1,999,935	1,835,750

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Parking Lot	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Single Family Housing	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771
NaturalGas Unmitigated	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	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
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
Single Family Housing	9508.35	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771
Total		**0.1025**	**0.8763**	**0.3729**	**5.5900e-003**		**0.0709**	**0.0709**		**0.0709**	**0.0709**		**1,118.6296**	**1,118.6296**	**0.0214**	**0.0205**	**1,125.2771**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	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
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
Single Family Housing	9.50835	0.1025	0.8763	0.3729	5.5900e-003		0.0709	0.0709		0.0709	0.0709		1,118.6296	1,118.6296	0.0214	0.0205	1,125.2771
Total		**0.1025**	**0.8763**	**0.3729**	**5.5900e-003**		**0.0709**	**0.0709**		**0.0709**	**0.0709**		**1,118.6296**	**1,118.6296**	**0.0214**	**0.0205**	**1,125.2771**

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0965	1.1572	7.2345	7.2500e-003		0.1247	0.1247		0.1247	0.1247	0.0000	1,389.8000	1,389.8000	0.0382	0.0253	1,398.2805
Unmitigated	88.9483	1.7143	116.6790	0.2073		15.5784	15.5784		15.5784	15.5784	1,671.0238	518.6706	2,189.6944	2.0779	0.1179	2,276.7804

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1928					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	84.9780	1.6362	109.9037	0.2070		15.5409	15.5409		15.5409	15.5409	1,671.0238	506.4706	2,177.4944	2.0662	0.1179	2,264.2864
Landscaping	0.2047	0.0781	6.7753	3.6000e-004		0.0375	0.0375		0.0375	0.0375		12.2000	12.2000	0.0118		12.4941
Total	**88.9483**	**1.7143**	**116.6790**	**0.2073**		**15.5784**	**15.5784**		**15.5784**	**15.5784**	**1,671.0238**	**518.6706**	**2,189.6944**	**2.0779**	**0.1179**	**2,276.7804**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5728					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1928					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.1263	1.0791	0.4592	6.8900e-003		0.0873	0.0873		0.0873	0.0873	0.0000	1,377.6000	1,377.6000	0.0264	0.0253	1,385.7864
Landscaping	0.2047	0.0781	6.7753	3.6000e-004		0.0375	0.0375		0.0375	0.0375		12.2000	12.2000	0.0118		12.4941
Total	**4.0965**	**1.1572**	**7.2345**	**7.2500e-003**		**0.1247**	**0.1247**		**0.1247**	**0.1247**	**0.0000**	**1,389.8000**	**1,389.8000**	**0.0382**	**0.0253**	**1,398.2805**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation