CITY OF PACIFICA
PLANNING DEPARTMENT

Lots 4-12 Oddstad Way Project

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

November 2018

RANEY
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APPENDICES

INITIAL STUDY

November 2018

A. BACKGROUND

1.	Project Title:	Lots 4-12 Oddstad Way Project
2.	Lead Agency Name and Address:	City of Pacifica Planning Department 1800 Francisco Blvd. Pacifica, CA 94044
3.	Contact Person and Phone Number:	Christian Murdock Associate Planner (650) 738-7444 murdockc@ci.pacifica.ca.us
4.	Project Location:	275 ft. Southwest of Rockaway Beach Avenue/ Bayview Road intersection Pacifica, CA 94044 Assessor Parcel Numbers: 022-056-080 022-056-090 022-056-060 022-056-070 022-064-010
5.	Project Sponsor's Name and Address:	Javier Diaz-Masias Twin Pinnacles Construction 608 7th Avenue San Bruno, CA 94066
6.	General Plan Designation:	Very Low Density Residential
7.	Zoning District:	Single-Family Residential Hillside (R-1-H)

8. Project Description Summary:

The proposed project would include the construction of a 3,800-square foot (sf) two-story single-family home with an attached three-car garage, as well as a 518-sf detached recreation room. The site, as well as the adjacent parcels in the immediate surrounding area, is currently undeveloped and covered with dense vegetation. Access to the project site would be provided by Oddstad Way, which would be extended approximately 360 feet from the existing terminus west of the site. In addition, the proposed project would require various utility improvements and implementation of stormwater control measures.

B. SOURCES

It should be noted that all of the technical reports and modeling results used for the purposes of this analysis are expressly incorporated herein and available upon request at the City of Pacifica Planning Department. The following documents are referenced information sources utilized for the analysis within this Initial Study/Mitigated Negative Declaration:

1. Bay Area Air Quality Management District. *Air Quality Standards and Attainment Status*. Available at: http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Accessed November 2017.
2. Bay Area Air Quality Management District. *California Environmental Quality Act, Air Quality Guidelines.* May 2017.
3. Balance Hydrologics, Inc. *Technical Peer Review of the Stormwater Management Plan for Lots 6-12 Oddstad Way, City of Pacifica, San Mateo County.* September 8, 2017.
4. California Air Pollution Control Officer's Association (CAPCOA). *California Emissions Estimator Model, User's Guide, Version 2016.3.2.* November 2017.
5. City of Pacifica. *Climate Action Plan*. July 14, 2014.
6. City of Pacifica. *Design Guidelines.* Revised April 1990.
7. City of Pacifica. *City of Pacifica General Plan.* 1980.
8. GEOCON Consultants, Inc. *Proposed Single Family Residence, Lots 6-12, Oddstad Way, Pacifica, California, Geotechnical Peer Review.* September 8, 2017.
9. j.c. brennan & associates, Inc. *Lots 6-12 Oddstad Way Noise Analysis, City of Pacifica, California.* March 19, 2018.
10. Live Oak Associates, Inc. *Peer Review of Environmental Documents for the Lots 6-12 Oddstad Way Project, Pacifica, San Mateo County, California*. September 5, 2017.
11. Megan W. Stromberg Consulting. *Stormwater Control Plan, Oddstad Way, Pacifica, San Mateo County, California.* November 21, 2017.
12. Omni-Means Engineers & Planners. *Traffic Impact Analysis of Construction Truck Trips for the Proposed Oddstad Way Residential Project, Pacifica, CA.* September 12, 2017.
13. Romig Engineers, Inc. *Geotechnical Investigation, Diaz-Masias Residence, Oddstad Way, Lot 1 – APN 022-056-060.* June 2014.
14. Romig Engineers, Inc. *Geotechnical Investigation, Diaz-Masias Residence, Oddstad Way, APN 022-056-080 & 090, Lot 2.* June 2014.
15. Romig Engineers, Inc. *Geotechnical Response to CEQA Review/Request for Additional Information, Oddstad Way (APNs 022-056-060/070/080/090, 022-066-010), Pacifica, California.* October 24, 2017.
16. Tom Origer and Associates. *Historical Resources Study of Lots 6-12 Oddstad Way, Pacifica, San Mateo County, California.* July 7, 2017.
17. WRA Environmental Consultants. *Biological Resources Assessment, Lots 6-9, Oddstad Way, Pacifica, San Mateo County, California.* June 19, 2014.
18. WRA Environmental Consultants. *Biological Resources Assessment, Oddstad Way New Residence Development, Pacifica, San Mateo County, California.* Updated November 2017.
19. WRA Environmental Consultants. *Lots 6-9, Oddstad Way Project Road Development Area Assessment.* February 23, 2015.
20. WRA Environmental Consultants. *Stormwater Control Plan, Oddstad Way, Pacifica, San*

Mateo County, California. January 12, 2017.
21. WRA Environmental Consultants. *Tree Survey Report, Oddstad Way New Residence Development, Pacifica, San Mateo County, California.* November 2017.
22. RMC Water and Environment, *City of Pacifica Collection System Master Plan.* August 2011.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

✖ **Aesthetics**	☐ **Agriculture and Forest Resources**	☐ **Air Quality**
✖ **Biological Resources**	✖ **Cultural Resources**	✖ **Geology and Soils**
☐ **Greenhouse Gas Emissions**	✖ **Hazards and Hazardous Materials**	✖ **Hydrology and Water Quality**
☐ **Land Use and Planning**	☐ **Mineral Resources**	✖ **Noise**
☐ **Population and Housing**	☐ **Public Services**	☐ **Recreation**
✖ **Transportation and Circulation**	✖ **Tribal Cultural Resources**	☐ **Utilities and Service Systems**
☐ **Mandatory Findings of Significance**		

D. DETERMINATION

On the basis of this initial study:

☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

✖ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Christian Murdock	City of Pacifica
Printed Name	For

E. BACKGROUND AND INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) identifies and analyzes the potential environmental impacts of the Lots 4-12 Oddstad Way Project (proposed project). The information and analysis presented in this document are organized in accordance with the order of the CEQA checklist in Appendix G of the CEQA Guidelines. If the analysis provided in this document identifies potentially significant environmental effects of the project, mitigation measures that should be applied to the project are prescribed. As noted previously, all of the technical reports and modeling results used for the purposes of this analysis are available upon request at the City of Pacifica Planning Department.

The mitigation measures prescribed for environmental effects described in this IS/MND will be implemented in conjunction with the project, as required by CEQA. The mitigation measures will be incorporated into the project through project conditions of approval. The City will adopt findings and a Mitigation Monitoring and Reporting Program for the project in conjunction with approval of the project.

In 1980, the City of Pacifica adopted the City of Pacifica General Plan. In March of 2014, the City of Pacifica released a Draft General Plan Update and associated Draft Environmental Impact Report (EIR). However, the Draft General Plan Update and associated Draft EIR have not yet been adopted or certified by the City. Therefore, the analysis contained within this IS/MND relies on the guidelines and information contained within the adopted 1980 General Plan. It should be noted that the 2014 Draft General Plan Update did not propose any policy or designation changes related to the project site.

F. PROJECT DESCRIPTION

The following provides a description of the project site's current environmental setting, as well as the components of the proposed project. Additional information regarding the environmental setting is included in the various topical sections below as well as in the referenced documents and technical studies listed as information sources above.

Project Location and Setting

The subject property consists of multiple parcels (Lots 4-12) totaling approximately 38,928 square feet (sf) located along Oddstad Way in the Rockaway Beach neighborhood of the City of Pacifica, California (see Figure 1, Regional Project Location and Figure 2, Project Vicinity Map). The proposed development area, hereafter referred to as the proposed project site, would be limited to the area consisting of Lots 6-12, totaling approximately 31,265 square feet (sf) within the subject property. The site is situated approximately 2,000 feet east of State Route (SR) 1, approximately 0.5 miles east of the Pacific Ocean, and approximately 120 feet south of Rockaway Creek. The site is identified by Assessor Parcel Numbers (APNs) 022-056-030, 022-056-040, 022-056-060, 022-056-070, 022-056-080, 022-056-090, and 022-064-010. The City's General Plan designates the site as Very Low Density Residential, and the site is zoned Single-family Residential Hillside (R-1-H).

Figure 1
Regional Project Location

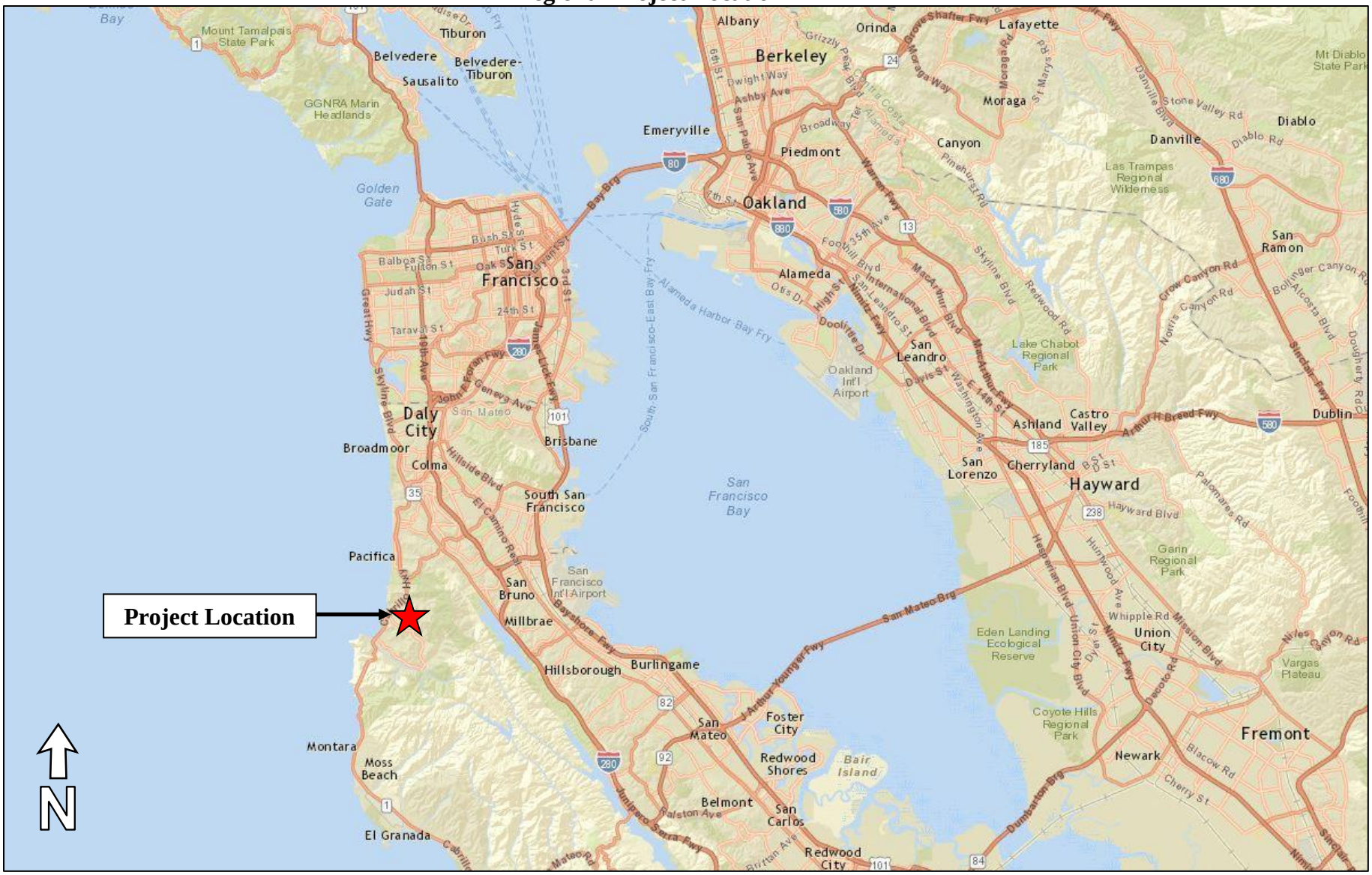


Figure 2
Project Vicinity Map

The proposed project site is located on a northwest-facing hillside with an average slope of 26 percent rising toward the rear of the site. The site, as well as the adjacent parcels in the immediate surrounding area, is currently undeveloped and covered with dense vegetation. The portion of Oddstad Way fronting the subject parcels has not yet been constructed; rather, the road terminates approximately 360 feet northwest of the site. A ditch runs from east to west along the southern edge of the planned roadway and connects to an existing culvert under Oddstad Way, where flows are conveyed to Rockaway Creek to the north of the project site. Per USGS 7.5-Minute topographic map for the project area, the ditch is not classified as a 'blue-line stream'. However, given that the ditch conveys episodic flows, any activity that could affect the existing conditions of the ditch would be subject to the requirements of Fish and Game Code Section 1602.

The site is located adjacent to existing single-family residential housing along Rockaway Beach Avenue to the north and east, and open space hillside consisting of woodland and coastal scrub to the west and south. Areas to the south and west of the project site are designated Open Space Residential and zoned Planned Development (P-D)/Hillside Preservation (HPD), while areas to the north are designated Low Density Residential and zoned Single-Family Residential (R-1). The area to the east of the project site is designated Very Low Density Residential and zoned R-1-H, similar to the site. Floor areas of single-family residential development within the Rockaway Beach neighborhood (inland of Buel Avenue) range from 450 sf to 3,650 sf, with a median of 1,540 sf.

Project Components

The proposed project would include the construction of a 4,318-sf single-family development (see Figure 3, Project Site). Access to the project site would be provided by Oddstad Way, which would be extended approximately 360 feet from the existing terminus west of the site (see Figure 4, Proposed Oddstad Way Road Extension Plan). In addition, the proposed project would require various utility improvements and implementation of stormwater control measures. Additional details regarding the following project components are presented below: single-family development; access and circulation; water, sewer, and stormwater infrastructure; tree removal and retention; and discretionary actions required for the proposed project. It should be noted that Lots 4 and 5 within the subject property would not be developed as part of the proposed project.

Single-family Development

The 4,318-sf residential development would consist of a 3,800-sf two-story single-family home with an attached three-car garage, as well as a 518-sf detached recreation room. The main house would be bordered to the east, south, and west by a yard area consisting of stone terrace permeable pavers. East of the main house, the yard would step up approximately 10 feet in elevation and extend to the east, bordered by a series of planters. The yard areas would be bounded by a series of retaining walls ranging in height from 2 ½ feet to 10 feet to accommodate the relatively steep grade of the site.

The recreation room would be elevated approximately 26 feet above the southern yard area of the main house, approximately 36 feet south of the façade of the house and would be separated from the house by the aforementioned retaining walls. Access to the recreation room would be provided by two proposed pedestrian walkways.

Figure 3
Proposed Site Plan

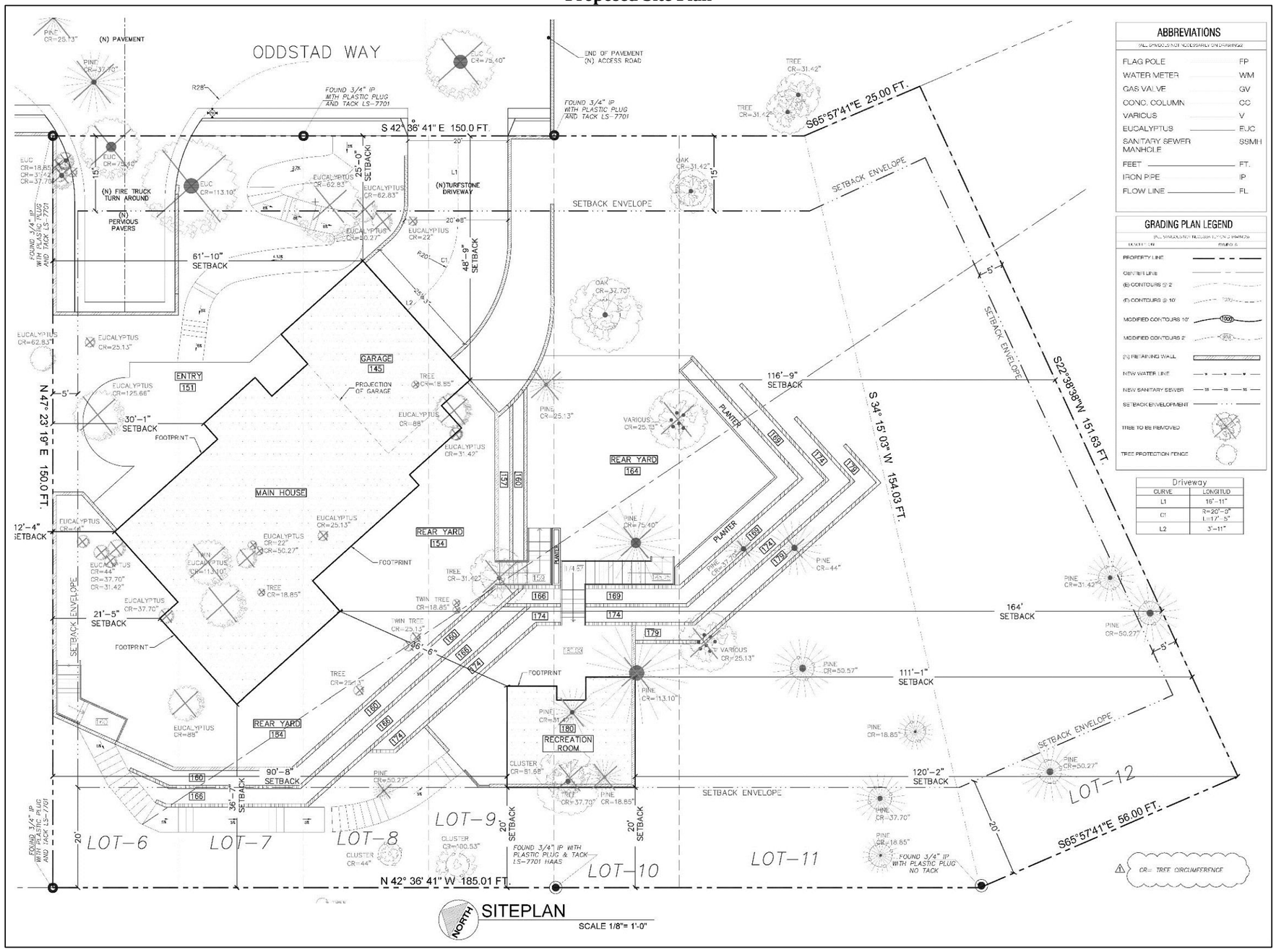
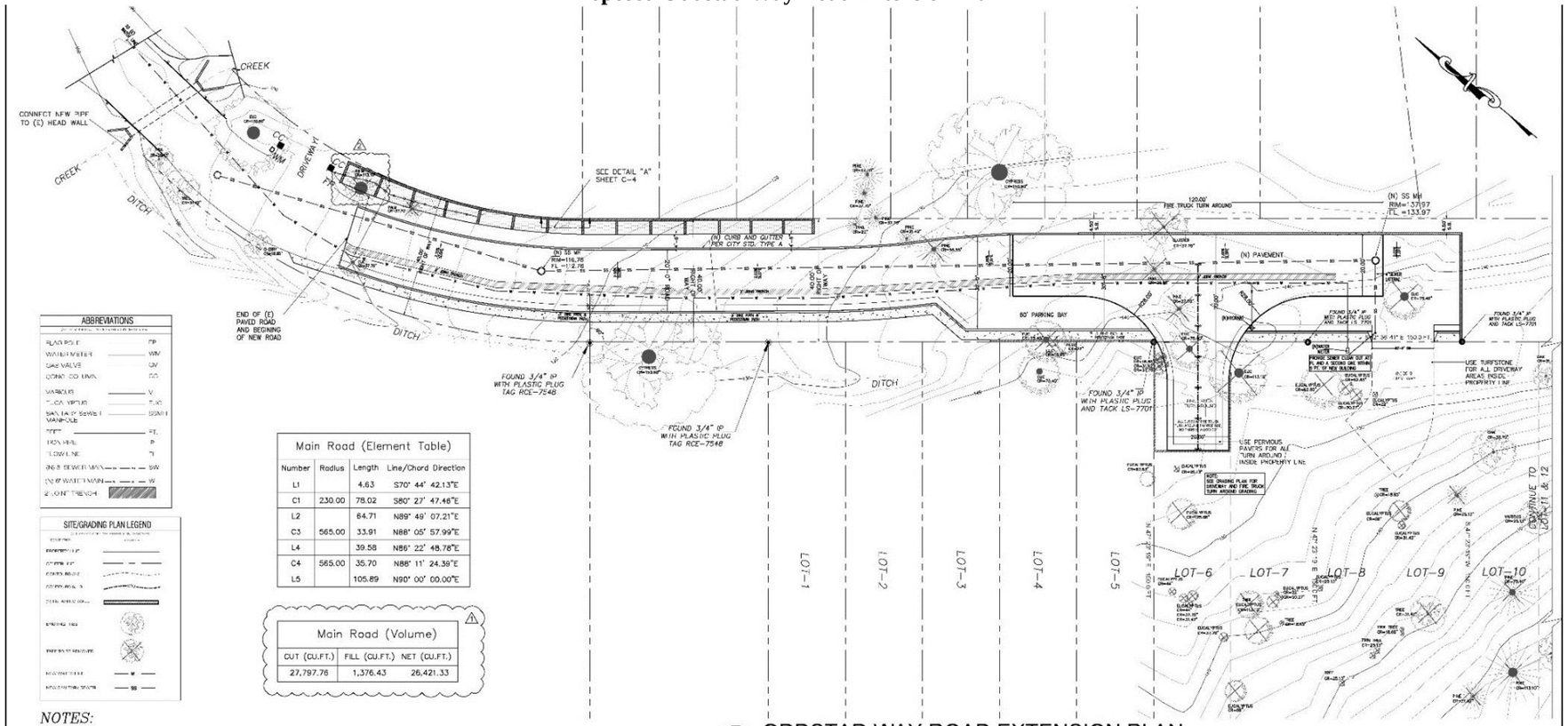


Figure 4
Proposed Oddstad Way Road Extension Plan



The first would extend from the northern portion of the project site and rise upwards around the southwest side of the proposed retaining walls, while the second would extend westward by way of a series of steps from the yard area to the south of the main house.

Access and Circulation

As noted above, Oddstad Way currently terminates approximately 360 feet northwest of the project site. In order to provide access to the proposed project site, the project would include extension of Oddstad Way to the project frontage. The extended roadway would be approximately 20 feet wide and would include an attached three-foot-wide sidewalk on the east side of the road. The roadway would slope away from the hillside at a two percent grade. At the project frontage, the roadway would terminate in an inverted hammerhead, which would allow for turnaround of fire trucks and other emergency vehicles. A 60-foot parking bay would be included within the Oddstad Way right-of way directly north of the proposed turnaround. The proposed parking bay would provide on-street parking for the proposed development while allowing the roadway design throughout the remainder of the extension to be no wider than necessary, thus minimizing grading.

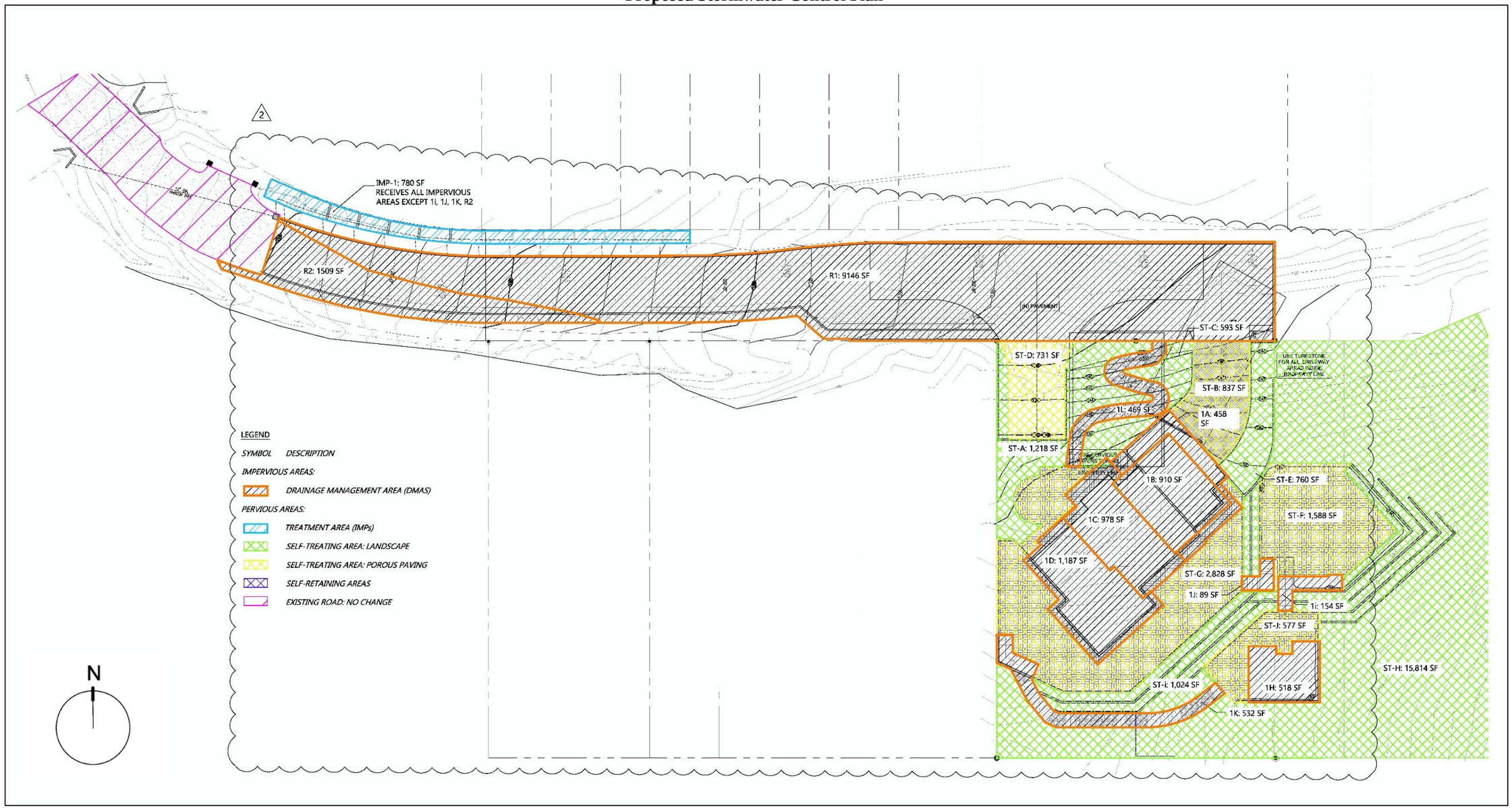
Access to the proposed project site would be provided by a new 20-foot wide minimum driveway connecting the proposed three-car garage to Oddstad Way southeast of the turnaround. The aforementioned sidewalk would continue along the project frontage, with breaks at the proposed turnaround and driveway. Pedestrian access to the site would be provided by a meandering, serpentine private walkway that would extend westward from the proposed sidewalk along Oddstad Way and connect to a patio/yard area along the northern façade of the main house. The private walkway would be bounded on both sides by various landscaping features.

Water, Sewer, and Stormwater Infrastructure

Sewer service for the proposed project would be provided by the City. In order to connect to the existing sanitary sewer line at Oddstad Way, the proposed project would require extension of a new eight-inch sewer line for approximately 360 feet between the project frontage and the existing line. The new sewer line would be located within the right-of-way of the proposed extension of Oddstad Way, and would be routed through a new manhole situated at the east end of the extended roadway. Water service would be provided by the North Coast County Water District (NCCWD) through a connection to the existing water main located at Rockaway Beach Avenue, which, similar to the sanitary sewer line, would be extended eastward along Oddstad Way to the site. The locations of the aforementioned utilities are shown in Figure 4 above. Electricity, natural gas, and telecommunications infrastructure would also be extended underground along the edge of Oddstad Way.

Runoff from the impervious areas on the site, including all roofs, hardscape, parking areas, and driveways, would be divided into distinct drainage management areas (DMAs) (see Figure 5, Stormwater Control Plan). Runoff from a portion of the DMAs would be managed by routing stormwater to a new bio-retention facility. Treated stormwater would be routed through a new storm drain pipe and discharge, by way of a new outfall structure, at the downstream side of the existing culvert at Oddstad Way.

Figure 5
Proposed Stormwater Control Plan



The bio-retention facility would be located to the north of the extended Oddstad Way roadway. With the exception of DMA-R2, runoff from the remaining DMAs would be routed to new on-site self-treating areas, including landscaping and porous paving. Runoff from DMA-R-2, which would include a portion the proposed roadway extension, as well as an associated sidewalk, would not drain to the proposed bio-retention facility, but rather, would sheet flow to the existing segment of Oddstad Way west of the proposed extension. The project would not include connections to the City's existing built stormwater infrastructure.

Tree Removal and Retention

The proposed project site and off-site improvement areas contain 20 living trees considered 'heritage trees' per the City's Municipal Code. The proposed project would include the removal of approximately eight of the 20 existing heritage trees in order to construct the on-site improvements as well as the off-site roadway and infrastructure improvements. A number of existing trees on the project site would be retained, including 12 heritage trees and various other trees not protected by the City's Municipal Code.

Construction Details

For the purposes of this analysis, construction is assumed to begin in April 2019 and occur over an approximately 13-month period. Because the site does not contain any existing structures, demolition would not be required. The project would include site preparation, grading, paving, and building construction. While the exact timing and length of each phase cannot be determined at this time, the following phase lengths have been assumed for the purposes of this analysis based on available project information:

- Site preparation: two weeks;
- Grading: two months;
- Off-site paving: two months;
- On-site paving: two weeks; and
- Building construction: eight months.

A total of 0.87-acres of land would be disturbed as a result of construction activities, including approximately 0.15-acres disturbed during construction of the Oddstad Way extension. During site preparation, a total of 1,110 cubic yards (CY) of material would be exported. During grading, a total of 3,373 CY of material would be exported.

Construction equipment used for off-site road improvements and other construction activities would likely include, but would not be limited to, bulldozers, loaded trucks, auger/drill rigs, jackhammers, vibratory hammers, vibratory compactors/rollers, graders, tractors/loaders/backhoes, cranes, forklifts, cement and mortar mixers, pavers, excavators, scrapers, generators, and air compressors.

As discussed in greater detail in Section XVI, Transportation and Circulation, of this IS/MND, single-chassis or short trailer dump trucks of a size capable of accessing the project site would haul approximately 7.5 CY of soils per load. Both the site preparation and grading phases would generate two to three dump truck trips per hour during construction hours, or approximately 24 to

30 truck trips per day given the City's standard construction hours. Over both phases, a total of approximately 597 dump truck trips would be generated ([1,110 CY + 3,373 CY] / 7.5 CY/truck). In addition, approximately eight construction worker trips would occur during site preparation and grading. Truck trips would likely be distributed onto Rockaway Beach Avenue and the intersections of Buel Avenue, Fassler Avenue, and State Route (SR) 1.

During the site preparation and grading phases, when construction activities would be most intensive, the project would employ approximately nine employees. Upon completion of the proposed Oddstad Way extension, construction employees would park on-site or along the extended roadway so as to avoid obstruction of the existing roadway network.

Discretionary Actions

Per Section 9-4.953 of the City's Municipal Code, a site development permit is required prior to issuance of building permits for any new structure on a lot zoned R-1-H. Section 9-4.954 similarly requires approval of a site development permit prior to issuance of a grading, encroachment, or building permit for the development of any unimproved, platted new street to an improved street in the R-1-H district. As such, implementation of the proposed project would require approval of a site development permit by the City of Pacifica. The proposed removal of heritage trees would require authorization by the City of Pacifica pursuant to section 4-12.07 of the Pacifica Municipal Code. The project would also require City approval of a lot merger for Lots 4-12 to merge the lots into a single parcel consistent with Municipal Code section 10-1.1201. In addition, the project may require the following entitlements from various other agencies:

- Section 404 Nationwide Permit (or Letter of Permission) (United States Army Corps of Engineers);
- Section 401 Water Quality Certification (Regional Water Quality Control Board – San Francisco Bay Region); and
- Section 1602 Lake and Streambed Alteration Agreement (California Department of Fish and Wildlife).

G. ENVIRONMENTAL CHECKLIST

The following checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures recommended as appropriate as part of the proposed project. For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less-Than-Significant With Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

In addition to discussions of project-level impacts, the environmental checklist includes an analysis of cumulative impacts associated with probable future projects in the project area. The scope of the cumulative analysis presented throughout this IS/MND is described below.

Cumulative Analysis

The proposed project includes the extension of Oddstad Way, as well as the existing sanitary sewer, water supply, and other utility infrastructure therein, through a currently undeveloped area to serve the proposed residence. Oddstad Way is an undeveloped public right-of-way where paving and utilities currently end approximately adjacent to 598 Rockaway Beach Avenue (APN 022-055-150). In addition to the project's proposed single-family residence the extended roadway would provide direct access to four lots to the west of the proposed project site which are currently undeveloped and covered with dense vegetation, similar to the project site. An additional 21 vacant lots exist east of the roadway extension and west of the Troglia Terrace public right-of-way approximately 1,900 feet to the southeast (there are another 9 lots in this area, all north of Oddstad Way, which are currently developed with single-family residences which obtain access from Rockaway Beach Avenue or Troglia Terrace). These lots east of the roadway extension would remain without street or utility access upon development of the proposed project.

Consistent with CEQA Guidelines, this IS/MND includes an analysis of cumulative impacts associated with the proposed project including the potential for development of those lots west and east of the project site. Per CEQA Guidelines Section 15130, subd. (b)(3), the lead agency should define the relevant geographic area of inquiry for each impact category, and should then identify the universe of "past, present, and probable future projects producing related or cumulative impacts" relevant to the various categories, either through the preparation of a "list" of such projects or through the use of "a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact" (id., subd. [b][1]). In accordance with Section 15130(b)(1)(B) of the CEQA Guidelines, the majority of the cumulative analysis in this section is based upon a summary of projections contained in the City of Pacifica General Plan; more specifically, buildout of the four undeveloped lots west of the project site in accordance with the land use designations shown on the adopted "Sharp Park Golf Course-West Fairway Park-Mori Point-Rockaway Beach Land Use Map." Residential development of the lots along Oddstad Way has been planned in the Pacifica General Plan since at least the adoption of the 1980 General Plan on July 28, 1980.[1]

Direct access to the roadway and utilities extensions proposed by the project shall serve as the basis for inclusion of certain lots other than the proposed project site within the impacts analysis in this IS/MND. The provision of direct access is an appropriate basis for inclusion of such lots because installation of the proposed roadway and utilities improvements by the proposed project would eliminate substantial permitting, financial, and technical burdens to the planned residential uses/development of the other lots. As demonstrated below, an analysis of the existing lot patterns

[1] The Pacifica City Council certified the Environmental Impact Report for the General Plan update on July 14, 1980.

surrounding the proposed project has identified four lots which would receive direct connections from the proposed project.

The four lots which will be provided direct access by the Oddstad Way roadway extension west of the project site are as follows: Lots 1-3 (standard lot); Lots 1-3 (flag lot); Lots 146-149; and Lots 150-156. These lots will be collectively referred to as the "Westerly Lots." The Westerly Lots were originally subdivided with the Rockaway Beach Subdivision Map No. 1 (RSM 6/53), approved by the San Mateo County Board of Supervisors in 1908[2]. These lots were subsequently merged by the City of Pacifica pursuant to Section 10-1.1201 of the Pacifica Municipal Code in the 1980s. In the case of Lots 1-3 (standard lot) and Lots 1-3 (flag lot), these lots were further reconfigured by a lot line adjustment in 2008. Henceforth, the four merged lots will be referenced by the lowest numbered original lot only (and standard or flag configuration, as with Lots 1-3) when referred to individually.

The Westerly Lots provided access by the Oddstad Way roadway extension all share the R-1-H (Single-Family Residential Hillside) zoning classification, first applied to the sites in 1992, and additionally have the following General Plan (GP) land use designations:

- Lot 1 (standard lot): Open Space Residential (OSR);
- Lot 1 (flag lot): Open Space Residential (OSR);
- Lot 146: Very Low Density Residential (VLDR); and
- Lot 150: Low Density Residential (LDR).

The R-1-H zoning classification, as provided in Sections 9-4.953 and 9-4.954 of the PMC, requires approval of a site development permit prior to issuance of a building permit for any new structure and prior to issuance of a grading, encroachment, or building permit for the development of any unimproved, platted new street to an improved street. The requirement to obtain a site development permit prior to development of any of the Westerly Lots would apply because all would require construction of a new structure since all of the lots are vacant. Approval of a site development permit is a discretionary permit and is contingent upon the Planning Commission not making any of the findings in Sec. 9-4.3204 of the City's Municipal Code, including but not limited to a finding "[t]hat the proposed development is inconsistent with the General Plan, Local Coastal Plan, or other applicable laws of the City." For the Westerly Lots, this would include finding consistency with the OSR, VLDR, and LDR land use designations in the General Plan as applicable to each lot.

The General Plan land use designations of the Westerly Lots call for residential development at the densities stated below:

- Open Space Residential (OSR): One dwelling unit per more than five acres;
- Very Low Density Residential (VLDR): 0.5 to 2.0 acres per dwelling unit; and
- Low Density Residential (LDR): Three to nine dwelling units per acre.

[2] A copy of this subdivision map is included as Appendix A. The map has been modified to demonstrate the current lot configurations along Oddstad Way described in this IS/MND.

Table 1 below summarizes the approximate land area of each of the four lots and indicates whether each lot satisfies the development densities called for in the General Plan:

Table 1
Westerly Lot Acreages

Lot	Land Area (approx.)	Meets General Plan Density Standard?
Lot 1 (standard lot)	0.116 acres	No (OSR)
Lot 1 (flag lot)	0.143 acres	No (OSR)
Lot 146	0.349 acres	No (VLDR)
Lot 150	0.482 acres	Yes (LDR)
Total:	**1.09 acres**	

As shown in Table 1, only one of the four Westerly Lots meets the General Plan land use densities called for in their respective land use designations. Therefore, Lot 1 (standard lot), Lot 1 (flag lot), and Lot 146 would each be likely to require a General Plan amendment prior to approval of a site development permit so that General Plan consistency could be found. The requirement to obtain approval of a discretionary permit (site development permit), as well as the requirement to obtain approval of a General Plan amendment, which is a legislative act requiring action by the City Council and which the City Council is not required to approve, renders uncertain the future development potential of these three lots. Based on current land use regulations applicable to the four lots west of the proposed project, only development of Lot 150 is reasonably foreseeable as a result of the proposed project. Moreover, even if development of all four lots was reasonably foreseeable, the details of each such development are unknown because of the discretionary permit process which they must undergo and because of the site-specific factors such as but not limited to biology, topography, and soils which must be evaluated prior to any permit approval and which would ultimately affect project design. The proposed project does not include removal of existing vegetation, grading activities, or any other activity preparatory to development on any of the Western Lots. The proposed project also does not include construction of sewer or water laterals needed to serve the Westerly Lots from the proposed utility extensions. Therefore, while future development of the Westerly Lots with up to four additional single-family residences has been anticipated by the City, the potential for the proposed project to directly enable such development is speculative, rather than a foregone conclusion[3]. Thus, although future development on the Westerly Lots is made more probable by the proposed Oddstad Way roadway and utilities extensions, such development would occur independently from the proposed project and would be subject to separate environmental review by and approvals from the City. Therefore, it is not possible to perform a complete project-level review of future development on these four lots within this IS/MND. Nevertheless, this IS/MND conservatively conducts project-level review of those impacts which could be reasonably foreseen from general single-family development[4] on the

[3] The City received an application for development permits to construct one single-family residence on each of Lot 1 (standard lot), Lot 1(flag lot), and Lot 150 on September 22, 2016. The application also included a General Plan amendment for Lot 1 (standard lot) and Lot 1 (flag lot) as well as a parking exception. The City determined the application, File No. 2015-001, to be incomplete on October 24, 2016. The applicant for File No. 2015-001 has not submitted a response to the City's determination. Because the application remains incomplete, and because the final details of the application are not known to the City, therefore, it is not possible to prepare a project-level analysis of potential environmental impacts which could result from the project if it should ever move forward in the development review process.

[4] As used here, *general single-family development* refers to a generic single-family residential project without foreknowledge of detailed site and grading plans for each of the Westerly Lots. This IS/MND necessarily relies

Westerly Lots based on the reasonable assumption that the City would likely grant approval of site development permits for development on all four lots after completion of the Oddstad roadway and utility extensions associated with this project, and assesses the other impact areas affected by development of the Westerly Lots within the cumulative impacts analysis below in Section XIX of this IS/MND. The impact areas affected by development of the Westerly Lots analyzed herein at the project-level are as follows:

- Agriculture & Forest Resources;
- Air Quality;
- Greenhouse Gas Emissions;
- Hazards;
- Mineral Resources;
- Noise;
- Population & Housing;
- Public Services;
- Recreation;
- Transportation & Circulation; and
- Utilities & Service Systems.

This IS/MND recognizes there are an additional 21 vacant lots east of the proposed Oddstad Way roadway extension. Because of construction cost considerations for installation of future utilities extensions to these lots, it is reasonable to consider the future development potential of only 12 of these lots located westerly of the mid-point between the proposed Oddstad Way street extension to the west and the existing Troglia Terrace right-of-way to the east. At the mid-point – located approximately at the western boundary of Lot 49 – the likelihood of extending the roadway and utilities from the west becomes highly speculative because it is reasonable to conclude that it would become more cost-effective to complete the extensions along a shorter distance from the east. Therefore, it is reasonable for this IS/MND to consider potential impacts from future development of only the following 12 lots (collectively the "Easterly Lots"):

- Lots 13-25 ("Lot 13");
- Lots 26-33 ("Lot 26");
- Lots 34-36 ("Lot 34");
- Lots 37-44 ("Lot 37");
- Lots 45-48 ("Lot 45");
- Lots 121-124 ("Lot 121");
- Lots 131-132 ("Lot 131");
- Lot 133;

on assumptions applicable to any general single-family development on the Westerly Lots because complete development permit applications do not exist for them, as noted above. Thus, site-specific considerations such as those already noted above, which are beyond the scope of this IS/MND to consider for the Westerly Lots, could reasonably affect the final design of any projects thereon. To the extent such site-specific considerations are reasonably understood to have the potential to affect final project design, they would also have the potential to affect project-level impacts. Since final project designs for the Westerly Lots are not available in the absence of complete development permit applications, any conclusions related to potential impacts from development other than general single-family development would be speculative and inappropriate for inclusion in this IS/MND.

- Lots 134-136 ("Lot 134");
- Lot 137;
- Lot 144; and
- Lot 145.

While the list above identifies those lots with some amount of increased potential for development as a result of the proposed project extending the roadway and utilities several hundred feet closer to them, the degree to which the proposed project would induce such development is difficult to ascertain. The proposed project would not provide a direct roadway or utilities connection to any of the Easterly Lots but rather would reduce the cost of ultimately reaching any of the lots with a roadway and utilities by some incremental amount. It is beyond the scope of this IS/MND to consider potential permitting and construction costs of the additional roadway and utilities extensions necessary to reach each of the lots, and then to perform financial modeling to determine at which point these lots would be induced to develop in consideration of these costs which were reduced in some incremental amount by the proposed project's roadway and utilities extensions. Rather, it is most appropriate to limit the analysis of impacts to that development which has the potential to be induced by the direct connection to roadway and utilities improvements associated with the proposed project, which would be limited to such improvements abutting the Westerly Lots only.

The potential for future development of the Easterly Lots is even more uncertain because the lots are also limited in the same way as the Westerly Lots by the applicable General Plan land use and zoning designations. Specifically, all of the lots east of the proposed project have a General Plan land use designation of Very Low Density Residential (VLDR) which requires 0.5 to 2.0 acres of land area per dwelling unit. Among the Easterly Lots, only Lot 13 (approx. 1.14 acres), Lot 26 (approx. 0.68-acre), and Lot 37 (approx. 0.67-acre) have sufficient land area to meet the density requirements of the VLDR designation. Thus, only Lots 13, 26, and 37 would be eligible for development without a General Plan amendment. All the Easterly Lots also have a zoning classification of R-1-H except Lot 145 which is classified as R-1 (Single-Family Residential). Within an R-1 zoning district, a building permit may be issued as a ministerial permit without prior issuance of a site development permit or any other discretionary permit. However, any roadway extension from the west to reach the site would be within an R-1-H zoning district and would require approval of a site development permit.

Thus, each of the Easterly Lots would be subject to approval of a site development permit, which is a discretionary permit, prior to development. The site development permit review process would also require environmental review of each development permit application. Therefore, the existing land use regulations applicable to the Easterly Lots render uncertain their future development potential for the same reasons as described above pertaining to the Westerly Lots. Moreover, eight of the Easterly Lots would likely require approval of General Plan amendments due to insufficient lot area relative to applicable land use designations,[5] meaning the existing land use regulations

[5] As noted above, Lots 13, 26, and 37 have lot areas greater than 0.5-acre and would comply with the VLDR density standard. Lot 145 is zoned R-1, meaning a building permit would be reviewed and approved as a ministerial permit without a site development permit being required. Thus, a finding of General Plan consistency would not be necessary for Lot 145, and the City could issue a building permit despite the site's lot area being less than 0.5 acres.

applicable to the Easterly Lots render uncertain their future development potential for the same reasons as described above pertaining to three of the Westerly Lots. Therefore, notwithstanding that they will not receive direct roadway or utilities connections, development of the Easterly Lots is speculative and it cannot be determined with certainty or a suitable degree of precision which, if any, of the Easterly Lots would be induced to develop as a result of the proposed project.

For the reasons set forth above, this IS/MND will consider certain project-level impacts wherever possible for development of the Westerly Lots; will consider certain cumulative impacts where it is not possible to consider project-level impacts for development of the Westerly Lots; and, will not consider project-level or cumulative impacts from development of the Easterly Lots because such impacts are speculative and not as reasonably foreseeable/probable as the Westerly Lots. Project-level impacts associated with the Westerly Lots are discussed within Sections I through XVIII of this IS/MND, while cumulative impacts associated with the Westerly Lots are discussed in Section XIX, Mandatory Findings of Significance.

I. AESTHETICS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 the site and its surroundings?	☐	✖	☐	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	✖	☐

Discussion

a. Examples of typical scenic vistas would include mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other area designated for the express purpose of viewing and sightseeing. In general, a project's impact to a scenic vista would occur if development of the project would substantially change or remove a scenic vista. Policy 3 in the Community Design Element of the City's General Plan sets the goal of protecting the City's irreplaceable scenic and visual amenities, but does not define or identify specific scenic vistas. The proposed project site is located in an existing residential neighborhood, and is currently designated for buildout with residential uses per the General Plan. Furthermore, development of the site as proposed would not obstruct views of any scenic resources such as the ridgeline located to the south of the site. As such, development of the project site was previously planned in the City's General Plan and the proposed project would not have a substantial adverse effect on a scenic vista, and a ***less-than-significant*** impact would occur.

b. The City does not contain an Officially Designated Scenic Highway.[6] SR 1, which is located approximately 0.5 mile west of the proposed project site, is an Eligible State Scenic Highway, but is not officially designated. The proposed project would not be visible to motorists travelling along SR 1, and, thus, would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. As such, ***no impact*** would occur.

c. The proposed project site is zoned R-1-H. Section 9-4.951 of the City's Municipal Code states the following regarding the R-1-H district:

> The City Council finds and declares that certain hillside areas and certain areas of the City which are not located on developed public streets provide unique terrain

[6] California Scenic Highway Mapping System. *San Mateo County*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed June 2018.

> features and add substantially to the character of the area such that the location, type, and visibility of development therein will affect the quality of the environment. The City Council finds that hillside development of sensitive areas should be regulated to ensure that any proposed development of houses and streets complies with the Pacifica Design Guidelines and preserves the natural terrain while allowing residential development compatible with the slope limitations of the development site. In addition, development proposals on currently undeveloped public streets present issues relative to grading, access, visibility, and neighborhood character. The objectives of the R-1-H District are to ensure that new structures and streets are designed to protect the visual and natural resource qualities of the hillsides and to minimize adverse impacts on existing neighborhoods, drainage, traffic, land stability, and natural resources.

The proposed project site is located on a hillside, and would be accessed by a public street (Oddstad Way) that is currently undeveloped. As such, development of the project site would change the existing visual character of the site. However, as a single-family home, the proposed project would essentially serve as an extension of the existing Rockaway Beach neighborhood to the north and east of the project site. In addition, the project would be consistent with the existing land use designation and zoning designation of the site. Thus, the City has previously anticipated changes to the visual character associated with residential development of the project site. Furthermore, various landscaping features would be included along the project frontage and throughout the project site. As shown in Figure 4 of this IS/MND, a variety of shrubs, perennials, grasses, trees, and bulbs would be planted northeast of the proposed residence along the proposed pedestrian pathway, along the perimeter of the proposed fire truck turnaround, and on either side of the proposed driveway. Low shrubs would be planted along the tops of the proposed retaining walls. Such features would enhance the visual quality of the site.

However, while the proposed project would be consistent with the existing land use designation and zoning designation of the site, the 4,318-sf residential development would represent the largest residence in the Rockaway Beach neighborhood by a margin of 668 square feet (18 percent). Given the size of the project, the substantial roadway improvements required, and the undeveloped nature of the project site, further analysis was performed to ensure that the proposed improvements do not have a negative impact on public views in the surrounding area.

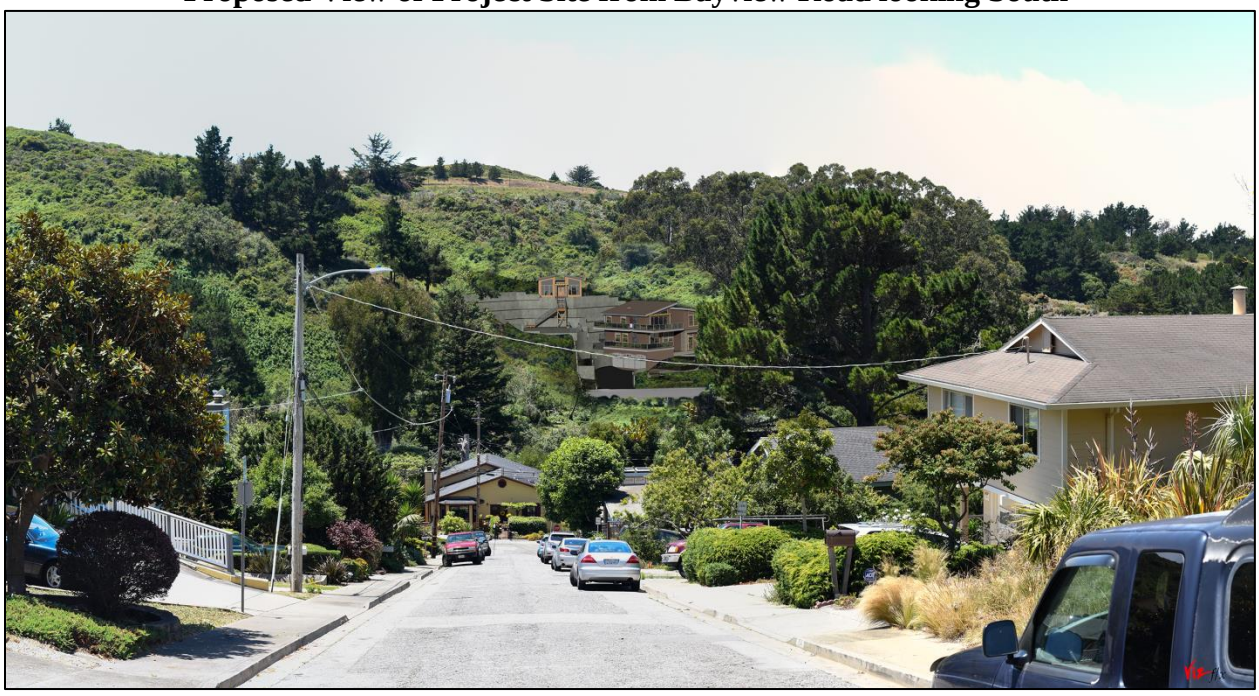
Visual simulations were prepared for the proposed project to aid in evaluating the potential visual impacts of the proposed project to the surrounding areas. The visual simulations include before and after views of the proposed project site, including all proposed landscaping improvements, from public views in the surrounding area. The views analyzed are described and discussed in further detail below.

View of Project Site from Bayview Road Looking South

Figure 6 and Figure 7 present the existing and proposed views of the site looking south from Bayview Road. The vantage point along Bayview Road provides the most unobstructed view of the project site and is considered to be representative of a typical

Figure 6
Existing View of Project Site from Bayview Road Looking South

Figure 7
Proposed View of Project Site from Bayview Road looking South



public viewshed. Bayview Road, as well as the other streets in the Rockaway Beach neighborhood, experience relatively low-volume motor vehicle, bicycle, and pedestrian traffic associated with residential development in the neighborhood. Such low traffic volumes reflect the fact that the Rockaway Beach neighborhood streets do not convey any thru-traffic to other areas within the City.

As shown in the figures, the proposed buildings and retaining walls would be visible to motorists, bicyclists, and pedestrians travelling southward along Bayview Road. However, as shown in Figure 4 of this IS/MND, the project would include planting of low shrubs along the tops of all proposed retaining walls to break up the visual continuity of each wall and allow the walls to better blend in with the surrounding environment. Thus, the project would be visually consistent with existing single-family homes in the middleground and foreground of the viewshed.

Given that the visual character of the proposed buildings would be similar to that of the existing development within the Rockaway Beach neighborhood, the project would not constitute a substantial change in the visual character of the area as viewed by motorists, bicyclists, or pedestrians on local roadways. In addition, the ridgeline that forms the backdrop of the project area for such sensitive viewers would not be obscured by the proposed project. However, in the absence of specific requirements for the application of natural, subdued colors for the proposed buildings and retaining walls, the project could degrade the visual character of the area from Bayview Road.

View of Project Site from Rockaway Beach Avenue Residence

Figure 8 and Figure 9 present the existing and proposed views of the site from the backyard of a single-family home located at 680 Rockaway Beach Avenue. The figures are representative of private views of the site which would typically be experienced by residents of homes within the neighborhood. It should be noted that private views are not typically considered to be protected under the CEQA Guidelines; however, such views are discussed herein for informational purposes.

As shown in Figure 9, the proposed project would be set into a hillside, and, thus, would not protrude substantially into the overall viewshed. While the proposed 518-sf detached recreation room would be visible to residents, the main home would be partially obscured by existing vegetation along the hillside. Views of the main home from other residences in the project area would also likely be obscured by such vegetation. Furthermore, as discussed above, the visual character of the proposed buildings would be similar to that of the existing development within the Rockaway Beach neighborhood. In addition, the proposed project would not block existing views of any significant visual resources such as the ridgeline above the project site. Therefore, the visual character of the area from residents of the existing single-family homes along Rockaway Beach Avenue would not be substantially degraded with implementation of the proposed project.

Figure 8
Existing View of Project Site from Rockaway Beach Avenue Residence

Figure 9
Proposed View of Project Site from Rockaway Beach Avenue Residence

Conclusion

As shown in the visual simulations, implementation of the proposed project would result in noticeable changes to the visual character of the area; however, modifications to the visual character of the site and surrounding area as a result of the proposed project would not constitute a substantial degradation of such character. In addition, the project would be required to comply with the City of Pacifica Design Guidelines, which are used by the City's Planning Commission and planning staff when reviewing and evaluating the design of all new development within the City. Compliance with the Design Guidelines would help to ensure that the visual quality of the area would be maintained. Nonetheless, given that the Design Guidelines do not contain specific standards related to color and texture for residential structures, colors and textures used for the proposed buildings and retaining walls could conflict with the color palette of the surrounding area. In addition, the Mitigation Measure VI-1 of this IS/MND would require the construction of three- to five-foot minimum debris walls along the southwest and northwest sides of the project site to protect the proposed structures from localized shallow surficial landslides. Proper design of such debris walls is necessary to ensure that indirect adverse effects on the visual quality of the project area do not occur. Therefore, the proposed project could substantially degrade the existing visual character or quality of the site and its surroundings, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

I-1. *Prior to issuance of building permits, all improvement and building plans for the proposed development shall demonstrate that the color and texture of the proposed buildings, retaining walls, and debris walls match or blend with the natural landscape in the project area, as well as the color palette of the existing residential development in the area. The final design of the buildings and retaining walls shall be reviewed and approved by the City of Pacifica Building Division.*

d. The proposed project site, as well as the adjacent parcels in the immediate surrounding area, is currently undeveloped and covered with dense vegetation; sources of light and glare do not exist on the project site. Therefore, development of the proposed project would introduce new sources of light and glare where none currently exist. Sources of light would include, but would not be limited to, exterior and interior lighting associated with the proposed single-family home and project-related traffic along Oddstad Way, which would be extended to the project frontage as part of the project. The proposed on-site structures could potentially produce daytime glare as a result of light reflecting off of windows.

However, due to the predominantly developed nature of the areas to the north and east of the project site, the increase in light and glare sources would not be expected to substantially increase the potential for sky glow. Moreover, site lighting would be

consistent with the Pacifica Design Guidelines which would prevent light and glare sources from impacting adjacent properties.

The Pacifica Design Guidelines require that exterior lighting is subdued and enhances building design.[7] In addition, the Guidelines prohibit use of lighting that creates glare for occupants or neighbors, and require that large areas requiring illumination are lit with low, shielded fixtures. The proposed project would be required to comply with the Design Guidelines, which would be ensured during the project approval processes. Compliance with the Pacifica Design Guidelines would ensure that the project would not introduce sources of light or glare that would pose a hazard or nuisance to neighboring development. As such, a ***less-than-significant*** impact would occur related to the creation of a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

[7] City of Pacifica. *Design Guidelines* [pg. 3]. Revised April 1990.

II. AGRICULTURE AND FOREST RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping 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 individually or cumulatively result in loss of Farmland to non-agricultural use?	☐	☐	☐	✖

Discussion

a,b,e. Per the California Department of Conservation Farmland Mapping and Monitoring Program, the proposed project site and the Westerly Lots consist of land considered Urban and Built-Up Land.[8] Furthermore, neither the site nor the Westerly Lots are zoned or designated in the General Plan for agriculture uses. The proposed project site and the Westerly Lots are not under a Williamson Act contract, and are not currently used for agriculture. Based on the above, development of the proposed project and future buildout of the Westerly Lots would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, conflict with existing zoning for agricultural use or a Williamson Act contract or involve other changes in the existing environment which, due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use. Therefore, the proposed project would have ***no impact***.

c,d. The proposed project site and the Westerly Lots are located within a residential neighborhood, and buildout of both areas with residential uses has been previously anticipated by the City per the City's adopted General Plan. Public Resources Code section 12220(g) defines forest land as the following:

> "Forest land" is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of

[8] California Department of Conservation. *San Mateo County Important Farmland 2014.* Published February 2016.

> one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

Given that the proposed project site and the Westerly Lots are currently designated for residential land use, management of either area for forest resources would not be compatible with existing development trends in the area. Furthermore, the project site and the Westerly Lots are zoned R-1-H. As such, the site and the Westerly Lots are not considered forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), and are not zoned Timberland Production (as defined by Government Code section 51104[g]). Given that the proposed project site does not contain forest land, the project would not result in the loss of forest land or conversion of forest land to non-forest use. Similarly, future development of the Westerly Lots with residential uses would not result in the loss of forest land or conversion of forest land to non-forest use. Thus, ***no impact*** would occur.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	✖	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	✖	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	✖	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	✖	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	✖	☐

Discussion

a-c. The City of Pacifica is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The SFBAAB area is currently designated as a nonattainment area for the State and federal ozone, State and federal fine particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State respirable particulate matter 10 microns in diameter (PM_{10}) ambient air quality standards (AAQS). The SFBAAB is designated attainment or unclassified for all other AAQS. It should be noted that on January 9, 2013, the U.S. Environmental Protection Agency (USEPA) issued a final rule to determine that the Bay Area has attained the 24-hour $PM_{2.5}$ federal AAQS. Nonetheless, the Bay Area must continue to be designated as nonattainment for the federal $PM_{2.5}$ AAQS until such time as the BAAQMD submits a redesignation request and a maintenance plan to the USEPA, and the USEPA approves the proposed redesignation. The USEPA has not yet approved a request for redesignation of the SFBAAB; therefore, the SFBAAB remains in nonattainment for 24-hour $PM_{2.5}$.

In compliance with regulations, due to the nonattainment designations of the area, the BAAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the AAQS, including control strategies to reduce air pollutant emissions through regulations, incentive programs, public education, and partnerships with other agencies. The current air quality plans are prepared in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG).

The most recent federal ozone plan is the 2001 Ozone Attainment Plan, which was adopted on October 24, 2001 and approved by the California Air Resources Board (CARB) on November 1, 2001. The plan was submitted to the USEPA on November 30, 2001 for review and approval. The most recent State ozone plan is the 2017 Clean Air Plan (CAP), adopted on April 19, 2017. The 2017 CAP was developed as a multi-pollutant plan that

provides an integrated control strategy to reduce ozone, PM, toxic air contaminants (TACs), and greenhouse gases (GHGs). Although a plan for achieving the State PM_{10} standard is not required, the BAAQMD has prioritized measures to reduce PM in developing the control strategy for the 2017 CAP. The control strategy serves as the backbone of the BAAQMD's current PM control program.

The aforementioned air quality plans contain mobile source controls, stationary source controls, and transportation control measures to be implemented in the region to attain the State and federal AAQS within the SFBAAB. Adopted BAAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with applicable air quality plans. The BAAQMD's established significance thresholds associated with development projects for construction and operational emissions of the ozone precursors reactive organic gases (ROG) and oxides of nitrogen (NO_x), as well as for PM_{10}, and $PM_{2.5}$, expressed in pounds per day (lbs/day) are listed in Table 2. Thus, by exceeding the BAAQMD's mass emission thresholds for construction or operational emissions of ROG, NO_X, $PM_{10,}$ or $PM_{2.5}$, a project would be considered to conflict with or obstruct implementation of the BAAQMD's air quality planning efforts. The City, as lead agency, has chosen to use the BAAQMD's thresholds of significance for evaluation of construction activities associated with the proposed project and future buildout of the Westerly Lots.

Table 2
BAAQMD Thresholds of Significance

Pollutant	Construction	Operational	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10} (exhaust)	82	82	15
$PM_{2.5}$ (exhaust)	54	54	10

Source: BAAQMD, CEQA Guidelines, 2017.

Proposed Project Only

Given that project operations would consist of occupation of one single-family family residence, operational emissions would not be substantial. Furthermore, the project is below the BAAQMD's operational-related criteria pollutant and ozone precursor screening level size of 56 single-family dwelling units.[9] Projects that do not exceed the BAAQMD's screening levels would not result in the generation of emissions that would exceed the BAAQMD's established thresholds of significance for operations.

The proposed project's on-site construction emissions were quantified using the California Emissions Estimator Model (CalEEMod) software version 2016.3.2 – a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions,

[9] Bay Area Air Quality Management District. *CEQA Guidelines* [pg. 3-2]. May 2017.

from land use projects. Where project-specific information is available, such information should be applied in the model. Accordingly, the proposed project's modeling assumed the following:

- The land use "single-family residential" was applied to the model;
- Construction would begin in April of 2019;
- Construction would occur over an approximately 11-month period;
- Demolition would not be required;
- A total of 0.72-acre of land would be disturbed;
- A total of 1,110 cubic yards of material would be exported during site preparation; and
- A total of 3,373 cubic yards of material would be exported during grading.

In addition to construction modeling performed within CalEEMod, construction emissions modeling for the roadway construction portion of the proposed project was completed separately. Although the BAAQMD does not maintain a specific tool for roadway construction emissions modeling, the nearby Sacramento Metropolitan Air Quality Management District (SMAQMD) maintains the Road Construction Emissions Model (Roadmod) for roadway construction projects. In the absence of a BAAQMD tool, the SMAQMD Roadmod tool was used to model construction emissions related to construction of the roadway leading to the project site. The Roadmod modeling assumed the following information regarding the proposed project:

- Project construction would begin in 2019;
- Roadway construction would occur over approximately two months;
- The roadway would span 0.07 miles; and
- A total of 0.15 acres would be disturbed for roadway construction.

All Roadmod and CalEEMod results are included as Appendices A and B, respectively, to this IS/MND.

The proposed project's estimated emissions associated with construction is presented and discussed in further detail below. A discussion of the proposed project's contribution to cumulative air quality conditions is provided below as well.

Construction Emissions

As noted in the project description, Oddstad Way currently terminates 360 feet away from the project site, and the site is currently inaccessible to construction vehicles. Considering the currently limited site access, construction activity on the project site could not commence until construction of the roadway extension was completed. Thus, the emissions related to roadway construction would occur prior to, and separate from, emissions related to on-site construction activity. Table 3, below presents the maximum unmitigated construction criteria air pollutants related to roadway construction. As shown in the table, the proposed project's construction emissions would be below the applicable thresholds of significance for ROG, NO_X, PM_{10}, and $PM_{2.5}$.

Table 3 Maximum Off-Site Roadway Construction Emissions (lbs/day)			
Pollutant	**Proposed Project Emissions**	**Threshold of Significance**	**Exceeds Threshold?**
ROG	4.23	54	**NO**
NO_X	46.04	54	**NO**
PM_{10} (exhaust)	2.20	82	**NO**
PM_{10} (fugitive)	3.00	None	**N/A**
$PM_{2.5}$ (exhaust)	1.99	54	**NO**
$PM_{2.5}$ (fugitive)	0.62	None	**N/A**
Source: Roadmod, 2018 (see Appendix B).			

As noted above, modeling for on-site construction and off-site roadway construction would occur separately. According to the CalEEMod results, on-site construction emissions would result in maximum unmitigated construction criteria air pollutant emissions as shown in Table 4. As shown in the table, the proposed project's construction emissions would be below the applicable thresholds of significance for ROG, NO_X, PM_{10}, and $PM_{2.5}$.

Table 4 Maximum On-Site Construction and Hauling Emissions (lbs/day)			
Pollutant	**Proposed Project Emissions**	**Threshold of Significance**	**Exceeds Threshold?**
ROG	1.52	54	**NO**
NO_X	13.30	54	**NO**
PM_{10} (exhaust)	0.73	82	**NO**
PM_{10} (fugitive)	1.07	None	**N/A**
$PM_{2.5}$ (exhaust)	0.69	54	**NO**
$PM_{2.5}$ (fugitive)	0.49	None	**N/A**
Source: CalEEMod, 2018 (see Appendix C).			

Although thresholds of significance for mass emissions of fugitive dust PM_{10} and $PM_{2.5}$ have not been identified by the City of Pacifica or BAAQMD, the proposed project's estimated fugitive dust emissions have been included for informational purposes. All projects within the jurisdiction of the BAAQMD are required to implement all of the BAAQMD's Basic Construction Mitigation Measures, which include the following:

1. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
2. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
3. All vehicle speeds on unpaved roads shall be limited to 15 mph.
4. 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.

5. 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.
6. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
7. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Given that the proposed project is located within the jurisdiction of the BAAQMD, the project would be procedurally required to implement all of the BAAQMD's Basic Construction Mitigation Measures listed above to the extent that the measures are feasible for the proposed project's construction activities. Implementation of the measures would help to further minimize construction-related emissions. Because the proposed project would result in construction emissions below the applicable thresholds of significance, the proposed project would be considered to result in a less-than-significant air quality impact during construction.

Proposed Project Plus Westerly Lots

Buildout of the proposed project site combined with future buildout of the Westerly Lots would include a total of five single-family residential homes. Thus, to the analysis presented above for development of the project site only, the total number of units would be below the BAAQMD's operational-related criteria pollutant and ozone precursor screening level size of 56 single-family dwelling units. Projects that do not exceed the BAAQMD's screening levels would not result in the generation of emissions that would exceed the BAAQMD's established thresholds of significance for operations.

For the purpose of this analysis, construction activities associated with buildout of the Westerly Lots was assumed to occur in April 2020, after completion of the proposed project. Thus, construction emissions associated with the Westerly Lots and construction emissions associated with the proposed project would not overlap. In addition, the total combined site area for the Westerly Lots is approximately 1.07 acres, which is similar in size to the 0.87-acre proposed project site. Given that the Westerly Lots would include a similar overall disturbance area and would not require import or export of soil material associated with construction of the proposed Oddstad Way extension, associated criteria pollutant emissions would likely be similar to the proposed project. Thus, as is the case for the proposed project, the Westerly Lot construction emissions would be below the applicable thresholds of significance for ROG, NO_X, PM_{10}, and $PM_{2.5}$.

Based on the above, buildout of the proposed project site and the adjacent Westerly Lots with single-family development would result in construction-related and operational

criteria pollutant emissions below the applicable BAAQMD thresholds of significance. Therefore, a less-than-significant air quality impact would occur.

Cumulative Emissions

Past, present and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By nature, air pollution is largely a cumulative impact. A single project is not sufficient in size to, by itself, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. The thresholds of significance presented in Table 2 represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. If a project exceeds the significance thresholds presented in Table 2, the proposed project's emissions would be cumulatively considerable, resulting in significant adverse cumulative air quality impacts to the region's existing air quality conditions. Because the proposed project and future buildout of the Westerly Lots would not result in emissions above the applicable thresholds of significance for ROG, NO_X, PM_{10}, or $PM_{2.5}$, the project would not result in a cumulatively considerable contribution to the region's existing air quality conditions.

Conclusion

As stated previously, the applicable regional air quality plans include the 2001 Ozone Attainment Plan and the 2010 CAP. Because the proposed project, as well as buildout of the Westerly Lots, would not result in construction related or operational emissions of criteria air pollutants in excess of BAAQMD's thresholds of significance, conflicts with or obstruction of the implementation of regional air quality plans would not occur. Therefore, the proposed project, combined with future buildout of the Westerly Lots, would not contribute to the region's nonattainment status for ozone or PM or contribute substantially to the violation of an air quality standard, and a ***less-than-significant*** impact would result.

d. Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Sensitive receptors are typically defined as facilities where sensitive receptor population groups (i.e., children, the elderly, the acutely ill, and the chronically ill) are likely to be located. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The nearest existing sensitive receptors to the project site and the Westerly Lots would be the single-family residences located approximately 100 feet northeast of the project site along Rockaway Beach Avenue.

The major pollutant concentrations of concern are localized carbon monoxide (CO) emissions and other toxic air contaminant (TAC) emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. High levels of localized CO concentrations are only expected where background levels are high, and traffic volumes and congestion levels are high. Emissions of CO are of potential concern, as the pollutant is a toxic gas that results from the incomplete combustion of carbon-containing fuels such as gasoline or wood. CO emissions are particularly related to traffic levels.

In order to provide a conservative indication of whether a project would result in localized CO emissions that would exceed the applicable threshold of significance, the BAAQMD has established screening criteria for localized CO emissions. According to BAAQMD, a proposed project would result in a less-than-significant impact related to localized CO emission concentrations if all of the following conditions are true for the project:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans;
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
- The project traffic 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, underpass, etc.).

As discussed in the Transportation and Circulation section of this IS/MND, neither the proposed project alone nor combined development of the proposed project with the Westerly Lots would not conflict with the San Mateo County Congestion Management Plan (CMP). Additionally, traffic counts for the area completed as part of a Traffic Impact Analysis (TIA) prepared for the project showed that all of the intersections in the project area experience traffic levels far below 44,000 vehicles during AM and PM peak hour periods.[10] As such, the proposed project and combined buildout of the Westerly Lots would not increase traffic volumes at an affected intersection to more than 44,000 vehicles per hour. Furthermore, areas where vertical and/or horizontal mixing is limited due to tunnels, underpasses, or similar features do not exist in the project area. As such, based on the BAAQMD's screening criteria for localized CO emissions, the proposed project and the Westerly Lot development would not be expected to result in substantial levels of localized CO at surrounding intersections or generate localized concentrations of CO that would exceed standards or cause health hazards.

[10] Omni-Means Engineers & Planners. *Traffic Impact Analysis of Construction Truck Trips for the Proposed Oddstad Way Residential Project, Pacifica, CA.* August 4, 2017.

TAC Emissions

Another category of environmental concern is TAC emissions. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure. Health-related risks associated with DPM in particular are primarily associated with long-term exposure. It should be noted that the proposed project site and the Westerly Lots are not located within the vicinity of any substantial sources of TAC emissions.

The proposed project, as well future buildout of the Westerly Lots, would not involve any land uses or operations that would be considered major sources of TACs, including DPM. As such, the proposed project would not generate any substantial pollutant concentrations during operations. However, short-term, construction-related activities could result in the generation of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. The CARB's Handbook includes distribution centers with associated diesel truck trips of more than 100 trucks per day as a source of substantial TAC emissions, and recommends siting new sensitive land uses a minimum of 1,000 feet away from such uses. TAC emissions associated with such distribution centers would be relatively similar to emissions associated with diesel hauling trucks typically used for project construction. As discussed in Section XVI, Transportation and Circulation, of this Initial Study, the proposed project would generate a maximum of 68 diesel truck trips per day during on-site project construction. Because future buildout of the Westerly Lots would include a relatively similar overall disturbance area and would not include any material hauling associated with construction of the proposed Oddstad Way extension, associated diesel truck trips would be reduced relative to the proposed project. Therefore, per the CARB's guidelines, construction activities associated with on-site project construction and future development of the Westerly Lots would not generate substantial TAC emissions requiring further study.

Furthermore, construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of a single-family residence. All construction equipment and operation thereof associated with development of the project site and the neighboring Westerly Lots would be regulated per BAAQMD's In-Use Off-Road Diesel Vehicle Regulation, which is intended to help reduce emissions associated with off-road diesel vehicles and equipment, including DPM. Such construction activities would also be required to comply with all other applicable BAAQMD rules and regulations, particularly associated with permitting of air pollutant sources. In addition, construction equipment would operate intermittently throughout the course of a day and only on portions of the development area at a time.

Based on the above, hauling truck trips associated with construction of the proposed project and future buildout of the Westerly Lots would not result in substantial TAC emissions. Because construction equipment would not operate for any long periods of time and would be used at varying locations within the project site and the Westerly Lots, associated emissions of DPM would not occur at the same location (or be evenly spread throughout the entire project site) for long periods of time. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk. Due to the temporary nature of construction and the relatively short duration of potential exposure to associated emissions, sensitive receptors in the area would not be exposed to pollutants for a permanent or substantially extended period of time. Therefore, construction of the proposed project and future buildout of the Westerly Lots would not be expected to expose nearby sensitive receptors to substantial pollutant concentrations.

Conclusion

Based on the above, the proposed project and future buildout of the Westerly Lots would not expose any sensitive receptors to substantial concentrations of localized CO or TACs, including DPM from construction activity. Therefore, a ***less-than-significant*** impact would occur related to the exposure of sensitive receptors to substantial concentrations of pollutants.

e. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative methodologies to determine the presence of a significant odor impact do not exist. Typical odor-generating land uses include, but are not limited to, wastewater treatment plants, landfills, and composting facilities. The proposed project, as well as future development of the Westerly Lots, would not introduce any such land uses. Development associated with buildout of the project site and the Westerly Lots would be residential in nature, and residential land uses are not typically associated with the creation of substantial objectionable odors. As a result, residential uses at the project site or the adjacent Westerly Lots would not create any objectionable odors that would affect a substantial number of people.

Although less common, diesel fumes associated with substantial diesel-fueled equipment and heavy-duty trucks, such as from construction activities, freeway traffic, or distribution centers, could be found to be objectionable. As such, construction activities associated with the proposed project and buildout of the Westerly Lots could cause diesel fumes, which could be considered objectionable, during the temporary construction period. Although diesel fumes from construction equipment are often found to be objectionable, construction is temporary and construction equipment would operate intermittently throughout the course of a day, would be restricted to the hours of 7:00 AM to 7:00 PM, Monday through Friday, and 9:00 AM to 5:00 PM on Saturdays and Sundays per Section 8-7.5.07 of the City's Municipal Code. In addition, all construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation. Project

construction would also be required to comply with all applicable BAAQMD rules and regulations, particularly associated with permitting of air pollutant sources. The aforementioned regulations would help to minimize air pollutant emissions as well as any associated odors. Considering the short-term nature of construction activities and the regulated and intermittent nature of the operation of construction equipment on the site, construction of the proposed project and development of the Westerly Lots would not be expected to create objectionable odors affecting a substantial number of people.

It should be noted that BAAQMD regulates objectionable odors through Regulation 7, Odorous Substances, which does not become applicable until the Air Pollution Control Officer (APCO) receives odor complaints from ten or more complainants within a 90-day period. Once effective, Regulation 7 places general limitation on odorous substances and specific emission limitations on certain odorous compounds, which remain effective until such time that citizen complaints have not been received by the APCO for one year. The limits of Regulation 7 become applicable again when the APCO receives odor complaints from five or more complainants within a 90-day period. Thus, although not anticipated, if odor complaints are made after the proposed project is developed, the BAAQMD would ensure that such odors are addressed and any potential odor effects reduced to less than significant.

For the aforementioned reasons, construction and operation of the proposed project and future development of the Westerly Lots would not create objectionable odors, and a ***less-than-significant*** impact related to objectionable odors would result.

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	✖	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	✖	☐
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	✖	☐
d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of 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 Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	✖

Discussion

The following discussion is based on a Biological Resources Assessment prepared for the proposed project by WRA, Inc.[11] The Biological Resources Assessment was updated based on a peer review conducted by Live Oak Associates, Inc.[12]

a. The proposed project site is undeveloped, and consists primarily of a non-native blue gum (Eucalyptus globulus) grove with native Monterey pine (Pinus radiata) interspersed. The site

[11] WRA, Inc. *Biological Resources Assessment, Oddstad Way New Residence Development, Pacifica, San Mateo County, California.* Updated November 2017.

[12] Live Oak Associates, Inc. *Peer Review of Environmental Documents for the Oddstad Way Project, Pacifica, San Mateo County, California.* September 5, 2017.

is bounded by residential development to the north of the site, and woodland and coastal scrub to the west and south. A ditch runs from east to west along the southern edge of the planned Oddstad Way roadway extension and connects to an existing culvert under Oddstad Way. The site is bordered by existing single-family residential housing along Rockaway Beach Avenue to the north and east, and open space hillside consisting of woodland and coastal scrub to the west and south.

According to the Biological Resources Assessment and peer review, 29 special-status plant species have the potential to occur within a five-mile radius of the project site. In addition, 38 special-status wildlife species have been recorded within the project vicinity. However, special-status plant or wildlife species were not observed during site visits conducted as part of the Biological Resources Assessment. The special-status species determined to require further analysis are discussed in greater detail below.

Special-status Plant Species

Special-status plant species were not observed on the project site during the site survey conducted as part of the Biological Resources Assessment. Based on an analysis of microhabitat conditions associated with each of the 29 special-status plant species considered, none of the species were determined to have the potential to occur within the project site or within the proposed off-site improvement areas.

Special-status Wildlife Species

Of the 38 special-status wildlife species recorded within the project vicinity, the following species have the potential to occur on the site based on known habitat requirements: San Francisco dusky-footed woodrat, Western red bat, hoary bat, and monarch butterfly. Such species, as well as protected raptors and nesting birds that could potentially occur on-site, are discussed in further detail below.

Raptors and Nesting Birds

Nesting birds, including raptors, are protected by California Fish and Game Code Section 3503. Raptors, passerines, non-passerine landbirds, and waterfowl are further protected under the Federal Migratory Bird Treaty Act (MBTA) of 1918. The MBTA prohibits the take, possession, purchase, sale, or bartering of any migratory bird, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations. All migratory bird species are protected by the MBTA. Any disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds, is restricted under the MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered a 'take' of the species under federal law. White-tailed kite and other nesting birds could potentially occur on the project site. Such species are discussed in greater detail below.

White-tailed Kite

White-tailed kite (*Elanus leucurus*) is a State-protected species covered under the California Endangered Species Act (CESA). The species typically occurs in low-elevation grassland and agricultural, wetland, oak woodland, and savannah habitats. Although white-tailed kite was not observed on the site during a site visit conducted

by WRA, suitable nesting habitat for the species was observed within the project vicinity. As such, the species has a moderate potential to occur on-site.

Other Nesting Birds

The proposed project site contains numerous trees and shrubs that may provide nesting habitat during the breeding season for nesting and migratory birds. Tree removal and noise disturbance associated with project construction could potentially impact nesting birds in the absence of appropriate avoidance measures.

Western Red Bat and Hoary Bat

The western red bat (*Lasiurus blossevillii*) is a California Species of Special Concern. Hoary bat (*Lasiurus cinereus*) does not have a federal or State protection status; however, maternal roosting sites are protected during the breeding season. Both bat species could potentially roost in the thick foliage or sluffing bark of the on-site eucalyptus trees, or within the English ivy associated with such trees. Mitigation is required to ensure that a significant impact does not occur.

San Francisco Dusky-footed Woodrat

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) is a California Species of Special Concern. The species inhabits coastal sage-scrub, pinyon-juniper, dense chaparral, oak and riparian woodlands, and mixed conifer forests where a well-developed understory is present. Suitable habitat for the San Francisco dusky-footed woodrat is present throughout most of the proposed project site. During a site visit conducted by WRA, six San Francisco dusky-footed woodrat nests were observed within the project site vicinity. While individuals were not observed, the species is assumed to be present within the project site.

Monarch Butterfly

The monarch butterfly (*Danaus plexippus*) is a State-protected species. Winter roost sites for monarch butterflies extend along the Pacific coast from northern Mendocino to Baja California, Mexico. Roosts are generally located in wind-protected tree groves with nectar and water sources nearby. The eucalyptus grove within the proposed project site is not a known roosting site for the monarch butterfly, and is unlikely to provide a suitable overwintering site for the species. Per the peer review conducted by Live Oak Associates, monarch butterflies are unlikely to occur on the project site; however, given the unique nature of, and regional concerns for, the species, pre-construction overwintering surveys would be required in order to ensure that impacts would not occur. Because timing of monarch migration on the coast side varies from year to year, the survey shall be conducted at a time to coincide with monarch roosting activity on the coast side for that particular year.

Conclusion

Per the Biological Resources Assessment and the peer review conducted by Live Oak Associates, special-status plant species are not expected to occur on-site, and, thus, would not be impacted by the proposed project. However, a number of special-status wildlife species, including raptors and nesting birds, western red bat, hoary bat, San Francisco dusky-footed woodrat, and monarch butterfly, have the potential to occupy the proposed project site. Therefore, a ***potentially significant*** impact regarding a substantial adverse effect on species

identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS) could occur.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level. It should be noted that the preconstruction surveys required by Mitigation Measure IV-1 below would be inclusive of Lots 4-5 within the subject property.

Raptors and Nesting Birds

IV-1. *If construction, tree removal, and/or tree trimming activities are proposed during the bird nesting season (February 1 through August 31), preconstruction surveys for nesting birds, including raptors, shall be conducted by a qualified biologist within 500 feet of the construction area no more than 14 days prior to initiation of construction activities. If active bird nests are not found, further action is not required. If active bird nests are found, and project activities could potentially impact nesting success as determined by a qualified biologist, all necessary permits shall be obtained from the USFWS Migratory Bird Treaty Office and the CDFW. Alternatively, the applicant may delay construction activities until active bird nests are no longer present within 300 feet of the construction area. Results of the preconstruction surveys shall be submitted to the City of Pacifica Planning Department and the CDFW.*

Roosting Bats

IV-2(a). *Prior to removal of any on-site trees, a qualified biologist shall conduct a pre-construction bat emergence survey. If active roosts are not found, then further action shall not be warranted. If either a maternity roost or hibernacula (structures used by bats for hibernation) is present, Mitigation Measures IV-2(b) and IV-2(c) shall be implemented. The pre-construction survey shall be submitted to the City of Pacifica Planning Department and the CDFW.*

IV-2(b). *If active bat maternity roosts or hibernacula are found in trees which will be removed as part of project construction, the project shall avoid the loss of the tree occupied by the roost to the extent feasible as determined by the CDFW. If an active maternity roost is located and the project cannot be redesigned to avoid removal of the occupied tree, demolition shall commence before maternity colonies form (i.e., prior to March 1) or after young are volant (flying) (i.e., after July 31). Disturbance-free buffer zones, as determined by a qualified biologist, shall be observed during the maternity roost season (March 1 through July 31).*

IV-2(c). *If a non-breeding bat hibernacula is found in a tree scheduled for removal, the individuals shall be safely evicted, under the direction of a qualified biologist (i.e., a biologist holding a CDFW collection permit and a*

Memorandum of Understanding with CDFW allowing the biologist to handle bats), by opening the roosting area to allow airflow through the cavity. Demolition shall then follow at least one night after initial disturbance for airflow. Such timing would allow bats to leave during darkness, thus increasing chances of finding new roosts with a minimum of potential predation during daylight. Trees with roosts that need to be removed shall first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during the darker hours.

San Francisco Dusky-footed Woodrat

IV-3(a). *Not more than 30 days prior to initiation of ground-disturbing activities, a qualified biologist shall conduct preconstruction surveys for all active woodrat stick nests that would be directly impacted by the proposed project. Surveys shall include all suitable habitat types within the ground disturbance footprint. Any stick nests within the construction area shall be flagged and dismantled under the supervision of the biologist. The results of the pre-construction surveys shall be submitted to the City of Pacifica Planning Department and the CDFW. If San Francisco dusky-footed woodrats are not encountered during the dismantling process, further action is not required.*

IV-3(b). *If young San Francisco dusky-footed woodrats are encountered during the dismantling process, all nest materials shall be replaced, and the nest shall remain undisturbed for at least three weeks to allow for the individuals to mature and vacate the nest. After three weeks, the dismantling process shall resume. Nest material shall be moved to suitable adjacent areas (woodland, scrub, or chaparral) that are outside of the disturbance area associated with the proposed project. If construction does not occur within 30 days of the most recent pre-construction survey, additional surveys shall be required prior to construction.*

Monarch Butterfly

IV-4. *Prior to initiation of construction activities or tree removal during the monarch butterfly winter roosting season (October through February), a qualified biologist shall survey the project site to ensure that a roosting colony is not present. Because timing of monarch migration on the coast side varies from year to year, the survey shall be conducted at a time to coincide with monarch roosting activity on the coast side for that particular year. Information on monarch roosting activity must be verified with applicable regulatory agencies prior to conducting the survey. If a roosting colony is not detected, tree removal may commence, and further surveys shall not be required. However, if a roosting colony is detected, trees shall not be removed until the winter roosting season has concluded (i.e., monarchs have not been observed in the general area or using the trees). Results of any butterfly surveys shall be submitted to the City of Pacifica*

Planning Department and the CDFW. If trees have already been removed prior to the onset of the winter roosting season, surveys are not warranted.

b,c. Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. The proposed project site was surveyed as part of the Biological Resources Assessment to determine if any wetlands and/or waters potentially under the jurisdiction of the U.S. Army Corps of Engineers (USACOE), Regional Water Quality Control Board (RWQCB), or CDFW were present. The assessment was based primarily on the presence of wetland plant indicators, as well as indicators of wetland hydrology and wetland soils. The preliminary waters assessment was based primarily on the presence of unvegetated, ponded areas or flowing water, areas vegetated with hydrophytic plant species, or evidence indicating the presence of waters such as a high water mark or a defined drainage course. In addition, the proposed project site and off-site improvement areas were evaluated for the presence of other sensitive biological communities, including riparian areas, sensitive plant communities recognized by CDFW, and habitats potentially supporting rare, endangered, and unique species as recognized by the City of Pacifica.

Per the Biological Resources Assessment, the project site and off-site road improvement areas do not contain jurisdictional wetlands or Waters of the U.S. However, the site does contain sensitive natural communities in the form of Monterey pine forest, ocean spray brush, and arroyo willow thicket (see Table 5). Ocean Spray Brush is considered sensitive per the CDFW. While arroyo willow thickets are not ranked as a sensitive community, the existing community surveyed within the project site was associated with an off-site intermittent stream and, thus, is considered riparian. Riparian vegetation is potentially subject to CDFW jurisdiction under Section 1600 of the California Fish and Game Code. The Monterey pine forest within the project site is not a native stand and is therefore not considered sensitive by CDFW.

Table 5
Sensitive Biological Communities Within the Project Site and Off-Site Improvement Areas

Community Type	Acreage
Monterey pine forest (Pinus radiata Forest Alliance)	0.18
Ocean spray brush (Holodiscus discolor Shrubland Alliance)	0.09
Arroyo willow thicket (Salix lasiolepis Shrubland Alliance)	0.04
Total:	**0.31**

Source: WRA, Inc., 2017.

While the project site contains 0.09-acre of ocean spray brush, only 0.01-acre would be disturbed by the proposed development. Per WRA, Inc., the loss of 0.01-acre of ocean spray brush would not considered substantial. The 0.04-acre of arroyo willow thicket would not be disturbed by the project. It should be noted that during project construction activities, consistent with Section 6.12.206 of the City's Municipal Code, silt fencing and straw wattle would be installed along the northeastern portion of the project site, upslope of the riparian vegetation associated with the arroyo willow thicket. As such, construction activities would not adversely affect such vegetation.

While the project site and off-site road improvement areas do not contain jurisdictional wetlands or Waters of the U.S., the proposed project would include construction of a new off-site outfall structure at the downstream side of the existing culvert at Oddstad Way. The culvert carries flows from Rockaway Creek, a small waterway that flows directly to the Pacific Ocean west of the project site. As discussed in Section IX, Hydrology and Water Quality, of this IS/MND, the proposed outfall would discharge treated runoff from a new bio-retention basin along the north side of the proposed roadway extension.

The USACE regulates the filling or grading of waters of the U.S. under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high-water marks" (OHWM) on opposing channel banks. All activities that involve the discharge of dredge or fill material into waters of the U.S. are subject to the permit requirements of the USACE. Given that the proposed outfall would be located within the OHWM of Rockaway Creek, which is under the jurisdiction of the USACE, the project would be subject to the permit requirements of Section 404 of the Clean Water Act.

In addition, under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board (SWRCB) has regulatory authority to protect the water quality of all surface water and groundwater in the State of California ("waters of the State"). Nine RWQCBs oversee water quality at the local and regional level. The RWQCB for a given region regulates discharges of fill or pollutants into waters of the State through the issuance of various permits and orders. Discharges into waters of the State that are also waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act permit. Discharges into all waters of the State, even those that are not also waters of the U.S., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB.

The CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that an activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement must be prepared. Such an agreement typically stipulates that certain measures would be implemented to protect the habitat values of the lake or drainage in question. Because the proposed outfall structure would require modification of the Rockaway Creek bank, the proposed project could potentially impact CDFW-jurisdictional features.

Based on the above, the proposed project would not have a substantial adverse effect on any sensitive natural communities located within the project site or the off-site road improvement areas. However, because the project would include the construction of an outfall structure within the OHWM of Rockaway Creek, the project would require issuance of a USACE Section 404 Clean Water Act Permit. In addition, the proposed project would require issuance of Section 401 Water Quality Certification and a Lake or Streambed Alteration Agreement prior to initiation of construction activities. Should the proposed project fail to comply with the necessary permitting requirements prior to the start of construction activities, a ***potentially significant*** impact could occur regarding riparian

habitat, seasonal wetlands, or vernal pools as defined by Section 404 of the Clean Water Act, or regarding a substantial adverse effect on a riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

IV-5(a) *Notify USACE. Prior to initiation of construction activities, the applicant shall obtain permit authorization to fill wetlands under Section 404 of the federal CWA (Section 404 Permit) from USACE. The Section 404 Permit application shall include an assessment of directly impacted, avoided, and preserved acreages to waters of the U.S. Mitigation measures shall be developed as part of the Section 404 Permit to ensure no net loss of wetland function and values. Mitigation for direct impacts to waters of the U.S. associated with the proposed outfall structure at Rockaway Creek would occur at a minimum of 1:1 ratio for direct impacts; however, final mitigation requirements shall be developed in consultation with USACE. In addition, a Water Quality Certification or waiver pursuant to Section 401 of the CWA must be obtained for Section 404 permit actions.*

IV-5(b) *Notify Regional Water Quality Control Board. Prior to initiation of construction activities, the project applicant shall submit to the San Francisco Bay Regional Water Quality Control Board an application for Clean Water Act Section 401 Water Quality Certification and/or Waste Discharge Requirements for Projects Involving Discharge of Dredged and/or Fill Material to Waters of the State. The project applicant shall be responsible for conducting all project activities in accordance with the permit provisions outlined in the applicable San Francisco Water Board permit.*

IV-5(c) *Notify CDFW. The CDFW maintains jurisdiction over the bed and bank of the bed, channel, and banks of any river, stream, or lake (Fish and Game Code Section 1602) and impacts to these areas may require a Lake or Streambed Alteration Agreement. Prior to initiating construction activities, the project applicant shall notify CDFW of the intentions of the project to determine if a Lake or Streambed Alteration Agreement is required.*

d. Habitat loss, fragmentation, and degradation have the potential to alter the use and viability of wildlife movement corridors (i.e., linear habitats that naturally connect and provide passage between two or more otherwise distinct larger habitats or habitat fragments). The suitability of a habitat as a wildlife movement corridor is related to, among other factors, the habitat corridor's dimensions (length and width), topography, vegetation, exposure to human influence, and the species in question.

The proposed project site is bordered by existing single-family residential housing along Rockaway Beach Avenue to the north and east, and open space hillside consisting of woodland and coastal scrub to the west and south. The proposed project would serve as an extension of the existing residential neighborhood, and would not substantially inhibit the movement of wildlife. The undeveloped areas to the west and south of the project site would continue to allow for movement of wildlife species, and would not be fragmented or degraded as a result of the project. Furthermore, as discussed previously, the proposed project site does not contain aquatic features that would allow for fish passage. In addition, the proposed project site has been previously planned for development with single-family residential uses per the City's General Plan. Therefore, the project would have a ***less-than-significant*** impact with respect to interfering substantially with the movement of any resident or migratory fish or wildlife species, or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites.

e. Title 4, Chapter 12 of the Pacifica Municipal Code (Preservation of Heritage Trees) stipulates regulations designed to preserve and protect heritage trees on private or City-owned property. In general, heritage trees are defined as any trees within the City, exclusive of eucalyptus, which have a trunk with a circumference of fifty inches (approximately sixteen inches in diameter) or more, measured at twenty-four inches above the natural grade. Sections 4-12.02 and 4-12.03 of the Municipal Code provide a complete definition of a heritage tree. Per Sections 4-12.07 and 4-12.08 of the Municipal Code, tree protection plans are required when engaging in new construction within the drip-line of a heritage tree. The plan must be prepared by a qualified arborist, horticulturist, landscape architect or other qualified person.

An arborist survey was conducted in October 2017 within the proposed project site and off-site improvement areas, as well as the surrounding vicinity.[13] A total of 105 trees with a diameter of at least six inches at one foot above grade were tagged and assessed, 20 of which are located within the proposed development area and are considered heritage trees per the City's Municipal Code. As shown in Table 6 below, eight of the heritage trees are within the proposed project footprint and would require removal. Of the eight Heritage trees to be removed, five are not native. Given that the proposed project would require the removal of eight heritage trees protected by the City's Municipal Code, a ***potentially significant*** impact could occur.

Table 6
Heritage Trees within the Project Site and Off-Site Improvement Areas

Species	Number of Trees in the Project Site and Off-Site Improvement Areas	Number of Trees to be Removed by Project
Lollypop tree (non-native)	2	0
Monterey pine (non-native)	13 (1 dead)	3
Coast redwood (native)	0	0
Arroyo willow (native)	1	0
Toyon (native)	5	3
Pittosporum (non-native)	2	2

Source: WRA, Inc., 2017.

[13] WRA, Inc. *Tree Survey Report, Oddstad Way New Residence Development, Pacifica, San Mateo County, California.*

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

IV-6. *Prior to issuance of a grading permit, the project applicant shall obtain tree removal permits from the City of Pacifica Planning Department for any heritage trees to be removed. Prior to issuance of a certificate of occupancy, the project applicant shall complete planting of any replacement trees required as part of the tree removal permit. In addition, the project applicant shall prepare and submit a tree protection plan prior to the approval of tree removal permits in accordance with the City Municipal Code, Sections 4-12.02 through 4-12.11, and prior to commencement of any construction activity shall implement any tree protection measures identified to protect trees which will not be removed during construction.*

f. Adopted Habitat Conservation Plans or Natural Conservation Community Plans covering the proposed project site do not exist. Therefore, the proposed project would not conflict with the provisions of such a plan, and ***no impact*** would occur.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	✖	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	✖	☐	☐
c. Directly or indirectly destroy a unique paleontological resource on site or unique geologic features?	☐	✖	☐	☐
d. Disturb any human remains, including those interred outside of formal cemeteries.	☐	✖	☐	☐

Discussion

The following discussion is based on a Historical Resources Study prepared for the proposed project by Tom Origer and Associates.[14] It should be noted that the Historical Resources Study included evaluation of both the proposed project site and the proposed off-site improvement areas. A field survey of the proposed project site and off-site improvement areas was conducted as part of the Historical Resources Study on June 12, 2016.

a. Historical resources are typically features that are associated with the lives of historically important persons and/or historically significant events, or that embody the distinctive characteristics of a type, period, region or method of construction. Historic-period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

According to the Historical Resources Study, the proposed project site and off-site improvement areas have not been subjected to previous historical resources studies, and historical resources have not been recorded within a quarter-mile of the proposed project site. Furthermore, neither the proposed project site nor the off-site improvement areas contain any existing structures, and a field survey conducted as part of the Historical Resources Study did not yield any historical resources. Based on the above, the proposed project would not cause a substantial adverse change in the significance of a historical resource, and a ***less-than-significant*** impact would occur.

b-d. The Historical Resources Study included archival research in order to determine the potential for cultural resources to occur within the vicinity of the proposed project site. Such research included a review of the library and project files at Tom Origer and Associates, as well as a review of archaeological site base maps and records, survey reports, and other materials on file at the Northwest Information Center (NWIC) in Sonoma,

[14] Tom Origer and Associates. *Historical Resources Study of Lots 6-12 Oddstad Way, Pacifica, San Mateo County, California.* July 7, 2017.

California. Ethnographic literature that describes appropriate Native American groups, county histories, and other primary and secondary sources were also reviewed.

Per the Historical Resources Study, the region within which the proposed project is located could potentially contain prehistoric archaeological site indicators including, but not limited to, the following: obsidian and chert flakes and chipped stone tools; grinding and mashing implements; bedrock outcrops and boulders with mortar cups; and locally darkened midden soils containing some of the previously-listed items, plus fragments of bone, shellfish, and fire affected stones. However, archaeological resources, paleontological resources, and unique geologic features were not observed during the field survey conducted on the project site. Given that the relatively steep slope of the proposed project site and the absence of a nearby perennial watercourse, the proposed project area is not sensitive for buried archaeological deposits, and the probability of encountering such deposits is low.

Nonetheless, the possibility exists that previously undiscovered archaeological or paleontological resources, including human remains, could be uncovered during ground-disturbing activities associated with construction of the proposed project. Therefore, the project could result in a ***potentially significant*** impact with respect to causing a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5 and/or disturbing human remains.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

V-1. *In the event of the accidental discovery or recognition of any human remains, further excavation or disturbance of the find or any nearby area reasonably suspected to overlie adjacent human remains shall not occur until compliance with the provisions of CEQA Guidelines Section 15064.5(e)(1) and (2) has occurred. The Guidelines specify that in the event of the discovery of human remains other than in a dedicated cemetery, no further excavation at the site or any nearby area suspected to contain human remains shall occur until the County Coroner has been notified to determine if an investigation into the cause of death is required. If the Coroner determines that the remains are Native American, then, within 24 hours, the Coroner must notify the Native American Heritage Commission, which in turn will notify the most likely descendants who may recommend treatment of the remains and any grave goods. If the Native American Heritage Commission is unable to identify a most likely descendant or most likely descendant fails to make a recommendation within 24 hours after notification by the Native American Heritage Commission, or the landowner or his authorized agent rejects the recommendation by the most likely descendant and mediation by the Native American Heritage Commission fails to provide a measure acceptable to the landowner, then the landowner or his authorized representative shall rebury the human remains and grave goods with appropriate dignity at a location on the*

property not subject to further disturbances. If human remains are encountered, a copy of the resulting County Coroner report noting any written consultation with the Native American Heritage Commission shall be submitted as proof of compliance to the City of Pacifica Planning Department.

V-2. *If any prehistoric or historic artifacts, or other indications of cultural deposits, such as historic privy pits or trash deposits, are found once ground disturbing activities are underway, all work within the vicinity of the find(s) shall cease and the find(s) shall be immediately evaluated by a qualified archaeologist. If the find is determined to be a historical or unique archaeological resource, contingency funding and a time allotment to allow for implementation of avoidance measures or appropriate mitigation shall be made available (CEQA Guidelines Section 15064.5). Work may continue on other parts of the project site while historical or unique archaeological resource mitigation takes place (Public Resources Code Sections 21083 and 21087).*

The requirements of mitigation measures V-1 and V-2 shall be included via notation on all project improvement plans and building permit plans.

VI. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault?	☐	☐	✖	☐
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 18-1B of the Uniform Building Code?	☐	✖	☐	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	✖

Discussion

A Geotechnical Investigation was prepared for the proposed project by Romig Engineers, Inc.[15] and subsequently peer-reviewed by GEOCON Consultants, Inc.[16]

a.i-ii. Per the Geotechnical Investigation, mapped active faults are not located within or adjacent to the proposed project site, and the site is not located within a State of California Earthquake Fault Zone (formerly known as a Special Studies Zone), an area where the potential for fault rupture is considered probable. The closest known active faults are the San Gregorio and San Andreas faults, located approximately 2.5 miles southwest and 2.6 miles northeast of the project site, respectively. Therefore, the likelihood of surface rupture occurring from active faulting at the proposed project site is low.

[15] Romig Engineers, Inc. *Geotechnical Investigation, Diaz-Macias Residence, Oddstad Way, Lot 1 – APN 022-056-060.* June 2014.

[16] GEOCON Consultants, Inc. *Proposed Single Family Residence, Lots 6-12, Oddstad Way, Pacifica, California, Geotechnical Peer Review.* September 8, 2017.

Given that the project site is located within the San Francisco Bay Area, an active seismic region, the project will undoubtedly experience severe ground shaking during moderate and large magnitude earthquakes produced along the San Andreas Fault or other active Bay Area fault zones. However, the proposed residence and associated improvements would be designed in accordance with the adopted edition of the California Residential Code (CRC) requirements in place at the time of building permit application. Structures built according to the seismic design provisions of current building codes should be able to: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage, but with some non-structural damage; and 3) resist major earthquakes without collapse, but with some structural, as well as non-structural damage. Given the project's adherence to the CRC requirements, the proposed project would not expose people or structures to substantial adverse effects including the risk of loss, injury, or death involving the rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map, or strong seismic ground shaking. Therefore, the proposed project would have a ***less-than-significant*** impact.

a.iii. Liquefaction occurs when saturated sandy soils lose strength during earthquake shaking. Ground settlement, or subsidence, often accompanies liquefaction. Soils most susceptible to liquefaction are saturated, loose, sandy silts, silty sands, and uniformly graded sands. According to the Geotechnical Investigation, the bedrock underlying the project site is situated at a relatively shallow depth, and, thus, in the professional opinion of Romig Engineers, Inc., the likelihood of liquefaction occurring at the site is low. Therefore, the proposed project would not be expected to be affected by seismic-related ground failure, including liquefaction, and a ***less-than-significant*** impact would occur.

a.iv. According to the Geotechnical Investigation, an old landslide is mapped underlying a portion of the proposed project site. Based on a soil boring conducted at the landslide, the landslide was determined to extend from depths of approximately 1.5 feet to 12 feet below ground surface. While the lateral margin of the landslide is not precisely defined, geologic maps of the area indicate that the landslide is approximately 300 feet wide and 500 feet long. However, obvious indications of recent movement of the landslide were not noted, although intense seismic shaking or unusually high or prolonged rainfall could potentially result in some movement. Based on the shallow depth of rock encountered at the site, as well as the lack of clear evidence suggesting recent slide features on the immediate slope or upslope of the site, the potential for significant damage to the proposed residence as a result of future movement of the old landslide is low.

However, while unlikely, the potential exists for the landslide to mobilize in the future and damage the proposed structures. Due to the extent and presumed thickness of the existing landslide mass, stabilization of the landslide mass to prevent future movementwould not be feasible. In addition, shallow slides or debris flows from the slopes uphill of the proposed project site could potentially mobilize and flow downslope towards the site. In order to limit potential hazards associated with landslides, the Geotechnical Investigation includes site-specific recommendations, including, but not limited to, the construction of three- to five-foot minimum debris walls along the southwest and northwest sides of the project site to protect the proposed structures from localized shallow surficial landslides. If the proposed project fails to incorporate the recommendations included in the

Geotechnical Investigation related to landslides, the project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

VI-1. *All improvement and building plans for the proposed development shall be designed by a Civil and Structural Engineer and reviewed and approved by the City of Pacifica Building Division prior to issuance of grading and building permits to ensure that all geotechnical recommendations specified in the Geotechnical Investigation prepared for the proposed project, including without limitation the debris walls, are properly incorporated and utilized in the project design.*

b. As discussed in Section IX, Hydrology and Water Quality, of this IS/MND, short-term construction activities associated with the proposed project could result in soil erosion or the loss of topsoil. Therefore, a ***potentially significant*** impact related to substantial soil erosion or the loss of topsoil could occur.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

VI-2. *Implement Mitigation Measure IX-1.*

VI-3. *Due to the proposed project site's hillside location and proximity to Rockaway Creek, project grading shall not be commenced during the rainy season, defined as the period between October 1 and April 30, inclusive, consistent with Section 8-1.18 of the City's Municipal Code. Any grading commenced prior to the rainy season which has not been stabilized as determined by the Building Official shall be stabilized with appropriate Best Management Practices as described in Mitigation Measure IX-1 of this IS/MND and as approved by the Building Official. In addition, the project applicant shall stabilize any exposed hillside areas by seeding the hillside with native grasses selected by a qualified biologist until construction is completed and permanent landscaping measures stabilize the hillside.*

c. As noted above, the proposed project would not be at risk for hazards associated with liquefaction, and implementation of Mitigation Measure VI-1 would reduce the project's landslide related impact to a less-than-significant level. Other soil stability issues, including differential compaction and lateral spreading, are discussed below.

Differential Compaction

Differential compaction can occur during moderate and large earthquakes when soft or loose, natural or fill soils are densified and settle, often unevenly, across a site. Per the Geotechnical Investigation, the materials composing the project site are hard clays/silts and weathered bedrock, which are generally not prone to significant differential compaction. In addition, the proposed residence would be supported on a foundation system that would extend into weathered bedrock below the overlying soils; therefore, the likelihood of significant damage to the proposed residence due to differential compaction is low.

Lateral Spreading

Lateral spreading is associated with terrain near free faces such as excavations, channels, or open bodies of water. Due to the moderate to steep sloping nature of the proposed project site, surface and near-surface soils would likely be prone to erosion and downslope soil creep. Without implementation of recommendations contained in the Geotechnical Investigation, lateral spreading could potentially occur on-site.

Conclusion

Based on the above, the proposed project could potentially be subject to risks associated with lateral spreading. As discussed above, the Geotechnical Investigation includes site-specific recommendations for seismic design, site preparation and grading, and foundation design sufficient to reduce such risks. Without implementation of the recommendations contained in the Geotechnical Investigation, a ***potentially significant*** impact could occur related to being located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, potentially resulting in on- or off-site landslide, lateral spreading, or collapse.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

VI-4. Implement Mitigation Measure VI-1.

d. Expansive soils shrink/swell when subjected to moisture fluctuations, which can cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. According to the Geotechnical Investigation, due to the substantial variation in supporting soils across the proposed project site, the project could be partially situated on weathered bedrock, and partially situated on highly-expansive soils and/or fill materials.

The proposed project would be subject to the requirements of the CRC, which includes provisions related to expansive soils. In addition, the Geotechnical Investigation includes site-specific recommendations for construction adequate to reduce hazards associated with expansive soils. Specifically, the Geotechnical Investigation recommends that the proposed structures be supported by drilled piers embedded into the bedrock below the

overlying soils on the site. A layer of non-expansive fill is also recommended below slabs-on-grade that are underlain by expansive soils, if such soils are encountered. Without implementation of the recommendations contained in the Geotechnical Investigation, a ***potentially significant*** impact could occur related to being located on expansive soils.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

VI-5. Implement Mitigation Measure VI-1.

e. Sewer service for the proposed project would be provided by the City of Pacifica by way of a proposed connection to the existing sanitary sewer line at Oddstad Way. Thus, septic tanks or alternative wastewater disposal systems would not be required for the proposed project, and ***no impact*** would occur relating to soils incapable of adequately supporting the use of septic tanks.

VII. GREENHOUSE GAS EMISSIONS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	✖	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	☐	☐	✖	☐

Discussion

a, b. Emissions of greenhouse gases (GHGs) contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on earth. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the proposed project would cumulatively contribute to increases of GHG emissions. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO_2) and, to a lesser extent, other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O) associated with area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste. The common unit of measurement for GHG is expressed in terms of annual metric tons of CO_2 equivalents ($MTCO_2e$/yr).

A number of regulations currently exist related to GHG emissions, predominantly Assembly Bill (AB 32), Executive Order S-3-05, and Senate Bill (32). AB 32 sets forth a statewide GHG emissions reduction target of 1990 levels by 2020. Executive Order S-3-05 sets forth a transitional reduction target of 2000 levels by 2010, the same target as AB 32 of 1990 levels by 2020, and further builds upon the AB 32 target by requiring a reduction to 80 percent below 1990 levels by 2050. SB 32 also builds upon AB 32 and sets forth a transitional reduction target of 40 percent below 1990 levels by 2030. In order to implement the statewide GHG emissions reduction targets, local jurisdictions are encouraged to prepare and adopt area-specific GHG reduction plans and/or thresholds of significance for GHG emissions.

The proposed project site and the Westerly Lots are located within the jurisdictional boundaries of the BAAQMD. BAAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to

reduce statewide GHG emissions needed to move towards climate stabilization. If a project would generate GHG emissions above the threshold level, the project would be considered to generate significant GHG emissions and conflict with applicable GHG regulations. In addition, the BAAQMD has developed screening criteria for operational GHG emissions.[17] Projects below the applicable screening criteria would not exceed the BAAQMD's 1,100 $MTCO_2e$/yr threshold of significance for projects other than stationary sources. For single-family land uses, BAAQMD's recommended operational GHG screening level is 56 dwelling units. The proposed project would only include one single-family residence, and, future development of the Westerly Lots would include up to four single-family residences. Thus, combined development of the proposed project and the Westerly Lots would be below the screening level. As such, the project and future development of the Westerly Lots would not be considered to generate substantial operational GHG emissions.

It should be noted that the City of Pacifica has adopted a Climate Action Plan (CAP) that is intended to guide reduction of GHG emissions associated with existing operations and future development in the City.[18] The GHG inventory contained in the City's CAP was derived based on the land use designations and associated densities defined in the City's General Plan. Because the proposed project would be consistent with the project site's existing General Plan land use designation, the project would be consistent with the GHG inventory contained in the CAP.

Construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change. Neither the City of Pacifica nor BAAQMD have adopted a threshold of significance for construction-related GHG emissions.[19] However, the proposed project's total construction GHG emissions have been estimated and compared to the BAAQMD's operational threshold of 1,100 $MTCO_2e$/yr for informational purposes. The proposed project's total construction-related GHG emissions are presented in Table 7 below. The construction modeling assumptions are described in the Air Quality section above and in the appendices to this IS/MND.

Table 7
Unmitigated Project Construction GHG Emissions

Year	Annual GHG Emissions ($MTCO_2e$/yr)
2018	267.8
2019	16.72
TOTAL GHG EMISSIONS	**284.52**

Sources:
Roadmod, September 2017 (see Appendix B).
CalEEMod, September 2017 (see Appendix C).

As shown in Table 7 above, the project's estimated total construction emissions of 284.52 $MTCO_2e$ would be well below BAAQMD's adopted operational threshold of 1,100 $MTCO_2e$/yr.

[17] Bay Area Air Quality Management District. *CEQA Guidelines* [pg. 3-1]. May 2010.
[18] City of Pacifica. *Climate Action Plan*. July 14, 2014.
[19] City of Pacifica. *Climate Action Plan*. July 14, 2014.

Based on the above, the proposed project, combined with future development of up to four single-family residences on the Westerly Lots, would be below the BAAQMD's recommended operational GHG screening level of 56 dwelling units, and, thus, would not generate substantial operational GHG emissions. The project would not include any operations that would generate GHG emissions beyond those of typical residential land uses, and would be consistent with the City's adopted CAP. In addition, while neither the City nor BAAQMD has established GHG emissions thresholds for construction, construction emissions associated with the proposed project and the Westerly Lots would be far below the BAAQMD's adopted operational threshold of 1,100 $MTCO_2e$/yr. Therefore, the proposed project would not be considered to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs; and impacts would be considered ***less than significant***.

VIII. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 likely 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 two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	✖	☐
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	✖	☐
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	✖	☐	☐
h. Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	✖		☐

Discussion

a. Residential land uses are not typically associated with the routine transport, use, disposal, or generation of substantial amounts of hazardous materials. Occupation of the proposed single-family residence, as well as additional single-family development associated with future buildout of the Westerly Lots, could involve the use common household cleaning products, fertilizers, and herbicides on-site, any of which could contain potentially hazardous chemicals; however, such products would be expected to be used in accordance with label instructions. Due to the regulations governing use of such products and the relatively small amount that would be expected to be used on the site, routine use of such products would not represent a substantial risk to public health or the environment.

Therefore, the proposed project and future buildout of the Westerly Lots would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and a ***less-than-significant*** impact would occur.

b,d. The proposed project site and the Westerly Lots are currently undeveloped. Neither area contains existing habitable structures, and, thus, asbestos containing materials (ACMs) or lead-based paints do not occur on-site or on the Westerly Lots. In addition, the Geotechnical Report did not identify any sources of naturally-occurring asbestos, such as serpentine rock, on the project site. Given the proximity of the project site to the Westerly Lots, naturally-occurring asbestos is unlikely to exist on the Westerly Lots.

Features such as septic systems, wells, above-ground storage tanks (ASTs), underground storage tanks (USTs), or other features related to uses of environmental concern have not been identified on the site or the Westerly Lots. In addition, given that neither the site nor the Westerly Lots have been subject to previous development, the presence of such features within either area is unlikely. Furthermore, the project site and the Westerly Lots are not included in the California Department of Toxic Substances Control EnviroStor Database.[20] The Envirostor Database includes information provided by the Department of Toxic Substances Control (DTSC) and included in the State's Hazardous Waste and Substances Sites (Cortese) List, which is compiled pursuant to Government Code section 65962.5. Per the GeoTracker data management system maintained by the SWRCB, the project area is not located within the vicinity of a site that impacts, or has the potential to impact, water quality.[21]

Construction activities associated with the proposed project and future buildout of the Westerly Lots would involve the use of heavy-duty equipment, which would contain fuels, oils, and hydraulic fluid. In addition, various other products commonly associated with construction such as concrete, paints, and adhesives would be used on-site. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used and transported during construction activities at the project site and the Westerly Lots. However, the project contractors would be required to comply with all California Health and Safety Codes and local County ordinances regulating the handling, storage, and transportation of hazardous and toxic materials. Significant risks to the public or workers are not expected with the assumption that such products would be used, transported, and disposed of properly in accordance with the handling instructions on their labels and in accordance with all applicable regulations.

The existing surrounding development consists of residential land uses, which are not typically associated with the use of significant quantities of hazardous materials. Thus, the project and future development of the Westerly Lots would not be subjected to any upset or accident conditions involving release of hazardous materials associated with nearby uses.

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[20] California Department of Toxic Substances Control. *Hazardous Waste and Substances Site List*. Available at: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm. Accessed June 2017.

[21] State Water Resources Control Board. *GeoTracker*. Available at: http://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=pacifica+ca. Accessed June 2017.

Overall, the proposed project and future development of the Westerly Lots would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment, and is not located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Thus, a ***less-than-significant*** impact would occur.

c. The proposed project site and the Westerly Lots are not located within one-quarter mile of a school. The nearest school, Vallemar Elementary School, is located approximately 0.75-miles north of the project area on Reina del Mar Avenue. Furthermore, as discussed above, hazardous materials would not be emitted during construction or operation of the proposed project or future Westerly Lot development. Therefore, the project would have a ***less-than-significant*** impact related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

e,f. The nearest airport relative to the proposed project site, San Francisco International Airport, is located approximately five miles east of the site. In addition, the project site is located approximately six miles north of Half Moon Bay Airport. Per the Comprehensive Airport Land Use Plan for the Environs of San Francisco International Airport (SFO Plan), the proposed project site does not lie within designated Safety Compatibility Zones or forecasted noise contours for the airport.[22] According to the San Mateo County Comprehensive Airport Land Use Compatibility Plan (ALUCP), the site is not located within an Airport Safety Zone for Half Moon Bay Airport, and, thus, would not be significantly affected by the airport.[23] Therefore, the proposed project would not result in a safety hazard for people residing or working in the project area, and a ***less-than-significant*** impact would occur.

g. The proposed project would include extension of Oddstad Way to the project frontage. The extended roadway would be approximately 20 feet wide, and would include an attached three-foot-wide sidewalk on the east side of the road. At the project frontage, the roadway would terminate in an inverted hammerhead, which would allow for turnaround of fire trucks and other emergency vehicles. A 60-foot parking bay would be included within the Oddstad Way right-of way directly north of the proposed turnaround. Access to the proposed project site would be provided by a new 20-foot wide minimum driveway connecting to the proposed three-car garage.

Based on the above, the project would not conflict with policies outlined in the adopted General Plan for managing emergency situations. However, prior to completion of construction activities, the potential exists for construction equipment and materials to temporarily obstruct emergency access along the proposed Oddstad Way extension. Therefore, the proposed project could impair implementation of or physically interfere with

[22] City/County Association of Governments of San Mateo County, California. *Comprehensive Airport Land Use Plan for the Environs of San Francisco International Airport*. July 2012.
[23] San Mateo County. *Comprehensive Airport Land Use Compatibility Plan.* December 1996.

an adopted emergency response plan or emergency evacuation plan, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

VIII-1 *Upon completion of the proposed roadway extension, the City of Pacifica shall require that the proposed emergency vehicle turnaround is kept clear in order to allow for unimpeded emergency vehicle access during construction activities associated with the proposed project. All construction equipment and materials shall be staged on-site so as to prevent obstruction of Oddstad Way.*

h. The proposed project site is located in an area where wildlands are adjacent to an urbanized area, as defined in Section 702A of the 2016 California Building Code. In 2015, a brush fire started near Fassler Avenue to the south of the project site and spread to Rockaway Beach Avenue. As such, wildfires present a potential risk to the proposed project.

As noted above, the proposed project would include roadway improvements, including the provision of a truck turnaround, to allow for unimpeded emergency vehicle access to the project site. The proposed roadway improvements would allow the North County Fire Authority (NCFA), which provides fire protection services to the City, to easily access the project site in the event of a wildfire. The nearest fire station relative to the project site is Fire Station 72, located at 1100 Linda Mar Boulevard in Pacifica, approximately 2.5 miles from the project site by way of SR 1. Furthermore, per the CAL FIRE Fire and Resources Assessment Program, the proposed project is not located in a Very High Fire Hazard Severity Zone (VHFHSZ).[24]

Nonetheless, given that the outlying areas of the Rockaway Beach neighborhood have experienced a wildland fire in recent years and the project site is located at an interface with wildland areas, the project could result in a ***potentially significant*** impact related to exposure of people or structures to the risk of loss, injury or death involving wildland fires.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

VIII-2. *Prior to issuance of grading permit, the grading plan submitted by the project applicant for review and approval by the City of Pacifica Planning Department shall include, by way of written notation, verification that the proposed buildings will comply with all applicable regulations and requirements within Chapter 7A, Materials and Construction Methods for Exterior Wildfire Exposure, of the California Building Code.*

[24] CAL FIRE. *Very High Fire Hazard Severity Zones in LRA, San Mateo County.* November 4, 2008.

VIII-3. *The project applicant and any/all subsequent owners and residents shall maintain 100 feet of 'defensible space' around all proposed structures, consistent with the requirements of the North County Fire Authority (NCFA).*

IX. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	☐	✖	☐	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	✖	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	✖	☐	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	✖	☐	☐
e. 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?	☐	✖	☐	☐
f. Otherwise substantially degrade water quality?	☐	✖	☐	☐
g. Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	✖	☐
h. Place within a 100-year floodplain structures which would impede or redirect flood flows?	☐	☐	✖	☐
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	☐	☐	✖	☐
j. Inundation by seiche, tsunami, or mudflow?	☐	☐	✖	☐

Discussion

a,c-f. All municipalities within San Mateo County (and the County itself) are required to develop surface water control standards for new development projects to comply with Provision C.3 of the RWQCB Municipal Regional Stormwater NPDES Permit order No. R2-2015-0049. The San Mateo Countywide Water Pollution Prevention Program developed a C.3 Stormwater Technical Guidance document for implementing the RWQCB Municipal

Regional Stormwater NPDES Permit C.3 requirements, known as the C.3 Standards.[25] The City of Pacifica has adopted the County C.3 Standards as part of the City's NPDES General Permit requirements, which require new development and redevelopment projects that create or alter 10,000 or more square feet of impervious area to contain and treat all stormwater runoff from the project site. Given that the proposed project would create approximately 15,952 square feet of impervious area, the project would be considered a C.3-regulated project and would be subject to the requirements of the RWQCB's C.3 Standards.

Per the SWCP prepared for the proposed project, the project would include a series of coordinated Low Impact Development (LID) Site Design Measures to remove pollutants, slow runoff, and release runoff from the site at a level comparable to the pre-development flow volume consistent with C.3 requirements.[26] The impervious areas on the site, including all roofs, hardscape, parking areas, and driveways, would be divided into distinct C.3 drainage management areas, or DMAs. The DMAs would be sized for treatment and flow control of runoff. Runoff from a portion of the DMAs would be managed by routing stormwater to a new bio-retention facility, located to the north side of the extended roadway, that would treat runoff by filtering out pollutants (see Figure 5, 'IMP-1'). The proposed bio-retention basin would be designed to the standards for bio-retention treatment systems detailed in Section 6.1, Bioretention Areas, of the C.3 Stormwater Technical Guidance. As shown in Table 8 below, the bio-retention basin would be appropriately sized to treat runoff from the DMAs draining to the basin consistent with the County's C.3 Stormwater Technical Guidance. Treated stormwater from the bio-retention basin would be routed through a new storm drain pipe and discharge, by way of a new outfall structure, at the downstream side of the existing culvert at Oddstad Way. The project would not include connections to the City's existing built stormwater collection and conveyance infrastructure.

Table 8
Proposed IMP Sizing Calculations

DMA Name	DMA Area (sf)	IMP Sizing		
		IMP Sizing Factor	Minimum Area (sf)	Proposed Area (sf)
DMA-1A	458	-	-	-
DMA-1B	910	-	-	-
DMA-1C	978	-	-	-
DMA-1D	1,187	-	-	-
DMA-1H	518	-	-	-
DMA-1L	469	-	-	-
DMA-R1	9,146	-	-	-
Total	**13,209**	**0.4**	**547**	**780**

Source: Megan W. Stromberg Consulting, 2017.

[25] City/County Association of Governments of San Mateo County, San Mateo Countywide Water Pollution Prevention Program. *C.3 Stormwater Technical Guidance.* June 2016.

[26] Megan W. Stromberg Consulting. *Stormwater Control Plan, Oddstad Way, Pacifica, San Mateo County, California.* November 21, 2017.

With the exception of DMA-R2, runoff from the remaining DMAs would be routed to new on-site self-treating areas, including landscaping and porous paving, in order to reduce the total amount runoff leaving the project site. Similar to the proposed bio-retention basin, the self-treating areas would be sized to adequately store and infiltrate runoff from such DMAs consistent with the County's C.3 Stormwater Technical Guidance, which states that stormwater treatment measures must be sized to treat runoff from relatively small sized, commonly occurring storms. . Section 5.1 of the C.3 Stormwater Technical Guidance provides specific methodologies for flow-based and volume-based sizing.

It should be noted that per the SWCP prepared for the proposed project, runoff from DMA R-2, which would total 1,509 sf and include a portion the proposed roadway extension, as well as an associated sidewalk, would not drain to the proposed bio-retention facility. Due to the steepness of the existing grades along Oddstad Way and the need for the proposed roadway extension to meet the grades at the existing pavement, treatment of the runoff from DMA-R2 at the proposed bio-retention basin is not feasible. As such, an alternative treatment method would be required in order to ensure polluted runoff from the roadway does not enter downstream waterways.

The SWCP prepared for the proposed project includes a C.3 Development Review Checklist, which indicates that the proposed bio-treatment facilities would be sufficient to meet water quality and flow control requirements of the C.3 Standards. As such, post-development runoff flows would not exceed existing flows associated with the site.

In order to ensure that the proposed project's bio-retention basin continues to adequately treat runoff following project implementation, long-term maintenance of the basins would be necessary. Consequently, the San Mateo Countywide Pollution Prevention Program would require the project applicant to prepare a maintenance plan and enter into a maintenance agreement with the City of Pacifica to assure long-term maintenance of the proposed treatment measures.[27] All stormwater treatment facilities detailed in the Stormwater Control Plan (SWCP) prepared for the proposed project would be owned and maintained by the project developer and owner until such time that the property is sold to a new owner. The project applicant would accept responsibility for operation and maintenance of the facilities until such time as responsibility is formally transferred to the new owner(s) for maintenance.

Additionally, during the early stages of construction activities, topsoil would be exposed due to grading of the site. After grading and prior to overlaying the ground surface with impervious surfaces and structures or new landscaping which would stabilize the soil, the potential exists for wind and water erosion to discharge sediment and/or urban pollutants into stormwater runoff, which could adversely affect water quality. The State Water Resources Control Board (SWRCB) regulates stormwater discharges associated with construction activities where clearing, grading, or excavation results in a land disturbance of one or more acres per the General Construction Permit. The project site is 31,265 square feet, or 0.72 acres, and, thus, construction activities would not be subject to the State's General Construction Permit requirements. However, the San Mateo Countywide Pollution Prevention Program provides a list of construction BMPs with which all projects involving

[27] City/County Association of Governments of San Mateo County, San Mateo Countywide Water Pollution Prevention Program. *C.3 Stormwater Technical Guidance* [pg. 8-1 to 8-12]. June 2016.

construction within the County are required to comply.[28] Should the project applicant fail to implement BMPs, pollutants from construction activities could runoff into local waterways and degrade downstream water quality, particularly during heavy winter rain events.

Because the proposed project would comply with C.3 standards, the proposed project would not substantially alter the existing drainage pattern of the site or area in a manner which would result in flooding on- or off-site, 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. However, submittal of a Final C.3. Development Review Checklist would be required to ensure that runoff from DMA R-2, which would total 1,509 sf and include a portion the proposed roadway extension as well as an associated sidewalk, would be properly treated prior to discharge into Rockaway Creek.

If the project applicant fails to implement appropriate construction BMPs, grade during the winter rain season, or develop a maintenance plan for the proposed LID Site Design Measures, the proposed project could result in erosion or siltation, violate water quality standards or waste discharge requirements, and substantially degrade water quality. As such, a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

IX-1. *During construction, the contractor shall implement BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable, which may include but are not necessarily limited to the following practices, or other BMPs identified in the California Stormwater Quality Association (CASQA) Construction BMP Handbook:*

- *Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) shall be employed to control erosion from disturbed areas;*
- *Inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways shall be covered or treated with nontoxic soil stabilizers;*
- *Exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways shall be enclosed or covered;*
- *The contractor shall ensure that no earth or organic material will be deposited or placed where such materials may be directly carried into a stream, marsh, slough, lagoon, or body of standing water;*

[28] City/County Association of Governments of San Mateo County, San Mateo Countywide Water Pollution Prevention Program. *Construction Best Management Practices.* Available at: http://www.cityofpacifica.org/depts/planning/stormwater_compliance/default.asp. Accessed January 4, 2017.

- *The following types of materials shall not be rinsed or washed into the streets, shoulder areas, or gutters: concrete, solvents and adhesives, thinners, paints, fuels, sawdust, dirt, gasoline, asphalt and concrete saw slurry, and heavily chlorinated water; and*
- *Grass or other vegetative cover shall be established on the construction site as soon as possible after disturbance.*

The applicable BMPs shall be included via notation on the project Improvement Plans prior to review and approval by the City of Pacifica Planning Department.

IX-2. *The applicant shall submit, with the application of building permits, a draft Stormwater Facilities and Maintenance Plan, including detailed maintenance requirements and a maintenance schedule for the review and approval by the City of Pacifica Planning Department. The Stormwater Facilities and Maintenance Plan shall be recorded against the property and shall bind all future owners of the project site. The maintenance plan shall consist of and comply with the following elements and performance standards, at a minimum:*

- *Inlets and outlets shall be inspected for erosion or plugging;*
- *Clear any obstructions and remove accumulation of sediment. Examine rock or other materials used as a splash pad and replenish as necessary;*
- *Inspect slopes for evidence of erosion and correct as necessary;*
- *Examine vegetation to verify health and suitability for use as erosion control;*
- *Replenish mulch as necessary, remove fallen leaves and debris, prune large shrubs or trees, and mow turf areas;*
- *Abate any potential vectors by filling holes in the ground, in and around the swale, and by ensuring that water does not pool for longer than 48 hours following a storm;*
- *Mosquito larvicides shall be applied only when absolutely necessary and then only by a licensed contractor;*
- *Observe soil at the bottom of the filter for percolation throughout the system. If portions of the swale or filter do not drain within 48 hours after the end of the storm, the soil shall be tilled and replanted; and*
- *Examine the vegetation to ensure that it is healthy and dense enough to provide filtering and to protect soils from erosion. Replace dead plants and remove invasive vegetation.*

IX-3. *Implement Mitigation Measure VI-3.*

IX-4. *The project applicant shall submit a Final Stormwater Control Plan (including a C.3 Development Review Checklist) fully addressing the requirements of the City's Municipal Regional Stormwater NPDES Permit,*

and including proper treatment of stormwater runoff from DMA-R2 to the satisfaction of the City Engineer.

b. The proposed project would receive water service from the North Coast County Water District (NCCWD). The NCCWD does not currently rely on groundwater wells for water supply.[29] As such, groundwater supplies would not be used to serve the proposed project. Given that the proposed project site is approximately 0.72-acre in size, any impervious surfaces created by the project would not substantially interfere with infiltration of stormwater into local groundwater. Furthermore, the project would limit hardscape and use pervious pavement treatments, which would allow for natural infiltration of stormwater. Therefore, the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level, and impacts would be ***less than significant***.

g-i. According to the October 16, 2012 Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) number 06081C0126E, the proposed project site is located within Flood Hazard Zone X, which is described by FEMA as an area of minimal flood hazard, usually above the 500-year flood level. Thus, development of the proposed project would not place housing or structures within a 100-year floodplain or impede or redirect flood flows, and restrictions on development or special requirements associated with flooding are not required for the project. Furthermore, the site is not located near a dam or levee and would not be inundated in the event of failure of such structures. Overall, the proposed project would not expose people or structures to a risk of loss, injury, or death involving flooding, including flooding as a result of a failure of a levee or dam, and impacts would be ***less than significant***.

j. A tsunami is a series of sea waves most commonly caused by an earthquake beneath the sea floor. As the waves enter shallow water, they may rise rapidly, causing property damage, injury, and potentially loss of life. The California Department of Conservation maintains Tsunami Inundation Maps for most populated areas along the California coastline. The maps are created by combining inundation results for a variety of different seismic source events. As such, the maps represent a worse-case scenario. According to the Tsunami Inundation Map for the Montara Mountain Quadrangle, the proposed project site is not located in a Tsunami Inundation Area.[30] Furthermore, the City of Pacifica participates in a Community Alert Network (CAN) that, in the event of an emergency, alerts all citizens of the City who have enrolled in the program. A City-specific tsunami warning and informational brochure is distributed throughout the City. In addition, the City is listed as a TsunamiReady City by the National Weather Service.[31] TsunamiReady is a voluntary community recognition program that promotes tsunami hazard preparedness as an active collaboration among federal, State/territorial and local emergency management agencies, community leaders and the public. The main goal of the program is to improve

[29] North Coast County Water District. *20-Year Long-Term Water Master Plan.* February 2016.

[30] California Department of Conservation. *Tsunami Inundation Map for Emergency Planning, Montara Mountain Quadrangle.* June 15, 2009.

[31] National Weather Service. *TsunamiReady in California.* Available at: http://www.tsunamiready.noaa.gov/tr-maps/ca-tr.shtml. Accessed February 17, 2017.

public safety before, during and after tsunami emergencies. Given that the City has extensively prepared for tsunami events, and the project site is not located in a Tsunami Inundation Area, the proposed project would be considered reasonably safe from tsunami hazards.

A seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir, whose destructive capacity is not as great as that of tsunamis. Seiches are known to have occurred during earthquakes, but none have been recorded in the Bay Area. The project site is located approximately 2.8 miles west of the nearest closed body of water, San Andreas Lake, and, as such, would not be expected to be at risk of inundation from seiche.

The FEMA defines a mudflow as "A river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water."[32] Other earth movements, such as landslides, slope failure, or a saturated soil mass moving by liquidity down a slope, are not mudflows. Mudflow events are caused by a combination of factors, including soil type, soil profile, precipitation, and slope. Mudflow may be triggered by heavy rainfall that the soil is not able to sufficiently drain or absorb. Given that the area surrounding the project site is heavily vegetated, the project site would not be expected to be at risk of inundation from mudflow. It should be noted that impacts associated with landslides are discussed in Chapter VI, Geology and Soils, of this IS/MND.

Based on the above, the proposed project would result in a ***less-than-significant*** impact related to inundation by seiche, tsunami, or mudflow.

[32] Federal Emergency Management Agency. *Definitions.* Updated March 1, 2017. Available at: https://www.fema.gov/national-flood-insurance-program/definitions#M. Accessed June 9, 2017.

X. LAND USE AND PLANNING. *Would the project:*		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a.	Physically divide an established community?	☐	☐	✖	☐
b.	Conflict with any applicable land use plans, policies, or regulations of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	✖	☐
c.	Conflict with any applicable habitat conservation plan or natural communities conservation plan?	☐	☐	☐	✖

Discussion

a. A project would risk dividing an established community if the project would introduce infrastructure or alter land use so as to change the land use conditions in the surrounding community or isolate an existing land use. As a single-family home, the proposed project would essentially serve as an extension of the existing Rockaway Beach neighborhood to the north and east of the project site. In addition, the proposed project would be consistent with the General Plan. Therefore, the proposed project would not physically divide an established community, and a ***less-than-significant*** impact would occur.

b. The proposed project site is designated by the adopted General Plan as Very Low Density Residential, and is zoned R-1-H. Per the City's adopted General Plan, the Very Low Density land use designation indicates residential development that averages 0.5 to 5.0 acres per dwelling unit. Thus, development of the proposed single-family home would be consistent with the existing land use designation.

Per Section 9-4.953 of the City's Municipal Code, a site development permit is required prior to issuance of building permits for any new structure on a lot zoned R-1-H or for construction of new streets. As such, implementation of the proposed project would require approval of a site development permit by the City of Pacifica. Upon issuance of a site development permit, the proposed project would be consistent with the land use designation and zoning designation of the project site, and the project would not conflict with any applicable land use plans, policies, or regulations of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect. Thus, a ***less-than-significant*** impact would occur.

c. The City is not located within the boundaries of any HCP or NCP; therefore, the proposed project would have ***no impact*** related to conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or State habitat conservation plan.

XI. MINERAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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

a,b. The State Division of Mines and Geology indicates that the proposed project site and the Westerly Lots do not contain any identified mineral resources of regional or Statewide significance (Mineral Resource Zone [MRZ] 2).[33] The adopted General Plan recognizes the existence of mineral resources at the Pacifica Quarry, but does not address mineral resources elsewhere in the City. Furthermore, the proposed project would be consistent with the adopted General Plan land use and zoning designations for the site. Therefore, construction of the proposed project, as well as future development of the Westerly Lots, would not result in the loss of any known mineral resources or 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, and a ***less-than-significant*** impact would occur.

[33] State of California. Division of Mines and Geology. *Generalized Mineral Land Classification Map of the South San Francisco Bay Production—Consumption Region*. Published 1996.

XII. NOISE. *Would the project result in:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	✖	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	✖	☐	☐
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	✖	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	✖	☐	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	✖	☐
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	✖	☐

Discussion

a,c. The following discussion is based on a noise analysis prepared by j.c. brennan and associates, Inc. for the proposed project.[34]

The primary sources of long-term noise associated with the proposed project and future buildout of the Westerly Lots would be traffic related to the trips generated during operations. However, according to the TIA prepared for the project, the number of vehicle trips that would be generated by the proposed single-family residence would be relatively low (one peak hour trip and 10 daily trips).[35] As such, the project would not substantially increase traffic volumes on area roadways during operation, and associated increases in noise levels would not occur. The existing ambient noise level at the project site was recorded as 51 Day-Night Average Level (L_{dn}) decibels (dB) for the continuous 24-hour noise level measurements. Therefore, noise levels at the exterior of the proposed single-

[34] j.c. brennan and associates, Inc. *Lots 6-12 Oddstad Way Noise Analysis, City of Pacifica, California.* March 19, 2018.

[35] Omni-Means Engineers & Planners. *Traffic Impact Analysis of Construction Truck Trips for the Proposed Oddstad Way Residential Project, Pacifica, CA.* September 12, 2017.

family residence would be below the established noise level threshold of 60 L_{dn} dB for residential single-family land uses.[36]

Future buildout of the Westerly Lots would include up to four additional single-family residences. Based on vehicle trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Handbook, four single-family residences would generate an estimated 38 total daily trips, with three trips during the AM peak hour and four trips during the PM peak hour.[37] Thus, similar to the proposed project, vehicle traffic associated with operation of future single-family development on the Westerly Lots would not result in a substantial long-term increase in ambient noise levels. In addition, while noise measurement data for the Westerly Lots is not available, existing ambient noise levels are likely similar to the proposed project site given that the Westerly Lots are located within close proximity to the project site and are surrounded by similar land uses. Thus, similar to the proposed project, future noise levels at single-family homes within the Westerly Lots would likely be below the City's applicable 60 L_{dn} dB threshold for single-family residential land uses.

Modern construction typically provides a 25-dB exterior-to-interior noise level reduction with windows closed. Consequently, sensitive receptors exposed to exterior noise of 70 dB Community Noise Equivalent Level (CNEL), or less, would be exposed to interior noise levels at or below the 45 dB CNEL/L_{dn} interior noise level standard specified by Title 24 of the CBC. Exterior noise levels at the proposed residence and future single-family development within the Westerly Lots would be less than 70 dB CNEL/L_{dn}, and, thus, typical interior noise levels – due to the modern construction methods used to build the homes – would be less than 45 dB CNEL/L_{dn}. Therefore, interior noise levels at the proposed project and future development within the Westerly Lots would not exceed the interior noise level standard of 45 dB CNEL/L_{dn}.

Conclusion

Based on the above, traffic noise associated with the operation of the proposed project and future development within the Westerly Lots would not result in the exposure of persons to or generation of noise levels in excess of the applicable standards, and would not cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Therefore, a ***less-than-significant*** impact would occur. Temporary noise-level increases associated with construction activities are discussed under question 'd' below.

b. Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities (PPV) in inches per second (in/sec). Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of PPV. Per the noise analysis prepared for the proposed project, the threshold for damage to architectural structures is 0.2 in/sec PPV or greater, and continuous vibrations of 0.1 in/sec PPV or

[36] City of Pacifica. *City of Pacifica General Plan*. 1980.
[37] Institute of Transportation Engineers. *Trip Generation Handbook, 9th Edition.* 2012.

greater would likely cause annoyance to sensitive receptors. The following sections describe potential vibration-generating activities associated with the proposed project and future development of the Westerly Lots.

Proposed Project

The primary vibration-generating activities associated with the proposed project would occur during roadway construction, grading, placement of utilities, and construction of foundations. Table 9 below presents typical vibration levels that could be expected from construction equipment at various distances.

Table 9
Vibration Levels for Various Construction Equipment

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)
Large Bulldozer	0.089	0.029
Loaded Trucks	0.076	0.025
Small Bulldozer	0.003	0.000
Auger/drill Rigs	0.089	0.029
Jackhammer	0.035	0.011
Vibratory Hammer	0.070	0.023
Vibratory Compactor/roller	0.210	0.070

Source: j.c. brennan and associates, Inc., 2017.

The most substantial source of ground-borne vibrations associated with project construction would be the use of vibratory compactors. During construction of the proposed on-site improvements, construction activities involving vibratory compactors would occur at a distance of approximately 100 feet from the nearest residential buildings. As shown in the table, vibratory compactors typically generate vibration levels of 0.210 in/sec at a distance of 25 feet, and 0.070 in/sec at a distance of 50 feet. Therefore, at a distance of 50 feet or greater from the vibration source, groundborne vibrations would be less than 0.1 in/sec PPV, and, thus, would not cause annoyance to sensitive receptors. It should be noted that loaded trucks accessing the project site would be required to drive by existing residences along Rockaway Beach Avenue and Oddstad Way. However, per the noise analysis prepared for the proposed project, loaded trucks produce vibration levels of less than 0.1 in/sec PPV at 25 feet and would not be expected to result in groundborne vibration exceeding the threshold for structural damage or human annoyance.

Nevertheless, during construction for the proposed Oddstad Way extension, vibratory compactors could be used within closer proximity (as close as 20 feet) to the residential structures located at the existing terminus of Oddstad Way. Such activities would occur over a brief period of time relative to the construction of the entire project. In addition, all construction activities would be limited to the hours of 7:00 AM to 7:00 PM, Monday through Friday, and 9:00 AM to 5:00 PM on Saturdays and Sundays per Section 8-7.5.07

of the City's Municipal Code. However, the vibration level could exceed the 0.2 in/sec PPV threshold for structural damage and 0.1 in/sec PPV for human annoyance.

Westerly Lots

Similar to the proposed project, construction activities associated with development of the Westerly Lots would generate ground-borne vibration. However, because development of the Westerly Lots would not include any roadway construction, use of vibratory compactors would likely not be required. Thus, the most vibration intensive equipment would likely be large bulldozers and/or auger/drill rigs. Construction activities associated with Westerly Lots would occur at varying distances from the nearest sensitive receptors. Of the four Westerly Lots, construction activities associated with Lot 150 would occur closest to existing sensitive receptors. While development plans for Lot 150 are not available at this time, assuming the entirety of the lot area is subject to ground disturbance, vibration-generating activities could occur at a distance of up to 20 feet from the existing single-family residence located at the current terminus of Oddstad Way (598 Rockaway Avenue). Construction activities associated with Lot 1 (flag lot), Lot 1 (standard lot), and Lot 146 would be further from existing sensitive receptors.

Using the maximum vibration level anticipated during construction of 0.089 in/sec PPV at 25 feet and adjusting for a distance of 20 feet,[38] the maximum vibration levels anticipated at the nearest residence would be approximately 0.11 in/sec PPV during construction activities associated with the project, which would be below the applicable 0.2 in/sec PPV threshold. In addition, only portions of Lot 150 would be disturbed at a time, with operation of construction equipment occurring intermittently throughout the course of a day. Thus, construction equipment on-site would not operate at a distance of 20 feet to the nearest residence continuously throughout the entire construction period or for an extended amount of time. As such, groundborne vibrations associated with development on Lot 150 would not damage any existing buildings. In addition, all construction activities would be limited to the hours of 7:00 AM to 7:00 PM, Monday through Friday, and 9:00 AM to 5:00 PM on Saturdays and Sundays per Section 8-7.5.07 of the City's Municipal Code.

Conclusion

Based on the above, construction activities associated with future development of the Westerly Lots would not result in excess groundborne vibration at the existing single-family residences in the project area. However, given that the vibration level associated with extension of Oddstad Way as part of the proposed project could exceed the 0.2 in/sec PPV threshold for structural damage and 0.1 in/sec PPV for human annoyance, a ***potentially significant*** impact could occur related to exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

[38] California Department of Transportation. *Transportation and Construction Vibration, Guidance Manual* [Equation 12, pg. 37]. September 2013.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

XII-1. During construction of the proposed Oddstad Way extension, vibratory compactors shall maintain a minimum distance of 50 feet from all existing residential structures. This requirement shall be included via notation on the project grading plans prior to review and approval by the City of Pacifica Planning Department.

d. The following sections describe construction noise associated with the proposed project and future development of the Westerly Lots.

Proposed Project

During project construction, noise would be generated by increased truck traffic on area roadways; a primary project-generated noise source would be truck traffic associated with the transport of heavy materials and equipment to and from the construction site. In addition, heavy equipment would be used for roadway construction, site preparation, grading, paving, and building construction. Construction noise associated with truck traffic, as well as on-site operation of heavy-duty construction equipment, is discussed below. It should be noted that construction truck traffic volumes include dump truck/haul truck trips involved in exporting soil from the project site during site preparation and grading activities. Such truck traffic volumes are discussed in Section XVI, Transportation and Circulation, of this IS/MND.

Construction Traffic on Rockaway Beach Avenue

Table 10 below shows the predicted increase in existing noise levels on Rockaway Beach Avenue in the project vicinity due to project-generated construction traffic. As shown in the table, project construction traffic would result in a temporary 7 dB increase in peak hour traffic noise levels and a 3 dB increase in average traffic noise levels along the roadway system. The predicted increase in traffic noise levels would exceed the established General Plan noise level threshold of 60 L_{dn} dB for residential single-family land uses. However, given that the residences located along Rockaway Beach Avenue face towards the roadway, the buildings would likely provide substantial shielding of the nearest backyard outdoor activity areas.

Construction Traffic on Oddstad Way

Table 11 below shows the predicted construction traffic noise along Oddstad Way, including both the existing roadway and the proposed extension. As shown in the table, construction traffic along Oddstad Way would not exceed the established noise level threshold of 60 L_{dn} dB for residential single-family land uses along the roadway.

Table 10
Rockaway Beach Avenue – Existing and Existing Plus Project Construction Traffic Noise Levels

Segment	Distance from Centerline (feet)	Traffic Noise Levels (L_{dn}, dB)			Peak Hour Traffic Noise Levels (L_{eq}, dB)			Existing Distance to Contours (feet)			Existing Plus Project Distance to Contours (feet)		
		Existing	Existing Plus Project	Change	Existing	Existing Plus Project	Change	70 L_{dn} dB	65 L_{dn} dB	60 L_{dn} dB	70 L_{dn} dB	65 L_{dn} dB	60 L_{dn} dB
North of Fassler Ave.	20	57	60	+3 dB	53	60	+7 dB	3	6	12	4	9	19
East of Buel Ave.	10	60	63	+3 dB	58	65	+7 dB	2	5	10	3	7	16

Notes:

- Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
- Traffic noise levels do not account for shielding from existing noise barriers or intervening structures. Traffic noise levels may vary depending on actual setback distances and/or localized shielding.

Source: j.c. brennan and associates, Inc., 2017.

Table 11
Predicted Construction Traffic Noise Levels at Oddstad Way

Roadway	Segment	Noise Levels (L_{dn} dB)	Distance from Centerline (feet)
Oddstad Way	South of Rockaway Beach Ave.	58	10

Note: Distances to traffic noise contours are measured in feet from the centerlines of the roadways.

Source: j.c. brennan and associates, Inc., 2017.

On-Site Construction Activities

During project construction, heavy equipment would be used for driveway construction, site preparation, grading, paving, and building construction, which would increase ambient noise levels when in use. Noise levels associated with construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise-sensitive areas. Noise levels associated with operation of typical construction equipment are shown in Table 12.

Table 12
Typical Construction Equipment Noise

Type of Equipment	Predicted Noise Levels, L_{max} dB				Distances to Noise Contours (feet)	
	Noise Level at 50 feet	Noise Level at 100 feet	Noise Level at 200 feet	Noise Level at 400 feet	70 dB L_{max} contour	65 dB L_{max} contour
Backhoe	78	72	66	60	126	223
Compactor	83	77	71	65	223	397
Compressor (air)	78	72	66	60	126	223
Concrete Saw	90	84	78	72	500	889
Dozer	82	76	70	64	199	354
Dump Truck	76	70	64	58	100	177
Excavator	81	75	69	63	177	315
Generator	81	75	69	63	177	315
Jackhammer	89	83	77	71	446	792
Pneumatic Tools	85	79	73	67	281	500

Source: j.c. brennan and associates, Inc., 2017.

As shown in the table, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet. Construction activities associated with the proposed project would primarily occur at distances of approximately 100 feet from the single-family residences located north of the project site. At distances of 100 feet, construction-related activity is predicted to generate exterior noise levels ranging from approximately 72 to 83 dB L_{max} at the nearest residences. As such, the noise levels at the nearest residences would be temporarily increased above levels existing without the project.

Westerly Lots

Similar to the proposed project, during future development of the Westerly Lots, noise would be generated by increased truck traffic on area roadways. Because development of the Westerly Lots would not include any soil export or import associated with construction of the proposed Oddstad Way extension, construction truck trip volumes would be reduced compared to the proposed project. Nonetheless, because construction activities associated with development of the Westerly Lots would likely require extensive grading and associated material hauling, associated construction traffic noise at nearby sensitive receptors could exceed the City's threshold of 60 L_{dn} dB for residential single-family land uses.

As noted previously, on-site construction activities associated with Westerly Lots would occur at varying distances from the nearest sensitive receptors. Of the four Westerly Lots, construction activities associated with Lot 150 would occur closest to existing sensitive receptors. While development plans for Lot 150 are not available at this time, assuming the entirety of the lot area is subject to ground disturbance, noise-generating activities could occur as close as 20 feet from the existing single-family residence located at the current terminus of Oddstad Way (598 Rockaway Beach Avenue). Construction activities associated with Lot 1 (flag lot), Lot 1 (standard lot), and Lot 146 would be further from existing sensitive receptors. Based on the typical construction equipment noise levels shown in Table 12, similar to the proposed project, construction activities associated with the Westerly Lots would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet. As such, the noise levels at the nearest residences would be temporarily increased above levels existing without the project.

Conclusion

Project-generated construction traffic on Oddstad Way would not exceed any applicable noise-level thresholds. However, project construction traffic on Rockaway Beach Avenue, combined with existing traffic volumes, could result in noise levels exceeding the established 60 L_{dn} dB standard for single-family residential uses. In addition, on-site operation of heavy-duty construction equipment could generate excessive noise level increases at nearby residences. Furthermore, while specific construction-related noise levels cannot be estimated at this time in the absence of detailed development plans, future development of the Westerly Lots could generate excess noise levels associated with construction traffic and on-site operation of heavy-duty construction equipment.

Noise associated with construction activities would occur intermittently, and would be limited to the hours of 7:00 AM to 7:00 PM, Monday through Friday, and 9:00 AM to 5:00 PM on Saturdays and Sundays per Section 8-7.5.07 of the City's Municipal Code. Nonetheless, given the potential for the project and future development of the Westerly Lots to generate substantial increases in ambient noise due to construction traffic, as well as the proximity of the nearby residential buildings to the proposed construction activities, noise levels at nearby noise-sensitive receptors could substantially increase above existing levels without the project, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

Proposed Project and Westerly Lots

XII-2. The following criteria shall be included in the grading plan submitted by the project applicants for review and approval by the City of Pacifica Planning Department prior to issuance of grading permits:

- *All equipment driven by internal combustion engines shall be equipped with mufflers which are in good working condition and appropriate for the equipment;*
- *The construction contractor shall utilize "quiet" models of air compressors (i.e., electric powered, rotary screw compressors such as the Eagle Silent Series Compressors or similar) and other stationary noise sources where the technology exists;*
- *At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practical from noise-sensitive receptors;*
- *Unnecessary idling of internal combustion engines shall be prohibited;*
- *Owners and occupants of residential properties located with 1,000 feet of the construction site shall be notified of the construction schedule in writing; and*
- *The construction contractor shall designate a "noise disturbance coordinator" who shall 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, etc.) and institute reasonable measures as warranted to correct the problem. A telephone number for the disturbance coordinator shall be conspicuously posted at the construction site.*

e,f. As noted previously, the nearest airport relative to the proposed project site, San Francisco International Airport, is located approximately five miles east of the site. In addition, the project site is located approximately six miles north of Half Moon Bay Airport. According to the San Mateo County ALUCP, the project area, including the Westerly Lots, is not located within an Airport Safety Zone for Half Moon Bay Airport, and, thus, would not be significantly affected by noise associated with the airport.[39] In addition, the proposed project site and the Westerly Lots are not covered by the forecasted noise contours specified by the SFO Plan for the San Francisco International Airport.[40] Therefore, the proposed project and future development on the Westerly Lots would not experience elevated noise

[39] San Mateo County. *Comprehensive Airport Land Use Compatibility Plan*. December 1996.
[40] City/County Association of Governments of San Mateo County, California. *Comprehensive Airport Land Use Plan for the Environs of San Francisco International Airport*. July 2012.

levels associated with either airport, and a ***less-than-significant*** impact would occur related to exposing people residing or working in the project area to excessive noise levels associated with airports.

XIII. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	✖	☐
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖

Discussion

a. The proposed project would include the development of one single-family home adjacent to an existing residential neighborhood. In addition, the project would include extension of Oddstad Way, as well as existing sanitary sewer and water supply utilities, through a currently undeveloped area to serve the proposed residence. As discussed previously, extension of such infrastructure could allow for an additional four single-family homes to be developed on the Westerly Lots adjacent to the project site. Potential environmental effects associated with future development of the Westerly Lots as a result of the proposed project are analyzed throughout this IS/MND. Given the relatively small number of homes that could be developed on the Westerly Lots as a result of the proposed project, the project would not be anticipated to create a large number of jobs or result in a large influx of new residents to the project area beyond what has been anticipated in the City's General Plan EIR.

Furthermore, the proposed project would be consistent with the land use and zoning designations for the site, and, thus, would be consistent with the buildout intensity anticipated for the site in the adopted General Plan. Therefore, the proposed project would result in a ***less-than-significant*** impact with respect to direct or indirect inducement of population growth in the area.

b,c. The project site and the Westerly Lots do not contain existing development, and, thus, buildout of such areas would not result in the displacement of any people or housing. In addition, the project would introduce an additional residential unit to the City's housing stock. Therefore, the proposed project, as well as future development of the Westerly Lots, would not be considered to displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere, and ***no impact*** would occur.

XIV. PUBLIC SERVICES. *Would the project 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:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	✖	☐
b. Police protection?	☐	☐	✖	☐
c. Schools?	☐	☐	✖	☐
d. Parks?	☐	☐	✖	☐
e. Other Public Facilities?	☐	☐	✖	☐

Discussion

a. In 2003, the cities of Daly City, Brisbane, and Pacifica collaborated to form the North County Fire Authority (NCFA), a Joint Powers Authority agreement. The NCFA provides fire protection and medical emergency services in the City of Pacifica as well as the other two communities. Under the NCFA, fire stations and fire companies are strategically located throughout the three communities, which provide rapid assistance for medical, fire or other hazardous situations. The goal of the NCFA is to accomplish a seven-minute or less total reflex time for arrival of a single company for 90 percent of all emergency incidents. For structure fires with multiple fire companies responding, the goal of the NCFA is to maintain an 11-minute or less total reflex time for 90 percent of all incidents.[41] In 2015, the NCFA met the seven-minute single company reflex time for 96 percent of all emergency incidents. For the same year, the 11-minute structure fire reflex time was met for 90 percent of all incidents.

The nearest fire station relative to the project site is Fire Station 72, located at 1100 Linda Mar Boulevard in Pacifica, approximately 2.5 miles from the project site by way of SR 1. Due to the close proximity of the station to the proposed project site and the Westerly Lots, the proposed project area would likely be located within the NCFA's seven-minute and 11-minute response time zones. Thus, the NCFA would not be required to improve existing facilities or construct new facilities in order to maintain acceptable service ratios, response times, or other performance objectives related to the provision of fire protection services. In addition, the proposed project and future development on the Westerly Lots would be required to comply with all NCFA standard conditions of approval related to provision of fire flow, roadway widths, etc.

Because the NCFA would provide adequate fire protection services to proposed project and future development on the Westerly Lots, and because the proposed project and the Westerly Lots would be required to include adequate fire safety design elements, the project would result in a ***less-than-significant*** impact with respect to the provision of new

[41] North County Fire Authority. *2015 Annual Report.* 2016.

or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services.

b. The Pacifica Police Department provides police protection services throughout the City, including the Rockaway Beach neighborhood. Upon implementation of the proposed project, the Pacifica Police Department would extend service to the proposed project site. Combined development of the proposed project and future buildout of the Westerly Lots would introduce a total of five single-family residences to the project area and, thus, would not have a significant impact on existing police protection resources. The Pacifica Police Department has not established a specific response time or staffing ratio standard. However, considering that the Pacifica Police Department headquarters are located approximately one mile north of the project site, response times to the project area would likely be relatively short. Therefore, the project would result in a ***less-than-significant*** impact with respect to the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection services.

c. The project site and the Westerly Lots are located within the Pacifica School District and the Jefferson Union High School District. Because the proposed project and future development of the Westerly Lots would include new single-family development, the project applicants would be required to pay the appropriate school district impact fees. Proposition 1A/Senate Bill No. 50 prohibits local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "[…] legislative or adjudicative act…involving …the planning, use, or development of real property" (Government Code 65996(b)). Satisfaction of the Proposition 1A/Senate Bill No. 50 statutory requirements by a developer is deemed to be "full and complete mitigation."

Development of the proposed project and the Westerly Lots would be limited to a total of five single-family residences and, thus, would not add a substantial number of new students to area schools. For example, the estimated student yield factor for the Jefferson Union High School District is 0.2 students/unit.[42] Thus, development of five single-family homes would add approximately one high school-aged student to the District's existing enrollment. As such, increased demand for school facilities associated with construction of the proposed single-family residence, as well as development of the Westerly Lots, would be accommodated by existing schools within the City. Furthermore, the proposed project and development associated with buildout of the Westerly Lots would comply with Proposition 1A/Senate Bill No. 50 through the payment of school impact fees. As such, the proposed project and future development of the Westerly Lots would not result in substantial adverse physical impacts associated with the provision of new or physically altered school facilities. Therefore, a ***less-than-significant*** impact would occur with respect to schools in the project area.

[42] Jefferson Union High School District. *Level I Developer Fee Study.* June 12, 2018.

d. The nearest public park relative to the project area is Oddstad Park, located approximately 0.8 miles south of the site. The proposed project, combined with future development of the Westerly Lots, would involve the development of up to five single-family residences, and would not include dedicated park areas. Development of five single-family residences would not be anticipated to result in any substantial adverse effects to local park facilities. Furthermore, per Section 8-19.03 of the Pacifica Municipal Code, the project applicants would be required to pay a Park Facilities Impact Fee to the City. The fee would be used by the City to fund acquisition, improvement and expansion of public parks, playground and recreational facilities throughout the City, and would offset any potential adverse effects to parks as a result of the proposed project and development of the Westerly Lots. Payment of the Park Facilities Impact Fee would ensure that the proposed project and future development of the Westerly Lots would not result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities. Therefore, a ***less-than-significant*** impact would occur in regard to parks.

e. The City contains two public libraries: the Pacifica-Sharp Park Library and the Pacifica-Sanchez Library. The libraries constitute two branches of the San Mateo County Library system. Per a 1999 Joint Powers Authority (JPA) agreement, the City is responsible for funding maintenance of the two libraries. The proposed project, combined with buildout of the Westerly Lots, would include development of up to five single-family homes. Such a limited amount of development would not result in a substantial increase in demand for library services, and a ***less-than-significant*** impact would occur in regard to libraries or other public facilities.

XV. RECREATION. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No 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

a,b. The proposed project would include development of a single-family home and associated infrastructure, while future development of the Westerly Lots would include up to four single-family homes. Neither the proposed project or future development of the Westerly Lots would not include the construction of recreational or park facilities.

The project area is located approximately 0.5mile east of Rockaway Beach. In addition, the area is located approximately 2.2 miles north of Pedro Point Headlands, a 225-acre park providing multiple hiking trails. As discussed in Section XIV, Public Services, of this IS/MND, payment of a Park Facilities Impact Fee in accordance with Section 8-19.03 of the Pacifica Municipal Code would offset deterioration of existing recreational facilities. Because the proposed project and future development of the Westerly Lots would not be expected to substantially increase the use of existing parks or recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated, a ***less-than-significant*** impact would occur.

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

Discussion

a,b. The following discussion is based on the TIA prepared for the proposed project by Omni-Means Engineers & Planners.[43]

According to the TIA, the number of vehicle trips that would be generated by the proposed single-family residence would be relatively low (one peak hour trip and 10 daily trips). As such, during operation, project-related traffic would not adversely affect streets and intersections in the project vicinity. However, a considerable amount of vehicle trips would be generated during construction of the proposed project, consisting primarily of vehicle truck trips associated with site preparation and grading activities. Thus, the analysis within

[43] Omni-Means Engineers & Planners. *Traffic Impact Analysis of Construction Truck Trips for the Proposed Oddstad Way Residential Project, Pacifica, CA.* September 12, 2017.

the TIA focused primarily on truck trips that would be generated during construction activities.

The TIA analyzed potential impacts to the following area roadways:

- Rockaway Beach Avenue (east of SR 1);
- Fassler Avenue; and
- Oddstad Way.

In addition, the TIA evaluated impacts of the proposed project on study area roadway facilities by measuring the effect project traffic would have on key intersections in the vicinity of the project site during peak travel periods, defined as the highest hour of travel activity from 7:00 to 9:00 AM and 4:00 to 6:00 PM on weekdays. The TIA evaluated the following study intersections in the project vicinity:

1. Fassler Avenue/SR 1 (signalized);
2. Fassler Avenue/Rockaway Beach Avenue (minor-street stop); and
3. Rockaway Beach Avenue/Buel Avenue (all-way stop controlled).

Analysis Methodology

The operations of roadway facilities are described with the term Level-of-Service (LOS). LOS provides a measure of operational performance ranging from LOS A-F. These ratings correspond to a volume/capacity (v/c) ratio and vehicle delay in seconds. LOS A represents free-flow conditions with little delay at intersections. LOS E represents unstable or unbalanced flow conditions with volumes at or near design capacity. LOS F represents a significantly congested condition where traffic flows can exceed design capacities resulting in long vehicle queues and delays from the minor-street approach. At unsignalized intersections with minor-street stop control, stated LOS refers to the stop-sign controlled approach with the longest delay. The peak hour intersection LOS calculations were calculated based on the HCM 2010 methodology using Synchro/Simtraffic modeling software. Both the methodology and modeling software used to analyze the proposed project are industry standards and have been used for a wide range of traffic studies in the project region.

Thresholds of Significance

The goal of the City of Pacifica is to maintain LOS standards according to the General Plan. It should be noted that while all six study roadway segments and intersections are within the City of Pacifica, the Fassler Avenue/SR 1 intersection is under the jurisdiction of Caltrans. However, the most stringent standards for the project study intersections, including the Fassler Avenue/SR 1 intersection are the standards currently established by the City of Pacifica and, thus, such standards form the basis for the significance criteria used in this analysis.

Per the City of Pacifica General Plan, project-related operational impacts on the signalized study intersections in the project vicinity would be considered significant if project-related traffic causes the LOS rating at intersections on SR 1 or SR 35 to deteriorate beyond LOS E during the peak commute hours. Such LOS standards are established by the San Mateo County CMP. [44]

Existing Conditions

As shown in Table 13, the Fassler Avenue/SR-1 intersection currently operates at LOS C or better. It should be noted that SR-1 may experience vehicle queuing between the signalized intersections through the Pacifica corridor during peak periods. Traffic flow rates on SR 1 through the Fassler Avenue/SR-1 intersection during such times are reduced due to vehicle congestion extending from the signalized intersections to the north and south. Nonetheless, the congestion experienced to the north and south of the Fassler Avenue/SR-1 intersection does not result in unacceptable LOS operations at any of the study intersections. The Fassler Avenue/Rockaway Beach Avenue intersection operates at LOS B or better for the stopped southbound approach. The Rockaway Beach Avenue/Buel Avenue intersection operates at LOS A. Based on the above, all three intersections operate at acceptable LOS levels.

Table 13
Existing Conditions: Intersection LOS

#	Intersection	Control Type[1]	AM Peak Hour		PM Peak Hour	
			LOS	Delay[2]	LOS	Delay[2]
1	Fassler Ave/SR 1	Signal	B	17.4	C	26.7
2	Fassler Ave/Rockaway Beach Ave	MSSC	B (southbound)	10.8	B (southbound)	10.5
3	Rockaway Beach Ave/Buel Ave	AWSC	A (	7.0	A	7.1

[1] *MSSC = Minor Street Stop Control and AWSC = All-Way Stop Control.*
[2] *Delay expressed in seconds.*

Source: Omni-Means Engineers & Planners, August 2017.

The TIA included a vehicle queuing analysis of the three area intersections based on the LOS calculations. Currently, westbound Fassler Avenue has a calculated 95th percentile queue length during the AM peak hour of approximately six cars (125 feet). The southbound Rockaway Beach Avenue approach to Fassler Avenue has a calculated queue length of approximately two vehicle lengths (39 feet), and the Rockaway Beach Avenue approaches to Buel Avenue have a calculated queue length of one to two cars (22 to 47 feet).

Proposed Project Trips

As discussed above, based on rates published in the Institute of Transportation Engineers (ITE) trip generation manual, a single-family detached unit generates one peak hour trip

[44] City/County Association of Governments of San Mateo County. *Final San Mateo County Congestion Management Program 2015* [pg. 3-5]. November 2015.

and 10 average daily trips (ADT). Such traffic volumes would not have an operational impact on streets and intersections in the project vicinity.

Project construction trips would consist primarily of dump-truck trips associated with site clearing and excavation. In order to assess potential construction traffic impacts, the construction-related vehicle trips were calculated and added to the existing street network in the project area.

Soil hauling would consist of two phases: initial clearing and site excavation. The initial clearing phase would involve 1,110 CY (cubic yards) of material removal (soil, trees, rocks, etc.) and would last approximately two weeks (10 business days). The site excavation phase would involve removal of soil during the cut-and-fill stage and is anticipated to involve 3,721 CY of soil removal over a two-month period (43 business days).

Single-chassis or short trailer dump trucks of a size capable of accessing the project site would haul approximately 7.5 CY of soils per load. Both phases are calculated to generate a total of three truck trips per hour during construction hours. However, trucks represent a potential higher traffic impact due to their greater length and slower acceleration characteristics. As such, a "Passenger Car Equivalent" (PCE) factor of 2.0 was applied to the truck trips to evaluate the intersection operations. Consequently, with application of the PCE factor, six heavy-duty vehicle trips per hour would be added to the street network during construction hours. Furthermore, two additional peak hour trips and eight daily trips were added to the truck trips to account for additional construction personnel driving to and from the site to assist with the hauling process. Such dump truck and construction worker trips were determined by Omni Means Engineers & Planners to provide a reasonable estimate of project-generated construction traffic based on the scope and intensity of the proposed construction activities. In total, construction activities associated with the proposed project would generate 68 daily trips, including eight trips during both the AM and PM peak hour periods.

The vehicle trips were distributed from the project site on Oddstad Way onto Rockaway Beach Avenue through the Buel Avenue intersection to Fassler Lane and SR 1. To provide a conservative estimate of trip distribution, the TIA conservatively assumed all project trips would be to and from the same direction (north on SR-1). Any split in the distribution would result in lower approach volumes and, thus, lower impacts.

Construction Traffic Plus Existing Traffic Conditions

Calculated construction truck trips were added to existing traffic volumes to determine potential impacts of project construction to area intersections and roadways (Construction Traffic Plus Existing Traffic Condition). According to the TIA, with the addition of the project-related trips, volumes on Rockaway Beach Avenue east of Fassler Avenue would increase from approximately 1,280 trips to 1,348 trips. Volumes east of Buel Avenue would increase from approximately 920 trips to 988 trips. The resulting LOS at the area intersections is shown in Table 14 below.

As shown in the table, the three intersections would continue to operate at acceptable LOS A-C conditions during the weekday AM and PM peak hours with addition of construction traffic, and delays would increase by less than one second. Vehicle queues at the study intersections with the added construction trips would remain essentially unchanged from existing conditions. Specifically, during the AM peak hour, the westbound Fassler Avenue approach to SR 1 would remain approximately six cars long. As such, construction traffic associated with the proposed project would not substantially contribute to the existing congestion issues north and south of the Fassler Avenue/SR 1 intersection. The southbound Rockaway Beach Avenue queue from Fassler Avenue would remain approximately two cars long. The Rockaway Beach Avenue/Buel Avenue intersection approach queues would remain approximately one to two vehicles long.

Table 14
Construction Traffic Plus Existing Traffic: Intersection LOS

#	Intersection	Scenario	AM Peak Hour		PM Peak Hour	
			LOS	Delay[1]	LOS	Delay[1]
1	Fassler Ave/SR 1	Existing	B	17.4	C	26.7
		Construction	B	17.5	C	26.8
2	Fassler Ave/Rockaway Beach Ave	Existing	B	10.8	B	10.5
		Construction	B	10.8	B	10.5
3	Rockaway Beach Ave/Buel Ave	Existing	A	7.0	A	7.1
		Construction	A	7.1	A	7.1

[1] *Delay expressed in seconds.*

Source: Omni-Means Engineers & Planners, August 2017.

Westerly Lots Traffic

Future single-family development associated with buildout of the Westerly Lots would result in associated increases in vehicle traffic. The TIA conservatively assumed development of up to five single-family homes on the Westerly Lots, rather than the four residences discussed elsewhere in this IS/MND. Per the TIA, buildout of the Westerly Lots would generate approximately 60 total daily vehicle trips, including six peak hour trips. Thus, similar to the proposed project, operational vehicle trip generation associated with the Westerly Lots would be relatively minimal, and would not be expected to adversely affect streets and intersections in the project vicinity. Furthermore, such traffic has been previously anticipated by the City per the City's General Plan.

Similar to the proposed project, development of the Westerly Lots would likely require considerable excavation and off-hauling of soils during construction activities, thus resulting in temporary generation of haul truck traffic. Traffic associated with such construction would be similar to the proposed project, and impacts would likely be less-than-significant. However, the exact amount of material export and import required for development of the Westerly Lots is not known at this time.

Conclusion

The proposed project would not cause any of the study intersections to exceed any applicable City, County, or State standards. In addition, the proposed project is consistent with the General Plan land use designation and zoning designation for the site. As such, buildout of the site has already been assumed in cumulative buildout traffic forecasts that have been used in the design of roadway and freeway facilities in the area. Therefore, the proposed project would not conflict with an applicable plan, ordinance, policy or congestion management plan for the area related to traffic, and a ***less-than-significant*** impact would occur.

c. The nearest airport relative to the proposed project site, San Francisco International Airport, is located approximately five miles east of the site. In addition, the project site is located approximately six miles north of Half Moon Bay Airport. Given that the proposed project is not located within the vicinity of either airport, the project would not result in a change in air traffic patterns, including either an increase in air traffic levels or a change in location that results in substantial safety risks, and ***no impact*** would occur.

d,e. The following includes a discussion of roadway hazards and emergency access issues, construction truck access, and potential road surface impacts associated with project construction and development of the Westerly Lots.

Roadway Hazards and Emergency Access

Circulation and access improvements associated with the proposed project would include extension of Oddstad Way to the project frontage (see Figure 5). The extended roadway would be approximately 20 feet wide, and would include an attached three-foot-wide sidewalk on the east side of the road. At the project frontage, the roadway would terminate in an inverted hammerhead, which would allow for turnaround of fire trucks and other emergency vehicles. A 60-foot parking bay would be included within the Oddstad Way right-of way directly north of the proposed turnaround. Access to the proposed project site would be provided by a new 20-foot wide minimum driveway connecting the proposed three-car garage to Oddstad Way southeast of the turnaround. All roadway improvements would be designed consistent with existing City standards and guidelines. Based on the above, sufficient emergency access would be provided for both the proposed project and the Westerly Lots.

Turning Widths

The TIA included an analysis of the required turning path radius for heavy-duty trucks accessing the project site during construction activities in order to determine if the trucks would be capable of negotiating existing roadway turn widths. The analysis evaluated single-unit trucks (30 feet long) and semi-trailer trucks (50-foot wheel base) by applying truck turning templates to the existing street network and intersections. Per the methodologies supplied in Chapter 2 of the American Association of State Highway and Transportation Officials' (AASHTO's) *A Policy on Geometric Design of Highways and*

Streets, both truck sizes would be able to negotiate and turn at intersections along the travel route between Oddstad Way and SR 1.

At the intersection of Oddstad Way and Rockaway Beach Avenue, single-unit and semi-trailer trucks would be able to negotiate the turn onto and off of Oddstad Way. However, the semi-trailer turning path would encompass the full street widths of Oddstad Way and Rockaway Beach Avenue near the intersection. Oddstad Way between Rockaway Beach Avenue and its existing terminus narrows to approximately 21 feet wide. If vehicles are parked on the street on Rockaway Beach Avenue near the intersection to the west or on Oddstad Way, the truck path could be impeded. Semi-trailer trucks would not be expected to comprise many (if any) of the proposed truck trips; however, in the absence of temporary parking restrictions near the Oddstad Way/Rockaway Beach Avenue, such trucks would likely be unable to access the project site.

Truck access to and from the proposed Oddstad Way extension would depend on the curvature of the road extension. Single-unit trucks would be able to negotiate a standard road design with a minimum 43.9-foot turning radius (42-foot wheel path plus a 1.9-foot overhang). If access for semi-trailer trucks is required, the road extension turning width would require a minimum 46.2-foot turning radius (45-foot wheel path plus a 1.2-foot overhang). Therefore, in the event a semi-truck were to become stuck negotiating the intersection, it could result in an obstruction to emergency vehicle access which would result in an indirect environmental impact. Consequently, Mitigation Measure XVI-1 has been included to reduce this potential impact to a less than significant level.

It should be noted that while project-level construction information is not currently available, development of the Westerly Lots would likely require semi-trailer truck traffic along Oddstad Way. Therefore, Mitigation Measure XVI-1 would be applicable to the Westerly Lots.

Road Surface Impacts

The soil hauling trips associated with project construction would generate 24 daily trips during the initial clearing phase and 30 daily trips during the site excavation phase. Half of the trips would be empty trucks and half would be loaded trucks, resulting in approximately 12 to 15 loaded trips per day. Currently, Rockaway Beach Avenue experiences approximately 1,280 trips west of Buel Avenue and 920 trips east of Buel Avenue. Loaded truck trips associated with project construction would represent 1.2 to 1.6 percent of total volumes. It is noted that trucks with two or more rear axles, instead of one, have a substantially lower equivalent single axle load weight applied to the roadway. Use of trucks with a single rear axle would increase the likelihood of road surface damage. Therefore, while the added truck trips could potentially result in some roadway degradation, such trips would not be expected to substantially reduce the lifespan of the road surface if the trucks used are of a single-unit design with at least two rear axles. Truck trip effects on roadway surfaces would be similar for construction activities associated with the Westerly Lots.

Conclusion

Based on the above, the proposed project and future development of the Westerly Lots would not substantially increase hazards due to design features (e.g., sharp curves or dangerous intersections) and/or result in inadequate emergency access. However, if the use of semi-trailer trucks is required during construction activities, parking restrictions would be required in order to provide for adequate turn widths at the Oddstad Way/Rockaway Beach Avenue intersection. In addition, if haul trucks with a single rear axle are used during construction activities associated with the project or buildout of the Westerly Lots, the proposed project could result in substantial degradation of local roadway surfaces. Thus, a ***potentially significant*** impact related to incompatible uses (semi-trailer trucks and haul trucks) could occur.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

Proposed Project and Westerly Lots

XVI-1. *If use of semi-trailer trucks is anticipated during project construction activities, temporary parking restrictions shall be put in place near the Oddstad Way/Rockaway Beach Avenue Intersection in order to ensure that adequate turning width is available to accommodate the trucks. The project applicant shall submit to the City plans showing the turning width of a 50-foot semi-trailer truck on Oddstad Way. The timing and nature of the parking restrictions shall be determined in coordination with the Department of Public Works prior to initiation of construction activities.*

XVI-2. *During project construction, all heavy-duty dump trucks used for soil hauling shall be of a single-unit design with at least two rear axles in order to distribute load weight and reduce wear on roadway surfaces. This requirement shall be included via notation on the project grading plans prior to review and approval by the City of Pacifica Planning Department.*

f. The proposed project consists of one single-family residence within an existing residential neighborhood. As such, operation of the proposed project would not decrease the performance or safety of any existing public transit, bicycle, or pedestrian facilities in the project area. Furthermore, as noted above, the proposed extension of Oddstad Way would include an attached three-foot-wide sidewalk on the east side of the road, thereby improving pedestrian connectivity between the project site and the existing residential development to the north of the site. Therefore, the proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, and a ***less-than-significant*** impact would occur.

XVII. TRIBAL CULTURAL RESOURCES. *Would the project 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:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. 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)?	☐	✖	☐	☐
b. 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	✖	☐	☐

Discussion

a,b. As discussed in Section V, Cultural Resources, of this IS/MND, the proposed project site and off-site improvement areas have not been subjected to previous historical resources studies, and historical resources have not been recorded within a quarter-mile of the proposed project site.[45] Furthermore, neither the proposed project site nor the off-site improvement areas contain any existing structures, and a field survey conducted as part of the Historical Resources Study did not yield any historical resources or tribal cultural resources. Tom Origer and Associates requested a Sacred Lands File search from the NAHC, however, a response was not received. Furthermore, the City of Pacifica has not received requests to be notified of development projects (pursuant to AB 52) from any Native American tribes in the project region and, thus, AB 52 project notification letters were not distributed by the City. The City, as a lead agency, has not identified any tribal resources on the site.

Given the relatively steep slope of the proposed project site and the absence of a nearby perennial watercourse, the proposed project area is not sensitive for buried archaeological deposits, and the probability of encountering such deposits is low. However, the possibility exists that previously undiscovered tribal cultural resources could be uncovered during ground-disturbing activities associated with construction of the proposed project.

[45] Tom Origer and Associates. *Historical Resources Study of Lots 6-12 Oddstad Way, Pacifica, San Mateo County, California.* July 7, 2017.

Therefore, the proposed project could result in a substantial adverse change in the significance of a tribal cultural resource, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

XVII. Implement Mitigation Measures V-1 and V-2.

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

Discussion

a,b,e. The proposed project would receive sewer service from the City. The City's wastewater is treated at the Calera Creek Water Recycling Plant (CCWRP), located approximately two miles north of the project site. The annual average daily wastewater flow in the City is 3.1 million gallons per day (gpd).[46] The CCWRP was designed to handle an annual average daily wastewater flow of 4.0 million gpd, and is anticipated to have enough capacity to accommodate buildout of the General Plan, including the proposed development at the Project site.

In order to connect to the City's existing six-inch sanitary sewer line at Oddstad Way, the proposed project would require extension of a new eight-inch sewer line for approximately 360 feet between the project frontage and the existing eight-inch line along Rockaway Beach Avenue at Manhole No. R-12. The existing sewer lines between Manhole No. R-12 and the Calera Creek Water Recycling Plant (the City's sewage treatment facility) are all

[46] City of Pacifica. *Redevelopment of the Beach Boulevard Property Draft Environmental Impact Report.* October 2012.

eight inches or greater in size. The new sewer line would be located within the right-of-way of the proposed extension to Oddstad Way, and would be routed through a new manhole situated at the east end of the extended roadway. The City has modeled existing and projected future sewage flows in the project area within its City of Pacifica Collection System Master Plan, August 2011 ("Sewer Master Plan"), to determine any system capacity limitations. The projected future flows modeled in the Sewer Master Plan included 50 dwelling units constructed on the vacant lots along Oddstad Way. The specific assumptions and findings are described more fully in Chapters 2 and 3 of the Sewer Master Plan. However, in summary, the Sewer Master Plan concluded that sufficient sewer capacity exists to accommodate all existing and projected future sewage flows in the Rockaway Beach neighborhood (which includes the project site and Westerly Lots along Oddstad Way).

In addition, residents of single-family homes along Oddstad Way would be required to pay an annual sewer charge per Chapter 6 of Title 6 of the City Municipal Code. Payment of the annual sewer charge would help to ensure that adequate capacity is available to serve the project's demand for services. Therefore, the proposed project would not exceed any wastewater treatment requirements of the applicable RWQCB, require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, or result in a determination by the City that adequate wastewater treatment capacity is not available to serve the project's projected demand. Thus, a ***less-than-significant*** impact would occur.

c. Development of the proposed project would result in an increase in impervious surfaces on the project site, which would increase the amount of stormwater runoff generated on the project site from existing levels. However, as discussed in Section IX, Hydrology and Water Quality, of this IS/MND, the project would be required to comply with C.3 Standards and includes appropriate site design measures, source controls, and hydraulically-sized stormwater treatment facilities to adequately manage all runoff from the proposed impervious surfaces. As stated in Section IX, the proposed bio-retention facility would not connect to the City's existing built storm drainage infrastructure, but would instead discharge treated stormwater into Rockaway Creek at the existing culvert under Oddstad Way by way of a new 12-inch pipe. Implementation of Mitigation Measure IX-4 would ensure that runoff from DMA-R2, which would total 1,509 sf and include a portion the proposed roadway extension as well as an associated sidewalk, would be properly treated prior to discharge into Rockaway Creek.

   Therefore, the proposed project would have a ***less-than-significant*** impact with respect to requiring or resulting in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

d. Water service would be provided by the NCCWD through a connection to the existing water main located near the intersection of Rockaway Beach Avenue and Oddstad Way, which would be extended eastward along Oddstad Way to the site. The NCCWD is estimated to have sufficient water supplies to serve the City through the year 2036 to

accommodate buildout of the General Plan.[47] The proposed project would be consistent with the existing General Plan land use designation, and, thus, would not exceed the demand previously anticipated for the site. Accordingly, the proposed project would not require or result in the construction of new water facilities or the expansion of existing facilities, as sufficient water supplies are available to adequately serve the proposed project. Therefore, a ***less-than-significant*** impact would occur.

f,g. Solid waste collection services for the City are provided by Recology of the Coast, a Division of Recology. Services provided to the City by Recology include curbside pick-up of garbage, recyclables, and green waste. Solid waste is disposed of at the Ox Mountain Landfill. Per CalRecycle, as of 2015, Ox Mountain Landfill had 22,180,000 CY of remaining available capacity, or approximately 36.7 percent of the facility's maximum permitted capacity of 60,500,000 CY. The Landfill is planned for closure in 2034. The proposed project would generate solid waste associated with construction activities and project operations.

The proposed project would include the development of one single-family home, and would be consistent with the project site's existing General Plan land use designation. As such, the project would generate a minimal amount of solid waste during operation. Construction debris would be disposed of in accordance with applicable federal, State, and local regulations and standards. All material exported during site preparation and grading activities would be off-hauled to Ox Mountain landfill.

Based on the above, the proposed project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs and would comply with federal, state, and local statutes and regulations related to solid waste. Thus, a ***less-than-significant*** impact would occur.

[47] North Coast County Water District. *20-Year Long-Term Water Master Plan.* February 2016.

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

Discussion

a. As described throughout this IS/MND, implementation of the proposed project would have the potential to degrade the quality of the environment by potentially reducing the habitat for a number of special-status wildlife species, including raptors and nesting birds, western red bat, hoary bat, San Francisco dusky-footed woodrat, and monarch butterfly. In addition, given that the project would include construction of a new storm drain outfall at Rockaway Creek, the project could potentially impact waters of the U.S. or the State. Should the project fail to treat runoff from all proposed impervious surfaces, discharge of polluted runoff into downstream waterways could occur. Furthermore, while unlikely, the project could result in impacts related to eliminating important examples of major periods of California history or prehistory associated with undiscovered archeological and/or paleontological resources during project construction.

However, the proposed project would implement and comply with applicable City of Pacifica General Plan and Municipal Code policies, as discussed throughout this IS/MND. Furthermore, this IS/MND includes mitigation measures that would reduce any potential impacts to less-than-significant levels. With implementation of the mitigation measures required by this IS/MND, as well as compliance with General Plan policies and all applicable sections of the Municipal Code, development of the proposed project would reduce any potential impacts associated with the following: 1) degrade the quality of the environment; 2) substantially reduce or impact the habitat of fish or wildlife species; 3) cause fish or wildlife populations to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare

or endangered plant or animal; or 6) eliminate important examples of the major periods of California history or prehistory. Therefore, a ***less-than-significant*** impact would occur.

b. The proposed project would include extension of Oddstad Way, as well as existing sanitary sewer and water supply utility infrastructure, through a currently undeveloped area to serve the proposed residence. Extension of such infrastructure could potentially allow for up to four additional single-family homes to be developed on the Westerly Lots along the extended roadway. Thus, roadway and utility improvements associated with the project have the potential to result in cumulative impacts when viewed in connection with the effects of probable future projects. Cumulative impacts associated with such future residential development are discussed at a project level throughout the following sections of this IS/MND:

- Agriculture & Forest Resources;
- Air Quality;
- Greenhouse Gas Emissions;
- Hazards;
- Mineral Resources;
- Noise;
- Population & Housing;
- Public Services;
- Recreation;
- Transportation & Circulation; and
- Utilities & Service Systems.

Because development plans for the Westerly Lots are not currently available, a project-level analysis of the remaining CEQA issue areas cannot be provided. Rather, for such issue areas, including aesthetics, a program-level analysis is included herein with the knowledge that additional environmental analysis would be conducted prior to issuance of building permits for the Westerly Lots.

With regard to aesthetics, given that the Westerly Lots adjacent to the project site are zoned R-1-H, future development of the lots would be regulated, per the City's Municipal Code, to ensure that such development complies with the Pacifica Design Guidelines and preserves the natural terrain. The Design Guidelines contain specific standards related to visual impact associated with hillside development. Thus, compliance with the Design Guidelines would minimize aesthetic impacts associated with such development. Furthermore, the City's General Plan has previously anticipated changes to visual character and increases in glare and nighttime lighting associated with buildout of the Westerly Lots with residential uses.

With regard to other CEQA issues which have not been addressed at a project level for the Westerly Lots, areas, the City has previously anticipated buildout of the project site, as well as the adjoining Westerly Lots. Therefore, cumulative impacts associated with buildout of the project area were included in the cumulative analysis of City buildout per the City's

General Plan, and development occurring in the area because of the proposed project's infrastructure improvements would not constitute a significant cumulative impact. Furthermore, as noted above, future development of the Westerly Lots would be subject to all applicable regulations associated with the R-1-H zoning district, the objective of which is to ensure that new structures and streets are designed to minimize adverse impacts on existing neighborhoods, drainage, traffic, land stability, and natural resources.

Conclusion

While the proposed roadway and infrastructure improvements would allow for future residential development to occur on the Westerly Lots, the project would not conflict with long-term environmental goals of the General Plan. Applicable policies from the General Plan would be implemented as part of the proposed project, as well as the project-specific mitigation measures included in this IS/MND, to ensure any potential impacts of the proposed project would be individually limited and not cumulatively considerable. As demonstrated in this IS/MND, all potential environmental impacts that could occur as a result of project implementation would be reduced to less-than-significant levels with implementation of project-specific mitigation measures and compliance with applicable General Plan policies and the City's Municipal Code. Therefore, when viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, the proposed project would not result in cumulatively considerable impacts. As such, a ***less than significant*** impact would occur.

c. The proposed project could expose humans to hazards relating to seismic ground shaking and residing in structures located on an unstable geologic unit, as well as potential wildfire hazards. In addition, the project could potentially expose neighboring noise-sensitive receptors to excess noise levels during construction. However, this IS/MND includes mitigation measures that would reduce any potential impacts to less-than-significant levels. Furthermore, the proposed project would be designed in accordance with all applicable building standards and codes to ensure adequate safety is provided for the future residents of the single-family residence. Therefore, impacts related to environmental effects that could cause adverse effects on human beings would be ***less than significant***.

b. The proposed project would include the development of one single-family home adjacent to an existing residential neighborhood. In addition, the project would include extension of Oddstad Way, as well as existing sanitary sewer and water supply utilities, through a currently undeveloped area to serve the proposed residence. It should be noted that extension of such infrastructure could potentially allow for four to five additional single-family homes to be developed along the extended roadway. Nonetheless, given the relatively small number of homes that could be developed as a result of the proposed project, the project would not be anticipated to create a large number of jobs or result in a large influx of new residents to the project area. In addition, the proposed project would be consistent with the land use and zoning designations for the site, and, thus, would be consistent with the buildout intensity anticipated for the site in the adopted General Plan. Therefore, the proposed project would result in a ***less-than-significant*** impact with respect to direct or indirect induction of population growth in the area.

Appendix A

Rockaway Beach Subdivision Map No. 1 (RSM 6/53)

ROCKAWAY BEACH

SAN MATEO COUNTY, CALIFORNIA

SUB-DIVISION Nº 1.

Dated December 4th 1908

SCALE 100 FEET TO ONE INCH

We, Colera Valley Land Company, a corporation do hereby certify that we are the owners of a tract or Sub-division, of land situated in lot 3 of the San Pedro Rancho, San Mateo County, California, and known as Rockaway Beach, Subdivision No 1. E.J. Tobin and Mercantile Trust Company of San Francisco are the only other persons whose consent is necessary to pass a clear title to said land. That we hereby consent to the making of this map, and do hereby dedicate for public use Hewitt Avenue (extension), San Pedro Way, Santa Cruz Terrace, Colera Terrace, Pacific Terrace, Bay View Road, Hill Street, and Spring Street as shown on this map. In Witness whereof said Corporation has caused this certificate to be executed in its Corporate name and under its corporate seal by its officers thereunto duly authorised this 4th day of December, 1908.

SEAL

Colera Valley Land Company
by Maitland Cline, Its President
C.E. Cline, Its Secretary

State of California, City and County } ss.
County of San Francisco

On this Fourth day of December A.D. 1908 before me CHAS. T. STANLEY, notary public in and for said City and County, residing therein, duly commissioned and sworn, personally appeared Maitland Cline President and C.E. Cline, Secretary known to me to be the President and Secretary of the Colera Valley Land Company, and acknowledged to me that said Corporation executed the above. In witness whereof I have hereunto set my hand and affixed my official seal, the day and year above written

SEAL

Chas. T. Stanley, Notary Public
in and for the City and County of
San Francisco, State of California

State of California, City and } ss.
County of San Francisco

On this 18th day of December A.D. 1908, before me Frank L. Owen, a Notary Public in and for said City and County, residing therein, duly commissioned and sworn, appeared personally W.G. Irwin, President and O. Ellinghouse, Secretary, known to me to be the President and Secretary of Mercantile Trust Company of San Francisco the corporation that executed the within instrument and acknowledged to me that the said Corporation executed the within instrument.

In witness whereof, I have hereunto set my hand and affixed my Official Seal, the day and year above written.

Frank L. Owen, Notary Public
in and for the City and County
of San Francisco, State of California

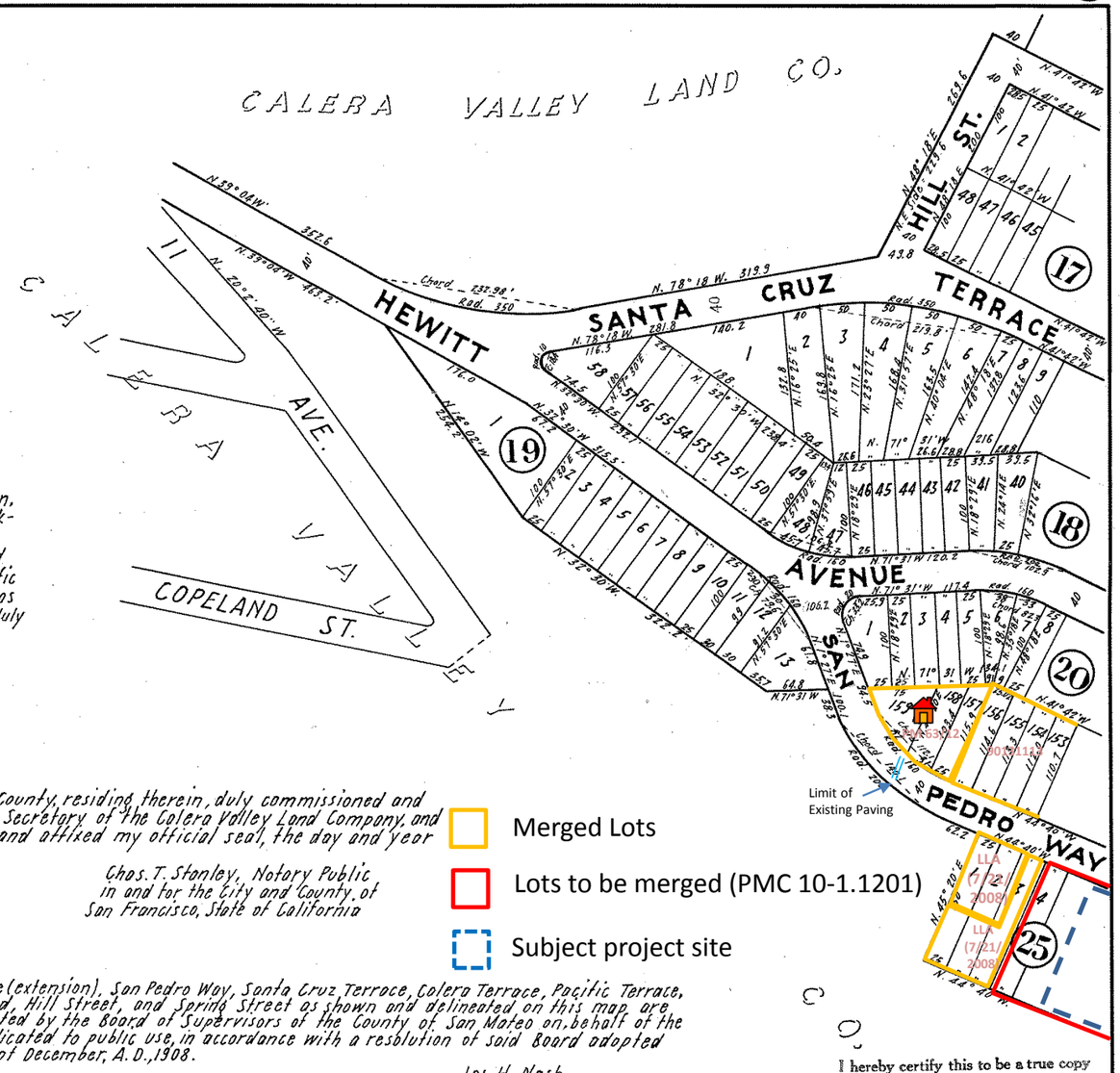
State of California, City and } ss.
County of San Francisco

On this Fourth day of December A.D. 1908, before me CHAS. T. STANLEY, a notary public in and for said City and County, residing therein, duly commissioned and sworn, personally appeared E.J. Tobin, known to me to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same.

In Witness Whereof I have hereunto set my hand and affixed my official seal the day and year above written.

SEAL

Chas. T. Stanley, Notary Public
in and for the City and County of
San Francisco, State of California



Hewitt Avenue (extension), San Pedro Way, Santa Cruz Terrace, Colera Terrace, Pacific Terrace, Bay View Road, Hill Street, and Spring Street as shown and delineated on this map are hereby accepted by the Board of Supervisors of the County of San Mateo on behalf of the public, as dedicated to public use, in accordance with a resolution of said Board adopted this 21 day of December, A.D., 1908.

(SEAL)

Jos. H. Nash
Clerk of said Board.

Mercantile Trust Company of San Francisco, a corporation do hereby consent to the making of this map and the dedication to public use of Hewitt Avenue (extension), San Pedro Way, Santa Cruz Terrace, Colera Terrace, Pacific Terrace, Bay View Terrace, Hill Street, and Spring Street.

In Witness Whereof, said Corporation has caused this certificate to be executed in its corporate name and under its Corporate Seal by its officers thereunto duly authorized this 18th day of December, 1908

(SEAL)

Mercantile Trust Company of San Francisco
by W.G. Irwin, President.
O. Ellinghouse, Secretary

I, W.H. Underhill, Auditor of the County of San Mateo, do hereby certify that there are no liens for unpaid State, County, Municipal or other taxes, except taxes not yet payable, against the tract of land shown on this map.

(SEAL)

Dated: 19th December, 1908.
W.H. Underhill, Auditor.

I hereby certify this to be a true copy of an original map recorded in Map Book 6 at page 53

Geo. A. Kneese
County Surveyor and Ex-officio
Deputy County Recorder of Maps

Merged Lots

Lots to be merged (PMC 10-1.1201)

Subject project site

I hereby certify this is a correct map from Surveys made by me. 4th December 1908.

Gouverneur Tobin
CIVIL ENGINEER
702 Market St. San Francisco.

Filed of the request of C.E. Cline on the 23rd day of December, 1908, at 17 min. past 3 o'clock P.M. San Mateo County Records.

J.F. Johnston, County Recorder
by Pouline E. Hanson, Deputy Recorder

I, E.J. Tobin do hereby consent to the making of this map and the dedication to public use of Hewitt Avenue (extension), San Pedro Way, Santa Cruz Terrace, Calera Terrace, Pacific Terrace, Bay View Road, Hill Street and Spring Street. In Witness Whereof I have hereunto set my hand and seal this 4th day of December, 1908.

E.J. Tobin

Note: The boundary courses of rectangular lots are the same as the boundary courses of the blocks.

I hereby certify this to be a true copy of an original map recorded in Map Book 6 at page 53.
Geo. A. Inness
County Surveyor and Ex-officio
Deputy County Recorder of Maps

CALERA VALLEY LAND CO.

CALERA TERRACE

SANTA CRUZ TERRACE

BAY VIEW ROAD

CALERA TERRACE

HEWITT AVENUE

SAN PEDRO WAY

SPRING ST.

PACIFIC TERRACE

CALERA VALLEY LAND CO.

CALERA VALLEY REALTY CO.

Limit of Street Extension

David Blackman Construction, Inc.

David Blackman

Eugene & Angeline Jacobs

Approx. half-way point

Appendix B

Roadmod Air Quality and Greenhouse Gas Modeling Outputs

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Lots 6-12 Oddstad Way

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.95	6.67	11.02	3.46	0.46	3.00	1.04	0.42	0.62	0.02	1,475.39	0.42	0.01	1,489.95
Grading/Excavation	4.23	32.38	46.04	5.20	2.20	3.00	2.61	1.99	0.62	0.06	6,037.47	1.73	0.06	6,097.72
Drainage/Utilities/Sub-Grade	3.90	31.65	37.76	5.04	2.04	3.00	2.52	1.90	0.62	0.05	5,242.32	1.10	0.05	5,283.89
Paving	1.77	17.24	17.28	1.08	1.08	0.00	0.97	0.97	0.00	0.03	2,651.37	0.73	0.03	2,677.20
Maximum (pounds/day)	4.23	32.38	46.04	5.20	2.20	3.00	2.61	1.99	0.62	0.06	6,037.47	1.73	0.06	6,097.72
Total (tons/construction project)	0.09	0.75	0.98	0.12	0.05	0.07	0.06	0.05	0.01	0.00	132.96	0.03	0.00	134.19

Notes:

Project Start Year ->	2019
Project Length (months) ->	3
Total Project Area (acres) ->	0
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	160	0
Grading/Excavation	0	0	0	0	680	0
Drainage/Utilities/Sub-Grade	0	0	0	0	560	0
Paving	0	0	0	0	400	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Lots 6-12 Oddstad Way

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.02	0.03	0.01	0.00	0.01	0.00	0.00	0.00	0.00	4.06	0.00	0.00	3.72
Grading/Excavation	0.05	0.40	0.57	0.06	0.03	0.04	0.03	0.02	0.01	0.00	74.71	0.02	0.00	68.46
Drainage/Utilities/Sub-Grade	0.03	0.26	0.31	0.04	0.02	0.02	0.02	0.02	0.01	0.00	43.25	0.01	0.00	39.55
Paving	0.01	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.94	0.00	0.00	10.02
Maximum (tons/phase)	0.05	0.40	0.57	0.06	0.03	0.04	0.03	0.02	0.01	0.00	74.71	0.02	0.00	68.46
Total (tons/construction project)	0.09	0.75	0.98	0.12	0.05	0.07	0.06	0.05	0.01	0.00	132.96	0.03	0.00	121.74

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Appendix C

CalEEMod Air Quality and Greenhouse Gas Modeling Outputs

Lots 6-12 Oddstad Way (Construction Only)

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	1.00	Dwelling Unit	0.72	3,373.00	3

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Lots 6-12 Oddstad Way (Construction Only) - Bay Area AQMD Air District, Annual

Project Characteristics - Intensity factor for CO2 adjusted based on PG&E's RPS reductions

Land Use - *Info provided by project applicant

Construction Phase - *Info provided by applicant

Grading - *Info provided by applicant

Vehicle Trips - *Operational emissions not modeled

Woodstoves - *Operational emissions not modeled

Consumer Products - *Operational emissions not modeled

Area Coating - *Operational emissions not modeled

Landscape Equipment - *Operational emissions not modeled

Energy Use - *Operational emissions not modeled

Water And Wastewater - *Operational emissions not modeled

Solid Waste - *Operation not modeled

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	5.00	160.00
tblConstructionPhase	NumDays	100.00	160.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	PhaseEndDate	9/4/2019	2/14/2020
tblConstructionPhase	PhaseEndDate	8/21/2019	1/31/2020
tblConstructionPhase	PhaseEndDate	4/3/2019	6/7/2019
tblConstructionPhase	PhaseEndDate	8/28/2019	6/21/2019
tblConstructionPhase	PhaseEndDate	4/1/2019	4/12/2019
tblConstructionPhase	PhaseStartDate	8/29/2019	7/8/2019
tblConstructionPhase	PhaseStartDate	4/4/2019	6/24/2019

Lots 6-12 Oddstad Way (Construction Only) - Bay Area AQMD Air District, Annual

tblConstructionPhase	PhaseStartDate	4/2/2019	4/15/2019
tblConstructionPhase	PhaseStartDate	8/22/2019	6/10/2019
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	6,155.97	0.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	T24E	217.68	0.00
tblEnergyUse	T24NG	39,708.76	0.00
tblFireplaces	NumberGas	0.25	0.00
tblFireplaces	NumberNoFireplace	0.08	0.00
tblFireplaces	NumberWood	0.43	0.00
tblGrading	AcresOfGrading	0.00	0.72
tblGrading	AcresOfGrading	5.00	0.00
tblGrading	MaterialExported	0.00	3,721.00
tblGrading	MaterialExported	0.00	1,110.00
tblLandscapeEquipment	NumberSummerDays	180	1
tblLandUse	LandUseSquareFeet	1,800.00	3,373.00
tblLandUse	LotAcreage	0.32	0.72
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblSolidWaste	SolidWasteGenerationRate	1.26	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWater	IndoorWaterUseRate	65,154.03	0.00
tblWater	OutdoorWaterUseRate	41,075.36	0.00
tblWoodstoves	NumberCatalytic	0.04	0.00
tblWoodstoves	NumberNoncatalytic	0.04	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1321	1.1406	0.8710	1.5800e-003	0.0233	0.0648	0.0881	0.0104	0.0607	0.0711	0.0000	142.1362	142.1362	0.0316	0.0000	142.9262
2020	0.0188	0.1296	0.1152	1.8000e-004	0.0000	7.8400e-003	7.8400e-003	0.0000	7.3600e-003	7.3600e-003	0.0000	15.7198	15.7198	4.0500e-003	0.0000	15.8210
Maximum	**0.1321**	**1.1406**	**0.8710**	**1.5800e-003**	**0.0233**	**0.0648**	**0.0881**	**0.0104**	**0.0607**	**0.0711**	**0.0000**	**142.1362**	**142.1362**	**0.0316**	**0.0000**	**142.9262**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1321	1.1406	0.8710	1.5800e-003	0.0233	0.0648	0.0881	0.0104	0.0607	0.0711	0.0000	142.1361	142.1361	0.0316	0.0000	142.9260
2020	0.0188	0.1296	0.1152	1.8000e-004	0.0000	7.8400e-003	7.8400e-003	0.0000	7.3600e-003	7.3600e-003	0.0000	15.7198	15.7198	4.0500e-003	0.0000	15.8210
Maximum	**0.1321**	**1.1406**	**0.8710**	**1.5800e-003**	**0.0233**	**0.0648**	**0.0881**	**0.0104**	**0.0607**	**0.0711**	**0.0000**	**142.1361**	**142.1361**	**0.0316**	**0.0000**	**142.9260**

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**4-1-2019**	**6-30-2019**	0.3811	0.3811
2	**7-1-2019**	**9-30-2019**	0.4270	0.4270
3	**10-1-2019**	**12-31-2019**	0.4330	0.4330
4	**1-1-2020**	**3-31-2020**	0.1433	0.1433
		Highest	0.4330	0.4330

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0132	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**0.0000**	**4.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**7.0000e-005**

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	0.0132	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0132**	**0.0000**	**4.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**7.0000e-005**

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

3.0 Construction Detail

Construction Phase

Lots 6-12 Oddstad Way (Construction Only) - Bay Area AQMD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2019	4/12/2019	5	10	
2	Grading	Grading	4/15/2019	6/7/2019	5	40	
3	Building Construction	Building Construction	6/24/2019	1/31/2020	5	160	
4	Paving	Paving	6/10/2019	6/21/2019	5	10	
5	Architectural Coating	Architectural Coating	7/8/2019	2/14/2020	5	160	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.72

Acres of Paving: 0

Residential Indoor: 6,830; Residential Outdoor: 2,277; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	139.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	465.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-003	0.0446	0.0207	5.0000e-005		1.8400e-003	1.8400e-003		1.6900e-003	1.6900e-003	0.0000	4.3779	4.3779	1.3900e-003	0.0000	4.4126
Total	**3.6000e-003**	**0.0446**	**0.0207**	**5.0000e-005**	**6.0000e-005**	**1.8400e-003**	**1.9000e-003**	**1.0000e-005**	**1.6900e-003**	**1.7000e-003**	**0.0000**	**4.3779**	**4.3779**	**1.3900e-003**	**0.0000**	**4.4126**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.3000e-004	0.0218	4.2500e-003	6.0000e-005	1.1700e-003	8.0000e-005	1.2600e-003	3.2000e-004	8.0000e-005	4.0000e-004	0.0000	5.3830	5.3830	2.8000e-004	0.0000	5.3901
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	7.0000e-005	6.8000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1787	0.1787	0.0000	0.0000	0.1788
Total	**7.2000e-004**	**0.0218**	**4.9300e-003**	**6.0000e-005**	**1.3700e-003**	**8.0000e-005**	**1.4600e-003**	**3.7000e-004**	**8.0000e-005**	**4.5000e-004**	**0.0000**	**5.5617**	**5.5617**	**2.8000e-004**	**0.0000**	**5.5690**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6000e-003	0.0446	0.0207	5.0000e-005		1.8400e-003	1.8400e-003		1.6900e-003	1.6900e-003	0.0000	4.3779	4.3779	1.3900e-003	0.0000	4.4126
Total	**3.6000e-003**	**0.0446**	**0.0207**	**5.0000e-005**	**6.0000e-005**	**1.8400e-003**	**1.9000e-003**	**1.0000e-005**	**1.6900e-003**	**1.7000e-003**	**0.0000**	**4.3779**	**4.3779**	**1.3900e-003**	**0.0000**	**4.4126**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.3000e-004	0.0218	4.2500e-003	6.0000e-005	1.1700e-003	8.0000e-005	1.2600e-003	3.2000e-004	8.0000e-005	4.0000e-004	0.0000	5.3830	5.3830	2.8000e-004	0.0000	5.3901
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.0000e-005	7.0000e-005	6.8000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1787	0.1787	0.0000	0.0000	0.1788
Total	**7.2000e-004**	**0.0218**	**4.9300e-003**	**6.0000e-005**	**1.3700e-003**	**8.0000e-005**	**1.4600e-003**	**3.7000e-004**	**8.0000e-005**	**4.5000e-004**	**0.0000**	**5.5617**	**5.5617**	**2.8000e-004**	**0.0000**	**5.5690**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0157	0.0000	0.0157	8.3500e-003	0.0000	8.3500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0191	0.1721	0.1538	2.4000e-004		0.0107	0.0107		0.0103	0.0103	0.0000	21.0405	21.0405	4.0100e-003	0.0000	21.1408
Total	**0.0191**	**0.1721**	**0.1538**	**2.4000e-004**	**0.0157**	**0.0107**	**0.0264**	**8.3500e-003**	**0.0103**	**0.0186**	**0.0000**	**21.0405**	**21.0405**	**4.0100e-003**	**0.0000**	**21.1408**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1200e-003	0.0728	0.0142	1.9000e-004	3.9300e-003	2.8000e-004	4.2000e-003	1.0800e-003	2.7000e-004	1.3500e-003	0.0000	18.0080	18.0080	9.5000e-004	0.0000	18.0318
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	7.3000e-004	5.4000e-004	5.4800e-003	2.0000e-005	1.5800e-003	1.0000e-005	1.5900e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.4295	1.4295	4.0000e-005	0.0000	1.4305
Total	**2.8500e-003**	**0.0733**	**0.0197**	**2.1000e-004**	**5.5100e-003**	**2.9000e-004**	**5.7900e-003**	**1.5000e-003**	**2.8000e-004**	**1.7800e-003**	**0.0000**	**19.4376**	**19.4376**	**9.9000e-004**	**0.0000**	**19.4623**

3.3 Grading - 2019

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					0.0157	0.0000	0.0157	8.3500e-003	0.0000	8.3500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0191	0.1721	0.1538	2.4000e-004		0.0107	0.0107		0.0103	0.0103	0.0000	21.0404	21.0404	4.0100e-003	0.0000	21.1407
Total	**0.0191**	**0.1721**	**0.1538**	**2.4000e-004**	**0.0157**	**0.0107**	**0.0264**	**8.3500e-003**	**0.0103**	**0.0186**	**0.0000**	**21.0404**	**21.0404**	**4.0100e-003**	**0.0000**	**21.1407**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.1200e-003	0.0728	0.0142	1.9000e-004	3.9300e-003	2.8000e-004	4.2000e-003	1.0800e-003	2.7000e-004	1.3500e-003	0.0000	18.0080	18.0080	9.5000e-004	0.0000	18.0318
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	7.3000e-004	5.4000e-004	5.4800e-003	2.0000e-005	1.5800e-003	1.0000e-005	1.5900e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.4295	1.4295	4.0000e-005	0.0000	1.4305
Total	**2.8500e-003**	**0.0733**	**0.0197**	**2.1000e-004**	**5.5100e-003**	**2.9000e-004**	**5.7900e-003**	**1.5000e-003**	**2.8000e-004**	**1.7800e-003**	**0.0000**	**19.4376**	**19.4376**	**9.9000e-004**	**0.0000**	**19.4623**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0656	0.6727	0.5167	7.8000e-004		0.0415	0.0415		0.0382	0.0382	0.0000	70.0758	70.0758	0.0222	0.0000	70.6301
Total	**0.0656**	**0.6727**	**0.5167**	**7.8000e-004**		**0.0415**	**0.0415**		**0.0382**	**0.0382**	**0.0000**	**70.0758**	**70.0758**	**0.0222**	**0.0000**	**70.6301**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Building Construction - 2019

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	0.0656	0.6727	0.5167	7.8000e-004		0.0415	0.0415		0.0382	0.0382	0.0000	70.0757	70.0757	0.0222	0.0000	70.6300
Total	**0.0656**	**0.6727**	**0.5167**	**7.8000e-004**		**0.0415**	**0.0415**		**0.0382**	**0.0382**	**0.0000**	**70.0757**	**70.0757**	**0.0222**	**0.0000**	**70.6300**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9100e-003	0.1018	0.0850	1.3000e-004		6.0100e-003	6.0100e-003		5.5300e-003	5.5300e-003	0.0000	11.5070	11.5070	3.7200e-003	0.0000	11.6000
Total	**9.9100e-003**	**0.1018**	**0.0850**	**1.3000e-004**		**6.0100e-003**	**6.0100e-003**		**5.5300e-003**	**5.5300e-003**	**0.0000**	**11.5070**	**11.5070**	**3.7200e-003**	**0.0000**	**11.6000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9100e-003	0.1018	0.0850	1.3000e-004		6.0100e-003	6.0100e-003		5.5300e-003	5.5300e-003	0.0000	11.5069	11.5069	3.7200e-003	0.0000	11.6000
Total	**9.9100e-003**	**0.1018**	**0.0850**	**1.3000e-004**		**6.0100e-003**	**6.0100e-003**		**5.5300e-003**	**5.5300e-003**	**0.0000**	**11.5069**	**11.5069**	**3.7200e-003**	**0.0000**	**11.6000**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1500e-003	0.0392	0.0357	6.0000e-005		2.2100e-003	2.2100e-003		2.0500e-003	2.0500e-003	0.0000	4.7862	4.7862	1.3700e-003	0.0000	4.8204
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.1500e-003**	**0.0392**	**0.0357**	**6.0000e-005**		**2.2100e-003**	**2.2100e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**4.7862**	**4.7862**	**1.3700e-003**	**0.0000**	**4.8204**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.4000e-004	2.4600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6433	0.6433	2.0000e-005	0.0000	0.6437
Total	**3.3000e-004**	**2.4000e-004**	**2.4600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6433**	**0.6433**	**2.0000e-005**	**0.0000**	**0.6437**

3.5 Paving - 2019

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	4.1500e-003	0.0392	0.0357	6.0000e-005		2.2100e-003	2.2100e-003		2.0500e-003	2.0500e-003	0.0000	4.7862	4.7862	1.3700e-003	0.0000	4.8204
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.1500e-003**	**0.0392**	**0.0357**	**6.0000e-005**		**2.2100e-003**	**2.2100e-003**		**2.0500e-003**	**2.0500e-003**	**0.0000**	**4.7862**	**4.7862**	**1.3700e-003**	**0.0000**	**4.8204**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.3000e-004	2.4000e-004	2.4600e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6433	0.6433	2.0000e-005	0.0000	0.6437
Total	**3.3000e-004**	**2.4000e-004**	**2.4600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6433**	**0.6433**	**2.0000e-005**	**0.0000**	**0.6437**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0189					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1166	0.1169	1.9000e-004		8.1800e-003	8.1800e-003		8.1800e-003	8.1800e-003	0.0000	16.2132	16.2132	1.3700e-003	0.0000	16.2474
Total	**0.0358**	**0.1166**	**0.1169**	**1.9000e-004**		**8.1800e-003**	**8.1800e-003**		**8.1800e-003**	**8.1800e-003**	**0.0000**	**16.2132**	**16.2132**	**1.3700e-003**	**0.0000**	**16.2474**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coating - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0189					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1166	0.1169	1.9000e-004		8.1800e-003	8.1800e-003		8.1800e-003	8.1800e-003	0.0000	16.2131	16.2131	1.3700e-003	0.0000	16.2474
Total	**0.0358**	**0.1166**	**0.1169**	**1.9000e-004**		**8.1800e-003**	**8.1800e-003**		**8.1800e-003**	**8.1800e-003**	**0.0000**	**16.2131**	**16.2131**	**1.3700e-003**	**0.0000**	**16.2474**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.9000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0278	0.0302	5.0000e-005		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003	0.0000	4.2129	4.2129	3.3000e-004	0.0000	4.2210
Total	**8.9000e-003**	**0.0278**	**0.0302**	**5.0000e-005**		**1.8300e-003**	**1.8300e-003**		**1.8300e-003**	**1.8300e-003**	**0.0000**	**4.2129**	**4.2129**	**3.3000e-004**	**0.0000**	**4.2210**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Architectural Coating - 2020

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	4.9000e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0278	0.0302	5.0000e-005		1.8300e-003	1.8300e-003		1.8300e-003	1.8300e-003	0.0000	4.2129	4.2129	3.3000e-004	0.0000	4.2210
Total	**8.9000e-003**	**0.0278**	**0.0302**	**5.0000e-005**		**1.8300e-003**	**1.8300e-003**		**1.8300e-003**	**1.8300e-003**	**0.0000**	**4.2129**	**4.2129**	**3.3000e-004**	**0.0000**	**4.2210**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
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
Single Family Housing	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789

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	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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					
Single Family Housing	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
Single Family Housing	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0132	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005
Unmitigated	0.0132	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0132					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005
Total	**0.0132**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**7.0000e-005**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0132					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	7.0000e-005
Total	**0.0132**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**7.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Lots 6-12 Oddstad Way (Construction Only)

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	1.00	Dwelling Unit	0.72	3,373.00	3

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Lots 6-12 Oddstad Way (Construction Only) - Bay Area AQMD Air District, Summer

Project Characteristics - Intensity factor for CO2 adjusted based on PG&E's RPS reductions

Land Use - *Info provided by project applicant

Construction Phase - *Info provided by applicant

Grading - *Info provided by applicant

Vehicle Trips - *Operational emissions not modeled

Woodstoves - *Operational emissions not modeled

Consumer Products - *Operational emissions not modeled

Area Coating - *Operational emissions not modeled

Landscape Equipment - *Operational emissions not modeled

Energy Use - *Operational emissions not modeled

Water And Wastewater - *Operational emissions not modeled

Solid Waste - *Operation not modeled

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	5.00	160.00
tblConstructionPhase	NumDays	100.00	160.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	PhaseEndDate	9/4/2019	2/14/2020
tblConstructionPhase	PhaseEndDate	8/21/2019	1/31/2020
tblConstructionPhase	PhaseEndDate	4/3/2019	6/7/2019
tblConstructionPhase	PhaseEndDate	8/28/2019	6/21/2019
tblConstructionPhase	PhaseEndDate	4/1/2019	4/12/2019
tblConstructionPhase	PhaseStartDate	8/29/2019	7/8/2019
tblConstructionPhase	PhaseStartDate	4/4/2019	6/24/2019

Lots 6-12 Oddstad Way (Construction Only) - Bay Area AQMD Air District, Summer

tblConstructionPhase	PhaseStartDate	4/2/2019	4/15/2019
tblConstructionPhase	PhaseStartDate	8/22/2019	6/10/2019
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	6,155.97	0.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	T24E	217.68	0.00
tblEnergyUse	T24NG	39,708.76	0.00
tblFireplaces	NumberGas	0.25	0.00
tblFireplaces	NumberNoFireplace	0.08	0.00
tblFireplaces	NumberWood	0.43	0.00
tblGrading	AcresOfGrading	0.00	0.72
tblGrading	AcresOfGrading	5.00	0.00
tblGrading	MaterialExported	0.00	3,721.00
tblGrading	MaterialExported	0.00	1,110.00
tblLandscapeEquipment	NumberSummerDays	180	1
tblLandUse	LandUseSquareFeet	1,800.00	3,373.00
tblLandUse	LotAcreage	0.32	0.72
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblSolidWaste	SolidWasteGenerationRate	1.26	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWater	IndoorWaterUseRate	65,154.03	0.00
tblWater	OutdoorWaterUseRate	41,075.36	0.00
tblWoodstoves	NumberCatalytic	0.04	0.00
tblWoodstoves	NumberNoncatalytic	0.04	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.5208	13.1911	9.3845	0.0222	1.0676	0.7341	1.6190	0.4949	0.6857	1.0210	0.0000	2,243.8210	2,243.8210	0.3806	0.0000	2,250.6829
2020	1.4007	10.5362	9.2189	0.0144	0.0000	0.6333	0.6333	0.0000	0.5915	0.5915	0.0000	1,384.4261	1,384.4261	0.3785	0.0000	1,393.8890
Maximum	**1.5208**	**13.1911**	**9.3845**	**0.0222**	**1.0676**	**0.7341**	**1.6190**	**0.4949**	**0.6857**	**1.0210**	**0.0000**	**2,243.8210**	**2,243.8210**	**0.3806**	**0.0000**	**2,250.6829**

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					
2019	1.5208	13.1911	9.3845	0.0222	1.0676	0.7341	1.6190	0.4949	0.6857	1.0210	0.0000	2,243.8210	2,243.8210	0.3806	0.0000	2,250.6829
2020	1.4007	10.5362	9.2189	0.0144	0.0000	0.6333	0.6333	0.0000	0.5915	0.5915	0.0000	1,384.4261	1,384.4261	0.3785	0.0000	1,393.8890
Maximum	**1.5208**	**13.1911**	**9.3845**	**0.0222**	**1.0676**	**0.7341**	**1.6190**	**0.4949**	**0.6857**	**1.0210**	**0.0000**	**2,243.8210**	**2,243.8210**	**0.3806**	**0.0000**	**2,250.6829**

Lots 6-12 Oddstad Way (Construction Only) - Bay Area AQMD Air District, Summer

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

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	0.0747	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	0.1486	0.1486	1.4000e-004	0.0000	0.1522
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0747**	**9.5000e-004**	**0.0827**	**0.0000**	**0.0000**	**4.6000e-004**	**4.6000e-004**	**0.0000**	**4.6000e-004**	**4.6000e-004**	**0.0000**	**0.1486**	**0.1486**	**1.4000e-004**	**0.0000**	**0.1522**

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	0.0747	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	0.1486	0.1486	1.4000e-004	0.0000	0.1522
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0747**	**9.5000e-004**	**0.0827**	**0.0000**	**0.0000**	**4.6000e-004**	**4.6000e-004**	**0.0000**	**4.6000e-004**	**4.6000e-004**	**0.0000**	**0.1486**	**0.1486**	**1.4000e-004**	**0.0000**	**0.1522**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2019	4/12/2019	5	10	
2	Grading	Grading	4/15/2019	6/7/2019	5	40	
3	Building Construction	Building Construction	6/24/2019	1/31/2020	5	160	
4	Paving	Paving	6/10/2019	6/21/2019	5	10	
5	Architectural Coating	Architectural Coating	7/8/2019	2/14/2020	5	160	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.72

Acres of Paving: 0

Residential Indoor: 6,830; Residential Outdoor: 2,277; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	139.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	465.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0126	0.0000	0.0126	1.9000e-003	0.0000	1.9000e-003			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378		965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.0126**	**0.3672**	**0.3798**	**1.9000e-003**	**0.3378**	**0.3397**		**965.1690**	**965.1690**	**0.3054**		**972.8032**

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	0.1254	4.2622	0.8218	0.0112	0.2428	0.0164	0.2593	0.0665	0.0157	0.0823		1,195.0080	1,195.0080	0.0611		1,196.5360
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	0.0190	0.0119	0.1491	4.3000e-004	0.0411	2.7000e-004	0.0414	0.0109	2.5000e-004	0.0112		42.3709	42.3709	1.1300e-003		42.3991
Total	**0.1444**	**4.2741**	**0.9709**	**0.0116**	**0.2839**	**0.0167**	**0.3006**	**0.0774**	**0.0160**	**0.0934**		**1,237.3789**	**1,237.3789**	**0.0623**		**1,238.9351**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0126	0.0000	0.0126	1.9000e-003	0.0000	1.9000e-003			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378	0.0000	965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.0126**	**0.3672**	**0.3798**	**1.9000e-003**	**0.3378**	**0.3397**	**0.0000**	**965.1690**	**965.1690**	**0.3054**		**972.8032**

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	0.1254	4.2622	0.8218	0.0112	0.2428	0.0164	0.2593	0.0665	0.0157	0.0823		1,195.0080	1,195.0080	0.0611		1,196.5360
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	0.0190	0.0119	0.1491	4.3000e-004	0.0411	2.7000e-004	0.0414	0.0109	2.5000e-004	0.0112		42.3709	42.3709	1.1300e-003		42.3991
Total	**0.1444**	**4.2741**	**0.9709**	**0.0116**	**0.2839**	**0.0167**	**0.3006**	**0.0774**	**0.0160**	**0.0934**		**1,237.3789**	**1,237.3789**	**0.0623**		**1,238.9351**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7824	0.0000	0.7824	0.4174	0.0000	0.4174			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125		1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.7824**	**0.5371**	**1.3195**	**0.4174**	**0.5125**	**0.9299**		**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

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	0.1049	3.5646	0.6873	9.3600e-003	0.2031	0.0138	0.2168	0.0557	0.0132	0.0688		999.4222	999.4222	0.0511		1,000.7001
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	0.0380	0.0238	0.2982	8.5000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		84.7418	84.7418	2.2500e-003		84.7981
Total	**0.1429**	**3.5884**	**0.9854**	**0.0102**	**0.2852**	**0.0143**	**0.2995**	**0.0774**	**0.0137**	**0.0911**		**1,084.1639**	**1,084.1639**	**0.0534**		**1,085.4982**

3.3 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7824	0.0000	0.7824	0.4174	0.0000	0.4174			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125	0.0000	1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.7824**	**0.5371**	**1.3195**	**0.4174**	**0.5125**	**0.9299**	**0.0000**	**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

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	0.1049	3.5646	0.6873	9.3600e-003	0.2031	0.0138	0.2168	0.0557	0.0132	0.0688		999.4222	999.4222	0.0511		1,000.7001
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	0.0380	0.0238	0.2982	8.5000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		84.7418	84.7418	2.2500e-003		84.7981
Total	**0.1429**	**3.5884**	**0.9854**	**0.0102**	**0.2852**	**0.0143**	**0.2995**	**0.0774**	**0.0137**	**0.0911**		**1,084.1639**	**1,084.1639**	**0.0534**		**1,085.4982**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569		1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**		**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569	0.0000	1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**	**0.0000**	**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806		1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**		**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806	0.0000	1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**	**0.0000**	**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8300	7.8446	7.1478	0.0113		0.4425	0.4425		0.4106	0.4106		1,055.1823	1,055.1823	0.3016		1,062.7231
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8300**	**7.8446**	**7.1478**	**0.0113**		**0.4425**	**0.4425**		**0.4106**	**0.4106**		**1,055.1823**	**1,055.1823**	**0.3016**		**1,062.7231**

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	0.0685	0.0429	0.5367	1.5300e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		152.5352	152.5352	4.0600e-003		152.6366
Total	**0.0685**	**0.0429**	**0.5367**	**1.5300e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**152.5352**	**152.5352**	**4.0600e-003**		**152.6366**

3.5 Paving - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8300	7.8446	7.1478	0.0113		0.4425	0.4425		0.4106	0.4106	0.0000	1,055.1823	1,055.1823	0.3016		1,062.7231
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8300**	**7.8446**	**7.1478**	**0.0113**		**0.4425**	**0.4425**		**0.4106**	**0.4106**	**0.0000**	**1,055.1823**	**1,055.1823**	**0.3016**		**1,062.7231**

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	0.0685	0.0429	0.5367	1.5300e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		152.5352	152.5352	4.0600e-003		152.6366
Total	**0.0685**	**0.0429**	**0.5367**	**1.5300e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**152.5352**	**152.5352**	**4.0600e-003**		**152.6366**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.2968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**0.5632**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Architectural Coating - 2019

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	0.2968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**0.5632**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.2968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**0.5390**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Architectural Coating - 2020

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	0.2968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**0.5390**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
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
Single Family Housing	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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					
Single Family Housing	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
Single Family Housing	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0747	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	0.1486	0.1486	1.4000e-004	0.0000	0.1522
Unmitigated	0.0747	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	0.1486	0.1486	1.4000e-004	0.0000	0.1522

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0722					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5100e-003	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1486	0.1486	1.4000e-004		0.1522
Total	**0.0747**	**9.5000e-004**	**0.0827**	**0.0000**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**0.1486**	**0.1486**	**1.4000e-004**	**0.0000**	**0.1522**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0722					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5100e-003	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1486	0.1486	1.4000e-004		0.1522
Total	**0.0747**	**9.5000e-004**	**0.0827**	**0.0000**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**0.1486**	**0.1486**	**1.4000e-004**	**0.0000**	**0.1522**

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

Lots 6-12 Oddstad Way (Construction Only)

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	1.00	Dwelling Unit	0.72	3,373.00	3

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Lots 6-12 Oddstad Way (Construction Only) - Bay Area AQMD Air District, Winter

Project Characteristics - Intensity factor for CO2 adjusted based on PG&E's RPS reductions

Land Use - *Info provided by project applicant

Construction Phase - *Info provided by applicant

Grading - *Info provided by applicant

Vehicle Trips - *Operational emissions not modeled

Woodstoves - *Operational emissions not modeled

Consumer Products - *Operational emissions not modeled

Area Coating - *Operational emissions not modeled

Landscape Equipment - *Operational emissions not modeled

Energy Use - *Operational emissions not modeled

Water And Wastewater - *Operational emissions not modeled

Solid Waste - *Operation not modeled

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	5.00	160.00
tblConstructionPhase	NumDays	100.00	160.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	5.00	10.00
tblConstructionPhase	NumDays	1.00	10.00
tblConstructionPhase	PhaseEndDate	9/4/2019	2/14/2020
tblConstructionPhase	PhaseEndDate	8/21/2019	1/31/2020
tblConstructionPhase	PhaseEndDate	4/3/2019	6/7/2019
tblConstructionPhase	PhaseEndDate	8/28/2019	6/21/2019
tblConstructionPhase	PhaseEndDate	4/1/2019	4/12/2019
tblConstructionPhase	PhaseStartDate	8/29/2019	7/8/2019
tblConstructionPhase	PhaseStartDate	4/4/2019	6/24/2019

Lots 6-12 Oddstad Way (Construction Only) - Bay Area AQMD Air District, Winter

tblConstructionPhase	PhaseStartDate	4/2/2019	4/15/2019
tblConstructionPhase	PhaseStartDate	8/22/2019	6/10/2019
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	6,155.97	0.00
tblEnergyUse	NT24NG	2,615.00	0.00
tblEnergyUse	T24E	217.68	0.00
tblEnergyUse	T24NG	39,708.76	0.00
tblFireplaces	NumberGas	0.25	0.00
tblFireplaces	NumberNoFireplace	0.08	0.00
tblFireplaces	NumberWood	0.43	0.00
tblGrading	AcresOfGrading	0.00	0.72
tblGrading	AcresOfGrading	5.00	0.00
tblGrading	MaterialExported	0.00	3,721.00
tblGrading	MaterialExported	0.00	1,110.00
tblLandscapeEquipment	NumberSummerDays	180	1
tblLandUse	LandUseSquareFeet	1,800.00	3,373.00
tblLandUse	LotAcreage	0.32	0.72
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblSolidWaste	SolidWasteGenerationRate	1.26	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWater	IndoorWaterUseRate	65,154.03	0.00
tblWater	OutdoorWaterUseRate	41,075.36	0.00
tblWoodstoves	NumberCatalytic	0.04	0.00
tblWoodstoves	NumberNoncatalytic	0.04	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	1.5208	13.3018	9.3845	0.0220	1.0676	0.7341	1.6193	0.4949	0.6857	1.0213	0.0000	2,220.7150	2,220.7150	0.3806	0.0000	2,227.6421
2020	1.4007	10.5362	9.2189	0.0144	0.0000	0.6333	0.6333	0.0000	0.5915	0.5915	0.0000	1,384.4261	1,384.4261	0.3785	0.0000	1,393.8890
Maximum	**1.5208**	**13.3018**	**9.3845**	**0.0220**	**1.0676**	**0.7341**	**1.6193**	**0.4949**	**0.6857**	**1.0213**	**0.0000**	**2,220.7150**	**2,220.7150**	**0.3806**	**0.0000**	**2,227.6421**

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					
2019	1.5208	13.3018	9.3845	0.0220	1.0676	0.7341	1.6193	0.4949	0.6857	1.0213	0.0000	2,220.7150	2,220.7150	0.3806	0.0000	2,227.6421
2020	1.4007	10.5362	9.2189	0.0144	0.0000	0.6333	0.6333	0.0000	0.5915	0.5915	0.0000	1,384.4261	1,384.4261	0.3785	0.0000	1,393.8890
Maximum	**1.5208**	**13.3018**	**9.3845**	**0.0220**	**1.0676**	**0.7341**	**1.6193**	**0.4949**	**0.6857**	**1.0213**	**0.0000**	**2,220.7150**	**2,220.7150**	**0.3806**	**0.0000**	**2,227.6421**

Lots 6-12 Oddstad Way (Construction Only) - Bay Area AQMD Air District, Winter

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

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	0.0747	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	0.1486	0.1486	1.4000e-004	0.0000	0.1522
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0747**	**9.5000e-004**	**0.0827**	**0.0000**	**0.0000**	**4.6000e-004**	**4.6000e-004**	**0.0000**	**4.6000e-004**	**4.6000e-004**	**0.0000**	**0.1486**	**0.1486**	**1.4000e-004**	**0.0000**	**0.1522**

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	0.0747	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	0.1486	0.1486	1.4000e-004	0.0000	0.1522
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0747**	**9.5000e-004**	**0.0827**	**0.0000**	**0.0000**	**4.6000e-004**	**4.6000e-004**	**0.0000**	**4.6000e-004**	**4.6000e-004**	**0.0000**	**0.1486**	**0.1486**	**1.4000e-004**	**0.0000**	**0.1522**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2019	4/12/2019	5	10	
2	Grading	Grading	4/15/2019	6/7/2019	5	40	
3	Building Construction	Building Construction	6/24/2019	1/31/2020	5	160	
4	Paving	Paving	6/10/2019	6/21/2019	5	10	
5	Architectural Coating	Architectural Coating	7/8/2019	2/14/2020	5	160	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.72

Acres of Paving: 0

Residential Indoor: 6,830; Residential Outdoor: 2,277; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	139.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	465.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0126	0.0000	0.0126	1.9000e-003	0.0000	1.9000e-003			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378		965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.0126**	**0.3672**	**0.3798**	**1.9000e-003**	**0.3378**	**0.3397**		**965.1690**	**965.1690**	**0.3054**		**972.8032**

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	0.1290	4.3702	0.8899	0.0110	0.2428	0.0168	0.2596	0.0665	0.0161	0.0826		1,175.3658	1,175.3658	0.0644		1,176.9758
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	0.0201	0.0147	0.1408	3.9000e-004	0.0411	2.7000e-004	0.0414	0.0109	2.5000e-004	0.0112		39.0316	39.0316	1.0600e-003		39.0581
Total	**0.1491**	**4.3849**	**1.0307**	**0.0114**	**0.2839**	**0.0170**	**0.3010**	**0.0774**	**0.0163**	**0.0937**		**1,214.3974**	**1,214.3974**	**0.0655**		**1,216.0339**

3.2 Site Preparation - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0126	0.0000	0.0126	1.9000e-003	0.0000	1.9000e-003			0.0000			0.0000
Off-Road	0.7195	8.9170	4.1407	9.7500e-003		0.3672	0.3672		0.3378	0.3378	0.0000	965.1690	965.1690	0.3054		972.8032
Total	**0.7195**	**8.9170**	**4.1407**	**9.7500e-003**	**0.0126**	**0.3672**	**0.3798**	**1.9000e-003**	**0.3378**	**0.3397**	**0.0000**	**965.1690**	**965.1690**	**0.3054**		**972.8032**

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	0.1290	4.3702	0.8899	0.0110	0.2428	0.0168	0.2596	0.0665	0.0161	0.0826		1,175.3658	1,175.3658	0.0644		1,176.9758
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	0.0201	0.0147	0.1408	3.9000e-004	0.0411	2.7000e-004	0.0414	0.0109	2.5000e-004	0.0112		39.0316	39.0316	1.0600e-003		39.0581
Total	**0.1491**	**4.3849**	**1.0307**	**0.0114**	**0.2839**	**0.0170**	**0.3010**	**0.0774**	**0.0163**	**0.0937**		**1,214.3974**	**1,214.3974**	**0.0655**		**1,216.0339**

3.3 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7824	0.0000	0.7824	0.4174	0.0000	0.4174			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125		1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.7824**	**0.5371**	**1.3195**	**0.4174**	**0.5125**	**0.9299**		**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

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	0.1079	3.6549	0.7443	9.2000e-003	0.2031	0.0140	0.2171	0.0557	0.0134	0.0691		982.9948	982.9948	0.0539		984.3413
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	0.0402	0.0294	0.2815	7.8000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		78.0632	78.0632	2.1200e-003		78.1162
Total	**0.1481**	**3.6843**	**1.0258**	**9.9800e-003**	**0.2852**	**0.0146**	**0.2998**	**0.0774**	**0.0139**	**0.0914**		**1,061.0580**	**1,061.0580**	**0.0560**		**1,062.4575**

3.3 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7824	0.0000	0.7824	0.4174	0.0000	0.4174			0.0000			0.0000
Off-Road	0.9530	8.6039	7.6917	0.0120		0.5371	0.5371		0.5125	0.5125	0.0000	1,159.6570	1,159.6570	0.2211		1,165.1847
Total	**0.9530**	**8.6039**	**7.6917**	**0.0120**	**0.7824**	**0.5371**	**1.3195**	**0.4174**	**0.5125**	**0.9299**	**0.0000**	**1,159.6570**	**1,159.6570**	**0.2211**		**1,165.1847**

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	0.1079	3.6549	0.7443	9.2000e-003	0.2031	0.0140	0.2171	0.0557	0.0134	0.0691		982.9948	982.9948	0.0539		984.3413
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	0.0402	0.0294	0.2815	7.8000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		78.0632	78.0632	2.1200e-003		78.1162
Total	**0.1481**	**3.6843**	**1.0258**	**9.9800e-003**	**0.2852**	**0.0146**	**0.2998**	**0.0774**	**0.0139**	**0.0914**		**1,061.0580**	**1,061.0580**	**0.0560**		**1,062.4575**

3.4 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569		1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**		**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Building Construction - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9576	9.8207	7.5432	0.0114		0.6054	0.6054		0.5569	0.5569	0.0000	1,127.6696	1,127.6696	0.3568		1,136.5892
Total	**0.9576**	**9.8207**	**7.5432**	**0.0114**		**0.6054**	**0.6054**		**0.5569**	**0.5569**	**0.0000**	**1,127.6696**	**1,127.6696**	**0.3568**		**1,136.5892**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806		1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**		**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.4 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806	0.0000	1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**	**0.0000**	**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.5 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8300	7.8446	7.1478	0.0113		0.4425	0.4425		0.4106	0.4106		1,055.1823	1,055.1823	0.3016		1,062.7231
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8300**	**7.8446**	**7.1478**	**0.0113**		**0.4425**	**0.4425**		**0.4106**	**0.4106**		**1,055.1823**	**1,055.1823**	**0.3016**		**1,062.7231**

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	0.0724	0.0530	0.5068	1.4100e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		140.5138	140.5138	3.8200e-003		140.6092
Total	**0.0724**	**0.0530**	**0.5068**	**1.4100e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**140.5138**	**140.5138**	**3.8200e-003**		**140.6092**

3.5 Paving - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8300	7.8446	7.1478	0.0113		0.4425	0.4425		0.4106	0.4106	0.0000	1,055.1823	1,055.1823	0.3016		1,062.7231
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8300**	**7.8446**	**7.1478**	**0.0113**		**0.4425**	**0.4425**		**0.4106**	**0.4106**	**0.0000**	**1,055.1823**	**1,055.1823**	**0.3016**		**1,062.7231**

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	0.0724	0.0530	0.5068	1.4100e-003	0.1479	9.8000e-004	0.1488	0.0392	9.0000e-004	0.0401		140.5138	140.5138	3.8200e-003		140.6092
Total	**0.0724**	**0.0530**	**0.5068**	**1.4100e-003**	**0.1479**	**9.8000e-004**	**0.1488**	**0.0392**	**9.0000e-004**	**0.0401**		**140.5138**	**140.5138**	**3.8200e-003**		**140.6092**

3.6 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.2968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**0.5632**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Architectural Coating - 2019

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	0.2968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**0.5632**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.2968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**0.5390**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

3.6 Architectural Coating - 2020

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	0.2968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**0.5390**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
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
Single Family Housing	0.575198	0.040076	0.193827	0.113296	0.016988	0.005361	0.017552	0.025197	0.002581	0.002349	0.005904	0.000881	0.000789

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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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					
Single Family Housing	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
Single Family Housing	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
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0747	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	0.1486	0.1486	1.4000e-004	0.0000	0.1522
Unmitigated	0.0747	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	0.1486	0.1486	1.4000e-004	0.0000	0.1522

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0722					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5100e-003	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1486	0.1486	1.4000e-004		0.1522
Total	**0.0747**	**9.5000e-004**	**0.0827**	**0.0000**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**0.1486**	**0.1486**	**1.4000e-004**	**0.0000**	**0.1522**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0722					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5100e-003	9.5000e-004	0.0827	0.0000		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004		0.1486	0.1486	1.4000e-004		0.1522
Total	**0.0747**	**9.5000e-004**	**0.0827**	**0.0000**		**4.6000e-004**	**4.6000e-004**		**4.6000e-004**	**4.6000e-004**	**0.0000**	**0.1486**	**0.1486**	**1.4000e-004**	**0.0000**	**0.1522**

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

Lots 6-12 Oddstad Way (Construction Only)

Bay Area AQMD Air District, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Cement and Mortar Mixers	Diesel	No Change	0	4	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Forklifts	Diesel	No Change	0	2	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	1	No Change	0.00
Rollers	Diesel	No Change	0	1	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	1	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	6	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	2.09100E-002	1.44330E-001	1.47140E-001	2.40000E-004	1.00100E-002	1.00100E-002	0.00000E+000	2.04260E+001	2.04260E+001	1.70000E-003	0.00000E+000	2.04684E+001
Cement and Mortar Mixers	8.80000E-004	5.52000E-003	4.63000E-003	1.00000E-005	2.20000E-004	2.20000E-004	0.00000E+000	6.87410E-001	6.87410E-001	7.00000E-005	0.00000E+000	6.89200E-001
Concrete/Industrial Saws	9.24000E-003	7.17700E-002	7.40400E-002	1.30000E-004	4.59000E-003	4.59000E-003	0.00000E+000	1.07532E+001	1.07532E+001	7.60000E-004	0.00000E+000	1.07721E+001
Cranes	1.98700E-002	2.36740E-001	9.07000E-002	2.30000E-004	1.00000E-002	9.20000E-003	0.00000E+000	2.06630E+001	2.06630E+001	6.56000E-003	0.00000E+000	2.08269E+001
Forklifts	1.89200E-002	1.69140E-001	1.43060E-001	1.80000E-004	1.30400E-002	1.19900E-002	0.00000E+000	1.64216E+001	1.64216E+001	5.21000E-003	0.00000E+000	1.65519E+001
Graders	2.43000E-003	3.29000E-002	9.19000E-003	3.00000E-005	1.06000E-003	9.70000E-004	0.00000E+000	2.98295E+000	2.98295E+000	9.40000E-004	0.00000E+000	3.00654E+000
Pavers	1.26000E-003	1.36700E-002	1.26900E-002	2.00000E-005	6.70000E-004	6.20000E-004	0.00000E+000	1.84753E+000	1.84753E+000	5.80000E-004	0.00000E+000	1.86214E+000
Rollers	9.90000E-004	9.80000E-003	8.34000E-003	1.00000E-005	6.40000E-004	5.90000E-004	0.00000E+000	1.03067E+000	1.03067E+000	3.30000E-004	0.00000E+000	1.03882E+000
Rubber Tired Dozers	2.84000E-003	3.01900E-002	1.07100E-002	2.00000E-005	1.47000E-003	1.35000E-003	0.00000E+000	1.91740E+000	1.91740E+000	6.10000E-004	0.00000E+000	1.93257E+000
Tractors/Loaders/Backhoes	4.58800E-002	4.60670E-001	4.58570E-001	6.20000E-004	3.05800E-002	2.81400E-002	0.00000E+000	5.54838E+001	5.54838E+001	1.76000E-002	0.00000E+000	5.59237E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	2.09100E-002	1.44330E-001	1.47140E-001	2.40000E-004	1.00100E-002	1.00100E-002	0.00000E+000	2.04260E+001	2.04260E+001	1.70000E-003	0.00000E+000	2.04684E+001
Cement and Mortar Mixers	8.80000E-004	5.52000E-003	4.63000E-003	1.00000E-005	2.20000E-004	2.20000E-004	0.00000E+000	6.87410E-001	6.87410E-001	7.00000E-005	0.00000E+000	6.89200E-001
Concrete/Industrial Saws	9.24000E-003	7.17700E-002	7.40400E-002	1.30000E-004	4.59000E-003	4.59000E-003	0.00000E+000	1.07531E+001	1.07531E+001	7.60000E-004	0.00000E+000	1.07721E+001
Cranes	1.98700E-002	2.36740E-001	9.07000E-002	2.30000E-004	1.00000E-002	9.20000E-003	0.00000E+000	2.06629E+001	2.06629E+001	6.56000E-003	0.00000E+000	2.08269E+001
Forklifts	1.89200E-002	1.69140E-001	1.43060E-001	1.80000E-004	1.30400E-002	1.19900E-002	0.00000E+000	1.64216E+001	1.64216E+001	5.21000E-003	0.00000E+000	1.65519E+001
Graders	2.43000E-003	3.29000E-002	9.19000E-003	3.00000E-005	1.06000E-003	9.70000E-004	0.00000E+000	2.98294E+000	2.98294E+000	9.40000E-004	0.00000E+000	3.00654E+000
Pavers	1.26000E-003	1.36700E-002	1.26900E-002	2.00000E-005	6.70000E-004	6.20000E-004	0.00000E+000	1.84753E+000	1.84753E+000	5.80000E-004	0.00000E+000	1.86214E+000
Rollers	9.90000E-004	9.80000E-003	8.34000E-003	1.00000E-005	6.40000E-004	5.90000E-004	0.00000E+000	1.03067E+000	1.03067E+000	3.30000E-004	0.00000E+000	1.03882E+000
Rubber Tired Dozers	2.84000E-003	3.01900E-002	1.07100E-002	2.00000E-005	1.47000E-003	1.35000E-003	0.00000E+000	1.91740E+000	1.91740E+000	6.10000E-004	0.00000E+000	1.93256E+000
Tractors/Loaders/Backhoes	4.58800E-002	4.60670E-001	4.58570E-001	6.20000E-004	3.05800E-002	2.81400E-002	0.00000E+000	5.54837E+001	5.54837E+001	1.76000E-002	0.00000E+000	5.59237E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.79143E-007	9.79143E-007	0.00000E+000	0.00000E+000	9.77115E-007
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.85992E-006	1.85992E-006	0.00000E+000	0.00000E+000	1.85665E-006
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.45187E-006	1.45187E-006	0.00000E+000	0.00000E+000	9.60297E-007
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21791E-006	1.21791E-006	0.00000E+000	0.00000E+000	1.20832E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	3.35239E-006	3.35239E-006	0.00000E+000	0.00000E+000	0.00000E+000
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	5.17446E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.26163E-006	1.26163E-006	0.00000E+000	0.00000E+000	1.25171E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	
No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)			
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Fugitive Dust	0.02	0.01	0.02	0.01	0.00	0.00
Grading	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting:

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00			
No	Land Use	Increase Diversity	-0.01	0.13		
No	Land Use	Improve Walkability Design	0.00			
No	Land Use	Improve Destination Accessibility	0.00			
No	Land Use	Increase Transit Accessibility	0.25			
No	Land Use	Integrate Below Market Rate Housing	0.00			
	Land Use	Land Use SubTotal	0.00			

No	Neighborhood Enhancements	Improve Pedestrian Network				
No	Neighborhood Enhancements	Provide Traffic Calming Measures				
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.00			
No	Parking Policy Pricing	Limit Parking Supply	0.00			
No	Parking Policy Pricing	Unbundle Parking Costs	0.00			
No	Parking Policy Pricing	On-street Market Pricing	0.00			
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00			
No	Transit Improvements	Expand Transit Network	0.00			
No	Transit Improvements	Increase Transit Frequency	0.00			
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.00			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"				
No	Commute	Workplace Parking Charge				
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program				
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.00			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	150.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
No	Use Low VOC Paint (Non-residential Exterior)	150.00
No	Use Low VOC Paint (Parking)	150.00
No	% Electric Lawnmower	
No	% Electric Leafblower	
No	% Electric Chainsaw	

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value

Institute Recycling and Composting Services Percent Reduction in Waste Disposed	