

PARTIAL RECIRCULATED DRAFT

Environmental Impact Report

Sunroad Commercial Project

SCH No. 2019029136

March 2020

Prepared for:



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Appendix C: Greenhouse Gas Emissions Analysis (February 2020)

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Acronyms and Abbreviations

AB	Assembly Bill
AQ Report	Air Quality Technical Report
ATCM	Airborne Toxic Control Measure
Biology Report	Sunroad Plaza Biology Study
BMP	Best management practices
BPO	Biological Preserve Overlay
CalEEMod	California Emission Estimator Model
CALGreen	California Green Building Standards
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH ₄	methane
City	City of Vista
CO	carbon monoxide
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalent
CWA	Clean Water Act
DEIR	Draft Environmental Impact Report
DPM	Diesel particulate matter
EIR	Environmental Impact Report
EO	Executive Order
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
GC	General Commercial
GHG	greenhouse gas
GP 2030 Update	Vista General Plan 2030 Update
GP 2030 Update PEIR	Vista General Plan 2030 Update Final Program EIR
HFC	hydrofluorocarbon
LID	Low-impact development
LOS	Level of service
LUCI	Land Use and Community Identity
MHCP	Multiple Habitat Conservation Plan
MMT	million metric ton
MT	metric ton
MWD	Metropolitan Water District
N ₂ O	nitrous oxide
NOP	Notice of Preparation
NO _x	oxides of nitrogen
PFC	perfluorocarbon

PM ₁₀	particulate matter less than ten microns in diameter
PM _{2.5}	particulate matter less than 2.5 microns in diameter
PPV	Peak particle velocity
project	Sunroad Commercial Project
RAQS	Regional Air Quality Strategy
RCS	Resource Conservation and Sustainability
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SB	Senate Bill
SDAPCD	San Diego Air Pollution Control District
SDCWA	San Diego County Water Authority
SF	square feet
SF ₆	sulfur hexafluoride
SIP	State Implementation Plan
SO _x	sulfur oxide
TAC	Toxic air contaminant
TCA	traditionally and culturally affiliated
USEPA	U.S. Environmental Protection Agency
UWMP	Urban water management plans
VFD	Vista Fire Department
VID	Vista Irrigation District
VOC	volatile organic compound

Preface to the Recirculated Draft Environmental Impact Report

Background

The previously circulated Draft Environmental Impact Report (DEIR) for the proposed Sunroad Commercial Project (project) was circulated for a 45-day public review period from October 3 to November 18, 2019. During the public review period, public agencies, interested persons, and organizations had an opportunity to submit written comments on the previously circulated DEIR to the City of Vista (City). The City received 13 comment letters during the previously circulated DEIR public review period.

After the close of the public review period, the Project Applicant (Sunroad Vista Land Partners, LP) determined that the following mitigation measures recommended in the previously circulated DEIR would be infeasible to implement (refer to Section 3.2, Greenhouse Gas Emissions, of this Recirculated DEIR for full text revisions made to the Greenhouse Gas mitigation measures and rationale explaining infeasibility to implement). Per State CEQA Guidelines, Section 15088.5(g), the revisions made to the previously circulated DEIR include the following:

- **GHG-1. Zero Net Energy.** This mitigation measure was revised to remove the requirement to install rooftop solar. As a result, this measure would no longer be “zero net energy,” and the title has been revised. Additional text changes include the provision of obtaining a third-party heating, ventilation, and air conditioning commissioning and verification of energy savings during the project design phase, and the transfer of the responsibility to verify energy savings from a third-party to the Project Applicant.
- **GHG-4. Transportation Demand Management.** This mitigation measure was removed.
- **GHG-5. Promotion of Electric and Alternative Fuel Vehicles.** This mitigation measure was revised to remove the requirement to provide Level 2 and DC Fast Chargers.
- **GHG-6. Parking Fee.** This mitigation measure was removed.

This document contains recirculated portions of the previously circulated DEIR for the proposed project. The California Environmental Quality Act (CEQA) requires a lead agency to recirculate all or portions of the previously circulated DEIR when “significant new information” is added to the EIR after the public review period begins but prior to certification (State CEQA Guidelines, Section 15088.5). The removal and revision of the mitigation measures listed previously is considered “significant new information” because it would increase project greenhouse gas emissions beyond what was analyzed in the previously circulated DEIR. Therefore, the City decided to recirculate the previously circulated DEIR before certification. Pursuant to Section 15088.5(c) of the State CEQA Guidelines, the Recirculated DEIR only consists of the chapters or portions of the previously circulated DEIR that have been modified. In accordance with State CEQA Guidelines, Section 15088.5(f)(2), the City requests that reviewers limit the scope of their

comments to the revised portions of the Recirculated DEIR. The following chapters compose the Recirculated DEIR:

- **Executive Summary.** This chapter has been revised to remove the infeasible greenhouse gas mitigation measures and associated text.
- **Chapter 3, Environmental Analysis.** Section 3.2, Greenhouse Gas Emissions, has been revised to remove the infeasible mitigation measures, which required remodeling of the project's greenhouse gas emissions and edits to the text and tables.
- **Chapter 4, Other CEQA Considerations.** This chapter has been revised to remove the infeasible mitigation measures and to make associated text changes.
- **Chapter 5, Alternatives.** This chapter has been revised to remove text references to the infeasible greenhouse gas mitigation measures, and to update the comparative analysis of the alternatives to the proposed project.
- **Chapter 7, References.** This chapter has been revised to include additional sources used to prepare the Recirculated DEIR.
- **Appendix C, Greenhouse Gas Emissions Analysis.** The Greenhouse Gas Emissions Analysis has been revised to remove the infeasible mitigation measures, which required remodeling of the project's greenhouse gas emissions and edits to the text and tables.

As necessary, the text of the previously circulated DEIR has been updated to reflect changes to the mitigation measures and minor revisions made to clarify or correct portions of the text. These modifications are indicated in ~~strikeout~~/underline format throughout the Recirculated DEIR. The Recirculated DEIR will serve as an informational document in addition to the previously circulated DEIR to be considered by the City and other local and state permitting agencies during their respective processing of the proposed project.

Recirculated Environmental Impact Report and Public Review

The Recirculated DEIR will undergo a 45-day public review and comment period. During this period, public agencies, interested persons, and organizations can submit written comments on the revised portions of the previously circulated DEIR to the lead agency on the accuracy and completeness of the Recirculated EIR. Pursuant to State CEQA Guidelines, Sections 15105(a) and (c), the 45-day public review period will be from March 12, 2020, through April 27, 2020. The public can review the Recirculated DEIR at the following address or on the City's website at <https://www.cityofvista.com/city-services/city-departments/community-development/building-planning-permits-applications/vista-general-plan-2030/environmental-resources>:

City of Vista
200 Civic Center Drive
Vista, California 92084

The City requires comments on the Recirculated DEIR to be submitted in writing. Comments or questions should be addressed to the following:

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Final Environmental Impact Report and Certification

Upon completion of the Recirculated DEIR public review period, a Final EIR (FEIR) will be prepared. Pursuant to State CEQA Guidelines, Section 15088.5(f)(2), the FEIR will include written comments on the Recirculated DEIR received during the 45-day public review period and the City's responses to those comments. Additionally, pursuant to State CEQA Guidelines, Section 15132, the FEIR will also include responses to comments on the previously circulated DEIR. The FEIR will consist of the previously circulated DEIR, the Recirculated DEIR, and any revisions to the previously circulated DEIR and the Recirculated EIR. The FEIR will also include a Mitigation Monitoring and Reporting Program prepared in accordance with State CEQA Guidelines, Section 15097. Prior to approving the project, the City, as the lead agency, must first certify that (1) the FEIR has been completed in compliance with CEQA, (2) the Planning Commission (the decision-making body) has reviewed and considered the information in the FEIR, and (3) the FEIR reflects the independent judgment and analysis of the City (State CEQA Guidelines, Section 15090). The City will also be required to adopt the Findings of Fact pursuant to State CEQA Guidelines, Section 15091. A Statement of Overriding Considerations will also be included to address significant and unavoidable impacts that were identified in the FEIR (State CEQA Guidelines, Section 15093).

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Executive Summary

Introduction

This summary provides a brief synopsis of the project description and results of the environmental analysis contained in the proposed Sunroad Commercial Project (project) Recirculated Draft Environmental Impact Report (DEIR) prepared by the City of Vista (City), in compliance with the California Environmental Quality Act (CEQA). This chapter highlights the major areas of importance in the environmental analysis for the proposed project, as required by State CEQA Guidelines, Section 15123. It also provides a brief description of the proposed project, project objectives, alternatives to the proposed project, and areas of controversy/issues to be resolved.

In addition, this chapter provides tables summarizing project impacts and mitigation measures (Table ES-1, Summary of Impacts and Mitigation Measures) and cumulative impacts and mitigation measures (Table ES-2, Summary of Cumulative Impacts and Mitigation Measures). A table is also provided that compares the anticipated impacts of the proposed project with those of each project alternative (Table ES-3, Comparison of Alternatives – Environmental Impacts).

Project Location

The project site is located at 460 Hacienda Drive in Vista, California (see Figures 2-1 and 2-2, Regional Location Map and Project Site, respectively, in Chapter 2, Project Description, in the previously circulated DEIR). The site is located at the northeast corner of the intersection of Vista Village Drive and Hacienda Drive. The site is bounded to the south and east by Hacienda Drive, to the west by Vista Village Drive, and to the north by the eastbound State Route 78 on-ramp. The 4.12-acre site is currently vacant and consists of five parcels: Assessor Parcel Numbers 164-231-01, -02, -03, -04, and -36. It is roughly graded and contains minor amounts of non-native vegetation. A storm drain inlet is located in the southwestern portion of the site, three sewer manholes are located along the northern perimeter, and miscellaneous debris is scattered throughout the project site.

Project Description Summary

Sunroad Vista Land Partners, LP (Project Applicant), is seeking approval of a site development plan, special use permit, and tentative subdivision map to develop and construct a 91,893-square-foot commercial center consisting of five single-story buildings; each with a drive-through. The commercial center would also include an open parking lot, two driveways, patios, walkways, and associated landscaping on a 4.12-acre site. Each single-story building would have a maximum height of 35 feet. Each building would be set back ten feet in the front, 20 feet in the rear, 20 feet on the left, and ten feet on the right of the buildings. According to the Proposed Site Plan (SGPA 2019), the project would consist of 13,740 square feet of restaurant space, 5,580 square feet of

retail space, and a 4,200-square-foot car wash for a total building square footage of 23,520 (13 percent of the site). The 26,033-square-foot parking lot would consist of 160 stalls (approximately 15 percent of the site). Landscaping would encompass 40,895 square feet (roughly 23 percent of the site). Two loading zones would encompass 1,445 square feet total (approximately 700 square feet each and less than 1 percent of the site) and would be located in the northwestern and northeastern corners, adjacent to Pads 2 and 4, respectively. The project would result in 91,893 square feet (2.11 acres) of development (or approximately 51 percent of the site).

Project Objectives

The following objectives have been identified for the proposed project:

1. Develop and implement a 91,893-square-foot commercial center, which includes five single-story buildings consisting of 23,520 square feet of restaurant and retail space and a car wash, and associated landscaping, hardscape (e.g., sidewalks, patios), and parking stalls.
2. Implement Policy 6.3 of the City's Land Use and Community Identity (LUCI) Element by developing a commercial center within the North County Regional Center/Breeze Hill Road Opportunity Area (OA-10).
3. Implement Policy 7.2 of the City's LUCI Element to promote regionally oriented commercial development along the State Route 78 corridor to serve the traveling public and provide freeway-oriented uses where direct access is available.
4. Implement Policy OA-10.2 of the City's LUCI Element to improve walkability in the area through enhanced pedestrian amenities by providing sidewalks, street trees, and lighting.

Impact Summary

~~The~~ Recirculated DEIR contains a discussion of the potential adverse effects from implementation of the proposed project, including information related to existing site conditions, analyses of the type and magnitude of individual and cumulative environmental impacts, and feasible mitigation measures that could avoid or reduce significant environmental impacts. In accordance with Appendix G of the State CEQA Guidelines, the potential environmental effects of the proposed project are analyzed for the following environmental issue areas:

- Section 3.1, Cultural and Tribal Cultural Resources
- Section 3.2, Greenhouse Gas Emissions
- Section 3.3, Transportation

The Recirculated DEIR includes revisions to the mitigation measures, associated text, and data provided in Section 3.2. Sections 3.1 and 3.3 have not been revised and are not included in the Recirculated DEIR.

Tables ES-1 and ES-2 summarize the environmental impacts that could result from the implementation of the proposed project and feasible mitigation measures that could avoid or

reduce environmental impacts. For each impact, Tables ES-1 and ES-2 identify the significance of the impact before mitigation, any applicable mitigation measures, and the level of significance of the impact after the implementation of mitigation measures.

Alternatives to the Proposed Project

Section 15126.6 of the State CEQA Guidelines requires that an EIR describe a reasonable range of alternatives to a proposed project (e.g., the Sunroad Commercial Project) that could feasibly attain most of the project objectives while avoiding or considerably reducing any of the significant impacts of the proposed project. In addition, a “no project” alternative must be analyzed in the EIR. CEQA also requires that an environmentally superior alternative be selected from among the alternatives. Chapter 5, Alternatives, provides a detailed discussion and qualitative analysis on the following scenarios:

- **Alternative 1: No Project/No Build Alternative.** This alternative evaluates the existing baseline conditions at the time the Notice of Preparation (NOP) was published and what would be reasonably expected to occur in the foreseeable future if the project were not approved and no other projects were approved for development in the foreseeable future.
- **Alternative 2: No Project/Existing Zoning Alternative.** Under this alternative, the project would not be approved as proposed. Instead, development would occur consistent with what is allowed under the existing general plan land use designation and zoning classification.
- **Alternative 3: Reduced Footprint Alternative.** This alternative was developed to determine where specific features of the proposed project could be eliminated to help reduce greenhouse gas (GHG) emissions.

Potential Areas of Controversy and Issues to Be Resolved

Pursuant to State CEQA Guidelines, Section 15123(b), a summary section must address areas of controversy known to the lead agency, including issues raised by agencies and the public, and it must also address issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

An NOP for the proposed project was issued on February 25, 2019. The NOP describing the original concept for the project and issues to be addressed in the EIR was distributed to the State Clearinghouse, responsible agencies, and other interested parties for a 30-day public review period from February 25, 2019 through March 26, 2019. The NOP identified the potential for significant impacts on the environment related to cultural and tribal cultural resources, GHG emissions, and transportation.

Comments have been taken into consideration in preparation of ~~theis~~ previously circulated DEIR. The City received three comment letters on the NOP for the proposed project. A copy of each letter is provided in Appendix A of ~~theis~~ previously circulated DEIR. Additionally, the complete text of the NOP and the NOP comments are included in Appendix A. The comment letters received are as follows:

1. **Josh and Maria Bowman (March 26, 2019):** The commenter states that the proposed project would increase traffic congestion and other possible safety issues. However, the commenter included project design feature suggestions to reduce traffic and noise related impacts, should it get approved.
2. **Native American Heritage Commission (March 6, 2019):** The Native American Heritage Commission included requirements for tribal consultation pursuant to Assembly Bill 52 and Senate Bill 18.
3. **California Department of Transportation (March 28, 2019):** The California Department of Transportation gave several recommendations pertaining to the necessary traffic impact analysis. In addition, the agency requested that hydrology and drainage studies be prepared, and included recommendations for what these studies should include. Further, the California Department of Transportation stated support for implementing complete streets and multi-modal mobility networks to help work toward reducing GHG emissions.

Discretionary Approvals

The City is the lead agency for the project, as it is the agency with primary authority over the project's discretionary approvals. The discretionary approvals required by the City include the following:

- Certification of the EIR
- Approval of a Site Development Plan
- Approval of a Special Use Permit
- Approval of a Tentative Subdivision Map

In addition, the proposed project would be required to obtain the following approvals for construction from the City: landscape construction plan, grading permit, right-of-way permit, and building permit. In addition, the project would be required to submit a Notice of Intent to the San Diego Regional Water Quality Control Board and to prepare a Stormwater Pollution Prevention Plan in accordance with the requirements of the National Pollutant Discharge Elimination System General Construction Activities Permit. An encroachment permit would also be required for any work done within the California Department of Transportation right-of-way.

Table ES-1. Summary of Impacts and Mitigation Measures

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
3.1 Cultural and Tribal Cultural Resources				
Historical Resources	Implementation of the proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.	NI	None required.	NI
Archaeological Resources	Implementation of the proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.	PS	<p>CUL-1. Construction Monitoring. Cultural resource construction monitoring shall be conducted on the site to provide for the identification, evaluation, treatment, and protection of any cultural resources that are affected by or may be discovered during the construction of the proposed project. The monitoring shall consist of the full-time presence of a Qualified Archaeologist and a traditionally and culturally affiliated (TCA) Native American Monitor for, but not limited to, any clearing or grubbing of vegetation, tree removal, demolition and/or removal of remnant foundations, pavements, abandonment and/or installation of infrastructure; grading or any other ground-disturbing or altering activities, including the placement of any imported fill materials (Note: All fill materials shall be absent of any and all cultural resources); and related road improvements, including but not limited to the installation of infrastructure and the realignments and/or expansions to Hacienda Drive and/or Vista Village Drive. Other tasks of the monitoring program shall include the following:</p> <ul style="list-style-type: none"> • The requirement for cultural resource construction monitoring shall be noted on all applicable construction documents, including but not limited to demolition plans and grading plans. • The Qualified Archaeologist and TCA Native American Monitor shall attend at least one pre-construction meeting with the Contractor and/or associated Subcontractors (e.g., grading contractor) and a representative from the City of Vista's Engineering or Community Development departments 	LS

Table ES-1. Summary of Impacts and Mitigation Measures

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>to present the archaeological monitoring program as presented in these measures.</p> <ul style="list-style-type: none"> • The Qualified Archaeologist shall maintain ongoing collaborative consultation with the TCA Native American Monitor during all ground-disturbing or altering activities, as identified above. The Project Applicant or Owner and/or Grading Contractor shall notify the Director of Community Development in writing, preferably through email, at least 48 hours prior to the start and end of all ground-disturbing activities. • The Qualified Archaeologist and/or TCA Native American Monitor may halt ground-disturbing activities if archaeological artifacts, deposits, and/or tribal cultural features are inadvertently discovered. In general, ground-disturbing activities shall be directed away from these discoveries for a short time to allow a determination of potential significance, the subject of which shall be determined by the Qualified Archaeologist and the TCA Native American Monitor, in consultation with the San Luis Rey Band. Ground-disturbing activities shall not resume until the Qualified Archaeologist, in consultation with the TCA Native American Monitor, deems that the cultural resource or feature has been appropriately documented and/or protected. At the Qualified Archaeologist's discretion, the location of ground-disturbing activities may be relocated elsewhere on the project site to avoid further disturbance of cultural resources. • The avoidance and protection of inadvertently discovered significant cultural and/or tribal cultural resources, and/or unique archaeological 	

Table ES-1. Summary of Impacts and Mitigation Measures

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>resources, is the preferable mitigation for the proposed project. If avoidance is not feasible, a data recovery plan may be authorized by the City of Vista as the lead agency under the California Environmental Quality Act. If data recovery is required, then the San Luis Rey Band shall be notified by the Qualified Archaeologist and consulted in drafting and finalizing any such recovery plan.</p> <p>CUL-2. Pre-Excavation Agreement. Prior to the issuance of a grading permit, and subject to approval of terms by the City of Vista, the Project Applicant or Owner and/or Contractor shall enter into a pre-excavation agreement with the San Luis Rey Band, a TCA tribe. A copy of the agreement shall be included in the grading plan submittals for the grading permit. The purpose of this agreement shall be to formalize protocols and procedures between the Project Applicant or Owner and/or Contractor and the San Luis Rey Band for the protection and treatment of artifacts, deposits, and/or features, including but not limited to Native American human remains, funerary objects, cultural and religious landscapes, ceremonial items, traditional gathering areas, and cultural items located and/or discovered through a monitoring program in conjunction with the construction of the proposed project, including additional archaeological surveys and/or studies, excavations, geotechnical investigations, off-site infrastructure installation, grading, and all other ground-disturbing activities.</p> <p>CUL-3. Monitoring Report and/or Evaluation Report. Prior to the release of the grading bond, a monitoring report and/or evaluation report, which describes the results, analysis, and conclusions of the cultural resource construction monitoring</p>	

Table ES-1. Summary of Impacts and Mitigation Measures

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>efforts (including but not limited to research design and/or data recovery programs) shall be submitted, along with the TCA Native American Monitor's notes and comments, by the Qualified Archaeologist to the City of Vista's Director of Community Development for review and approval.</p> <p>CUL-4. Most Likely Descendant. All cultural materials that are associated with burial and/or funerary goods will be repatriated to the most likely descendant as determined by the Native American Heritage Commission per California Public Resources Code, Section 5097.98.</p> <p>CUL-5. Recovered Cultural Material. Recovered cultural material of historic significance shall be curated with accompanying catalog, photographs, and reports to a San Diego curation facility that meets federal standards per Title 36, Part 79, of the Code of Federal Regulations. Recovered cultural material of tribal cultural significance shall be repatriated as stipulated in the pre-excavation agreement as described in Mitigation Measure CUL-2.</p>	
Tribal Cultural Resources	Implementation of the proposed project could result in disturbance of unknown subsurface TCRs.	PS	Mitigation Measures CUL-1 through CUL-5.	LS
Human Remains	Implementation of the proposed project could result in disturbance of potential human remains including those interred outside of dedicated cemeteries.	PS	<p>CUL-6. Human Remains. As specified by California Health and Safety Code, Section 7050.5, if human remains are found on the project site during construction or during archaeological work, the person responsible for the excavation, or his or her authorized representative, shall immediately notify the San Diego County Coroner's office by telephone. No further excavation or disturbance of the discovery or any nearby area reasonably suspected to overlie adjacent remains (as determined by the Qualified Archaeologist and/or the TCA Native American Monitor) shall occur until the County Coroner has made the necessary</p>	LS

Table ES-1. Summary of Impacts and Mitigation Measures

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			findings as to origin and disposition pursuant to California Public Resources Code, Section 5097.98. If such a discovery occurs, a temporary construction exclusion zone shall be established surrounding the area of the discovery so that the area would be protected (as determined by the Qualified Archaeologist and/or the TCA Native American Monitor), and consultation and treatment could occur as prescribed by law. As further defined by state law, the County Coroner would determine within two working days of being notified if the remains are subject to his or her authority. If the County Coroner recognizes the remains to be Native American, he or she shall contact the Native American Heritage Commission within 24 hours. The Native American Heritage Commission would make a determination as to the most likely descendent. If Native American remains are discovered, the remains shall be kept in situ (in place) or in a secure location in proximity to where they were found, and the analysis of the remains shall only occur on site in the presence of the Native American Monitor.	
3.2 Greenhouse Gas Emissions				
Generate GHG Emissions	The proposed project could generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	PS	GHG-1. Zero-Net-Energy-Reducing Features. Prior to the issuance of any building permit, the Project Applicant and/or Owner shall demonstrate in writing to the City of Vista's Community Development Director that the project has been designed and shall be constructed to include, at a minimum, the following features to reduce energy demand and achieve zero net energy, as defined by the California Energy Commission in its 2015 Integrated Energy Policy Report, or otherwise achieve an equivalent level of energy efficiency, renewable energy generation or greenhouse gas emissions savings. The following measures shall may be included to demonstrate the project's achievement of zero net commitment to energy reduction:	SU

Table ES-1. Summary of Impacts and Mitigation Measures

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<ul style="list-style-type: none"> • Install programmable thermostats in commercial spaces • Use electric landscaping equipment to achieve a reduction in non-space/water heating residential natural gas use • Provide heating, ventilation, and air conditioning commissioning and verification of energy savings during project design phase Obtain third-party heating, ventilation, and air conditioning commissioning and verification of energy savings • Install high-efficiency area lighting • Limit outdoor lighting • Maximize interior daylight • Install rooftop solar photovoltaic systems to the extent required to offset the project's remaining electricity demand with on-site solar renewable energy <p>Through incorporation of zero-energy technology into the project, as prescribed by a qualified energy efficiency and design consultant, fossil fuel-related sources of greenhouse gases associated with electricity use from project-related, non-mobile source operational activities would be zero.</p> <p>GHG-2. Conservation of Water. Prior to issuance of any building permit, the Project Applicant and/or Owner shall demonstrate in writing (including receipts or other evidence) that all installed low-flow plumbing fixtures and appliances are low-water use.</p> <p>GHG-3. Solid Waste Reduction. Prior to issuance of a certificate of occupancy for any building, the property manager shall, as part of the standard tenant agreement, require commercial tenants to institute recycling and composting services with a 50 percent reduction target in</p>	

Table ES-1. Summary of Impacts and Mitigation Measures

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>waste disposed. A copy of this agreement shall be sent to the Director of Community Development prior to issuance of the certificate of occupancy.</p> <p>GHG-4. Transportation Demand Management. Prior to issuance of a certificate of occupancy for any building, the Project Applicant and/or Owner shall implement the following measures to reduce vehicle miles traveled resulting from the project. The following measures are designed to influence the transportation choices of employees and serve to enhance the use of alternative transportation modes both on and off the project site through the provision of incentives and subsidies, and other innovative means. A copy of each shall be sent to the Director of Community Development prior to issuance of the certificate of occupancy.</p> <ul style="list-style-type: none"> • Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer an employer-sponsored vanpool/shuttle service to the extent that at least 20 percent of employees are eligible for the program. • Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer an average transit fare subsidy of \$6.00 per employee per day. • Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer a rideshare program to employees to the extent that at least 20 percent of employees are eligible for the program. • Property manager shall, as part of the standard tenant agreement, require commercial tenants to encourage telecommuting and alternative work schedules, such as a nine day/80-hour schedule, four day/40-hour schedule, or part time 	

Table ES-1. Summary of Impacts and Mitigation Measures

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
			<p>telecommuting, to the extent that at least ten percent of employees are eligible for the program.</p> <p>GHG-45. Promotion of Electric and Alternative Fuel Vehicles. Prior to issuance of any building permits, the Project Applicant and/or Owner shall demonstrate in writing and/or plan that six dedicated electric vehicle parking spaces with electric vehicle charging stations have been incorporated into the design of the project to encourage electric vehicle and alternative fuel vehicle use. The parking spaces shall provide a mix of Level 2 and DC Fast Chargers in order to serve a variety of vehicles.</p> <p>GHG-6 Parking Fee. Prior to issuance of any building permit, the Project Applicant and/or Owner shall demonstrate in writing that the project parking lot includes a system to charge for parking on site, such as numbered parking spaces and automated parking pay stations.</p>	
Consistency with Local Plans Adopted for the Purpose of Reducing GHG Emissions	The proposed project could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	PS	Mitigation Measures GHG-1 through GHG-46 above would reduce project GHG emissions to the extent feasible, but would not reduce emissions to the extent that would comply with applicable GHG plans.	SU
3.3 Transportation				
Circulation System Performance	The proposed project could 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,	PS	<p>TRA-1. S. Melrose Drive/Hacienda Drive.</p> <ul style="list-style-type: none"> • Provide signal interconnect on Hacienda Drive between the S. Melrose Drive/Hacienda Drive intersection and the Vista Village Drive/Hacienda Drive intersection. • Provide a third westbound left-turn lane and striping as shown on Figure 3.3-1, Conceptual Transportation Mitigation Measure Plan. • In addition to the above, as part of the development, the project will construct an exclusive 	LS

Table ES-1. Summary of Impacts and Mitigation Measures

Issue	Impact	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
	pedestrian and bicycle paths, and mass transit.		westbound right-turn lane on Hacienda Drive (along the project frontage), at Vista Village Drive.	
Traffic Hazards	The project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LS	None required.	LS
Inadequate Emergency Access	The project would not result in inadequate emergency access.	LS	None required.	LS
Alternative Transportation Facilities	The project would not conflict with applicable policies, plans, or programs, regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	LS	None required.	LS

Notes: LS = Less than Significant Impact; NI = No Impact; PS = Potentially Significant Impact; SU = Significant and Unavoidable

Table ES-2. Summary of Cumulative Impacts and Mitigation Measures

Issue	Geographic Scope of Cumulative Impact Analysis	Significance Before Mitigation	Mitigation Measure(s)	Significance After Mitigation
3.1 Cultural and Tribal Cultural Resources				
Historical Resources	City of Vista	Not Cumulatively Considerable	None required	Not Applicable
Archaeological Resources	San Diego County Region	Cumulatively Considerable	Mitigation Measures CUL-1 through CUL-5	Less than Cumulatively Considerable
Human Remains	San Diego County Region	Cumulatively Considerable	Mitigation Measure CUL-6	Less than Cumulatively Considerable
Tribal Cultural Resources	San Diego County Region	Cumulatively Considerable	Mitigation Measures CUL-1 and CUL-2	Less than Cumulatively Considerable
3.2 Greenhouse Gas Emissions				
Generate GHG Emissions	Global Scale	Cumulatively Considerable	Mitigation Measures GHG-1 through GHG- <u>46</u>	Cumulatively Significant and Unavoidable
Consistency with Local Plans Adopted for the Purpose of Reducing GHG Emissions	Global Scale	Cumulatively Considerable	Mitigation Measures GHG-1 through GHG- <u>46</u>	Cumulatively Significant and Unavoidable
3.3 Transportation				
Circulation System Performance	Study Area Analyzed in Traffic Study	Cumulatively Considerable	Mitigation Measures TRA-1	Less than Cumulatively Considerable
Traffic Hazards	Study Area Analyzed in Traffic Study	Not Cumulatively Considerable	None required	Not Applicable
Inadequate Emergency Access	City of Vista	Not Cumulatively Considerable	None required	Not Applicable
Alternative Transportation Facilities	City of Vista	Not Cumulatively Considerable	None required	Not Applicable

Table ES-3. Comparison of Alternatives – Environmental Impacts

Environmental Topic Area	Proposed Project	Alternative 1: No Project/No Build	Alternative 2: No Project/ Existing Zoning	Alternative 3: Reduced Footprint
Cultural and Tribal Cultural Resources				
Historical Resources	NI	—	—	—
Archaeological Resources	PS	▼	—	▼—
Tribal Cultural Resources	PS	▼	—	▼—
Human Remains	LS	▼	—	▼—
Greenhouse Gas Emissions				
Generation of GHG Emissions	SU	▼	==▼	▼
Consistency with Local Plans Adopted for the Purpose of Reducing GHG Emissions	SU	▼	==▼	▼
Transportation				
Circulation System Performance	PS	▼	▼	▼
Traffic Hazards	LS	==▼	==▼	==▼
Emergency Access	LS	==▼	==▼	==▼
Alternative Transportation Facilities	LS	==▼	==▼	==▼

Notes: GHG = greenhouse gas; NI = No Impact; LS = Less than Significant Impact; PS = Potentially Significant Impact; SU = Significant and Unavoidable Impact

▲ Alternative is likely to result in greater impacts to issue when compared to proposed project.

— Alternative is likely to result in similar impacts to issue when compared to proposed project.

▼ Alternative is likely to result in reduced impacts to issue when compared to proposed project.

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3.2 Greenhouse Gas Emissions

This section describes the existing environmental setting, regulatory framework related to greenhouse gas (GHG) emissions, and evaluates the potential impacts from climate change that may result from the generation of GHG associated with implementation of the proposed Sunroad Commercial Project (project). Harris & Associates prepared ~~the~~ a revised GHG Emissions Analysis (20192020) for the proposed project, which is included as Appendix C. The following information is based on the GHG Analysis unless otherwise referenced.

3.2.1 Environmental Setting

3.2.1.1 Global Climate Change Overview

Climate change refers to any substantial change in measures of climate (such as temperature, precipitation, or wind) lasting for decades or longer. According to the U.S. Environmental Protection Agency (USEPA), the earth's climate has changed many times during the planet's history, including events ranging from ice ages to long periods of warmth. Historically, natural factors such as volcanic eruptions, changes in the earth's orbit, and the amount of energy released from the sun have affected the earth's climate. Some GHGs, such as water vapor, occur naturally and are emitted to the atmosphere through natural processes, while others are emitted through human activities. Since the 1700s, human activities associated with the Industrial Revolution have also changed the composition of the atmosphere and therefore very likely are influencing the earth's climate. Over the past 200 years, the burning of fossil fuels, such as coal and oil, and deforestation has increased CO₂ concentrations in the atmosphere (USEPA 2018).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effects of GHGs, the earth's temperature would be about 34 degrees Celsius cooler (CAT 2007). However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Greenhouse Gases

Carbon dioxide (CO₂) enters the atmosphere through the burning of fossil fuels, solid waste, trees and wood products, and as a result of other chemical reactions such as through the manufacturing of cement. Globally, the largest source of CO₂ emissions is the combustion of fossil fuels in power plants, automobiles, industrial facilities, and other similar sources (USEPA 2018). Methane (CH₄) is emitted from a variety of both natural and human-related sources, including fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management (USEPA 2017). Nitrous oxide (N₂O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste (USEPA 2017). Hydrofluorocarbons (HFCs),

perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) are synthetic, powerful GHGs that are emitted from a variety of industrial processes, and the production of chlorodifluoromethane. Construction or operation of the proposed project would not include any industrial processes, and chlorodifluoromethane has been mostly phased out of use in the United States (UNEP 2012); therefore, these GHGs are not discussed further in this Recirculated Draft Environmental Impact Report (DEIR).

Individual GHGs have varying heat-trapping properties and atmospheric lifetimes. Table 3.2-1 identifies the carbon dioxide equivalent (CO₂e) and atmospheric lifetimes of basic GHGs. The CO₂e is a consistent methodology for comparing GHG emissions because it normalizes various GHG emissions to a consistent measure. Each GHG is compared to CO₂ with respect to its ability to trap infrared radiation, its atmospheric lifetime, and its chemical structure. For example, CH₄ is a GHG that is 28 times more potent than CO₂; therefore, one metric ton (MT) of CH₄ is equal to 28 MTCO₂e.

Table 3.2-1. Global Warming Potentials and Atmospheric Lifetimes of Common GHGs

GHG	Formula	100-Year Global Warming Potential ¹	Atmospheric Lifetime
Carbon dioxide	CO ₂	1	~100
Methane	CH ₄	28	12
Nitrous oxide	N ₂ O	265	121

Source: CARB 2014. Consistent with CalEEMod Version 2016.3.2.

Notes: CH₄ = methane; CO₂ = carbon dioxide; GHG = greenhouse gas; N₂O = nitrous oxide

¹ The warming effects over a 100-year time frame relative to other GHGs.

Carbon Dioxide

A number of specialized industrial production processes and product uses such as mineral production, metal production, and petroleum-based products also produce CO₂ emissions. CO₂ is also removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the biological carbon cycle. As part of the carbon cycle, billions of tons of atmospheric CO₂ are removed from the atmosphere by oceans and growing plants, also known as “sinks,” and are emitted back into the atmosphere annually through respiration, decay, and combustion, also known as “sources.” When in balance, the total CO₂ emissions and removals from the entire carbon cycle are roughly equal. Since the Industrial Revolution in the 1700s, human activities, such as the burning of oil, coal and gas or deforestation, have increased CO₂ concentrations in the atmosphere (USEPA 2018).

Methane

CH₄ is emitted from a variety of both human-related and natural sources. Human-related activities include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. CH₄ is emitted during the production and transport of fossil fuels. CH₄ emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills. It is estimated that 60 percent of global CH₄ emissions are related to human activities. Natural sources of CH₄ include wetlands, gas hydrates, permafrost, termites,

oceans, freshwater bodies, non-wetland soils, and wildfires. Natural processes in soil and chemical reactions in the atmosphere help remove CH₄ from the atmosphere (USEPA 2018).

Nitrous Oxide

N₂O is produced by both natural and human-related sources. N₂O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. Primary human-related sources of N₂O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production. N₂O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. Globally, about 40 percent of total N₂O emissions come from human activities (USEPA 2018).

3.2.1.2 Global, National, Statewide, and Local Greenhouse Gas Inventories

In an effort to evaluate and reduce the potential adverse impacts of climate change, global, national, state, and local organizations have conducted GHG inventories to estimate levels of and trends in GHG emissions and removals. The following summarizes these GHG inventories.

Global

Worldwide anthropogenic GHG emissions in 2010 were approximately 49,000 million metric tons (MMT) CO₂e, including ongoing emissions from industrial and agricultural sources and emissions from land use changes (i.e., deforestation, biomass decay) (IPCC 2014). CO₂ emissions from fossil fuel use and industrial processes accounts for 65 percent of the total emissions of 49,000 MMTCO₂e (which includes land use changes) and all CO₂ emissions are 77 percent of the total GHG emissions. CH₄ emissions account for 16 percent and N₂O emissions for six percent of total GHG emissions (IPCC 2014).

National

The USEPA publication, Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2016, provides a comprehensive emissions inventory of the nation’s primary anthropogenic sources and sinks of GHGs. Total U.S. GHG emissions in 2016 were 6,511.3 MMTCO₂e, a decrease from 2015 by 1.9 percent. Emissions from transportation activities, in aggregate, accounted for the largest portion (28.5 percent) of total U.S. GHG emissions in 2016. Electric power generation accounted for the second largest portion (28.4 percent), while emissions from industry accounted for the third largest portion (21.6 percent) of total U.S. GHG emissions in 2016. Emissions from industry have in general declined over the past decade, due to a number of factors, including structural changes in the U.S. economy (i.e., shifts from a manufacturing-based to a service-based economy), fuel switching, and energy efficiency improvements. The remaining U.S. GHG emissions were contributed by, in order of magnitude, the agriculture, commercial, and residential sectors (USEPA 2018).

Statewide

Total California GHG emissions in 2016 were 429 MMTCO₂e, according to the California Greenhouse Gas Emissions Inventory for 2006 to 2016, which tracks the emissions of seven GHGs for the years 2000 through 2016. During the 2000 to 2016 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14 tons per person to 10.8 tons per person in 2016, a 23 percent decrease. The transportation sector remains the largest source of GHG emissions in the state, accounting for 39 percent of the inventory, and shows a small increase in emissions in 2016. Emissions from the electricity sector (16 percent in 2016) continue to decline due to growing zero-GHG energy generation sources. Emissions from the industrial sector contributed 21 percent to total GHG emissions in 2015 and 2016, the commercial sector contributed five percent, residential sector contributed seven percent, and agriculture contributed eight percent (CARB 2018a).

Local

In 2009, the City of Vista (City) prepared an inventory of community GHG emissions based on its 2005 emissions data. The inventory was prepared in compliance with the guidance in CARB's Scoping Plan to create an emissions reduction goal of 15 percent below "current" levels by 2020, and aided in establishing a baseline of GHG emissions for the preparation of the City's Climate Action Plan (CAP), adopted in 2013. The City completed an update of its CAP in November 2019 and anticipates adoption of the updated CAP in mid-2020; however, it is not yet available. According to the 2005 GHG emissions inventory, the Vista community emitted approximately 547,039 MTCO₂e as a result of activities that took place within the transportation, residential energy use, commercial and industrial energy use, solid waste, and wastewater sectors. The largest contributors of GHG emissions were the transportation (57 percent), commercial/industrial energy use (20 percent), and residential energy use (16 percent) sectors. According to the CAP, under the business-as-usual scenario, Vista's GHG emissions are projected to grow approximately 14 percent above 2005 GHG emissions levels by the year 2020, from 547,039 MTCO₂e to 625,957 MTCO₂e. The City commits in the CAP to reduce its GHG emissions to 464,983 MTCO₂e, which is 15 percent below 2005 levels by 2020, consistent with Assembly Bill (AB) 32.

3.2.1.3 Regional Adverse Effects of Climate Change

As referenced in the City's CAP, the Regional Focus 2050 Working Paper and Technical Assessment (Focus 2050) explored what the San Diego region would be like in 2050 if current climate change trends continue (San Diego Foundation 2008). The range of impacts presented in Focus 2050 are based on projections of climate change on the San Diego region using three climate models and two emissions scenarios drawn from those used by the Intergovernmental Panel on

Climate Change. A summary of the potential adverse effects of climate change on the San Diego region, as projected in Focus 2050, is provided below.

Climate

From observations and model historical simulations, it appears that temperatures began to warm more substantially in the 1970s. Some scientists attribute the change to the response to the effects of GHG accumulation, which began to increase substantially during this time. All of the climate model simulations exhibit warming across San Diego county, ranging from about 1.5 degrees Fahrenheit to 4.5 degrees Fahrenheit, with some differences in the timing and geographic distribution of the changes. The models predict greater warming in the summer than in winter, with surface air temperatures warming from 0.7 degrees Fahrenheit to more than two degrees Fahrenheit over that found in winter. Temperature changes for areas along the coast would be moderated by the influence of the Pacific Ocean, but interior areas, where the greatest population growth would occur, would experience the greatest temperature increase.

The months when San Diego county experiences the most extreme warm temperatures, currently in July and August, will likely begin in June and extend until September. It is estimated that the inland portion of San Diego county may have more than a threefold increase in hot days in 2050. Experts generally conclude that rainfall will continue to vary widely from year to year, leaving San Diego county highly vulnerable to drought.

Sea Level

If current climate change trends continue, rising sea levels will have a major impact on the San Diego region's environment and economy, particularly in coastal areas. When high tide occurs during a large storm, particularly in El Niño winters, flooding will threaten homes, businesses, and hotels in low-lying coastal communities such as Imperial Beach, Coronado, Mission Beach, La Jolla Shores, Del Mar, and Oceanside. Flooding may also impact military, port and airport operations. High surf events will last for more hours, with waves causing even greater coastal erosion and related damage. Rising sea levels will wear away the foundations of sea bluffs and significantly change the county's coastline. Sandy beaches and nearby wetlands serve as barriers to protect coastline developments from high surf. As these areas shrink from more intense wave activity, there may be a greater need for beach sand replenishment. More seawalls and breakwaters may need to be built to defend homes and businesses from coastal flooding. In addition to being extremely costly, these structures will destroy beaches and wetlands that do not have space to shift inland. Wetlands and estuaries could be devastated, leaving beaches exposed to more pollutants that endanger human and marine life.

Water Supply

The San Diego County Water Authority predicts an increase in water demand for San Diego county of around 20 percent, from 648,030 acre-feet/year (the 2005–2010 average) to about 785,685 acre-feet/year in 2035. About 84 percent of this demand is expected to come from imported sources (SDCWA 2010). By 2050, the expected demand will increase to 915,000 acre-feet/year, which is an increase of 41 percent over the 2005–2010 period. By 2050, about 80 percent of the water supply is expected to be imported.

Drought years, which have historically increased water demand by another seven percent, might occur as much as 50 percent more often and be considerably drier. In drought years, parched soil soaks up more surface water and groundwater, increasing the need for imported and other water supplies. At the same time that the county's demand for water would increase, climate change could shrink the Colorado River flow (a major source of imported water for San Diego county) by 20 percent or more. A decline in the Sierra Nevada snowpack, aggravated by increased temperatures, could impact the water flow of many Northern California rivers that serve as primary sources of water to the California Aqueduct, a major source of imported water for the county. San Diego County's water supply plans are likely to be severely challenged by climate change. Even with plans in place to conserve, recycle, and augment our available water, it is estimated San Diego county could face an 18 percent shortfall in water supply by 2050.

Wildfires

Fire occurrence has steadily increased in Southern California, in direct proportion to human population growth as most ignitions are caused by human activities. Most fires start during the summer, when coastal sage and chaparral vegetation have dried to a highly flammable state. Fires that start during the fall, however, burn many more acres because flames are intensified and spread by hot, dry Santa Ana winds. It is not entirely clear from climate change models how Santa Ana conditions will affect San Diego regional fire regimes in the future. Some models predict a decrease in the frequency and intensity of Santa Ana conditions while others predict an increase, particularly during the fire season. If Santa Ana conditions increase significantly earlier in the fire season, this shift could increase the incidence of massive Santa Ana fires, because the winds will begin gusting during the time of year when most fires start. More fires that are frequent would threaten native plant species by not allowing sufficient recovery time before they burn again. This would allow weedy, non-native species, which thrive in post-fire conditions, to multiply. Weedy invaders dry out earlier in the year, catch fire more easily, and burn faster than native plants.

Additionally, if current trends continue, the San Diego region will experience a population increase, with more development and human activities in backcountry areas over the coming decades. As a result of climate change, we can expect higher spring temperatures, scorching summers, drier vegetation, and longer fire seasons. A simultaneous occurrence of all of these

factors will increase the likelihood of more devastating firestorms similar to those that destroyed many homes and lives in unincorporated San Diego county during 2003 and 2007.

Ecosystems

San Diego county beaches, canyons, mountains and deserts support a vast variety of plants and animals, some of which are found nowhere else on the planet. This biodiversity is already under stress from human population growth and land use changes that have broken up and reduced species habitat into fragmented areas. The impacts of climate change will add to the pressures on habitats and the species that live in San Diego county. As a result, the locations where the temperature, moisture, and other environmental conditions are suitable for a particular species will shift. Plant and animal species are generally able to adapt to shifting habitats, but under existing trends, climate change would occur so rapidly that ecological conditions may shift faster than species are able to follow. To survive, some animals and plants will have to move up to 95 miles over the next century to find new habitat or they will face extinction. Drought and unusually warm years have already led to growing insect populations, such as bark beetles, which have attacked and killed drought-stressed trees in San Diego county. With warmer weather, the county's forests will lose even more trees. Ecological changes will cascade, as the loss of one species will challenge the ability of other species up and down the same food chain to survive. Top predators like coyotes may be lost if habitat patches become too small or isolated, and that can lead to an increase in smaller predators that prey on native songbirds.

Public Health

Increased heat, air pollution, wildfires, and infectious disease will cause illness and death in San Diego county, especially among the elderly, children, and the chronically ill. Californians experience the worst air quality in the nation, and San Diego region is currently out of compliance with the federal ozone standard. By 2050, more hot sunny days will increase ozone air pollution levels, which can exacerbate asthma and other respiratory and cardiovascular diseases. Fire-related injuries and death are likely to increase if intense wildfires occur more frequently. Wildfires can also be a significant contributor to air pollution. Wildfire smoke contains numerous toxic and hazardous pollutants that are dangerous to breathe and can worsen lung disease and other respiratory conditions.

Warmer temperatures year-round could lead to growing mosquito populations, increasing the occurrence of West Nile virus in the San Diego region. Hot weather could also bring tropical diseases such as malaria and dengue fever to the region for the first time. In coastal waters, conditions are likely to favor more frequent "red tides" or harmful algal blooms, which can harbor toxic bacteria and other diseases. In 2050, with an aging population and more residents living in areas with extreme-heat conditions and poor air quality, the San Diego region will face intensified public health concerns.

Energy Needs

If current climate change trends continue, warmer temperatures and a growing population will translate into big challenges for the San Diego region's energy supply by 2050. The main impact will be higher demand for electricity as a result of the greater need for summer cooling, especially in inland areas where both regional population growth and temperature increases will be highest. Hotter summers and more frequent, longer and intense heat waves will increase peak demand for electricity, which could result in blackouts and power outages, without adequate planning.

3.2.2 Regulatory Setting

3.2.2.1 Federal

The following section describes the federal regulation relevant to the proposed project's GHG Analysis, the federal Clean Air Act.

Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. USEPA* that CO₂ is an air pollutant, as defined under the Clean Air Act, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO₂, CH₄, N₂O, HFC, PFC, and SF₆) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the U.S. Department of Transportation's National Highway Traffic Safety Administration. The standards require compliance with progressively more stringent GHG emission standards for the 2012 through 2025 vehicle model years.

3.2.2.2 State

The following section summarizes statewide GHG emissions targets relevant to the proposed project's GHG Analysis.

Executive Order S-3-05

On June 1, 2005, California's Governor announced, through Executive Order (EO) S-3-05, the following statewide GHG emission reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels
- By 2020, California shall reduce GHG emissions to 1990 levels
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels

The first California Climate Action Team (CAT) Report to the Governor in 2006 contained recommendations and strategies to help ensure the targets in EO S-3-05 are met (CalEPA 2006). The latest CAT Biennial Report was released in 2010. It expands on the policy-oriented 2006 assessment and provides updated information and scientific findings. The details in the CAT

Biennial Report include development of updated climate and sea-level projections using the latest information and tools available, and evaluation of climate change in the context of broader social changes such as land use changes and demographic shifts (CalEPA 2010).

Assembly Bill 32 – Global Warming Solution Act of 2006

In September 2006, the California Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing GHG emissions in California. GHGs as defined under AB 32 include CO₂, CH₄, N₂O, CFCs, HFCs, PFCs, and SF₆. Under AB 32, the California Air Resources Board (CARB) has the primary responsibility for reducing GHG emissions and continues the CAT to coordinate statewide efforts and promote strategies that can be undertaken by many other California agencies. AB 32 required CARB to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020.

In general, AB 32 directed CARB to do the following:

- Prepare and approve a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of GHGs by 2020, and update the scoping plan every five years
- Maintain and continue reductions in emissions of GHG beyond 2020
- Identify the statewide level of GHG emissions in 1990 to serve as the emissions limit to be achieved by 2020
- Identify and adopt regulations for discrete early actions that could be enforceable on or before January 1, 2010
- Adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit GHG emissions
- Convene an Environmental Justice Advisory Committee to advise the Board in developing and updating the scoping plan and any other pertinent matter in implementing AB 32
- Appoint an Economic and Technology Advancement Advisory Committee to provide recommendations for technologies, research and GHG emission reduction measures

Regarding the first bullet, the first update to the scoping plan was adopted in May 2014. The first update identifies opportunities for GHG reductions using existing and new funding sources, defines CARB's climate change priorities for the next five years, and establishes the plan for meeting the long-term goals of EO S-3-05, described below. The first update highlights California's progress toward meeting the 2020 GHG emission reduction goals defined in the initial scoping plan and evaluates how GHG reduction strategies may be aligned with other state priorities for water, waste, natural resources, clean energy, transportation, and land use. According to the first update, California is on track to meet the 2020 GHG emission reduction goal. While the first update discussed setting a mid-term target, the plan did not set a quantifiable target toward meeting the 2050 goal.

The 2017 Climate Change Scoping Plan Update was finalized in November 2017 and adopted in December 2017. This most recent scoping plan lays out the framework for achieving the 2030 reductions as established in EO B-30-15 and Senate Bill (SB) 32, described below. The proposed 2017 Climate Change Scoping Plan Update identifies GHG reductions by emissions sector to achieve a statewide emissions level that is 40 percent below 1990 levels by 2030. CARB recommends statewide targets of no more than six metric tons CO₂e per capita by 2030 and no more than two metric tons CO₂e per capita by 2050. However, CARB specifically states that these goals are appropriate for the plan level (city, county, subregional, or regional level, as appropriate), but not for specific individual projects because they include all emissions sectors in the state.

The 2017 Climate Change Scoping Plan Update also includes recommendations for local governments when considering discretionary approvals and entitlements of individual projects through the California Environmental Quality Act (CEQA). Specifically, CARB recommends that projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize GHG emissions, and that achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development. When designing mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled, and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits locally.

Senate Bill 32

Effective January 1, 2017, SB 32 (Stats. 2016, ch. 249) added a new Section 38566 to the California Health and Safety Code. It provides that “in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by [Division 25.5 of the Health and Safety Code], [CARB] shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030.” In other words, SB 32 requires California, by the year 2030, to reduce its statewide GHG emissions so that they are 40 percent below those that occurred in 1990.

Senate Bill 350

In the 2015 legislative session, the Legislature passed SB 350 (Stats. 2015, ch. 547). This legislation added language to the Public Utilities Code that essentially puts into statute the 2050 GHG reduction target already identified in EO S-3-05, albeit in the limited context of new state policies (1) increasing the overall share of electricity that must be produced through renewable energy sources and (2) directing certain state agencies to begin planning for the widespread electrification of the California vehicle fleet. Section 740.12(a)(1)(D) of the Public Utilities Code now states that “the Legislature finds and declares [that] . . . reducing emissions of [GHGs] to 40

percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050 will require widespread transportation electrification.” Furthermore, Section 740.12(b) now states that the California Public Utilities Commission, in consultation with CARB and the California Energy Commission, must “direct electrical corporations to file applications for programs and investments to accelerate widespread transportation electrification to reduce dependence on petroleum, meet air quality standards, . . . and reduce emissions of greenhouse gases to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050.”

Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve “the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State.” On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California’s enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2018b).

California Code of Regulations, Title 24, Part 6

California Code of Regulations, Title 24, Part 6, California’s Energy Efficiency Standards for Residential and Nonresidential Buildings, was first established in 1978 in response to a legislative mandate to reduce California’s energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. The Title 24 standards are updated periodically to allow the consideration and possible incorporation of new energy efficiency technologies and methods. The latest update to the Title 24 standards occurred in 2016 and went into effect January 1, 2017. The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential Standards include improvements for attics, walls, water heating, and lighting. The standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards—the energy budgets—that vary by climate zone (of which there are 16 in California) and building type; thus, the standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach.

California Green Building Standards Code

The California Green Building Standards Code (24 CCR Part 11) is a code with mandatory requirements for new residential and nonresidential buildings throughout California. The code is Part 11 of the California Building Standards Code in Title 24 of the California Code of Regulations (CBSC 2016). The current 2016 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings went into effect on January 1, 2017.

The development of the CALGreen Code is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction.

The CALGreen Code contains requirements for stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options that allow the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, such as heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

Assembly Bill 341

In 2011, the state legislature enacted AB 341 (California Public Resource Code, Section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 also requires the provision of recycling service to commercial and residential facilities that generate four cubic yards or more of solid waste per week. AB 341 does not include a recycling target for local municipalities.

Executive Order S-01-07

EO S-01-07 was enacted by the Governor on January 18, 2007, and mandates that (1) a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least ten percent by 2020 and (2) a Low Carbon Fuel Standard for transportation fuels be established for California. According to the San Diego County Updated Greenhouse Gas Inventory (EPIC 2013), the effects of the Low Carbon Fuel Standard would be a ten percent reduction in GHG emissions from fuel use by 2020. On April 23, 2009, CARB adopted regulations to implement the Low Carbon Fuel Standard.

3.2.2.3 Local

The following section summarizes the City's plans and guidance relevant to the proposed project's GHG Analysis.

City of Vista Climate Action Plan

The City adopted a CAP in 2013 to reduce GHG emissions in the city in order to comply with AB 32 and SB 97. The CAP provides an estimate of business-as-usual¹ emissions by the year 2020, and a projection of the amount of reductions needed to meet the City's requirement to reduce GHG emissions to 1990 levels. The CAP estimates that a reduction of 27,187 MTCO_{2e} will be required. The CAP adopts climate action measures designed to provide the necessary reductions to meet the 2020 target, including measures designed to reduce vehicle miles traveled, increase tree planting, and resources to encourage small-scale renewable energy installation. The City updated its CAP in November 2019 and anticipates a mid-2020 adoption date.

City of Vista Interim Guidance

In 2016, the City developed interim guidance for evaluating GHG emissions from individual development projects within the city subject to CEQA in light of the 2015 Newhall Ranch project California Supreme Court Ruling.² The purpose of the City's Interim Policy on Greenhouse Gas Emissions Significance Thresholds for CEQA (2016 Interim GHG Policy) (April 6, 2016) is to provide guidance for a consistent and objective evaluation of significant climate change impacts in compliance with AB 32 until the CAP ~~is adopted in mid-2020; can be updated to include such evaluation criteria.~~ The interim guidance identifies a numerical "Bright Line" threshold based on a review of projects within Vista. It was determined that a level of 1,185 MTCO_{2e} would capture 90 percent of the city's GHG emissions that are attributable to development projects. To determine if a project is making substantial progress toward meeting 2020 GHG emissions targets set forth in the CAP and AB 32, the total project GHG emissions in its first fully operational year must be less than the Bright Line threshold. If project emissions are below the threshold, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. If the project is estimated to provide annual emissions that are above 1,185 MTCO_{2e} per year, but at or below an Efficiency Threshold³ of 3.3 MTCO_{2e} per service population, that project would also result in less than significant impacts.

3.2.3 Impact Significance Criteria

Given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG

¹ The "business-as-usual" scenario provides a forecast of GHG emissions in the year 2020 if consumption trends and behavior continue as they were in 2005, absent any new federal, state, regional, or local policies or actions to reduce emissions.

² Center for Biological Diversity v. California Department of Fish and Wildlife (11/30/2015, Case No. S217763).

³ Efficiency Thresholds apply necessary emissions reductions on a per-capita basis. This Efficiency Threshold represents the emissions per member of the service population (residents and employees) that, if achieved, would reduce the City's GHG emissions to below its reduction goals.

emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts.

According to Appendix G of the State CEQA Guidelines, a project would be considered to have a significant climate change impact if it would:

- Generate GHG either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.
- ~~Exacerbate exposure to adverse effects of climate change.~~

The determination of significance is governed by State CEQA Guidelines, Section 15064.4, which states that “the determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to . . . [use a quantitative model or qualitative model].” In turn, State CEQA Guidelines, Section 15064.4(b), clarifies that a lead agency should consider “whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.” Therefore, consistent with State CEQA Guidelines, Section 15064.4, the GHG Analysis for the proposed project appropriately relies upon a threshold based on the exercise of careful judgment and believed to be appropriate in the context of this particular project.

The City’s interim guidance for evaluating individual development projects within Vista is the applicable threshold for evaluating whether the proposed project would generate a level of GHG emissions that may have a significant impact on the environment. This threshold is appropriate because it is designed to evaluate whether a project would make substantial progress toward achieving the emissions reduction goals of AB 32 and the CAP. Following the methods described by the California Air Pollution Control Officers Association in their report CEQA & Climate Change, dated January 2008, the City conducted a review of projects within Vista to determine a 90 percent capture rate (i.e., the screening level of emissions that would capture and require GHG-reducing features for 90 percent of GHG emissions from anticipated development). As identified in the City’s 2016 Interim GHG Policy, it was determined that a level of 1,185 MTCO_{2e} would capture 90 percent of the city’s emissions that are attributable to development projects (City of Vista 2016a).

In accordance with the City’s guidance, if the total project annual GHG emissions are less than 1,185 MTCO_{2e}, then the project would not generate GHG emissions that would have a significant impact on the environment. If the project is estimated to provide annual emissions that are above 1,185 MTCO_{2e} per year, but at or below an Efficiency Threshold of 3.3 MTCO_{2e} per service population,

that project would result in less than significant impacts. Service population is defined by population and employees of the proposed development. If the project is estimated to produce GHG emissions over the City's Efficiency Threshold, the impact is considered significant.

The plans, policies, or regulations ~~adopted~~ for the purpose of reducing GHG emissions that are applicable to the proposed project include the City's interim guidance and the adopted CAP, as well as AB 32 and SB 32.

3.2.4 Method of Analysis

The proposed project's GHG emissions were calculated using the California Emission Estimator Model (CalEEMod), Version 2016.3.2. The emission sources include construction (off-road vehicles), mobile (on-road vehicles), area (landscape maintenance equipment), energy, water and wastewater, and solid waste sources. GHG emissions are estimated in terms of total MTCO_{2e}.

Construction Emissions

Emissions from the construction phase of the proposed project are assessed using CalEEMod. Construction of the proposed project is assumed to begin in June 2019 and last for approximately one year. The analysis assessed annual emissions from individual construction activities, including site preparation (one month), grading (two weeks), building construction (ten months), paving (one month), and architectural coating (one month). It is assumed that no overlap would occur between construction phases. The CalEEMod default construction equipment and vehicle trips are assumed for each construction phase. Soil import of 2,200 cubic yards is anticipated. A complete listing of the assumptions used in the analysis and model output is provided in Appendix C of their Recirculated DEIR. Construction emissions were amortized over 30 years and added to operational emissions (SCAQMD 2008).

Operational Emissions

Operational emissions were also estimated using CalEEMod. The model estimates emissions from vehicle and stationary sources of pollutants. CalEEMod defaults for trip length, distribution, and purpose were used. Trip generation rates were obtained from the Transportation Impact Analysis – Sunroad Restaurants (Appendix D), which estimated that the project would generate 6,638 total primary vehicle trips from all proposed land uses. Primary trips are new trips on the street system that occur because a development is built, and therefore reflect the project's net increase in vehicle emissions. Trip lengths were obtained for each land use type from San Diego Association of Governments estimates (SANDAG 2002). The CalEEMod energy emissions intensities for San Diego Gas & Electric were modified to reflect that 43 percent of energy provided to customers in 2016 by San Diego Gas & Electric (2018) was from renewable sources. The Project Applicant anticipates that development on Pad 2 will exceed Title 24 energy standards by nine percent, and development on Pad 4 will exceed Title 24 by 12 percent (Jones, pers. comm. 2018). These building

pads would both include retail and restaurant uses. Modeling assumes that the remaining development would meet but not exceed Title 24 standards. Total outdoor water use is estimated to be 906,675 gallons per year (SGPA 2018). CalEEMod defaults for indoor water use, natural gas, and solid waste are assumed for all land uses, with the exception of water use from the car wash, described below. All modeling output files are provided in Appendix C of the ~~the~~ Recirculated DEIR.

CalEEMod does not include a default land use input for a car wash use. The General Light Industrial land use was selected to represent the energy use and solid waste disposal from the car wash because it reflects use of mechanical equipment. Water use is estimated based on information provided by the Project Applicant and industry publications. The proposed car wash is anticipated to use approximately 15–17 gallons of water per car and would use recycled water. This analysis conservatively assumes 17 gallons per car. The transportation impact analysis estimates 900 one-way vehicle trips associated with the car wash, or 450 visitors. It is assumed that ten percent of these trips would be employee trips, and the remaining visiting vehicles (405 vehicles) would receive a car wash, resulting in a water use of 2.513 million gallons per year. Based on an industry report, approximately 75 percent of water used in each car wash may be recycled water (Auto Laundry News 2013). This analysis conservatively assumes that only 60 percent of water in each wash would be recycled to account for water that is lost and not recycled. As such total potable water use required for the car wash would be approximately one million gallons per year. This estimate is also conservative because it assumes that the car wash would be in operation every day of the year.

3.2.5 Project Impacts and Mitigation

This section evaluates potential impacts of the proposed project related to the generation of GHG emissions.

3.2.5.1 Issue 1: Generate GHG Emissions

Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Analysis

Construction Emissions

GHG emissions would be associated with the construction phases of the project through use of heavy equipment, truck trips, and vehicle trips by the construction crew commuting to the project site. Emissions of GHGs related to the construction of the project would be temporary. Estimated Construction Emissions by phase are provided in Table 3.2-2. As shown, total GHG emissions associated with construction would be approximately 399 MTCO_{2e} for the duration of construction. Amortized construction activities would contribute 13 MTCO_{2e} emissions per year for 30 years.

Table 3.2-2. Estimated Construction Emissions

Construction Phase	CO ₂ e Emissions (metric tons)
Site Preparation	36
Grading	25
Building Construction	317
Paving	18
Architectural Coating	3
Total Construction Emissions	399
<i>Amortized Construction Emissions</i>	13

Source: CalEEMod, Version 2016.3.2.

Notes: CO₂e = carbon dioxide equivalent

Operational Emissions

Table 3.2-3 summarizes the estimated annual emissions from operation of the project. These include GHG emissions associated with vehicles, buildings (natural gas, purchased electricity), water consumption (energy embodied in potable water), solid waste management (including transport and landfill gas generation), and area sources (landscape equipment).

Table 3.2-3. Estimated Annual Operational Emissions

Emissions Source	CO ₂ e Emissions (metric tons)
Vehicle Emissions	2,123
Electricity	138
Natural Gas	132
Solid Waste	85
Water Use	25
Area Sources	<1
Amortized Construction Emissions	13
Total Annual Emissions	2,517

Source: CalEEMod, Version 2016.3.2.

Notes: CO₂e = carbon dioxide equivalent

As shown in Table 3.2-3, the total CO₂e emissions from the project would be approximately 2,517 metric tons. The net emissions increase associated with the project exceeds the City's Bright Line threshold of 1,185 metric tons of CO₂e and would therefore be subject to the City's Efficiency Threshold of 3.3 MTCO₂e per year per service population.

Service population is defined as the number of residents plus the number of employees supported by a project. The proposed project would not support residents. The number of jobs that could be supported by the proposed project is based on data regarding the typical square footage of commercial floor space required per employee for various commercial land use types published by the San Luis Obispo County Air Pollution Control District (SLO County APCD 2012). The San Luis Obispo County Air Pollution Control District GHG Thresholds and Supporting Evidence

handbook serves as a general guide for consultants on quantifying project GHG emission impacts. Absent similar, local data for Vista or San Diego county, the jobs per square footage information published by San Luis Obispo County Air Pollution Control District provides the most relevant data published by a public agency for the purposes of reducing GHG and, therefore, is consistent with the State CEQA Guidelines, Section 15064.4. The number of jobs supported by the proposed project is summarized in Table 3.2-4.

Table 3.2-4. Proposed Project Service Population

Land Use	Employees per 1,000 SF	Project 1,000 SF	Project Service Population
Fast-Food Restaurant with Drive-Through	6.22	13.74	85
Retail ¹	2.39	5.58	13
Car Wash ²	2.22	4.2	9
Project Service Population			107

Sources: San Luis Obispo County APCD 2012.

Notes: SF = square feet

¹ Strip Mall land use type was determined to be most similar

² Gasoline/Service Station was determined to be most similar.

Assuming a service population of 107, the proposed project would have a GHG efficiency of 23.5 MTCO_{2e} per year per service population. Therefore, the proposed project would exceed the significance criteria and would result in a significant GHG impact.

Significance of Impact

The proposed project would exceed the City's Bright Line and Efficiency Thresholds. Therefore, it would result in a significant impact related to GHG emissions.

Mitigation Measures

Assuming a service population of 107, annual operational GHG emissions from the proposed project would need to be reduced to 353 MTCO_{2e} or less to be considered less than significant under the City's Efficiency Threshold. However, this is well below the City's screening level of 1,185 MTCO_{2e}. Therefore, requiring the project to meet the Efficiency Threshold rather than the Bright Line threshold would be overly conservative and commit the project to reductions beyond its fair share. As previously stated, projects that result in annual emissions of 1,185 MTCO_{2e} or less have been determined to result in less than significant impacts by the City. As such, the proposed project emissions would need to be reduced to below 1,185 MTCO_{2e} per year to be considered less than significant.

In the 2017 Climate Change Scoping Plan Update, CARB recommends that individual projects demonstrate consistency with AB 32 and SB 32 by showing that they have implemented all feasible measures to reduce GHG emissions (CARB 2017). As such, this analysis has considered

a range of possible measures to reduce GHG emissions, and incorporated those that could feasibly be implemented into mitigation measures. All measures from the City's CAP were considered as potential mitigation for the project, as well as the measures recommended in the CAPCOA report, Quantifying Greenhouse Gas Mitigation Measures (2010). Note that while the City's CAP was used as a source for potential GHG reduction measures, the CAP does not require individual development projects to implement the GHG reduction measures found within it. As outlined in Chapter 4, Implementation and Monitoring, of the City's CAP, the implementation plan outlines responsibilities and actions for various City departments but does not include specific requirements for future development. Mitigation Measures GHG-1 through GHG-46 would reduce the project's GHG emissions impact. These measures are followed ~~in Section 3.2.5.12,~~ by a description of GHG-reducing measures that were considered for the proposed project but rejected as infeasible.

Table 3.2-5 summarizes the GHG emissions reduction that is calculated to result from each mitigation measure. Table 3.2-6 summarizes the project's annual GHG emissions with implementation of these measures. As shown in Table 3.2-6, with mitigation the proposed project would generate an estimated 2,451,044 MTCO₂e annually, and would continue to exceed the City's screening level of 1,185 MTCO₂e.

GHG-1 Zero Net Energy-Reducing Features. Prior to the issuance of any building permit, the Project Applicant and/or Owner shall demonstrate in writing to the City of Vista's Community Development Director that the project has been designed ~~and shall be constructed to include, at a minimum, the following features to reduce energy demand~~ achieve zero net energy, as defined by the California Energy Commission in its 2015 Integrated Energy Policy Report, or otherwise achieve an equivalent level of energy efficiency, renewable energy generation or greenhouse gas emissions savings. The following measures ~~may shall~~ be included to demonstrate the project's ~~achievement of zero net~~ commitment to energy reduction:

- Install programmable thermostats in commercial spaces
- Use electric landscaping equipment to achieve a reduction in ~~non-space/water heating residential~~ natural gas use
- Provide heating, ventilation, and air conditioning commissioning and verification of energy savings during project design phase ~~Obtain third party heating, ventilation, and air conditioning commissioning and verification of energy savings~~
- Install high-efficiency area lighting
- Limit outdoor lighting
- Maximize interior daylight
- ~~Install rooftop solar photovoltaic systems to the extent required to offset the project's remaining electricity demand with on-site solar renewable energy~~

~~Through incorporation of zero-energy technology into the project, as prescribed by a qualified energy efficiency and design consultant, fossil fuel-related sources of greenhouse gases associated with electricity use from project-related, non-mobile source operational activities would be zero~~

GHG-2 Conservation of Water. Prior to issuance of any building permit, the Project Applicant and/or Owner shall demonstrate in writing (including receipts or other evidence) that all installed low-flow plumbing fixtures and appliances are low-water use.

GHG-3 Solid Waste Reduction. Prior to issuance of a certificate of occupancy for any building, the property manager shall, as part of the standard tenant agreement, require commercial tenants to institute recycling and composting services with a 50 percent reduction target in waste disposed. A copy of this agreement shall be sent to the Director of Community Development prior to issuance of the certificate of occupancy.

~~**GHG-4 Transportation Demand Management.** Prior to issuance of a certificate of occupancy for any building, the Project Applicant and/or Owner shall implement the following measures to reduce vehicle miles traveled resulting from the project. The following measures are designed to influence the transportation choices of employees and serve to enhance the use of alternative transportation modes both on and off the project site through the provision of incentives and subsidies, and other innovative means. A copy of each shall be sent to the Director of Community Development prior to issuance of the certificate of occupancy.~~

- ~~• Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer an employer sponsored vanpool/shuttle service to the extent that at least 20 percent of employees are eligible for the program.~~
- ~~• Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer an average transit fare subsidy of \$6.00 per employee per day.~~
- ~~• Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer a rideshare program to employees to the extent that at least 20 percent of employees are eligible for the program.~~
- ~~• Property manager shall, as part of the standard tenant agreement, require commercial tenants to encourage telecommuting and alternative work schedules, such as a nine-day/80-hour schedule, four-day/40-hour schedule, or part time telecommuting, to the extent that at least ten percent of employees are eligible for the program.~~

GHG-45 Promotion of Electric and Alternative Fuel Vehicles. Prior to issuance of any building permits, the Project Applicant and/or Owner shall demonstrate in writing and/or plan that six dedicated electric vehicle parking spaces with electric vehicle charging stations have been incorporated into the design of the project to encourage electric vehicle and

alternative fuel vehicle use. ~~The parking spaces shall provide a mix of Level 2 and DC Fast Chargers in order to serve a variety of vehicles.~~

GHG-6 ~~Parking Fee.~~ ~~Prior to issuance of any building permit, the Project Applicant and/or Owner shall demonstrate in writing that the project parking lot includes a system to charge for parking on site, such as numbered parking spaces and automated parking pay stations.~~

Table 3.2-5. Calculated Mitigation GHG Emissions Reductions

Emissions Source	CO ₂ e Emissions Reduction (metric tons)
GHG-1 Zero Net Energy-Reducing Features	438
GHG-2 Conservation of Water	5
GHG-3 Solid Waste Reduction	42
GHG-4 Transportation Demand Management and GHG-6 Parking Fee	272
GHG-4 5 Promotion of Electric and Alternative Fuel Vehicles	16
Total Annual Emissions Reduction	47366

Source: CalEEMod, Version 2016.3.2. Electric vehicle charging stations reduction based on calculation methodology provided by Energy Policy Initiatives Center (Nilmini Silva-Send, PhD, Assistant Director/Adjunct Professor, Energy Policy Initiatives Center; Co-Principal Investigator Climate Education Partners, University of San Diego School of Law, Email to Greg Wade, City Manager, City of Solana Beach, April 11, 2018.)

Notes: CO₂e = carbon dioxide equivalent; GHG = greenhouse gas

Table 3.2-6. Estimated Mitigated Annual Operational Emissions

Emissions Source	CO ₂ e Emissions (metric tons)
Vehicle Emissions	2,1074,835 ¹
Electricity	1350
Natural Gas	132
Solid Waste	43
Water Use	20
Area Sources	<1
Amortized Construction Emissions	13
Total Annual Emissions	2,451044

Source: CalEEMod, Version 2016.3.2

Notes: CO₂e = carbon dioxide equivalent

¹ Assumes 16 MTCO₂e reduction from provision of six electric vehicle charging stations, based on calculation methodology provided by Energy Policy Initiatives Center (Nilmini Silva-Send, PhD, Assistant Director/Adjunct Professor, Energy Policy Initiatives Center; Co-Principal Investigator Climate Education Partners, University of San Diego School of Law, Email to Greg Wade, City Manager, City of Solana Beach, April 11, 2018).

Mitigation Measures Considered but Rejected

As previously described, this analysis has considered a range of possible measures to reduce GHG, and incorporated those that could feasibly be implemented into mitigation measures. All measures from the City's CAP (2013) and the measures recommended in CAPCOA's Quantifying Greenhouse Gas Mitigation Measures (CAPCOA 2010) were considered as potential mitigation for the project. The following CAP measures were considered for the proposed project:

- **Implementation Action M-2.1.** Identify and secure additional funding to replace incandescent and mercury vapor street and traffic signal lights with LED, or other energy efficient lamps.
- **Implementation Action M-2.2.** Identify and secure additional funding to replace inefficient outdoor lights at City buildings and facilities as identified in the Vista Energy Roadmap.
- **Implementation Action M-3.1.** Identify cost-effective renewable energy opportunities for additional City properties and apply for federal, state, and utility grants and other funding opportunities when they become available.
- **Implementation Action M-5.1.** Identify City-owned or -operated facilities that need recycling receptacles, such as parks and recreational facilities. Install receptacles at appropriate locations and post signs to encourage recycling at these locations.
- **Implementation Action T-1.1.** Continue to pursue public and private funding to expand and link the City's bicycle and pedestrian network in accordance with the General Plan 2030 Circulation Element.
- **Implementation Action T-2.1.** Coordinate with North County Transit District to continue to expand local rail and bus service to and within Vista.

Implementation Actions M-2.1, M-2.2, M-3.1, M-5.1, and T-1.1 in the City's CAP (2013) were ultimately rejected because these actions have been implemented, or funding has already been secured to implement these measures. Implementation Action T-2.1 was rejected because transit operations in the city are under the jurisdiction of the North County Transit District and are outside of the control of the City.

In addition, the following measures recommended in CAPCOA's Quantifying Greenhouse Gas Mitigation Measures (CAPCOA 2010) were considered for the project:

- **Measure AE-2.** Establish Onsite Renewable Energy Systems – Solar Power
- **Measure PDT-2.** Unbundle Parking Costs from Property Cost
- **Measure TRT-3.** Provide Ride-Sharing Programs
- **Measure TRT-4.** Implement Subsidized or Discounted Transit Program
- **Measure TRT-6.** Encourage Telecommuting and Alternative Work Schedules
- **Measure TRT-11.** Provide Employer-Sponsored Vanpool/Shuttle

Measure AE-2 was rejected because it was determined by the Project Architect and HMT Electric, the project's electrical professional commercial contractor, that inadequate rooftop space would be available to provide the necessary electricity generation to offset project use (Gordon 2020). The minimum roof area necessary to accommodate the required panels to meet projected energy demand is 16,544 square feet; however, the potentially usable roof area of the five buildings combined is approximately 6,000 square feet. Of that total area, over 90 percent (5,520 square feet) would be

located on restaurant rooftops. Photovoltaic module function is compromised on rooftops used for restaurant operations in two ways: (1) the toxic nature of the smoke and grease exhaust impairs the solar collection effectiveness, and (2) the toxins reduce the rated service life of the equipment. Therefore, solar photovoltaic panels were determined to be incompatible with the proposed project (Gordon 2020).

Measure PDT-2 was rejected because the site does not accommodate the stacking or turnarounds necessary for regulated parking mechanisms. Further, no other retail centers in the city require paid parking, and the City does not intend to require paid parking for commercial and retail centers. Paid parking at only one retail center would put the property owner at an unfair commercial disadvantage and would result in diverted traffic that could result in longer vehicle trip lengths (Gordon 2020).

Finally, Measures TRT-3, TRT-4, TRT-6, and TRT-11, which are Transportation Demand Management strategies, were rejected because the project is designed to accommodate several unrelated retail tenants. One of the primary goals of implementing Transportation Demand Management strategies is to reduce peak-period congestion by promoting sustainable modes such as public transit, walking, and biking. As such, Transportation Demand Management strategies focus on identifying alternatives to single-occupancy vehicle use during commuting hours (CAPCOA 2010). The anticipated mix of uses includes fast-food chains, each with their own independent operating requirements; a car wash; and retail tenants. The nature of each business is unlike a commercial office building, which would likely have most employees working full-time positions during typical business hours (9:00 a.m. to 5:00 p.m.) and commuting during the AM and PM peak periods to and from work. Instead, the proposed tenants would have employees working various shifts, including staggered and overlapping shifts, throughout the day. At no time would there be a critical mass of employees from a single employer arriving or departing at the same time to make ride-sharing or shuttle programs feasible (Gordon 2020). Work would typically need to be performed on site and at specific hours and could not accommodate telecommuting or alternative schedules. Additionally, it is anticipated that businesses occupying the site would be chain stores or restaurants, and individual site managers or franchise owners may not have control over employee benefits, such as transit subsidies. Therefore, it is technically infeasible for an off-site property manager to implement and enforce these requirements.

Additionally, off-site carbon offsets were considered for the project to offset the remaining reduction required to reduce project emissions to the City's screening level. The City has considered the applicability of the use of offsets outside of the city to meet local GHG reduction goals, and has concluded that purchase of offsets outside of the region would not aid the City in meeting its CAP reduction goals. A San Diego County Superior Court decision has also indicated that these offsets may be inappropriate for mitigation of impacts under CEQA.⁴

⁴ Golden Door Properties v. County of San Diego. Case No. 2018-13324. Filed December 24, 2018. The case is currently on appeal.

Significance After Mitigation

With implementation of feasible mitigation measures, project emissions would continue to be significant and unavoidable.

3.2.5.2 Issue 2: Consistency with Local Plans Adopted for the Purpose of Reducing GHG Emissions

Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis

The plans, policies, or regulations adopted for the purpose of reducing GHG emissions that are applicable to the proposed project include the City's interim guidance and CAP, as well as the long-term statewide emissions reduction goals.

The City's CAP (2013) is the applicable plan adopted for the purpose of reducing GHG emissions. Vista's Municipal Code and state regulations codify compliance with some CAP measures. As demonstrated in Table 3.2-7, the project would comply with the CAP measures that apply to new land development.

Table 3.2-7. Climate Action Plan Measure Consistency

Climate Action Plan Measure	Project Consistency
Measure E-1. Energy Efficiency Building Standards Ensure that new development complies with the energy efficiency and green building standards identified in Title 24 of the California Code of Regulations.	The proposed project is required by law to comply with Title 24 regulations. In addition, it is anticipated that development on Pad 2 will exceed Title 24 energy standards by nine percent, and development on Pad 4 will exceed Title 24 by 12 percent.
Measure T-4. Smart Growth Promote sustainable and smart growth land use patterns and development regulations and guidelines.	The proposed project would provide infill development by redeveloping a site in close proximity to existing development, pedestrian and bicycle facilities, and transit routes.
Measure S-1. Expanded Recycling Create a mandatory solid waste recycling program for multi-family residences and commercial operations.	The proposed project would make recycling services available to tenants, in compliance with AB 341.
Measure S-2. Construction and Demolition Debris Diversion Require the redirection of at least 50 percent of the total construction and demolition debris generated by a project via reuse or recycling.	The proposed project would comply with Chapter 13.17 of the City of Vista's Municipal Code, which codifies this measure.

Source: City of Vista 2013².

Notes: AB = Assembly Bill

As shown in Table 3.2-7, the project would be consistent with the measures of the local plan, policy, or regulation adopted for the purpose of reducing GHG emissions. However, because the project's emissions would exceed the City's emissions threshold for compliance with its emissions

reduction goals, the project would potentially conflict with the goals of the City's CAP. This would result in a significant impact.

As described in Section 3.2.2.2, State, EO B-30-15 established a statewide emissions reduction target of 40 percent below 1990 levels by 2030, which was codified by SB 32. EO S-3-05 established a statewide emissions reduction target of 80 percent below 1990 levels by 2050. According to the most recent data included in the 2017 Climate Change Scoping Plan Update, the state is on track to achieve the 2020 target.

It can be difficult to quantitatively forecast future GHG emissions associated with the project, given the uncertainty in future state and federal policies, such as Title 24 energy efficiency regulations. However, in the interest of full disclosure under CEQA, an attempt has been made to estimate the project's annual GHG emissions in the years 2030 and 2050. These estimates take into account: (1) additional reductions in vehicle GHG emissions due to Advanced Clean Cars and increased percentage of electric and low-emission vehicles in the fleet and (2) implementation of the 50 percent Renewable Portfolio Standard. Table 3.2-8 presents the estimated GHG emissions for 2030 and 2050 with these measures in place.

Table 3.2-8. Estimated Future Greenhouse Gas Emissions

Emissions Source or Reduction	Annual Emissions (MTCO₂e) Horizon Year 2030	Annual Emissions (MTCO₂e) Horizon Year 2050
Vehicle Emissions	1,636	1,562
Electricity	121	121
Natural Gas	132	132
Solid Waste	85	85
Water Use	23	23
Area Sources	<1	<1
Amortized Construction Emissions	13	13
Annual Operational Emissions with Project Design Features	2,010	1,936
<i>Emissions per Year per Service Population</i>	<i>18.8</i>	<i>18.1</i>

Source: CalEEMod 2016.3.2. See Appendix C for model output.

Notes: MTCO₂e = metric tons of carbon dioxide equivalent

These emissions would likely be reduced further than shown in Table 3.2-8 due to implementation of additional GHG reduction measures and technological advances that cannot be quantified with reasonable certainty at this time. For example, it is likely that the state will increase the Renewable Portfolio Standard targets. The estimated future GHG emissions in Table 3.2-8 demonstrate that the project's emissions would likely continue to decrease due to reasonably foreseeable reductions in vehicular emissions attributable to existing regulatory standards. However, the project's future emissions projections would continue to exceed the City's threshold for significance for 2020 impacts. Because the project's future emissions would not meet the CityVista's short-term targets,

which are less ambitious than the state's long-term targets, it is reasonable to assume that the project would potentially interfere with implementation of the 2030 or 2050 GHG reduction goals. This impact would be significant.

Significance of Impact

Because the project's emissions would exceed the emissions threshold for compliance with the City's emissions reduction goals, the project would potentially conflict with the goals of the ~~Vista's~~ City's CAP (2013), and may be seen to exceed its fair share in achieving the state's reduction target. This impact would be significant.

Mitigation Measures

See the previous Mitigation Measures GHG-1 through GHG-~~46~~.

Significance After Mitigation

Implementation of Mitigation Measures GHG-1 through GHG-~~46~~ would reduce project GHG emissions to the extent feasible but would not reduce emissions to the extent that would comply with applicable GHG plans. As described previously, additional feasible mitigation measures are not available to reduce project emissions. This impact would remain significant and unavoidable.

3.2.6 Cumulative Impacts

As discussed in Section 3.2.3, Impact Significance Criteria, given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. The City's Bright Line and Efficiency Thresholds identified in its 2016 Interim GHG Policy (City of Vista 2016) are intended to require individual projects to contribute their fair share of GHG reductions to meet local and statewide cumulative GHG reduction goals. Thus, the analysis in Section 3.2.5.1 that compares the project's direct GHG emissions to the City's threshold for significance addresses the project's potential cumulative impact.

As summarized in Section 3.2.5.1, with the incorporation of mitigation, construction and operation of the proposed project would generate an estimated 2,451 MTCO₂e annually~~implementation of the proposed project would result in GHG emissions of 2,517 MTCO₂e~~, which would exceed both the City's Bright Line and Efficiency Thresholds identified in its 2016 Interim GHG Policy (City of Vista 2016). Therefore, the proposed project would result in a cumulatively considerable contribution to a potentially significant cumulative impact with respect to GHG emissions and climate change.

Chapter 4 Other CEQA Considerations

Section 15126 of the California Environmental Quality Act (CEQA) Guidelines requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, an environmental impact report (EIR) must also identify (1) significant environmental effects of the proposed project (evaluated in Section 4.2), (2) significant environmental effects that cannot be avoided if the proposed project is implemented (evaluated in Section 4.3), (3) significant irreversible environmental changes that would result from implementation of the proposed project (evaluated in Section 4.4), (4) growth-inducing impacts of the proposed project (evaluated in Section 4.5), and (5) alternatives to the proposed project (evaluated in Chapter 5, Alternatives, in this Recirculated Draft EIR [DEIR]).

4.1 Effects Found Not to be Significant

Section 15128 of the State CEQA Guidelines requires that an EIR contain a statement briefly disclosing the reasons why various possible significant effects of a proposed project were found not to be significant and, therefore, have not been discussed in detail in the EIR. The proposed Sunroad Commercial Project (project) was reviewed against the applicable environmental issues contained in the Initial Study Checklist in Appendix G of the State CEQA Guidelines. Environmental topics for which potentially significant impacts have been identified are addressed in Chapter 3, Environmental Analysis, of this Recirculated DEIR. Section 4.1 of this current chapter of the Recirculated DEIR addresses the following environmental topics for which impacts have been found not to be significant: aesthetics, agriculture and forestry resources, air quality, biological resources, energy, geology/soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, utilities/service systems, and wildfire.

4.1.1 Aesthetics

Would the project have a substantial adverse effect on a scenic vista?

The proposed project would not adversely affect existing views of scenic vistas. A scenic vista is generally defined as the view of an area that is visually or aesthetically pleasing. The Vista General Plan 2030 Update Final Program EIR (GP 2030 Update PEIR) (City of Vista 2011) identifies scenic resources within the city of Vista and its sphere of influence, such as the rugged San Marcos Mountains east and northeast; various ridgelines, hills, and valleys; creeks and streams; distant mountains north; public and private open space with native vegetation; public parks; a network of hiking and horseback riding trails; various private and public recreation facilities (such as the Guajome Regional Park, a 557-acre, County of San Diego [County]-owned park); and buildings of historical and cultural significance (such as Rancho Minerva, Rancho Buena Vista, and the

Guajome Ranch House, a national historic landmark). Further, the GP 2030 Update PEIR (City of Vista 2011) identifies the following two main viewsheds that have been identified within the city of Vista and its sphere of influence based on general viewing areas: (1) the San Marcos Mountains east and northeast of the city of Vista and (2) scenic canyons in the southwestern portions of the city of Vista. The project site is located approximately two miles southwest of the San Marcos Mountains and 0.5 mile from the scenic canyons.

Surrounding land uses of the project site to the north are the eastbound on-ramp to State Route 78 (Ronald Packard Parkway) and commercial centers. Vista Village Drive, open space, and Buena Vista Creek border the site to the west. A shopping center, residential development, and Hacienda Drive border the project site to the south and southeast. Vacant land borders the project site to the east. The development of the proposed commercial center would not have a significant impact on scenic viewsheds of the San Marcos Mountains or canyons. The project is located in a relatively flat topographic area, and the site is in a low-lying zone, meaning the existing site would slightly screen the future center from the surrounding community. Proposed buildings would only be a single-story and conform to the maximum permitted height of 35 feet. As a result, no significant impacts would arise from project development.

Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The proposed project would not substantially damage scenic resources or historic buildings within a state scenic highway. The project site is not located along a state scenic highway. The 4.12-acre site is in an area with residential and commercial land uses. The site is currently vacant and roughly graded with gravel and contains minor vegetation and debris. The Sunroad Plaza Biology Study (Biology Report) (Appendix E) stated that San Diego viguiera (*Bahiopsis laciniata*), a sensitive species, is present on site and is planned to be removed. These plants have apparently seeded from mature plants planted on the adjacent road slopes, are kept small in stature by repeated mowing, are not part of sensitive vegetation community, are not connected to any off-site protected open space or vacant land, and are not within a Focused Planning Area. Therefore, they do not represent a natural population with conservation significance. In addition, no other scenic resources exist on the project site. Impacts would be less than significant.

Would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The proposed project would alter, but would not substantially degrade the existing visual character or quality of the project site or surroundings. The visual character of the existing project site is characterized by roughly graded, vacant land, minor vegetation, and debris. The visual character

of the surrounding area is defined by commercial development and low-density residential. The project site is located adjacent to a larger big box retail development and main freeway overpass.

The project would enhance the visual quality of the project site by introducing aesthetically pleasing commercial uses to an underused vacant piece of land. It would act as a transition to the adjacent neighboring residential community due to its evenly spaced buildings and heavily landscaped layout. The overall design of the proposed project would be composed of five single-story buildings in a modern architectural style, with water conserving and non-invasive landscaping, sidewalks, and a surface parking lot.

The proposed architectural design is intended to reflect the character and development pattern of the surrounding area. The architectural design would reflect a modern style and incorporate smooth stucco with brick veneer and metal corrugated siding. The main body colors of the buildings would portray a theme of beiges, tans, silvers, grey, and black accent with faux wood siding accents. The color scheme would be mixed with proprietary color schemes of selected future tenants. Other architectural features include natural galvanized metal corrugated siding, painted metal iron fixtures, iron fixture aluminum storefront, dark bronze and Sunbrella charcoal tweed metal and cloth awnings, dark bronze matte parapet coping, planter trellises, and standing seam metal roofing. The proposed development would be consistent with nearby commercial land uses with the incorporation of setbacks, building heights, architectural design features, and landscaping. Additionally, the Project Applicant has already submitted development plans, including building elevations, to Vista's Planning Department for review for consistency with the City of Vista's (City's) Design Guidelines.

Therefore, given the visual character of the existing site, development of the proposed project would have a less than significant impact on the visual character of the site and its surroundings.

Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Sensitive receptors relative to lighting and glare include nearby residents, motorists, and pedestrians. Glare can emanate from many different sources, some of which include direct sunlight, sunlight reflecting from cars or buildings, and bright outdoor lighting. The project site is currently roughly graded, vacant land with minor vegetation and debris. Potential sources of nighttime lighting or glare in the project site include lighting associated with the commercial buildings or surface parking lot.

The primary materials of the proposed buildings are smooth stucco with brick veneer and metal corrugated siding. Other architectural features include natural galvanized metal corrugated siding, painted metal iron fixtures, and iron fixture aluminum storefronts. Of those materials, the metal, aluminum, and iron fixtures have the potential to produce glare. The dark finishes of these features would reduce the potential for high reflectiveness. The project includes a large surface parking lot

that could generate glare from the windshields of parked cars. Non-reflective glass would be used for windows throughout the project site to lessen glare. However, the project would incorporate a substantial amount of landscaping, much more than required, to further reduce any potential for glare from the project to impact the surrounding land uses.

An Electrical Photometric Plan (SCI Lighting Solutions 2018) was prepared for the proposed project and includes the following series of outdoor LED lighting: 51 single lights located within the surface parking lot, 33 single sconce lights located along the building perimeters and mounted to each structure, and ten LED lights stationed at each building drive-through. Additionally, the installation of outdoor lighting would be required to meet the requirements in Section 18.58.260, Outdoor Lighting Facilities and/or Fixtures, of the City's Development Code. Compliance with this existing code would reduce the potential to generate glare from new lighting fixtures. Future lighting on the project site is not intended to extend outside the project boundaries into the surrounding commercial and residential neighborhoods. As a result, the proposed project would not create a substantial source of glare, and impacts would be less than significant.

4.1.2 Agriculture and Forestry Resources

Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?;

Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?;

Would the project 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])?;

Would the project result in the loss of forest land or conversion of forest land to non-forest use?; and

Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion forest land to non-forest use?

The project site is located within an urbanized area of southern Vista. The site was used previously for agriculture prior to 1938 and continued to 1996, and single-family residences and associated structures reportedly occupied the site between 1953 and 1996 but were later removed by 1997. However, the site is currently vacant and roughly graded with gravel and contains minor vegetation and debris. Based on farmland maps prepared by the California Department of Conservation, the property is neither located in an area designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance nor currently under active agricultural use or under a Williamson Act contract (DOC 2019). Further, the site is not located in an area designated as forest

land or timberland. As a result, project development would not convert any farmland to non-agricultural use or forest land to non-forest use, or conflict with existing agricultural or timberland zoning or Williamson Act contracts. Therefore, no impacts would occur.

4.1.3 Air Quality

The discussion below is based on the Air Quality Technical Report (AQ Report) (Appendix C) prepared for the proposed project by Harris & Associates in 2019.

Would the project conflict with or obstruct implementation of the applicable air quality plan?

The project site is located within the San Diego Air Basin. The San Diego Air Pollution Control District (SDAPCD) manages air quality in the San Diego Air Basin. Air quality plans applicable to the San Diego Air Basin include the San Diego Regional Air Quality Strategy (RAQS), addressing state requirements, and applicable portions of the California State Implementation Plan (SIP), addressing federal requirements. The RAQS and SIP outline the SDAPCD's plans and control measures designed to attain state and federal air quality standards. The RAQS and SIP were most recently updated in 2016.

The RAQS and SIP rely on San Diego Association of Governments (SANDAG) growth projections, which are based in part on the City of Vista and County of San Diego general plans. As such, projects that propose development consistent with the growth anticipated by the applicable general plans are consistent with the RAQS and applicable portions of the SIP. In the event that a project proposes development that is less dense than anticipated within the general plan, the project would be consistent. If a project proposes development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might be in conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality.

The applicable general plan for the city is the Vista General Plan 2030 Update (GP 2030 Update) (City of Vista 2012). The project is zoned General Commercial (GC), would be consistent with SANDAG and the local general plan's growth projections, and would not conflict with or obstruct implementation of the SIP or RAQS. Impacts would be less than significant.

Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under applicable federal or state ambient air quality standard?

The following discussion addresses the proposed project's potential to violate any air quality standard or contribute substantially to an existing or projected air quality violation from project construction and operation.

Construction Impacts

As explained in Chapter 2, Project Description, construction of the proposed project is anticipated to begin in the spring of 2019 and take approximately 13 months to complete. Grading and site preparation would be accomplished first, and then paving, construction of the building, and architectural coating would occur. Each phase of construction would occur sequentially and with no overlap between phases. Because the project site is currently vacant, no demolition is required. The site would be prepared by removing existing vegetation and then graded. It is assumed that the 4.12-acre site would be disturbed during grading. Approximately 5,500 cubic yards of cut and 7,700 cubic yards of fill would be required, resulting in an anticipated soil import of 2,200 cubic yards.

Construction of the proposed project would result in temporary air pollutants associated with soil disturbance, dust emissions, employee and material delivery vehicle exhaust, off-gassing from paving and coating activities, and combustion pollutants from off-road construction equipment. Construction-related air pollution emissions can vary day to day depending on the level of activity, the type of activity, and the prevailing weather conditions. The primary air pollutants of concern from construction activities are particulate matter (including both particulate matter less than ten microns in diameter [PM₁₀] and particulate matter less than 2.5 microns in diameter [PM_{2.5}]), carbon monoxide (CO), and ozone precursors (including volatile organic compounds [VOC] and oxides of nitrogen [NO_x]). Table 4-1 presents a summary of estimated maximum daily winter construction emissions for the proposed project. The California Emissions Estimator Model (CalEEMod) calculates winter and summer emission results. In this case, the winter emissions are slightly higher than the summer emissions. Thus, winter represents the worst-case scenario.

Table 4-1. Maximum Daily Construction Emissions (lb/day)

	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Year 2019	4.41	45.63	22.59	0.04	20.82	12.19
Year 2020	30.49	21.34	18.63	0.035	1.62	1.20
Maximum	30.49	45.63	22.59	0.04	20.82	12.19
Daily Threshold	137	250	550	250	100	55
Significant?	No	No	No	No	No	No

Source: Appendix C.

Notes: CO = carbon monoxide; NO_x = oxides of nitrogen; PM₁₀ = particulate matter less than ten microns in diameter; PM_{2.5} = particulate matter less than 2.5 microns in diameter; SO_x = sulfur oxide; VOC = volatile organic compound

The estimate of unmitigated winter construction emissions indicates that the proposed project would not exceed the significance thresholds for any criteria air pollutants during any phase of construction. The proposed project would result in a less than significant impact related to criteria pollutant emissions during construction.

Operational Impacts

After construction has been completed, the project would be associated with ongoing air pollution associated with mobile vehicle sources, space heating, water heating, landscape maintenance equipment, and VOC emissions from periodic repainting of interior and exterior surfaces. As with construction emissions, the project's criteria pollutant emissions were calculated using CalEEMod, version 2016.3.2. However, CalEEMod does not include charbroiler emissions. Charbroiler emissions are calculated based on emissions factors available from California Air Resources Board (CARB) (CARB 2007). Total project operational emissions are presented in Table 4-2.

Table 4-2. Maximum Daily Operational Emissions (lb/day)

Source	VOC	NO _x	CO	SO _x	Total PM ₁₀	Total PM _{2.5}
Area	0.70	<1	0.02	0	<1	<1
Energy	0.07	0.66	0.55	<1	0.05	0.05
Mobile	8.33	27.63	61.05	0.12	9.18	2.55
Charbroilers	0.378	NA	NA	NA	3.36	3.36
Total	9.48	28.29	61.62	0.12	12.59	5.96
Daily Threshold	137	250	550	250	100	55
Significant?	No	No	No	No	No	No

Source: Appendix C.

Notes: CO = carbon monoxide; NO_x = oxides of nitrogen; PM₁₀ = particulate matter less than ten microns in diameter; PM_{2.5} = particulate matter less than 2.5 microns in diameter; SO_x = sulfur oxide; VOC = volatile organic compound

As shown, operational emissions for the proposed project would be below the significance threshold for criteria pollutants. Therefore, operation of the project would not violate any air quality standard or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment. Impacts related to project operation would be less than significant.

Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors typically include schools (preschool–twelfth grade), hospitals, resident care facilities, daycare centers, or other facilities that may house individuals with health conditions that would be adversely affected by changes in air quality. The primary emissions of concern regarding health effects for land development projects are CO and diesel particulate matter (DPM). Additionally, because the proposed project would include restaurants that may use charbroilers, formaldehyde, acetaldehyde, and acrolein are also addressed in the analysis below.

Carbon Monoxide Hotspots

A CO hotspot is an area of localized CO pollution caused by high vehicle intensity, such as congested intersections and parking garages. If a project increases average delay at signalized intersections operating at level of service (LOS) E or F or causes an intersection that would operate at LOS D or better without the project to operate at LOS E or F with the project, a quantitative screening is required.

The TIA (Appendix D) prepared by Linscott, Law and Greenspan, Engineers, for the proposed project in 2019 used project-level trip generation analysis and distribution to evaluate the intersections in the project vicinity that would carry the majority of project traffic. Two study area intersections would operate at LOS E or F under all three traffic impact analysis scenarios (existing + project, short-term, and long-term): S. Melrose Drive/Hacienda Drive and Vista Village Drive/Hacienda Drive. Additionally, N. Melrose Drive/Vista Way would operate at LOS E or F under two traffic impact scenarios (short-term and long-term).

These intersections would result in an LOS E or LOS F without the addition of project traffic. The CALINE 4 model was used to estimate the potential CO impact at each of these intersections during the most congested peak hour scenario. To estimate the most conservative conditions for the hot spot analysis, CO concentrations were analyzed for the long-term (Year 2030) scenario because the greatest delays would occur at all three intersections under this scenario. Table 4-3 displays the estimated CO concentrations at the nearest receptor from the affected intersections. As shown in Table 4-3, CO concentrations would not exceed the state or federal AAQS for 1-hour or 8-hour CO concentrations at either intersection. This impact would be less than significant.

Table 4-3. Estimated Carbon Monoxide Concentrations

Intersection	1-Hour CO Concentration (ppm)	8-Hour CO Concentration (ppm)	Impact?
N. Melrose Drive/Vista Way	3.9	2.7	No
S. Melrose Drive/Hacienda Drive	3.9	2.7	No
Vista Village Drive/Hacienda Drive	3.8	2.7	No
Significance Threshold	20.0 (State)/35.0 (Federal)	9.0 (State and Federal)	—

Source: CALINE 4 using EMFAC 2017 emission factors.

Notes: CO = carbon monoxide

Modeling assumptions: 1-hour CO concentrations were calculated using the worst-case wind angle scenario in the CALINE 4 model. Receptor locations were set 30 feet from the roadway centerline. CO emission factors were generated using the EMFAC 2017 model, using the CO emission factor for Year 2030 for the total vehicle mix during conditions in January at a temperature of 40 degrees Fahrenheit and 40 percent relative humidity. The assumed vehicle speed was 5 miles per hour. An ambient 1-hour carbon monoxide concentration of 3.7 ppm was used to reflect ambient conditions. Ambient data obtained from the Escondido-E. Valley Parkway station from 2012, the most recent year available at the station closest to the site. The 8-hour carbon monoxide concentration was based on a persistence factor of 0.7 for urban uses (Caltrans 2010).

Diesel Particulate Matter

According to the County's Guidelines for Determining Significance – Air Quality (County of San Diego 2007), for typical land use projects that do not propose stationary sources of emissions regulated by SDAPCD, DPM is the primary toxic air contaminant (TAC) of concern. CARB identified DPM as a TAC in 1998. The dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Thus, the risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer time period. Health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, are typically based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with a project.

Project construction would result in short-term emissions of DPM from the exhaust of off-road, heavy-duty diesel equipment. As presented in Table 4-2, implementation of the project would not result in PM emissions above the screening level threshold during construction. Additionally, because DPM is considered to have long-term health effects, and construction would be a short-term event, emissions would not result in a significant long-term health risk to surrounding receptors.

Based on the SCAQMD's "Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis" (SCAQMD 2003), projects that should be analyzed for DPM emissions include truck stops, distribution centers, and transit centers, which could be sources of DPM from heavy-duty diesel trucks.

The proposed commercial uses do not include stationary sources of emissions regulated by the SDAPCD; however, operation of the proposed project would require some diesel delivery truck trips to the project businesses. In 2004, the CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to DPM and other TACs and their pollutants. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. The measure does not allow diesel fueled commercial vehicles to idle for more than five minutes at any given time. The measure may be enforced by either CARB or SDAPCD. Violations may be reported to the San Diego County Sheriff's Department (Sheriff's Department), and violators are subject to a fine. Potential localized air toxic impacts from on-site sources of DPM would be minimal since only a limited number of heavy-duty trucks would be required per month to supply the proposed businesses, and the trucks that would frequent the area would not idle for extended periods of time.

Other Pollutants

Based on CARB siting recommendations in the Air Quality and Land Use Handbook (CARB 2005), a detailed health risk assessment should be conducted for proposed sensitive receptors within 1,000 feet of a warehouse distribution center, 300 feet of a large gas station, 50 feet of a typical gas-dispensing facility, or 300 feet of a dry-cleaning facility that uses perchloroethylene, among other siting recommendations (CARB 2005). The proposed project would not accommodate any of the uses listed in the CARB siting recommendations. As previously stated, up to three of the proposed restaurant spaces may include use of charbroilers for cooking and would generate exhaust from cooking operations. CARB does not list charbroilers or other food-processing equipment as a facility that would potentially emit air pollutants of concern. Equipment located at eating establishments that is used for preparing food for human consumption at the same establishment is also specifically exempted from SDAPCD operating permit requirements (SDAPCD Rule 11, Exemptions from Rule 10 Permit Requirements). Additionally, VOC and particulate matter emissions from the potential use of charbroilers were quantified and compared to the SDAPCD air quality impact analysis thresholds in Table 4-2. Table 4-4 compares the charbroiler emissions to the air quality impact

analysis annual screening levels. As shown in Tables 4-2 and 4-4, emissions would be well below the air quality impact analysis thresholds. Therefore, operation of charbroilers on site would not expose sensitive receptors to substantial pollutant concentrations.

Table 4-4. Annual Emissions from Charbroiler Use at Project (tons/year)

	PM ₁₀	PM _{2.5}	VOC
Charbroiler Emissions	0.6	0.6	0.07
Screening Level	15	10	13.7
Significant?	No	No	No

Source: CARB 2007.

Notes: PM₁₀ = particulate matter less than ten microns in diameter; PM_{2.5} = particulate matter less than 2.5 microns in diameter; SO_x = sulfur oxide; VOC = volatile organic compound

Would the project result in substantial emissions (such as those leading to odors or dust) adversely affecting a substantial number of people?

Construction Impacts

Construction associated with the proposed project could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. However, diesel equipment would not be operating at once, and construction near existing receptors would be temporary. The closest sensitive receptor is a residence located approximately 250 feet south of the project site. As shown in Table 4-1, construction emissions of SO_x, the pollutant most associated with noxious odors, would be minimal. As such, odor impacts during construction would be less than significant.

Operational Impacts

CARB's Air Quality and Land Use Handbook (CARB 2005) includes a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. The proposed project does not propose any of these uses. As previously described, use of charbroilers would result in exhaust emissions. However, use of cooking equipment is not listed as a typical source of odors. Additionally, air quality analyses prepared for similar uses (a proposed In-N-Out restaurant and a proposed Burger King restaurant) in the city of Vallejo determined that these restaurants would not be a source of significant odors (City of Vallejo 2015; Meridian Consultants 2017). Therefore, operation of the proposed project would not generate significant odors, and this impact would be less than significant.

4.1.4 Biological Resources

The discussion below is based on the Biology Report prepared on October 3, 2018, by Tierra Data, Inc. (Appendix E), and a subsequent memorandum prepared on January 3, 2019, by Tierra Data, Inc. (Appendix E).

Would the project 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 Services?

The project site is currently vacant and roughly graded with gravel and contains minor vegetation. A storm drain inlet is located in the southwestern portion of the site, three sewer manholes span the northern perimeter, and miscellaneous debris is scattered throughout the project site. The survey area for the Biological Report included the 4.12-acre project site. The site visit was conducted on September 7, 2018, and wandering transects were performed throughout the entire property. A subsequent site visit was conducted on December 20, 2018 (Appendix E).

Special-Status Species

This section defines special-status plants and wildlife and presents special-status wildlife that occur or have potential to occur within the project site.

Definitions

Plants – Sensitive or “special-status” plants are those listed as rare, endangered, threatened, of special concern, or considered noteworthy by the California Department of Fish and Wildlife (CDFW); the U.S. Fish and Wildlife Service (USFWS); the California Native Plant Society; or other conservation agencies, organizations, or local botanists.

Wildlife – Sensitive wildlife are those listed as rare, endangered, threatened, of special concern, or considered noteworthy by the CDFW; USFWS; the National Audubon Society; or other conservation agencies, organizations, or local zoologists.

One sensitive species was observed on the site, San Diego viguiera, which is a California Rare Plant Rank 4.3 sensitive species. California Rare Plant Rank 4.3 is the lowest sensitivity rating by the California Native Plant Society. Many small, individual San Diego viguiera (less than 0.5 meter tall) were observed sporadically along the western and northern perimeters of the site. These plants appeared to originate from a strip of the species outside of the fence along the slopes that support Vista Village Drive and the on-ramp to State Route 78, which was apparently planted for the landscaping of those slopes. The plants inside of the fence have either grown from seeds entering the site from across the fence or were part of the original landscaping and are now being cut down during weed control efforts (Appendix E). Although most of the individuals occur along the fence line and on the road slopes outside of the parcel boundaries, several individuals occur within the parcel boundaries primarily at the western corner of the site. According to the Biology Report, the plants on site have apparently seeded from mature plants planted on the adjacent road slopes, are kept small in stature by repeated mowing, are not part of the sensitive vegetation community, are not connected to any off-site protected open space or vacant land, and are not within the Focused Planning Area (Appendix E). Therefore, the plants do not represent a natural population with

conservation significance. As a result, impacts to special-status plant and animal species and communities would be less than significant.

Initially, direct impacts were identified in the Biology Report (Appendix E) on ground-nesting bird species. As stated in the Biology Report (Appendix E), site conditions during this time, included suitable habitat to some ground-nesting bird species such as killdeer (*Charadrius vociferous*), which prefer to nest on open ground. A flock of approximately ten killdeer was observed during the September 2018 site visit. Additionally, birds may also nest in the Chinese elms (*Ulmus parvifolia*) that were located at the eastern end of the site. However, these trees are very small and, therefore, represent marginal nesting opportunities. Due to the site conditions observed in September 2018, the Biology Report (Appendix E) concluded that direct impacts to resident and migratory birds during project clearing, grubbing, or construction could render the site temporarily unsuitable for nesting birds because of the noise vibration and increased activity levels associated with various construction activities. The Biology Report (Appendix E) identified a mitigation measure to prevent impacts to Migratory Bird Treaty Act–protected birds and their nests during bird breeding season (January 1 through September 16).

However, the subsequent memorandum from Tierra Data, Inc., concerning this impact concluded that the only resources that could support arboreal nesting birds were the small Chinese elms at the eastern end of the project site, which were previously documented in the site visit conducted September 2018 (Appendix E). These trees provided potential avian nesting sites, and while no nesting has been observed to date, it was deemed appropriate to remove these trees to avoid removal during the bird-breeding season identified in the mitigation measure. The trees have been cut down but not completely killed. However, the remaining growth does not represent potential nesting habitat for arboreal avian species. With the arboreal resources removed, only a check for ground-nesting birds (i.e., killdeer) would be needed prior to the start of work if clearing and grading were to start between January 1 and September 15, assuming the Chinese elms do not grow back. Beyond this measure, conditions applied from the Multiple Habitat Conservation Plan (MHCP) identified in the Biology Report (Appendix E) to ensure the prevention of indirect impacts. Therefore, without the Chinese elms to support nesting birds, impacts on Migratory Bird Treaty Act–protected birds and their nests during bird breeding season are considered less than significant.

Would the project have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Vegetation communities (or habitats) are generally considered “sensitive” if (1) they are recognized by the wildlife agencies as being generally depleted, (2) they are considered rare within the region by local experts, (3) if they are known to support sensitive wildlife or plant species, or (4) they are known to serve as important wildlife corridors or habitat linkages. These sensitive habitats are typically depleted throughout their known ranges or are highly localized or fragmented.

Based on the site visit conducted in September 2018, most of the site is almost barren with very sparse non-native weeds and characterized as bare ground that is included within but differentiated from disturbed habitat. A small stand of Chinese elm trees observed at the eastern end of the site is classified as non-native vegetation. The approximate acreages of each vegetation community anticipated to be affected by the proposed project are provided in Table 4-5.

Table 4-5. Summary of Proposed Vegetation Community Impacts

Vegetation Community	Acreage on Site
Non-Native Vegetation	0.02
Disturbed Habitat (11300)	0.52
Bare Ground	3.55
Total Biological Survey Area	4.09¹

Source: Appendix E.

Notes:

¹ Totals may not add due to rounding.

No sensitive habitats were observed on the site. The proposed project does not contain any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS. Therefore, impacts would be less than significant.

Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

According to the Biology Report (Appendix E), the development of the project site does not contain any jurisdictional waters or wetlands. Because these features are absent from the project site, Clean Water Act (CWA), Sections 401 and 404, permit applications would not be required to be submitted to the Regional Water Quality Control Board (RWQCB) and U.S. Army Corps of Engineers, respectively. No impacts would occur.

Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impeded the use of native wildlife nursery sites?

As noted in the Biology Report (Appendix E), the project site does not contain any regional wildlife corridors or habitat linkages. The site is currently vacant and supports degraded or low-quality habitat. It is surrounded by residential and commercial development and is bounded on all sides by local roadways and a state highway, which would limit wildlife movement. With few resources on site and limited resources off site, the project site is not part of any functional local or regional corridor and does not provide the resources to be a nursery site. Thus, no impacts would occur.

Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The City does not have additional specific policies or ordinances that protect biological resources other than compliance with CEQA and the existing MHCP. As a result, no impacts would occur due to a conflict with local policies or ordinances.

Would the project conflict with provisions or an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The city of Vista is part of the North County MHCP, which was adopted by the SANDAG Board of Directors in 2003. The MHCP is a comprehensive conservation planning process developed to identify and protect critical habitats for a wide range of plant and animal species within a 20,000-acre preserve system in North County. A key to protecting biological resources is to preserve the open spaces in which they exist. To implement the provisions of the MHCP within Vista, a Biological Preserve Overlay (BPO) has been created and identified as the City's regional habitat preservation system in the GP 2030 Update (City of Vista 2012). The project site is not within or adjacent to any land that has a BPO designation. Therefore, the development of the proposed project would not create any significant impacts to the provisions of the MHCP.

4.1.5 Energy

Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?

Construction Energy Usage

During construction, the proposed project would result in an increase in energy consumption through the combustion of fossil fuels in construction vehicles, worker commute vehicles, and construction equipment and the use of electricity for temporary buildings, lighting, and other sources. Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during site clearing, grading, paving, and building construction. The types of equipment could include gasoline- and diesel-powered construction and transportation equipment, including trucks, bulldozers, front-end loaders, forklifts, and cranes. Other equipment could include construction lighting; field services (office trailers); and electrically driven equipment, such as pumps and other tools.

Limitations on idling of vehicles and equipment and requirements that equipment be properly maintained would result in fuel savings. California regulations (State CEQA Guidelines, Sections 2449[d][3], 2485) limit idling from both on-road and off-road diesel-powered equipment and are enforced by CARB. Also, given the high cost of fuel, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction.

Therefore, the construction phase would not result in a significant impact associated with the wasteful, inefficient, and unnecessary consumption of energy.

Operational Energy Usage

Operation of the proposed project would consume electrical and natural gas energy for several purposes including but not limited to building heating and cooling, refrigeration, lighting, and commercial equipment. Electricity for the project site would be provided from a variety of sources through San Diego Gas & Electric's electric transmission and distribution lines. Section 3.2, Greenhouse Gas Emissions, includes emissions data for these energy sources. To reduce energy output from fossil fuel sources and to operate efficiently, the project is required to be constructed ~~to achieve with zero net energy-reducing features~~ (Mitigation Measure GHG-1). Measures to achieve ~~zero net energy reductions~~ include the following:

- Install programmable thermostats in commercial spaces
- Use electric landscaping equipment to achieve a reduction in ~~non-space /water-heating residential~~ natural gas use
- Provide heating, ventilation, and air conditioning commissioning and verification of energy savings during project design phase~~Obtain third-party heating, ventilation, and air conditioning (HVAC) commissioning and verification of energy savings~~
- Install high-efficiency area lighting
- Limit outdoor lighting
- Maximize interior daylight
- ~~Install rooftop solar photovoltaic systems to the extent required to offset the project's remaining electricity demand with on-site solar renewable energy~~

Additionally, buildings constructed as part of the proposed project would conform to Title 24 energy efficiency requirements. Part 6 is California's Energy Efficiency Standards for Residential and Non-Residential Buildings, and Part 11 is the California Green Building Standards (CALGreen). Title 24 was established by the California Energy Commission (CEC) in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and non-residential buildings. In 2013, CEC updated Title 24 standards with more stringent requirements, effective July 1, 2014. Buildings for which an application for a building permit is submitted on or after July 1, 2014, must follow the 2013 standards. Energy-efficient buildings require less electricity. The CEC Impact Analysis for California's 2013 Building Energy Efficiency Standards estimates that the 2013 standards are 23.3 percent more efficient than the previous 2008 standards for residential construction and 21.8 percent more efficient for non-residential construction. In 2016, CEC updated Title 24 standards again, effective January 1, 2017. While the impact analysis of these standards has not yet been released, CEC estimates that the 2016 standards are 28 percent more efficient than 2013 standards for residential construction and are five percent more efficient for non-residential construction. The

building efficiency standards are enforced through the plan check and building permit process. Therefore, impacts concerning this issue area are considered less than significant.

Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Development of the project site would follow Title 24 Building Energy Efficiency Standards to reduce energy use, which establish minimum efficiency standards related to various building features, including appliances, water- and space-heating and cooling equipment, building installation and roofing, and lighting. Further, the project includes mitigation measures and other state regulations that include design features that reduce energy use, improve energy efficiency, and increase reliance on renewable energy sources that would be used in the operation of the proposed project to reduce energy use. Adherence to the building efficiency standards and the implementation of mitigation measures that reduce fossil fuel use and promote energy efficiency would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the proposed project would not result in a policy impact that would result in a significant impact on the environment.

4.1.6 Geology/Soils

Would the project directly or indirectly cause potential substantial adverse effects, including the risk of injury, damage or death involving:

- i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.***

The purpose of the Alquist-Priolo Earthquake Fault Zoning Act (1972) is to mitigate the hazard of surface faulting by preventing the construction of buildings used for human occupancy over an area with known faults. Unlike damage from ground shaking, which can occur at great distances from the fault, impacts from fault rupture are limited to the immediate area of the fault zone where the fault breaks along the ground surface. As discussed in the Preliminary Geotechnical Investigation (Appendix F), the project site does not contain and is not adjacent to an Alquist-Priolo Special Study Zone Area. Therefore, impacts from fault rupture would not occur.

- ii) Strong seismic ground shaking?***

The project area, like most of Southern California, could be subject to such seismic events as strong ground shaking and seismically induced settlement such as liquefaction, which could potentially expose people and structures to substantially adverse effects. The ground motion characteristics of any future earthquakes in the region would depend on the characteristics of the generating fault, the distance to the epicenter, the magnitude of the earthquake, and the site-specific geologic conditions. Major faults in the region could be a source of a strong seismic-related movement at

the project site. According to the Preliminary Geotechnical Investigation (Appendix F), although the site is within Southern California, a seismically active region, no active faults are known to transect the site. The nearest active seismic source to the site is considered to be the offshore Rose Canyon-Inglewood fault system 10.5 miles southwest of the subject property.

Because of the potential for seismic events to impact structures in the city of Vista in particular and Southern California in general, the proposed buildings are required to be constructed in compliance with the seismic safety standards in the 2016 California Building Code (CBC) in effect at the time grading and building permits are obtained. In general, compliance with the CBC would include the incorporation of (1) seismic safety features to minimize the potential for significant effects as a result of earthquakes, (2) proper building footings and foundations, and (3) construction of the building structure so that it would withstand the effects of strong ground shaking. In addition, as required under the City's Grading Ordinance (Municipal Code, Chapter 17.56), recommendations in a geotechnical report prepared for the proposed project must be followed during site preparation and grading activities. The City's Building Department would also review the building plans through building plan checks, issuance of a building permit, and inspection of the building during construction, which would ensure that required CBC seismic safety measures are incorporated into the building. Compliance with the CBC, the geotechnical recommendations of the Geotechnical Investigation, the Building Department's review process, permit application, and inspections would result in less than significant impacts.

iii) Seismic-related ground failure, including liquefaction?

Liquefaction is a phenomenon in which a saturated cohesionless soil causes a temporary transformation of the soil to a fluid mass, resulting in a loss of support. According to the Preliminary Geotechnical Investigation (Appendix F), due to the lack of cohesionless soils at the project site and its shallow bedrock conditions, the potential for liquefaction is considered negligible. Due to the lack of liquefaction potential, lateral spreading is not anticipated to be an issue.

iv) Landslides?

The project site is located on and adjacent to relatively level ground and is not within a landslide hazard zone. Therefore, landslides are not considered to be a hazard. Compliance with the CBC, the Building Department's review process, permit application, and inspections would result in less than significant impacts.

Would the project result in substantial soil erosion or the loss of topsoil?;

Would the project be located in a geologic unit or soil that is unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?; and

Would the project be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

The site is situated within the coastal plain of the Peninsular Ranges geomorphic province. The geology of the area is controlled by alluvial and marine influences. Geologic units encountered by the subsurface investigation include artificial fill and granitic bedrock (tonalite). Tonalite is a variety of granitic rock. Generally, tonalite is light gray to dark gray in color. In the project area, the tonalite is mapped as Green Valley Tonalite, medium-grained, and containing the minerals sodic plagioclase, quartz, hornblende, or other mafic minerals (Appendix F). The proposed project is not 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.

The Preliminary Geotechnical Investigation (2017) (Appendix F) prepared by Nova Services, Inc., identified the on-site surface materials as having a low expansion potential. As required under the City's Grading Ordinance, the recommendations in the Preliminary Geotechnical Investigation (Appendix F) must be followed during the construction phases. Before construction begins, the contractor is required to prepare a stormwater pollution prevention plan (SWPPP) and implement standard erosion-control measures and stormwater construction best management practices (BMPs) (through the grading permit process) that would minimize potentially significant impacts from soil erosion during construction. Further, the proposed commercial structures are required to be constructed in compliance with the seismic safety standards set forth in the CBC. Therefore, potential impacts from soil erosion, seismic instability, or soil structure would be less than significant.

Would the project 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?

The proposed project would tie into existing sewers, avoiding the need to use septic tanks or alternative wastewater disposal systems. As a result, no impacts would occur from proposed project development.

Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The probability of discovering paleontological resources depends on the geologic formation being excavated and the depth and volume of the excavation. Sedimentary rocks, such as those found in coastal areas, usually contain fossils. Granite rocks, such as those found in inland areas, usually would not contain fossils. Geologic units encountered by the subsurface investigation on the project

site include artificial fill and granitic bedrock (tonalite). Therefore, there is a low probability of discovering paleontological resources, and no impact would occur from the project development.

4.1.7 Hazards and Hazardous Materials

The following discussion is based on information provided in the Phase I Environmental Site Assessment (Phase I ESA) (2018) and Phase II Soil Sampling Report (2018) prepared by SCS Engineers. The reports, in their entirety, are in Appendix G.

Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

The project proposes development of a 91,893-square-foot commercial center consisting of restaurants, retail space, a car wash, and associated parking lot on 4.12 acres. Construction equipment that would be used to build the proposed project has the potential to release oils, greases, solvents, and other finishing materials through accidental spills. Spill or upset of these materials could have the potential to impact surrounding land uses; however, federal, state, and local controls have been enacted to reduce the effects of such potential hazardous materials spills. The Vista Fire Department (VFD) enforces city, state, and federal hazardous materials regulations for the city of Vista. City regulations include securing of hazardous materials containers to prevent spills and spill containment and mitigation. In addition, the State Fire Marshal enforces oil and gas pipeline safety regulations, and the federal government enforces hazardous materials transport pursuant to its interstate commerce regulation authority. Compliance with these requirements is mandatory as standard permitting conditions and would minimize the potential for the accidental release or upset of hazardous materials, thus ensuring public safety. Therefore, construction-related activities would not result in the release of hazardous materials into the environment.

Operation of the proposed project would involve an unquantifiable, but limited, use of potentially hazardous materials typical of car wash, retail, and restaurant uses, including cleaning fluids, detergents, solvents, adhesives, sealers, paints, fuels/lubricants, and fertilizers and/or pesticides for landscaping. These materials would be contained, stored, and used on site in accordance with manufacturer's instructions, applicable standards and federal, state, and local regulations. Compliance with applicable regulations would serve to protect against a significant and irreversible environmental change that could result from the accidental release of hazardous materials. Therefore, operation-related activities would not result in the release of hazardous materials into the environment and would have a less than significant impact.

Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

As noted previously, occupancy of the proposed project would not result in the routine generation, storage, disposal, or transportation of hazardous materials. According to the Phase I ESA

(Appendix G), there was no evidence of storage tanks, drums, hazardous substances, petroleum projects, unidentified containers, odors, or pools of liquids.

Based on the review of aerial photographs and historical information, the project site and its vicinity have historically been used for agriculture between 1938 and 1996 (Appendix G). The historical agricultural use of the site would suggest that organochlorine pesticides and arsenic could be present in soil on site.

In addition, based on the interpreted presence of residences and associated structures at the project site from 1953 to 1996 with unpaved areas adjacent to the buildings, the potential exists for the presence of elevated concentrations of lead in the soil (Appendix G). Soils immediately adjacent to previous buildings containing lead-based paint may contain high concentrations of lead due to the lead being leached from the exterior of the structure as the paint weathers and ages. In addition, the scraping and sanding of lead-based paints during maintenance and repainting of the exteriors of buildings may also contribute to the lead content of the soil in the immediate vicinity.

A Phase II Soil Sampling Report (Appendix G) was prepared to assess the possible presence of pesticides (i.e., organochlorine pesticides and arsenic) and lead in shallow soil on the project site. No organochlorine pesticides were detected above their respective laboratory reporting limits in the soil samples taken. In addition, none of the samples analyzed were reported to exceed the commercial U.S. Environmental Protection Agency's Regional Screening Level of 3.0 milligrams per kilogram, which is used to screen soil samples for potential health risk for commercial users for arsenic (Appendix G). Therefore, it was determined there would be a low likelihood of a human health risk from pesticides and arsenic to current and future commercial users of the proposed site.

The eight samples analyzed for lead were above the laboratory reporting limits, but no samples were reported with lead concentrations exceeding the California Human Health Screening Level of 320 milligrams per kilogram, which is used to screen soil samples for potential health risk to commercial users. One sample was reported with lead concentrations that exceed the RWQCB Tier 1 Soil Screening Levels for waste exported from the project site. However, based on statistical analysis used to further assess/clarify waste characterizations, the Phase II Soil Sampling Report (Appendix G) concluded there is a low likelihood that soil exported from the site would exceed the RWQCB Soil Screening Levels for lead and that soil exported from the site during construction would not contain hazardous materials.

Therefore, the proposed project would not result in significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment and impacts would be less than significant.

Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?

There are no schools located within 0.25 mile of the project site. A preschool named Children's Paradise, Inc. is located approximately 0.4 mile northeast of the project site, and St. Francis of Assisi Catholic School is located approximately 0.5 mile north of the site. The proposed project would not routinely generate, store, dispose of, or transport significant quantities of hazardous substances. As a result, no significant impacts to nearby schools would occur. Once constructed, the project would not propose uses that would emit hazardous emissions or handle hazardous or acutely hazardous substances or waste; therefore, impacts would be less than significant.

Would the project 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?

As part of the Phase I ESA (Appendix G), a computerized record search was conducted to identify known or suspected environmental concerns that may be associated with the site. The search indicated that the site is not identified on the Environmental Data Resources regulatory report, confirming that the project site is not located on a hazardous materials site pursuant to California Government Code, Section 65962.5. In addition, numerous properties within the project site's vicinity were listed on the Environmental Data Resources database and were found not to pose an environmental concern and were not evaluated further. Therefore, impacts would be less than significant.

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 or excessive noise for people residing or working in the project area?

The nearest airport is the McClellan-Palomar Airport, located approximately five miles southwest of the project site in the city of Carlsbad. The property is not located within the Airport Influence Area of the airport (SDCRAA 2011). The project site is also sufficiently distanced from the airport so that the project would not affect the safe operation of the airport, and it would not be affected by noise created by airport operations. Consequently, construction of the project would not create significant impacts. There are no private airstrips within the vicinity of the project site. Therefore, the development of the project would not result in a safety hazard for people residing or working in the project area.

Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The City is a participant in the Multi-Jurisdictional Hazard Mitigation Plan for the County of San Diego (October 2017), which identifies risks by natural and human-made disasters and ways to minimize the damage from those disasters. The proposed project would provide commercial land uses that would be permitted and approved in compliance with existing safety regulations, such as

the CBC and Uniform Fire Code, to ensure that it would not conflict with implementation of the Multi-Jurisdictional Hazard Mitigation Plan.

Short-term construction traffic impacts are anticipated from vehicles involved in hauling and delivering materials to and from the site (e.g., soil exports, demolition material), which could interfere with emergency response plans or evacuation plans. However, as part of the conditions of project approval, the Project Applicant or Contractor would be required to prepare and implement a construction traffic management plan to the satisfaction of the City's Traffic Engineer to avoid significant construction-related impacts to nearby streets and intersections, especially during peak-hour times. As a result, interference with emergency response or evacuation plans would be avoided. See Section 3.3, Transportation, for additional information.

Operation of the proposed project would also not result in a physical interference with an emergency response evacuation. Access to the project would be provided through two proposed driveways along Hacienda Drive. At the primary project driveway, a left-turn pocket would be constructed in the center of Hacienda Drive to provide refuge for vehicles wanting to turn left onto the primary project driveway and to keep eastbound traffic on Hacienda Drive flowing and preventing it from being delayed by the waiting left-turning vehicles. Another way to access the project site is by traveling west on Hacienda Drive and turning right at either driveway into the proposed commercial center. A dedicated westbound right-turn lane is proposed on Hacienda Drive at Vista Village Road as part of the project. Adequate width and turning radius would be provided at the project driveways to allow fire truck access to the proposed commercial buildings. See Section 3.3 for additional information.

Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

The project site is within an Urban Un-Zoned Fire Hazard Area based on the City's Fire Hazard Severity Zones Map prepared by the California Department of Forestry and Fire Protection's Fire and Resource Assessment Program. The Urban Un-Zoned Fire Hazard Area represents a very low threat from wildland fires because it is not located within the wildland-urban interface fire area. Therefore, no impacts from wildfires would occur with development of the site.

4.1.8 Hydrology and Water Quality

The following discussion is based on the CEQA Preliminary Hydrology/Drainage Study (Drainage Study) and the Priority Development Project Stormwater Quality Management Plan prepared by Stevens Cresto Engineering, Inc. (Appendix H), both prepared in 2018.

Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

The project proposes development of a 91,893-square-foot commercial center consisting of five single-story buildings including restaurants, in-line retail, and a self-service car wash on 4.12 acres. The site is located within the Vista Hydrologic Subarea (904.22) of the Buena Vista Hydrologic Area (904.20) of the Carlsbad Hydrological Unit (904.0). In the existing condition, the project site is a rough-graded, vacant lot where stormwater runoff sheet drains from the northeastern corner to the southwestern corner into a small storm drain inlet. Runoff is then conveyed within the existing public storm drain system in Hacienda Drive, and commingles with runoff from Vista Village Drive. Stormwater runoff within this system flows west and discharges into Buena Vista Creek, which is located approximately 500 feet downstream. Runoff then flows into Buena Vista Lagoon and eventually discharges into the Pacific Ocean.

Buena Vista Creek is on the CWA Section 303(d) list for sediment toxicity and selenium, and Buena Vista Lagoon is on the CWA Section 303(d) list for indicator bacteria, nutrients, and sedimentation/siltation. The designated beneficial uses of Buena Vista Creek include Agricultural Supply (AGR), Industrial Service Supply (IND), Contact Recreation (REC1), Non-Contact Recreation (REC2), Warm Freshwater Habitat (WARM), and Wildlife Habitat (WILD) (SDRWQCB 2016).

Construction Impacts

Construction of the proposed project would require grading and excavation of soils, which would loosen sediment that then has the potential to mix with surface water runoff and degrade water quality. Additionally, construction would require the use of heavy equipment and construction-related chemicals, such as concrete, cement, asphalt, fuels, oils, antifreeze, transmission fluid, grease, solvents, and paints. These potentially harmful materials could be accidentally spilled or improperly disposed of during construction and, if mixed with surface water runoff, could wash into and pollute waters.

These types of water quality impacts during project construction would be prevented through implementation of a grading and erosion control plan that is required by the City's Grading Ordinance (Development Code, Chapter 17.56) and the State General Permit to Discharge Storm Water Associated with Construction Activities (NPDES No. CAS000002), which requires preparation of a SWPPP by a qualified SWPPP developer. The grading and erosion control plan and SWPPP are required for plan check and approval by the City's Land Development engineer and the Planning Division prior to provision of permits for the project and would include construction BMPs such as the following:

- Silt fence, fiber rolls, or gravel bag
- Street sweeping and vacuuming

- Storm drain inlet protection
- Stabilized construction entrance/exit
- Vehicle and equipment maintenance, cleaning, and fueling
- Hydroseeding
- Material delivery and storage
- Stockpile management
- Spill prevention and control
- Solid waste management
- Concrete waste management

Adherence to the existing requirements and implementation of the appropriate BMPs per the permitting process would ensure that potential water quality degradation associated with construction activities would be minimized, and impacts would be less than significant.

Operational Impacts

The proposed project would develop commercial uses on the project site to include retail, restaurants, and a car wash, which would introduce the potential for pollutants such as chemicals from car wash detergents, restaurant waste, cleaning products from restaurant and retail use, nutrients from fertilizer, pesticides and sediment from landscaping, trash and debris, and oil and grease from vehicles. These pollutants could potentially discharge into surface waters and result in degradation of water quality. As described previously, Buena Vista Creek, to which the project site ultimately drains, is listed as impaired on the U.S. Environmental Protection Agency's CWA Section 303(d) list. Therefore, operation of the proposed project could create new impairments or exacerbate existing impairments within the waterbody, which would result in a water quality impact.

However, in accordance with the City's BMP Design Manual (2016b), as detailed in the 2015 City of Vista Stormwater Standards Manual (Municipal Code Chapter 13.18, Stormwater Management and Discharge Control Program) and the requirements of the extended Municipal Separate Storm Sewer System (MS4) Permit (San Diego RWQCB Order R9-2013-0001),¹ new and significant redevelopment projects that fall into one of eight categories would be considered "priority" projects. Priority projects are required to incorporate post-construction (or permanent) low-impact development (LID) site design, source control, and treatment control BMPs into the project's design. The proposed project meets three of the eight priority project categories: (1) a new development that creates 10,000 square feet or more of impervious surfaces; (2) a new development project that creates 5,000 square feet or more of impervious surfaces and supports one of the following uses: (a) restaurants and (b) parking lots; and (3) a development project that results in the disturbance of one acre or more of land and are expected to generate post-construction pollutants. As a result, the proposed project is classified as a priority project.

¹ As amended by R9-2015-0001 on February 11, 2015, and R9-2015-0100 on November 18, 2015 (City of Vista 2017).

The project is required to incorporate LID BMPs into the site design. The site design BMPs would minimize impervious surfaces and provide infiltration of runoff before it can leave the site. In addition, source control BMPs are required per the City's BMP Design Manual (2016b) to minimize the introduction of pollutants that may result in water quality impacts, and treatment control BMPs would treat runoff before it discharges from the site. According to the City's Stormwater Standards Manual (2015), treatment control BMPs are effective at minimizing pollutants of concern. The types of BMPs that would be implemented for the proposed project are listed in Table 4-6.

Table 4-6. Best Management Practices Incorporated into Project Design

Type of BMP	Description of BMP
LID Site Design	1. <u>Biofiltration basins and runoff collection</u> : Basins would be designed for pollutant control and hydromodification management. Runoff would be collected within a private storm drain system for conveyance to four BMP facilities: three detention infiltration basins and a biofiltration with partial retention basin.
	2. <u>Minimize impervious surfaces</u> : Impervious surfaces would be minimized by constructing roads and sidewalks to a minimum width requirement.
	3. <u>Minimize soil compaction</u> : Areas receiving planting would be planted and tilled per landscaping plan.
Source Control	4. <u>Storm drain stenciling</u> : Inlets/catch basins would be stenciled with the words "No Dumping – Drains to Creek" or equivalent message.
	5. <u>Employ efficient irrigation and drought tolerant landscape design</u> : Effective irrigation into landscaping would be provided to minimize runoff of excessive irrigation landscape with native and drought-tolerant species to minimize the need for pesticide use.
	6. <u>Protect trash storage areas from rainfall, run-on, runoff, and wind dispersal</u> : Trash enclosures would be covered and designed to preclude run-on.
	7. <u>Pest management</u> : Integrated pest management practices would be employed. Building design would include features that discourage entrance of pests, such as weather stripping.
	8. <u>Vehicle and equipment cleaning</u> : Washwater from carwash would be contained within the proposed building, collected, and discharged to the sanitary sewer.

Source: Appendix H.

Notes: BMP = best management practice; LID = low-impact design

Post-construction, the project would maintain pre-project drainage patterns. The proposed project would construct an on-site private storm drain system that would convey the runoff to one of three underground detention/infiltration basins designed to provide 100-year peak flow mitigation and adequate hydromodification mitigation (Appendix H). The project would also include a biofiltration facility, designed for partial infiltration, at the corner of Hacienda Drive and Vista Village Drive. A private storm drain downstream of the BMPs would convey the project flows to the existing public storm drain system in Hacienda Drive. The proposed basins would remove coarse sediment, trash, and pollutants (i.e., sediments, nutrients, heavy metals, oxygen demanding substances, oil and grease, bacteria, and pesticides), and media filters (porous pavement) would remove coarse sediment, trash, and fine particles before stormwater would be discharged from the project site. With implementation of the operational treatment control BMPs, potential pollutants would be reduced to the maximum extent feasible. Therefore, development of the proposed project would not violate any

water quality standards or waste discharge requirements, including but not limited to increasing pollutant discharges to receiving waters. Impacts would be less than significant.

Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The proposed project would not use groundwater during construction or operation. No groundwater to a depth of 20 feet was encountered during the field explorations conducted for the Preliminary Geotechnical Investigation (Appendix F). The proposed project would result in a change in the amount of impervious ground cover on the project site from zero acres (zero percent coverage) under existing conditions to 3.56 acres (77 percent coverage) at project completion. Additionally, the project site is not located in the groundwater sustainability agency boundary area or within a groundwater basin boundary. Therefore, the project would not decrease groundwater supplies or impede groundwater management of a basin.

Vista Irrigation District (VID), which would provide water to the project site, uses water supplies from the Warner Basin aquifer to supplement its local surface water supply, which is Lake Henshaw. The VID's operational procedure is to use its surface water supply when available and conserve its groundwater for dry years when runoff is minimal and surface supplies are reduced. In dry years, groundwater is pumped from wells into Lake Henshaw and then used from the lake as needed. In wet years, surface water supply is used and groundwater pumping operations cease, which allows the basin to recharge. The groundwater basin acts as a water bank, allowing deposits in wet years and withdrawals in dry years (VID 2016). Therefore, the proposed project would not substantially deplete or interfere with groundwater supplies, and impacts would be less than significant.

Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course or a stream or river or through the addition of impervious surfaces, in a manner that would:

i) Result in substantial erosion or siltation on or off site?

The project's potential to substantially alter the existing drainage pattern of the site or area in a manner that would result in substantial erosion or siltation on or off site during construction and operation is discussed below. The site does not include and is not adjacent to a stream or river. Thus, impacts related to alteration of the course of a stream or river would not occur.

Construction Impacts

Construction of the proposed project would require the excavation of 5,500 cubic yards, which would loosen sediment and could result in erosion or siltation. The project also requires the import of 2,200 cubic yards of material. However, construction of the proposed project requires the City's approval of a grading and erosion control plan per the Grading Ordinance (Development Code, Chapter 17.56) and the State General Permit to Discharge Storm Water Associated with

Construction Activities (NPDES No. CAS000002), which requires preparation of a SWPPP by a qualified SWPPP developer. The grading and erosion control plan and SWPPP are required for plan check and approval by the Land Development and the Planning divisions prior to provision of permits for the project, and would include construction BMPs to reduce erosion or siltation. Typical BMPs for erosion or siltation include the use of silt fencing, fiber rolls, gravel bags, stabilized construction driveway, and stockpile management.

Adherence to the existing requirements and implementation of the required BMPs per the permitting process would ensure that erosion and siltation associated with construction activities would be minimized, and impacts would be less than significant.

Operational Impacts

As designed, the proposed project would not alter the natural drainage path or divert any water from the existing natural conditions or drainage boundaries. Post-construction, the project would maintain pre-project drainage patterns. The proposed project would construct an on-site private storm drain system that would convey the runoff to one of three underground detention/infiltration basins designed to provide 100-year peak mitigation and also adequate hydromodification mitigation (Appendix H). The project would also include a biofiltration facility, designed for partial infiltration, at the corner of Hacienda Drive and Vista Village Drive. The proposed detention/infiltration basins and biofiltration facility would treat stormwater runoff before it leaves the project site to remove any coarse sediment before it enters the off-site drainage area. The project's landscaped areas would also minimize the erosion of surficial soils. Therefore, implementation of the proposed project would not substantially alter the existing drainage pattern such that substantial erosion would occur on or off site. Impacts would be less than significant.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site?

The project's potential to substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff that would result in flooding on or off site during construction and operation is discussed below. The project site does not include and is not adjacent to a stream or river. Thus, impacts related to alteration of the course of a stream or river would not occur.

Construction Impacts

Construction of the proposed project would require the excavation of 5,500 cubic yards and the import of 2,200 cubic yards of material, which could temporarily alter the existing drainage pattern of the site or area and result in flooding on or off site. However, as described previously, implementation of project construction requires preparation of a SWPPP by a qualified SWPPP

developer, which would include construction BMPs to limit an increase in stormwater flows during construction, and reduce the potential for construction-related flooding.

Operational Impacts

Post construction, the proposed project would maintain pre-project drainage patterns. The project would construct an on-site private storm drain system that would convey the runoff to one of three underground detention/infiltration basins designed to provide 100-year peak flow mitigation. These facilities would be designed to also provide adequate hydromodification mitigation (Appendix H). The project would also include a biofiltration facility, designed for partial infiltration, at the corner of Hacienda Drive and Vista Village Drive. A private storm drain downstream of the BMPs would convey the project flows to the existing public storm drain system in Hacienda Drive.

Table 4-7 shows a summary of the peak flow rates for pre- and post-construction conditions. Under the proposed development, the peak flow rates or post-construction conditions would be less than those in the pre-development condition.

Table 4-7. Existing and Proposed 100-Year Peak Discharge Rates

Basin	100-Year Flow Rate (cfs)		
	Existing Q ₁₀₀ (cfs)	Proposed Undetained Condition Q ₁₀₀ (cfs)	Proposed Detained Condition Q ₁₀₀ (cfs)
POC1	11.20	39.65	11.17

Source: Appendix H.

Notes: cfs = cubic feet per second; POC1 = Point of Compliance – Existing curb inlet on the northern side of Hacienda Drive

Under the proposed (developed) condition, the proposed project would increase the peak flow rate of the site to 39.65 cfs. The City requires 100-year runoff from a project to be no greater than the existing condition 100-year runoff. To meet this requirement, the project includes three detention/infiltration basins located in the northwestern, north-central, and southeastern portions of the project site. A fourth facility, a biofiltration basin planter with partial retention, would be located in the southwestern portion of the site. These facilities would also function as biofiltration basins for water quality purposes. As shown in Table 4-7, the peak flow rates in the proposed detained condition would be 11.17 cfs, which are below the rates in the existing condition. As a result, implementation of the proposed project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site, and impacts would be less than significant.

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

The project's potential to 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 is discussed below for project construction and operation.

Construction Impacts

As described previously, the proposed project would require the excavation of 5,500 cubic yards and would require the import of 2,200 cubic yards of material, which would loosen sediment and could temporarily alter the existing drainage pattern of the site and result in additional sources of polluted runoff. However, implementation of project construction requires approval of a grading and erosion control plan, which would include construction BMPs to minimize the potential for construction-related sources of pollution or increases in stormwater flows that could result in flooding.

Adherence to the existing requirements and implementation of the required BMPs per the permitting process would ensure that increases in runoff and pollution associated with construction activities would be minimized, and impacts related to the capacity of stormwater drainage systems and generation of polluted runoff would be less than significant.

Operational Impacts

The proposed drainage patterns and drainage improvements were designed to mimic existing drainage patterns. As discussed previously, the underground detention/infiltration basins and biofiltration facility would be designed to also provide adequate hydromodification mitigation (Appendix H) to control the velocity and amount of runoff post-development to ensure that runoff does not exceed pre-development conditions. Therefore, the existing storm drainage system would be sufficiently sized to convey the post-development condition, and impacts would be less than significant.

iv) Impeded or redirect flood flows?

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for the project area, the project site is located within Flood Zone X, which represents areas of 0.2 percent annual chance of flood, areas of one percent annual chance flood with average depths of less than one foot or with drainage areas less than one square mile, or areas protected from levees from one percent annual chance flood (FEMA 2019). Therefore, implementation of the proposed project would not construct housing or other structures within a 100-year flood hazard area or place structures within a 100-year flood hazard area that would impede or redirect flows.

In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

The project site is not at risk for seiche or tsunami from area lakes or the Pacific Ocean. In addition, the project site is approximately six miles from the Pacific Ocean and is located at an elevation of 340–342 feet mean sea level. As a result, the project site is not at risk for tsunami inundation, and impacts would not occur.

In addition, the project site does not have the potential to produce mudflows due to the relatively flat and moderately sloped topography of the site and surrounding area. The City's Development Code, Section 16.48, requires that developments within or near slopes apply slope stabilization measures, which include but are not limited to hydroseeding and use of erosion control blankets, silt fencing, fiber rolls, and gravel bags. As a result, impacts related to mudflows would not occur.

Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

According to the San Diego Basin Plan (Basin Plan), the city of Vista and the project site are within the Vista Hydrologic Subarea of the Buena Vista Hydrologic Area (904.20) of the Carlsbad Hydrological Unit (904.0). In the existing condition, the project site is a rough-graded, vacant lot that drains from the northeastern corner to the southwestern corner into a small collection area. Runoff is then conveyed within the existing public storm drain system in Hacienda Drive, and commingles with runoff from Vista Village Drive. Stormwater runoff within this system flows west and discharges into Buena Vista Creek, which is located approximately 500 feet downstream. Runoff then flows into Buena Vista Lagoon and eventually discharges into the Pacific Ocean. Buena Vista Creek is on the CWA Section 303(d) list for sediment toxicity and selenium, and Buena Vista Lagoon is on the CWA Section 303(d) list for indicator bacteria, nutrients, and sedimentation/siltation. The designated beneficial uses of Buena Vista Creek include Agricultural Supply (AGR), Industrial Service Supply (IND), Contact Recreation (REC1), Non-Contact Recreation (REC2), Warm Freshwater Habitat (WARM), and Wildlife Habitat WILD (WILD) (SDRWQCB 2016). Construction and operation activities associated with the proposed project could result in an increase in potential discharge of pollutants to receiving waters, including waters designated as impaired. Additionally, hydromodification could increase stormwater runoff and intensify erosion and the transport of sediment and other pollutants. Land use changes may also introduce new types of pollutants in stormwater runoff. The project site is not located in the groundwater sustainability agency boundary area or within a groundwater basin boundary. Therefore, there is no sustainable groundwater management plan prepared for the project site.

Construction Impacts

Construction activities associated with the proposed project would involve various types of equipment such as bulldozers, scrapers, backhoes, and other earth-moving equipment; dump trucks; cranes; trucks; concrete mixers; and generators. Pollutants associated with these

construction activities that could result in water quality impacts include soils, debris, other materials generated during demolition and clearing, fuels and other fluids associated with the equipment used for construction, paints, other hazardous materials, concrete slurries, and asphalt materials. Due to the extent of construction anticipated under the proposed project, implementation could result in significant short-term impacts to water quality impacts from uncontrolled sediment and pollutants in stormwater runoff that could conflict with the policies of the Basin Plan.

However, as previously discussed, construction projects that disturb more than one acre would be required to comply with General Construction Stormwater Permit requirements, including the development and implementation of a SWPPP. The SWPPP must identify BMPs that the discharger would use to protect stormwater runoff from pollutants and the placement of those BMPs. Therefore, with the implementation of policies and regulatory requirements, which include the implementation of construction-period BMPs to address potential discharges of pollutants to stormwater, any short-term water quality impacts during construction of the proposed project would be minimized and would not cause a conflict with or obstruct implementation of the Basin Plan. Therefore, potential impacts would be less than significant.

Operational Impacts

Implementation of the proposed project would result in land use changes that would have the potential to generate pollutants that could degrade the surface water quality of downstream receiving waters. Pollution sources for the proposed project would include landscaping, rooftops, parking, and trash storage areas. In addition, implementation of the proposed project could also result in more routine operation and maintenance activities, increasing instances of accidental spills and non-stormwater discharges to storm drains and non-stormwater connections (e.g., sewer connections) that could result in the potential discharge of pollutants to storm drainage systems and associated receiving waters. Therefore, operation of the proposed project could result in significant long-term water quality impacts from uncontrolled pollutants in stormwater runoff that could conflict with the policies of the Basin Plan.

However, as previously discussed, the proposed project requires the implementation of construction and operation BMPs, which includes LID site design and source control BMPs, to reduce runoff or pollutants at the source. Therefore, with the implementation of appropriate BMPs, compliance with Chapter 13.18 of the City's Municipal Code, and applicable state requirements, project impacts would be minimized and would not conflict with or obstruct implementation of the Basin Plan. As such, impacts are considered less than significant.

4.1.9 Land Use and Planning

Would the project physically divide an established community?

The site is located in the northeastern corner of the intersection of Vista Village Drive and Hacienda Drive. The site is bounded to the south and east by Hacienda Drive, to the west by Vista Village Drive, and to the north by the eastbound State Route 78 on-ramp. Vacant land borders the project site to the east.

Development of the proposed improvements would not create any new land use barriers, preclude the development of surrounding parcels, or otherwise divide or disrupt the physical arrangement of the surrounding community. Overall, the proposed project would result in a residential development that would be consistent with the established community. As a result, no impacts would occur.

Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The project site has a land use designation under the GP 2030 Update (City of Vista 2012) as General Commercial (GC), which allows a maximum allowable intensity of 0.75 floor area ratio. As described in the Land Use and Community Identity (LUCI) Element of the GP 2030 Update (City of Vista 2012), the GC land use designation is intended for a broader range of retail sales including community shopping centers, department stores, restaurants, financial institutions, automotive services, and sales and repair of consumer goods. The proposed project's consistency with the GP 2030 Update (City of Vista 2012), Zoning Code, and other land use plans and policies is discussed below.

General Plan

Land Use and Community Identity Element

As described previously, the proposed project would comply with the City's LUCI Element policy that land uses comply with surrounding designations. The following policies under the LUCI Element would be applicable to the proposed project. Table 4-8 summarizes the project's consistency with the policies.

Table 4-8. Consistency with Policies in the LUCI Element of the Vista General Plan 2030 Update

LUCI Policies	Project Description	Consistent (Y/N)?
Policy 1.1: Require the application of the City of Vista Design Guidelines, including site design, architecture, lighting, and signage, when reviewing and approving new development and redevelopment.	As described in Chapter 2 and shown on Figure 2-5, Proposed Site Plan, the site design, architecture, lighting, landscape architecture, and signage would meet or exceed all City design guidelines and standards. Any project components that do not meet City Guidelines would be addressed during City staff review of the proposed project.	Y
Policy 1.5: Require public and/or private landscaping along all arterial roadways to: minimize the visual dominance of paved surfaces; create more appropriately defined and human-scaled public places; help distinguish spaces designated for pedestrian and non-motorized use from those designated for vehicular travel and parking; and provide environmental benefits, such as absorbing carbon dioxide, helping manage stormwater, and shading to reduce heat island effects. Preference shall be given to native or drought tolerant landscape species.	<p>Proposed landscaping would consist of non-invasive, low- to moderate-water-use/drought-tolerant plants with similar water-use plants grouped together. A wide range of shrubs, ground covers, and trees are proposed. Trees would be planted along the project perimeter of the site and around each proposed building, and all but the Koelreuteria (Chinese flame tree) and Cercidium (Palo Verde) would be evergreen. At-grade planters would be situated around Pads 1 through 4 with vine planted in narrow, raised planters around Pads 2 and 4. Sloped areas would be planted with ground-cover species. Parking lot medians would provide a minimum of four five-gallon screening shrubs for every 100 feet and a canopy shade tree. There would be three-foot-high screening shrubs along the outer edges of the parking area. No turf would be used. Instead, plants would be dressed with a three-inch layer of mulch moisture retention to discourage weeds. Landscaped areas in common areas would be permanently maintained by the property owner. Landscaping area on the project site would total 40,895 square feet (see Figure 2-7, Landscape Plan).</p> <p>Plant selection would be based on the Water Efficient Landscaping Ordinance in the City's Development Code, Chapter 18.56. The proposed plant species would require low or moderate water use.</p>	Y
Policy 1.6: Encourage undergrounding of utilities, and discourage new electric and communications lines to be added to existing aboveground utility systems.	Gas, electrical, cable, and telephone connections would be provided to the project site from existing facilities within or adjacent to Hacienda Drive and Vista Village Way.	Y
Policy 2.8: Consider adoption of a slope protection ordinance as an amendment to the zoning ordinance to better define grading standards for hillside development and ensure the protection of natural landforms in the review of new development.	The current graded ground surface is relatively level. Elevations range from 324 feet mean sea level in the southwestern corner to 340 feet above mean sea level in the northeastern corner. This 16-foot differential occurs over a distance of approximately 700 feet, a surface gradient of approximately two percent.	Y
Policy 2.9: Prohibit mass grading to protect the visual continuity of the hillsides.	The project site is not located on a hillside, and the current graded ground surface is relatively flat.	Y
Policy 2.11: Preserve immediate ridges and hilltops in a natural state to the maximum extent possible. Intermediate ridges are those with visible land behind them that creates a backdrop to the ridge as viewed from the valley floor. Development should be sited such that buildings do not project above the natural landform. Development applications shall be designed so that site plans	The natural slope of the site generally runs in a south to north direction. In addition, the commercial buildings would not be taller than what is allowed under City standards.	Y

Table 4-8. Consistency with Policies in the LUCI Element of the Vista General Plan 2030 Update

LUCI Policies	Project Description	Consistent (Y/N)?
concentrate development in the subordinate or hidden locations, and grading plans minimize disruption of the natural landform and vegetation.		
Policy 2.12: Restrict development of hillsides so that the natural appearance and landform of the site is preserved. Development projects on terrain with a slope greater than 3.5 percent shall conform with the following standards: development shall be designed to minimize grading requirements by conforming to the natural contours of the site; the site shall be landscaped with existing trees and natural vegetation, as much as possible, to stabilize slopes, reduce erosion, and enhance the visual appearance of the development; and grading, terracing, padding, and cut-and-fill shall be minimized to protect the visual continuity of the hillsides.	Grading would be performed to the minimum extent necessary to carry out the development. On-site landscaping with trees, shrubs, and ground cover would stabilize slopes, reduce erosion, and further enhance the visual appearance of the development.	Y
Policy 3.2: Mitigate unacceptable levels of noise, odors, pollution, dust, light, and glare upon residential areas and other sensitive receptors, such as schools and day care centers.	<p><i>Noise:</i> Anticipated operational noise sources include machine operations related to the automated car wash, outdoor vacuums, drive-through speakers, and rooftop HVAC units. The project would not result in unacceptable levels of noise. Modeling for the project's operations includes the combined noise levels generated by all sources. As a result, 50 dBA L_{eq} noise contours would not extend into nearby properties. See additional analysis in Section 4.1.11, Noise.</p> <p><i>Odors:</i> The project does not propose any land uses typically considered a source of significant odors. See analysis in Section 4.1.3, Air Quality.</p> <p><i>Pollution:</i> Emissions from the proposed project are produced as a result of fuel combustion emissions from vehicles, space heating, water heating, and landscape maintenance equipment; VOC emissions from periodic repainting of interior and exterior surfaces; and charbroiling from the proposed restaurants. The project would not result in unacceptable levels of pollution as total project operations would be below the significance thresholds for all pollutants.</p> <p><i>Dust:</i> The project would not result in unacceptable levels of dust. Dust suppression methods would be included during construction. Such BMPs are described in Section 4.1.8, Hydrology and Water Quality.</p> <p><i>Light and Glare:</i> As discussed in Section 4.1.1, Aesthetics, the proposed project would include natural galvanized metal corrugated siding, painted metal iron fixtures, and iron fixture aluminum storefronts, which have the potential to produce glare. The proposed project would include dark finishes to reduce the potential for high reflectiveness. In addition, the proposed parking lot could generate glare from the windshields of parked cars. The proposed project incorporates a landscaping plan that would help reduce any potential for glare from the project from impacting the surrounding land uses. In addition, the installation of outdoor lighting would be required to meet the requirements in Section 18.58.260, Outdoor</p>	Y

Table 4-8. Consistency with Policies in the LUCI Element of the Vista General Plan 2030 Update

LUCI Policies	Project Description	Consistent (Y/N)?
	Lighting Facilities and/or Fixtures, of the City's Development Code. Compliance with this existing code would reduce the potential to generate glare from new lighting fixtures.	
Policy 3.3: Require visual and acoustic buffering between non-residential and residential land uses and other sensitive receptors by employing techniques such as landscaping, setbacks, sound walls, and sensitive siting of buildings.	<p>The project would enhance the visual quality of the project site by introducing aesthetically pleasing commercial uses to an underused vacant piece of land. The proposed architectural design is intended to reflect the character of the surrounding area and would include a mixture of textures and finishes such as smooth stucco with brick veneer, faux wood siding, and metal corrugated siding. It would act as a transition to the adjacent neighboring residential community due to its evenly spaced modern buildings and heavily landscaped layout. In accordance with the proposed landscape plan, trees would be planted along the project perimeter and surrounding each proposed building. At-grade planters would be situated around Pads 1 through 4 with vine plantings in narrow, raised planters around Pads 2 and 4. Sloped areas would be planted with ground-cover species. Parking lot medians would provide a minimum of four five-gallon screening shrubs for every 100 feet and a canopy shade tree.</p> <p>Plant selection would be based on the Water Efficient Landscaping Ordinance in the City's Development Code, Chapter 18.56. The proposed plant species would require low or moderate water use.</p>	Y
<p>Policy 4.3: Ensure that new and redeveloped projects are designed to improve pedestrian and transit connections, and connections to trail and bicycle networks.</p> <p>Policy 5.4: Promote the provision of multi-modal access to activity centers such as public facilities, commercial centers and corridors, employment centers, transit stops, schools, parks, recreation areas, and tourist attractions.</p>	Concrete pathways would be provided at storefronts and connect each building to offer pedestrian access within the project site. The storefront concrete pathways vary in width from 5-feet to 12'-10" and connecting concrete pedestrian walkways vary in width between 5-and and 6-feet. A 5-foot-wide sidewalk would be constructed along the southwestern project site perimeter on the northern side of Hacienda Drive to provide pedestrian connection to the existing sidewalk on Vista Village Drive. Section 18.54.080 of the City's Zoning Code requires one bicycle space for every 20 automobile spaces. Pursuant to the City's Zoning Code, the project would provide 160 parking stalls and therefore would provide eight bicycle spaces on site, which would meet the City's Zoning Code requirements. North County Transit District's BREEZE bus line operates service (Route No. 332) along S. Melrose Drive, which provides a connection between the project site and the Vista Transit Center and the Buena Creek SPRINTER stations. The nearest bus stop to the project site is located at S. Melrose Drive and Hacienda Drive about 0.2 mile south.	Y
Policy 4.4: Encourage new and redeveloped projects to incorporate facilities that support bicycle use, such as bike racks, lockers, and/or showers, to the extent possible and appropriate.	Eight bicycle parking spaces would be provided on site with one bike rack provided by the future tenants situated at each building pad.	Y
Policy 4.9: Ensure that new development complies with the California Green Building Standards Code (the CALGreen Code) to promote sustainable design and construction practices and positive environmental impacts in planning and design, energy efficiency, water	The proposed project would comply with the applicable CALGreen building codes and standards in affect at the time of construction.	Y

Table 4-8. Consistency with Policies in the LUCI Element of the Vista General Plan 2030 Update

LUCI Policies	Project Description	Consistent (Y/N)?
efficiency and conservation, and material conservation and resource efficiency.		
Policy 5.3: Study and remove barriers, where feasible, to allow people of all abilities to access the mobility infrastructure serving the community.	The proposed project would provide concrete pathways at storefronts and connect with each building to offer pedestrian access within the project site. The storefront concrete pathways vary in width from 5-feet to 12'-10" and connecting concrete pedestrian walkways vary in width between 5-and and 6-feet. A five-foot-wide sidewalk, curb, and gutter would be constructed along the southwestern project site perimeter on the northern side of Hacienda Drive to provide pedestrian connection to the existing sidewalk on Vista Village Drive. Improvements would comply with ADA requirements.	Y
Policy 6.6: Require graffiti- resistant materials and construction techniques, including landscaping, on all perimeter walls for commercial, industrial, institutional, and recreational development and redevelopment.	Graffiti-resistant materials and construction techniques, including split face walls along the public edges of the project, would be used to deter vandalism. Landscaping would be planted along the perimeter of common open space areas to deter trespassing, loitering, and unauthorized use.	Y
Policy 7.4: Promote Vista as a desirable place to do business by ensuring it has a positive image and identity, quality development, and attractive streetscapes and gateways.	The project would enhance the visual quality of the project site by introducing aesthetically pleasing commercial uses to an underused vacant piece of land. Proposed landscaping would consist of non-invasive and low- to moderate-water-use/drought-tolerant plants with similar water-use plants grouped together. A wide range of shrubs, ground covers, and trees are proposed. Trees would be planted along the perimeter of the site and around each proposed building, and all but the Koelreuteria (Chinese flame tree) and Cercidium (Palo Verde) are evergreen. At-grade planters would be situated around Pads 1 through 4 with vine planted in narrow, raised planters around Pads 2 and 4. Sloped areas would be planted with ground cover species. Parking lot medians would provide a minimum of four five-gallon screening shrubs for every 100 feet and a canopy shade tree.	Y
Policy 11.1: Encourage community participation in planning and development of land use policies, plans, and programs through outreach efforts, workshops, community meetings, public hearings, newsletters, and electronic media.	Project comments would be received during the public review period for the <u>Recirculated</u> DEIR for the project. The Planning Commission will hold a public hearing to consider the approval of the project and certification of the <u>Recirculated</u> DEIR.	Y
Policy 11.2: Foster coordinated planning and cooperation with non-governmental organizations, particularly those involved in resource protection, in implementation of the City's land use planning policies.	As part of the EIR process, the City consulted with California Native American tribes to ensure the protection of tribal cultural resources under AB 52.	Y
Policy 11.3: Provide and support opportunities for diverse groups to participate in the planning process.	Through the CEQA process and public hearings, local residents are encouraged to participate in the planning process.	Y

Source: City of Vista 2012.

Notes: AB = Assembly Bill; ADA = Americans with Disabilities Act; BMP = best management practice; CEQA = California Environmental Quality Act; DEIR = draft environmental impact report; HVAC = heating, ventilation, and air conditioning; VOC = volatile organic compound

As shown in Table 4-8, the proposed project would be consistent with the applicable goals and policies in the LUCI Element of the GP 2030 Update (City of Vista 2012). Therefore, less than significant impacts would occur from development of the proposed project.

Circulation Element

The City's Circulation Element contains policies that apply to the proposed project. Table 4-9 identifies the goals and policies that would apply to the proposed project and provides a project consistency evaluation.

Table 4-9. Consistency with General Plan Circulation Element Goals and Policies

Circulation Element Goal/Policy	Project Description	Consistent (Y/N)?
CE Policy 1.2: Strive to maintain a vehicular Level of Service (LOS) D or better throughout the City except for within areas designated for mixed-use development, or areas designated to be more bicycle/pedestrian friendly.	As described in Section 3.3, the proposed project has a significant impact at the S. Melrose Drive/Hacienda Drive intersection in the Existing + Project, Near-Term Cumulative Impacts, Long-Term Cumulative Impact scenarios. Implementation of Mitigation Measure TRA-1 would reduce this impact to a less than significant level. In addition, the project would require payment of the City's Impact Fees for Arterial Streets and Traffic Signals Program.	Y
CE Policy 1.5: When a traffic analysis indicates that the LOS reaches "D" or below, the City will determine that improvements or operational changes are needed to maintain or improve the LOS. Such improvements will either be the responsibility of the project applicant or the City will identify potential funding and prioritization for the necessary improvements through the CIP process.		Y
CE Policy 1.10: Require necessary conditions of approval on development projects to achieve LOS standards prescribed in this Element. Develop a checklist for development and redevelopment project to ensure the inclusion of infrastructure that provides for safe travel for all users and enhances the project outcome and community impact.		Y

Table 4-9. Consistency with General Plan Circulation Element Goals and Policies

Circulation Element Goal/Policy	Project Description	Consistent (Y/N)?
CE Policy 1.11: Require all new development projects to participate in the City's transportation fee programs. These programs will be designed to ensure that all new development projects fund their fair share of the necessary long-term transportation improvements identified in this Element.		Y
CE Policy 1.12: Require all new development projects to either fund or install their fair share of all required feasible transportation improvements necessary to achieve a multi-modal LOS identified in this Element as mitigation for the direct impacts on the circulation network from the proposed project.		Y
CE Goal 5 – Encourage alternative forms of transportation to private automobiles that meet the needs of all City residents by providing improved access to transit connections, to employment, and other activity centers.	The proposed project would include concrete pathways at storefronts and connect with each building to offer pedestrian access within the project site. The storefront concrete pathways vary in width from five feet to 12 feet and ten inches, and connecting concrete pedestrian walkways vary in width between five and six feet. A five-foot-wide sidewalk, curb, and gutter would be constructed along the southwestern project site perimeter on the northern side of Hacienda Drive to provide pedestrian connection to the existing sidewalk on Vista Village Drive. North County Transit District's BREEZE bus line operates service (Route No. 332) along S. Melrose Drive, which provides a connection between the project site and the Vista Transit Center and the Buena Creek SPRINTER stations. The nearest bus stop to the project site is located at S. Melrose Drive and Hacienda Drive approximately 0.2 mile south.	Y
CE Policy 6.4: Require proposed developments to install sidewalks and wheelchair ramps that comply with the ADA standards adjacent to all roadways within each development	The proposed project would include ADA-compliant walkways and wheelchair ramps that would provide access throughout the project site and adjacent areas. Bicycle access to the project would be provided through S. Melrose Avenue. No bicycle lanes are located along Hacienda Drive.	Y
CE Policy 6.7: Require developers to provide facilities for pedestrian travel such as sidewalks, design developments to provide pedestrian access to the development via sidewalks, and avoid requiring that pedestrians use driveways to access development.	As described previously, the proposed project would include walkways for pedestrian travel throughout the project site and to areas adjacent to the project site.	Y

Source: City of Vista 2012.

Notes: ADA = Americans with Disabilities Act; CE = Circulation Element

As described in Table 4-9, the proposed project would be consistent with the goals and policies of the City's Circulation Element. Therefore, impacts related to consistency with the Circulation Element would be less than significant.

Resource Conservation and Sustainability Element

The City's Resource Conservation and Sustainability (RCS) Element contains policies that apply to the proposed project. Table 4-10 identifies the goals and policies that would apply to the proposed project and provides a project consistency evaluation.

Table 4-10. Consistency with General Plan Resource Sustainability and Conservation Element Goals and Policies

Resource Sustainability and Conservation Goal/Policy	Project Description	Consistent (Y/N)?
<u>RSC Policy 2.7</u> : Through the California Environmental Quality Act (CEQA) documents, evaluate and disclose the contribution new projects could have on climate change and require mitigation measures as appropriate.	As required by this measure, GHG emissions for the project have been evaluated and disclosed, and mitigation measures are required; see 3.2, Greenhouse Gas Emissions. The GHG emissions that would result from operation of the proposed project would exceed the City's <u>Bright Line and Efficiency Thresholds</u> . Mitigation Measures GHG-1 through GHG-47 are identified to reduce emissions to the extent feasible. However, even with the implementation of mitigation measures, impacts would be significant and unavoidable.	Y
<u>RSC Goal 4</u> : Preserve, protect, and enhance water quality in watersheds to which the City contributes storm water and urban runoff.	The project proposes to use drought-tolerant and native species in its landscaping plan, and LID site design measures are incorporated into the project design in accordance with current stormwater regulations to manage stormwater and urban runoff as discussed in Section 4.1.8.	Y
<u>RSC Policy 4.6</u> : Require the incorporation of LID techniques in accordance with current storm water regulations to manage storm water and urban runoff, reduce runoff and pollution, reduce the footprint of development on each parcel, and assist in maintaining or restoring the natural hydrology of the site.	LID techniques, including three detention/infiltration basins located in the northwestern, north-central, and southeastern portions of the project site and a fourth facility, a biofiltration basin planter, are incorporated into the project design. On-site stormwater runoff would be collected in proposed private storm drains and conveyed to the proposed biofiltration basins. These basins have been designed for pollution control and hydromodification mitigation and to control the peak flow rates from the project site in accordance with current regulations to manage stormwater and urban runoff as discussed in Section 4.1.8.	Y
<u>RSC Goal 6</u> : Implement the provisions of the regional Multiple Habitat Conservation Plan (MHCP).	As discussed in Section 4.1.4, Biological Resources, the project site is not within or adjacent to any land that has a BPO designation. Therefore, the development of the proposed project would not create any conflict with the provisions of the MHCP.	Y
<u>RSC Goal 9</u> : Continue to provide parkland to effectively serve the recreational needs of the community.	The proposed project does not include residential development and would not generate the need for parkland in the community. The expansion of existing recreational facilities or the construction of new recreational facilities is not anticipated or needed.	Y

Table 4-10. Consistency with General Plan Resource Sustainability and Conservation Element Goals and Policies

Resource Sustainability and Conservation Goal/Policy	Project Description	Consistent (Y/N)?
RSC Policy 9.8: Encourage and where appropriate, require the inclusion of recreational facilities, permanently dedicated open space and/or trails within new residential subdivisions, and multi-family, commercial, and industrial developments, and within the Opportunity Areas identified in the Land Use and Community Identity Element.	The proposed project does not include residential development, and would not generate the need for parkland in the community. The expansion of existing recreational facilities or the construction of new recreational facilities is not anticipated or needed.	NA
RSC Goal 12: Acknowledge, preserve, and protect the City's Native American heritage.	As described in Section 3.1, Cultural and Tribal Resources, City staff notified California Native American tribes per the requirements of CEQA Section 21080.3.1 (i.e., Assembly Bill 52), and consultation was conducted per the requirements of CEQA Section 21080.3.2. In addition, given the potential for unknown subsurface archaeological resources and tribal cultural resources, avoidance and mitigation would be required during construction of the proposed project to preserve and protect the City's Native American heritage as discussed in Section 3.1.	Y
RSC Policy 12.3: Ensure that the San Luis Rey Band of Mission Indians is notified of any proposed discretionary planning or grading applications affecting lands with potential archaeological resources.	As described in Section 3.1, City staff notified California Native American tribes, including the San Luis Rey Band of Mission Indians, per the requirements of CEQA Section 21080.3.1 (i.e., Assembly Bill 52), and consultation was conducted per the requirements of CEQA Section 21080.3.2.	Y
RSC Policy 12.4: If significant Native American artifacts are discovered during pre-construction or construction phases of a discretionary project or during implementation of a grading permit, the first priority shall be: a) to avoid any further disturbance of those areas by re-designing the proposed development or project; and b) to have those areas placed into a protected open space via an open space easement or other protective measure. If avoidance is not feasible based on consultation with the Most Likely Descendant of the artifact, appropriate mitigation shall be required. Any discovered Native American artifacts shall be returned to their Most Likely Descendant and repatriated at the earliest opportunity.	As stated in Section 3.1, mitigation measures would be implemented that address the treatment of significant Native American artifacts, deposits, and features should they be encountered during pre-construction or construction of the proposed project.	Y

Table 4-10. Consistency with General Plan Resource Sustainability and Conservation Element Goals and Policies

Resource Sustainability and Conservation Goal/Policy	Project Description	Consistent (Y/N)?
RSC Policy 12.5: If Native American human remains and/or associated grave goods found during any activities identified in RCS Policy 12.4, the first priority shall be: a) to avoid any further disturbance of those areas in which remains have been found, and b) to have the remains and/or associated goods preserved in place via an open space easement or similar protective land use measure. The second priority shall be that the Most Likely Descendant of the remains and/or goods, as determined by the NAHC, must also have the opportunity to recommend other culturally appropriate treatment.	As stated in Section 3.1, Mitigation Measure CUL-6, which addresses the treatment of Native American human remains and associated grave goods should they be encountered during pre-construction or construction of the proposed project, would be implemented.	Y

Source: City of Vista 2012.

Notes: BPO = Biological Preserve Overlay; GHG = greenhouse gas; LID = low-impact design; MHCP = Multiple Habitat Conservation Plan; NA = not applicable; RCS = Resource Conservation and Sustainability

Therefore, as discussed in Table 4-10, implementation of the proposed project would be consistent with the goals and policies of the RCS Element of the Vista General Plan 2030 Update, and impacts would be less than significant.

Other General Plan Elements

The proposed project would be conditioned to comply with applicable noise standards, would be adequately served by existing public services, and would require compliance with the City's Building and Fire Codes and with the CBC. Consequently, no inconsistencies with the Noise Element and Public Safety, Facilities, and Services Element of the GP 2030 Update (City of Vista 2012) are anticipated as a result of project development; therefore, impacts would be less than significant.

Habitat Conservation Plan or Natural Community Preservation Plan

The city of Vista is part of the North County MHCP, which is a comprehensive conservation planning process developed to identify and protect critical habitats for a wide range of plant and animal species within a 20,000-acre preserve system in North County. To implement the provisions of the MHCP within Vista, a BPO has been created and identified as the City's regional habitat preservation system in the GP 2030 Update (City of Vista 2012). The project site is not within or adjacent to any land that has a BPO designation. Therefore, the development of the proposed project would not conflict with the provisions of the MHCP, and impacts related to the MHCP would not occur.

Zoning Code

Consistency with Commercial Zone Designation

The property is currently zoned Commercial (C-1) under the Zoning Code. Per Chapter 18.64 in the City's Development Code, an assessment is required for determining project consistency with the GP 2030 Update, Zoning Code, development standards, and design guidelines. With approval of the Site Development Plan, the proposed project would be consistent with the proposed residential zoning. Impacts would be less than significant.

4.1.10 Mineral Resources

Would the project 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?; and

Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan other land use plan?

The California Department of Conservation's California Geological Survey does not identify the project site as an area with high potential for aggregate or mineral resources (CGS 2019). The GP 2030 Update (City of Vista 2012) does not identify the project site as a locally important mineral resource recovery site. Therefore, development of the proposed project would not result in the loss of availability of a known mineral resource. No impacts would occur.

4.1.11 Noise

The following discussion is based on the analysis contained within the Noise Assessment Study (Noise Study) (Appendix I) prepared by Helix Environmental Planning in 2018 for the proposed project.

Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Potential noise impacts associated with the proposed project would be related to short-term (i.e., temporary) noise during construction and long-term noise resulting from project's car wash, drive-through speakers, rooftop HVAC, and operational traffic.

Existing Conditions

The existing noise environment is dominated by vehicular traffic noise on State Route 78 and Vista Village Drive. Other noise sources include general noise associated with the shopping center south of the project site. The existing noise levels on the project site were documented through two short-term ambient noise measurements conducted on the project site on September 5, 2018 (Appendix I). The first measurement was taken at the southern edge of the site on Hacienda Drive. The second measurement was taken at the western edge of the site along Vista Village Drive, approximately 60 feet from the roadway centerline. Table 4-11 shows the results of the short-term noise monitoring.

Table 4-11. Short-Term Noise Monitoring Summary

Site Location	Description	Noise Sources	L _{eq}
Measurement 1	Southern edge of the project site along Hacienda Drive, approximately 25 feet from roadway centerline.	Traffic noise along nearby roadways was the primary noise source; some incidental noise was generated from the shopping center to the south.	61.0
Measurement 2	Western edge of the project site along Vista Village drive, approximately 60 feet from roadway centerline.	Traffic along Vista Village Drive was the dominant noise source.	71.7

Source: Appendix I.

Notes: L_{eq} = equivalent continuous sound level

Construction Impacts

Short-term noise impacts are related to noise generated during construction on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Construction activities of the project that would produce noise include grading, erecting new buildings, and paving the site. The magnitude of the noise impact would depend on the type of construction activity, equipment used, duration of each construction phase, distance between the noise source and receiver, and any intervening structures. Construction would generate elevated noise levels that may disturb nearby noise-sensitive land uses.

All construction equipment would not operate at the same time or location. Additionally, construction equipment would not be in constant use during the eight-hour operating day. A loader and dump truck were analyzed together for construction noise impacts due to their likelihood of being used in conjunction with one another. Construction was estimated at an average of approximately 150 feet from the nearest residential property line south of the project site across Hacienda Drive. Table 4-12 provides the Roadway Construction Noise Model noise level results for expected construction equipment using the 150-foot distance without accounting for topography or existing walls.

Table 4-12. Construction Equipment Noise Levels

Unit	Percent Operating Time	dBA L_{eq} at 150 Feet
Backhoe	40	64.0
Compressor	40	64.1
Concrete Mixer Truck	40	65.3
Concrete Pump Truck	20	64.9
Crane	16	71.0
Dozer	40	68.1
Dump Truck	40	62.9
Grader	40	71.5
Excavator	40	67.2
Front-End Loader	40	65.6
Paver	50	64.7
Roller	20	63.5
Loader/Dump Truck	40	67.5

Source: Appendix I.

Notes: dBA – A weighted decibels; L_{eq} = equivalent continuous sound level

According to Section 8.32.040 in the City’s Municipal Code, noise levels from project-related grading and construction activities should not exceed the noise limit specified in the San Diego County Code, Sections 36.408 and 36.409, of 75 A-weighted decibels (dBA) (eight-hour average) when measured at the boundary line of the property where the noise is located or any occupied property where noise is being received. As stated previously, most construction equipment would generate noise levels below 70 dBA at the nearest residences. A crane and grader would generate noise levels of 71.0 and 71.5 dBA equivalent continuous sound level (L_{eq}), respectively (Appendix I). Construction noise from this equipment would be below the 75 dBA L_{eq} significance threshold and, therefore, would be less than significant.

Operational Impacts

Stationary Sources

According to the Chapter 8.32, Noise Control, of the City’s Municipal Code, it is unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level at any point on or beyond the boundaries of the property exceeds these limits. The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones. A significant impact would occur if the project would expose proposed commercial development to noise levels exceeding 60 community noise equivalent level. Per the City’s Noise Ordinance, impacts would be significant if the project would generate noise levels at a common property line with a residential zone that would exceed the following one-hour average exterior noise levels: 55 dBA from 7:00 a.m. to 10:00 p.m. and 50 dBA from 10:00 p.m. to 7:00 a.m. Impacts would also be significance if the project would generate noise levels at a common

property line with a commercial zone that would exceed the following one-hour exterior noise levels: 60 dBA from 7:00 a.m. to 10:00 p.m. and 55 from 10:00 p.m. to 7:00 a.m.

Anticipated operational noise sources include machine operations related to the automated car wash, outdoor vacuums, drive-through speakers, and rooftop HVAC units. Modeling for the project's operations includes the combined noise levels generated by these sources. As a result, 50 dBA L_{eq} noise contours would not extend into nearby properties (Appendix I). The vacuum stalls would generate substantial noise, but elevated noise levels would largely remain within the project site. Similarly, the projects' drive-through speakers would not generate noise levels exceeding 60 dBA L_{eq} beyond approximately 25 feet. HVAC units would not generate ground-level noise above 50 dBA L_{eq} on site or off site. The car wash blower would generate noise levels beyond the project site; however, noise levels exceeding 50 dBA L_{eq} are not expected to be generated at nearby residences. An existing six-foot concrete masonry unit wall would reduce noise levels at the residences to the south. Furthermore, the car wash would not be operating during nighttime hours, and noise levels exceeding 55 dBA L_{eq} are not expected across Hacienda Drive. Because nearby residential uses would not be subjected to noise levels from project operations exceeding either daytime or nighttime limits, impacts would be less than significant.

Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Project-related construction and operational groundborne vibration impacts are discussed separately below. Groundborne vibration consists of rapidly fluctuating motions within the ground that have an average motion of zero. Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. Common sources of groundborne vibration include construction activities such as blasting, pile driving, and operating heavy earth-moving equipment.

Construction Impacts

Of the variety of equipment that would be used during construction, large vibratory rollers would produce the greatest groundborne vibration levels. Impact equipment such as pile drivers are not expected to be used during construction of the project. Large vibratory rollers produce groundborne vibration levels ranging up to 0.210 inch per second peak particle velocity (PPV) at 25 feet from the operating equipment. As discussed in the Noise Study (Appendix I), the nearest off-site receptors to the proposed construction footprint are residential units located approximately 100 feet south of the project site. A 0.210 inch per second PPV vibration level would equal 0.046 inch per second PPV at a distance of 100 feet (Appendix I). This would be lower than what is considered a "strongly perceptible" impact for humans of 0.1 inch per second PPV and the structural damage impact to older residential structures of 0.5 inch per second PPV. Therefore,

although a vibratory roller may be perceptible to nearby human receptors, temporary impacts associated with the roller (and other potential equipment) would be less than significant.

Operational Impacts

Implementation of the project would not include any permanent sources that would expose people in the project vicinity to groundborne vibration levels that could be perceptible without instruments at any existing sensitive land use in the project vicinity. In addition, there are no existing significant permanent sources of groundborne vibration in the project vicinity to which the proposed project would be exposed. Therefore, project operational groundborne vibration-level impacts would be considered less than significant.

For a project located within the vicinity of a private airstrip or 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?

The nearest airport is the McClellan-Palomar Airport, located approximately five miles southwest of the project site in the city of Carlsbad. The property is not located within the Airport Influence Area of the airport (SDCRAA 2011). The project site is also sufficiently distanced from the airport so that the project would not affect the safe operation of the airport, and it would not be affected by noise created by airport operations. Consequently, construction of the project would not create significant impacts. There are no private airstrips within the vicinity of the project site. Therefore, the development of the project would not result in a safety hazard for people residing or working in the project area.

4.1.12 Population and Housing

Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The proposed project involves the construction of a commercial center consisting of five single-story buildings including restaurants, in-line retail, and a self-service car wash on a 4.12-acre site. The proposed project would be consistent with the current GP 2030 Update (City of Vista 2012) land use designation of General Commercial (GC). No residential uses are included in the project. Furthermore, the project would be constructed on a site and within an area of the city that has existing infrastructure and public services. These community-serving commercial retail uses would serve the existing population and would not induce population growth directly or indirectly through the extension of infrastructure. As a result, development of the project would not result in potentially growth-inducing effects. No impacts would occur.

Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The site is currently vacant and roughly graded with gravel and contains minor native vegetation and debris. There are no housing units or people occupying the site. Therefore, development of the proposed project would not displace any number of existing housing or people, necessitating the construction of replacement housing elsewhere. No impacts would occur.

4.1.13 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 or the public services:

- i) Fire protection?***
- ii) Police protection?***
- iii) Schools?***
- iv) Parks?***
- v) Other public facilities?***

The proposed project would result in less than significant impacts to fire protective services, police services, schools, roads, and other public facilities. The proposed project involves the construction of a commercial center consisting of five single-story buildings including restaurants, in-line retail, and a self-service car wash in the southern portion of the city of Vista that is currently vacant and roughly graded and contains minor vegetation and debris. Potential impacts on each public service are discussed below.

Fire Protection Services

The proposed project would be constructed in accordance with applicable fire codes set forth by the State Fire Marshal, the VFD, and the City's Building Code. Development of the proposed project may result in an incremental increase in the demand for emergency services; however, the size and location of the project would not place an undue hardship on the VFD since they are currently servicing the area. Fire protection services would be available from Fire Station No. 1 located at 175 N. Melrose Drive, approximately 0.4 mile northwest.

In addition, the VFD has reviewed the site and architectural plans and identified recommendations to reduce potential impacts to fire protective services. Some of these recommendations are also included in the conditions of project approval for the project. Further, prior to final project approval, the City's Fire Marshal would verify that the proposed project has been designed to conform to the City's Fire Code, including emergency access for fire trucks within the site. Also,

development impact fees would help ensure funding continues to be provided to the VFD. Therefore, development of the proposed project would not exceed the capacity of the VFD to serve the site or other areas with existing fire protection services and resources. Impacts would be less than significant.

Police Protective Services

The Sheriff's Department is contracted by the City to provide law enforcement in Vista and the surrounding unincorporated areas. The Sheriff's Department office on S. Melrose Drive is located approximately 0.4 mile southwest of the project site at 325 S. Melrose Drive. Their services include general patrol, traffic enforcement, criminal investigation, juvenile services, communications and dispatch, and various management support services. Law enforcement services are available 24 hours per day, seven days per week, and include community service officers, canine handlers, and narcotics and gang investigators.

The proposed project would create a new commercial development on a site that is currently vacant, which could create the need for police services. However, the development would occur within an area of existing residential and commercial uses that is regularly patrolled by the Sheriff's Department. In addition, a representative of the department reviewed the site and architectural plan submittals and provided recommendations to the Project Applicant to reduce potential security impacts. As a result, the site and building design of the proposed project has incorporated appropriate security considerations including low-intensity security lighting for the purposes of wayfinding and safety and building structure security. These security considerations could help reduce the need for law enforcement services. Overall, it is anticipated that the proposed project would not result in the need for new or remodeled police facilities. Therefore, the project would not exceed the capacity of the Sheriff's Department to provide police protective services to the residents of the project, and impacts would be less than significant.

Schools

The Vista Unified School District provides school facilities and services to students within the city. The schools that serve the project area include the following:

- Breeze Hill Elementary School, 1111 Melrose Way. In the 2016–2017 school year, the school had 780 students (VUSD 2018). The projected number of resident students in 2020 would be 841 (VUSD 2014).
- Madison Middle School is located at 4930 Lake Boulevard, Oceanside, California. In the 2016–2017 school year, the school had 1,130 students (VUSD 2018). The projected number of resident students in 2020 is expected to be 959 (VUSD 2014).
- Rancho Buena Vista High School is located at 1601 Longhorn Drive. In the 2016–2017 school year, the school had 2,246 students (VUSD 2018). The projected number of resident students in 2020 is anticipated to be 2,707 (VUSD 2014).

However, since the proposed project would serve purely commercial purposes, no students are projected to be directly added to these school populations.

Pursuant to California Government Code, Section 65995 et seq. (which was passed as Senate Bill 50 in 1998), local agencies are prohibited from denying land use approvals on the basis that school facilities are inadequate. In addition, school districts may collect fees to offset the costs associated with increasing school capacity as a result of development. Level I fees are assessed based on the proposed square footage of residential, commercial/industrial, and/or parking structure uses. Level II fees require the developer to provide half of the costs of accommodating students in new schools, and the state provides the other half. Level III fees require the developer to pay the full cost of accommodating the students in new schools and are implemented at the time the available funds from Proposition 1A (approved by the voters in 1998) are expended. School districts must demonstrate to the state their long-term facilities needs and costs based on long-term population growth to qualify for this source of funding. According to California Government Code, Section 65996, the development fees authorized by Senate Bill 50 are deemed to be “full and complete school facilities mitigation.” Effective July 1, 2016, the Vista Unified School District’s school fee is \$0.51 per square foot for commercial projects. Pursuant to California Government Code, Section 65995 et seq., payment of these fees would offset any potentially significant impacts to school facilities, and impacts would be less than significant.

Maintenance of Public Facilities

The proposed project may result in an incremental increase in the use of libraries, senior centers, and other public facilities. However, the proposed project would not induce population growth because no residences are proposed on the project site. Due to the size and scope of the proposed project and associated vehicular traffic and required street improvements, which include a dedicated westbound right-turn lane proposed on Hacienda Drive at Vista Village Road; signal interconnect on Hacienda Drive between the S. Melrose Drive/Hacienda Drive intersection and the Vista Village Drive/Hacienda Drive intersection; and a third westbound left-turn lane and striping, project development is not anticipated to increase roadway maintenance on local roads above normal levels. Maintenance of public roads in the vicinity of the site (e.g., Hacienda Drive, Vista Village Drive) is provided by the City. As a result, maintenance of public facilities would result in a less than significant impact.

4.1.14 Recreation

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?; and

Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse effect on the environment?

There are several existing City park facilities that are located within two miles of the project site, including the following:

- Breeze Hill Park, 645 S. Melrose Drive, 0.7 mile south
- Creekwalk Park, 117 Vista Village Drive, 0.7 mile north
- Wave Waterpark, 101 Wave Drive, 0.7 mile north
- Veterans Memorial Park, Paseo Santa Fe Avenue, 1.1 miles northwest
- Linda Rhoades Park, 600 N. Santa Fe Avenue, 1.3 miles north
- Wildwood Park, 651 E. Vista Way, 1.3 miles northwest
- Civic Center Park, 200 Civic Center Drive, 1.5 miles northwest
- Luz Duran Park, 340 E. Townsite Drive, 1.7 miles north
- Raintree Park, 545 Townsite Drive, 1.9 miles north

The proposed project involves the construction of a commercial center consisting of five single-story buildings including restaurants, in-line retail, and a self-service car wash on a 4.12-acre site. The proposed project would not contain any residences. Because the project does not include residential development, it would not generate substantial impacts to parks and other recreational facilities. Therefore, the proposed project would not result in an increase in 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. The expansion of existing recreational facilities or the construction of new recreational facilities is not anticipated or needed. Therefore, no impacts would occur.

4.1.15 Utilities/Service Systems

Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Water Infrastructure and Facilities

Development of the project site would increase the demand for potable water that would be needed to serve the proposed commercial buildings. Water service for the project would be provided by the VID. The VID is a member agency of the San Diego County Water Authority (SDCWA). The VID imports most of its potable water supply from the SDCWA, that, in turn, buys potable water

from the Metropolitan Water District (MWD) of Southern California. The remaining of the VID's supply is surface water from Lake Henshaw, which is fed through precipitation from the San Luis Rey watershed.

The VID plans to use its local water supply, in conjunction with water received from the SDCWA, to meet demands in its services area. In addition, SDCWA and MWD are pursuing projects to diversify and enhance their supplies. If the VID delivers its local water supply as projected and the SDCWA's and MWD's supplies are developed as planned, no shortages are anticipated within the VID's service area in a normal year. Table 4-13 provides total quantities of current and planned water supplies for the VID in a normal year. The average daily demand of potable water for the proposed project would be approximately 5,974 gallons per day (4.12 acres x 1,450 gallons per day per acre).² This equates to 2,180,510 gallons per year, or 6.7 acre feet per year. This equates to a 0.03 percent demand on 2020 supplies. Considering the current estimations that were determined using the VID water supply and consumption assumptions, the proposed project would increase regional water consumption by less than one percent. This impact is less than significant.

Table 4-13. Current and Planned Water Supplies (Normal Year – Acre Feet/Year)

Water Supply Sources	2015	2020	2025	2030	2035	2040
Purchased from SDCWA	16,215	14,682	16,258	17,567	18,255	19,085
VID Surface Water	1,618	5,062	5,062	5,062	5,062	5,062
VID Produced Groundwater	—	—	—	—	—	—
Recycled Water	—	—	—	—	—	—
Total	17,833	19,744	21,230	22,629	23,317	24,147

Source: VID 2016.

Notes: SDCWA = San Diego County Water Authority; VID = Vista Irrigation District

The proposed project's private sewer lines would connect with the City's existing sewer mains located within Vista Village Drive and Hacienda Drive. Wastewater is treated at the Encina Water Pollution Control Facility, which is a conventional activated sludge wastewater treatment plant with a treatment capacity of 43.3 million gallons per day. The sanitation district and wastewater treatment facility operate in accordance with applicable wastewater treatment requirements of the San Diego RWQCB, and the project's wastewater system has been designed to comply with these treatment requirements. Therefore, the proposed project would tie into existing wastewater/sewer lines and would adhere to wastewater treatment requirements specified by the SDRWQCB so that no impact would occur.

² Based on water demand factors for commercial land use designation (Table 3-4, Projected Water Demands) in VID's 2017 Potable Water Master Plan, April 2018.

Stormwater Infrastructure and Facilities

Development of the project site would result in the construction of new buildings, landscaping, and hardscaping that are anticipated to result in slight alterations to the existing drainage pattern of the proposed project site. As discussed in Section 4.1.8, Hydrology and Water Quality, the proposed project would construct an on-site storm drain system that would collect drainage at various points throughout the site and route it through a series of basins prior to reaching the ultimate drainage point, Buena Vista Creek. Additionally, BMPs installed during development are not expected to result in environmental effects. As such, with the implementation of construction and operation BMPs, compliance with local and state regulatory requirements, no significant impacts related to new or expanded storm water infrastructure would occur.

Electric Power, Natural Gas, and Telecommunications Facilities

Electricity and natural gas are provided to the project area by San Diego Gas & Electric, which is a regulated subsidiary of Semptra Energy Utility that provides both electricity and natural gas to the City. San Diego Gas & Electric has extensive underground and overhead electric facilities located within and adjacent to the City (City of Vista 2012). The City has over 123 miles of overhead and 205 miles of underground electrical lines. (City of Vista 2012). Through the project approval process, the Project Applicant would coordinate with City staff and San Diego Gas & Electric staff to properly connect to existing lines. Natural gas is distributed throughout the city by underground lines, typically located within public rights-of-way. The Project Applicant would coordinate with the City to connect to existing gas lines in Hacienda Drive. Similarly, telecommunication lines exist in Hacienda Drive. The Project Applicant would coordinate with the City to connect to these telecommunications lines. The project site is adjacent to existing developed areas that are presently served by electrical, natural gas, and telecommunications services. Therefore, the development of the proposed project would not result in the construction or relocation of any of these utility facilities. As such, no impacts would occur.

Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

As previously discussed, the average daily demand of potable water for the proposed project would be approximately 5,974 gallons per day. Water supplies necessary to serve the demands of the proposed project, along with existing and other projected future users, and the actions necessary to develop these supplies (e.g., conservation through Senate Bill 7 of the Seventh Extraordinary Session [or SBX 7-7], efficiency standards) have been identified in the urban water management plans (UWMPs) of the VID, SDCWA, and MWD. California's urban water suppliers are required to prepare UWMPs in compliance with the Urban Water Management Planning Act (California Water Code, Section 10610 et seq.) and the Water Conservation Bill of 2009 (SBX 7-7). UWMPs are prepared every five years by urban water suppliers to support their long-term resource planning and ensure adequate water supplies are available to meet existing and future water demands over

a 20-year planning horizon, including the consideration of various drought scenarios and demand management measures. The passage of SBX 7-7 in 2009 was enacted to require retail urban water agencies within California to achieve a 20 percent reduction in urban per capita water use by December 31, 2020 (California Water Code, Section 10608.20).

As a result, SBX 7-7 requires that UWMPs report base daily per capita water use (baseline), urban water use target, interim urban water use target, and compliance daily per capita water use. The VID, SDCWA, and MWD calculate future demands within their respective service areas based on SANDAG's projected population and growth rate projections. SANDAG's projections are based on the land use policies in the general plans of the jurisdictions within San Diego county. These projections provide consistency between retail and wholesale agencies' water demand projections, thereby ensuring that adequate supplies are being planned for existing and future water users.

According to the VID's 2015 UWMP (VID 2016), the VID would use local water resources whenever possible; however, if there is a shortfall, they would rely on the SDCWA supplies. In the analysis of a normal water supply year, as described in the VID's 2015 UWMP, if the SDCWA, MWD, and VID supplies are developed as planned, and SBX 7-7 conservation targets are achieved, no shortages are anticipated within the VID's service area in a normal year through 2040. That would mean that the VID's entire projected potable water supply would meet the entire projected SBX 7-7 water demand of 24,147 acre-feet in 2040. In the analysis of a single dry year through 2040, the VID's 2015 UWMP findings indicated that if the SDCWA, MWD and VID supplies are developed as planned, and SBX 7-7 conservation targets are achieved, no shortages are anticipated within the VID's service area. However, for multiple dry-year reliability analyses, the conservative planning assumption used in the VID's 2015 UWMP expects that the MWD would allocate supplies to its member agencies. As a result, some level of shortage could be potentially experienced. As stated previously, when shortages occur in the VID's resources, the SDCWA would use various measures to cover the shortfall, as described below.

The SDCWA was established pursuant to legislation adopted by the California State Legislature in 1943 for the primary purpose of supplying imported water to the San Diego county for wholesale distribution to its member agencies. These imported water supplies consist of water purchases from the MWD, core water transfers from Imperial Irrigation District and canal lining projects that are wheeled through the MWD's conveyance facilities to the SDCWA's pipelines (or aqueducts), and spot water transfers that are pursued on an as-needed basis to offset reductions in supplies from MWD.

Following the major drought in California from 1987 through 1992, which led to severe water supply shortages throughout the state, the SDCWA and its member agencies vigorously developed plans to minimize the impact of potential shortages by diversifying its supplies and strengthening its conservation programs. The SDCWA's 2015 UWMP identifies a diverse mix of water resources projected to be developed over the next 25 years to ensure long-term water supply reliability for the

region. For example, existing and planned supplies from the Imperial Irrigation District transfer, canal lining projects, and planned supplies from the seawater desalination project in the city of Carlsbad (now in operation) would be considered drought-resilient supplies. The SDCWA, as a wholesale supplier, is also required by law to support its retail member agencies' efforts to comply with SBX 7-7 through a combination of regionally and locally administered active and passive water conservation measures, programs, and policies, as well as the use of recycled water. Examples of active measures and programs include residential and commercial water use surveys and education programs. Examples of passive measures include programs that encourage long-term behavior change towards measurable reductions in outdoor water use; increase the landscape industry's basic knowledge regarding the interdependency between water efficiency design, irrigation design, and maintenance; and participation on statewide, national, and industrial committees to advance behavior-based conservation strategies. Additional passive programs and policies include outreach activities, plumbing code changes, legislation, and conservation-based rate structures.

According to the SDCWA's 2015 UWMP (SDCWA 2016) section on water supply reliability, under a single dry-year assessment using a very conservative assumption regarding limited MWD supplies during a single dry water year, and assuming SDCWA and member agency supplies are maintained and developed as planned, along with achievement of the additional conservation target, no shortages are anticipated within the SDCWA service area in a single dry year until 2035. These shortages would be eliminated should MWD supplies approach the supply levels projected in the 2015 UWMP single dry year supply capability. With the previous years leading up to the single dry year presenting wet or average hydrologic conditions, the MWD should have adequate supplies in storage to cover potential shortfalls in core supplies and would not need to allocate supplies. Therefore, it is anticipated that the SDCWA would be able to meet the VID's increased demands during a single dry water year. For SDCWA's 2015 UWMP multiple dry-year reliability analysis, the conservative planning assumption is that the MWD would be allocating supplies to its member agencies. Because it is uncertain how the MWD would allocate supplies to its member agencies in the future, the analysis in SDCWA's 2015 UWMP assumes supplies would be allocated based on preferential right to the MWD supplies. If a shortage occurs, the SDCWA plans to use action measures in its Water Shortage and Drought Response Plan. These actions include dry-year supplies, carryover storage, and regional shortage management measures to fill the shortfall. The SDCWA's dry-year supplies and carryover storage are components of managing potential shortages within the region and for increasing supply reliability for the region. The dry-year supplies assist in minimizing or reducing potential supply shortages from the MWD. Over the last five years, the SDCWA has developed a carryover storage program to more effectively manage supplies. This includes in-region surface storage currently in member agency reservoirs and increasing capacity through the raising of San Vicente Dam, which was completed in June 2014. The SDCWA also has an out-of-region groundwater banking program in the Central Valley. Through these efforts, the SDCWA can store water available during wet periods for use during

times of shortage. In years where shortages may still occur, after use of carryover storage, additional regional shortage management measures, such as securing of dry-year transfers and achieving extraordinary conservation through voluntary or mandatory water-use restrictions, would also be undertaken.

On the local level, additional water conservation for new developments in the city would be achieved through compliance with the Water Efficient Landscaping Ordinance in Chapter 18.56 of the City's Development Code. An Estimated Total Water Use Worksheet was included as part of the development plan package and was submitted to the City. City staff review of the worksheet would confirm the proposed project's compliance with the Water Efficient Landscaping Ordinance.

In addition to the noted UWMP described previously, other regional and/or state entities may enact other measures during multiple dry water years as well, including emergency regulations. For example, on April 1, 2015, Governor Jerry Brown issued the fourth in a series of executive orders on actions necessary to address California's current severe four-year drought conditions. The April 1, 2015, Executive Order required, for the first time in the state's history, mandatory conservation of potable urban water use. In response to this order, the SWRCB released draft emergency regulations to restrict overall potable urban water use across the state by 25 percent. These regulations included such prohibitions as irrigating landscapes outside of newly constructed homes and buildings in a manner inconsistent with California Building Standards Code (e.g., CALGreen requirements for automatic irrigation systems with weather or soil moisture-based controllers and sensors). Implementation of these prohibitions would be promulgated through the VID's regulations. Therefore, as discussed previously, the development of the proposed project would not require new or expanded water entitlements from the VID or require new water resources to be found. Impacts would be less than significant.

Would the project 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?

An existing eight-inch vitrified clay pipe sewer line is located in Vista Village Drive and Hacienda Drive. As shown on Figure 2-5, Proposed Site Plan, the proposed project would construct on-site sewer lines that would convey wastewater from the on-site uses to the existing sewer system.

Based on the City's Sewer Master Plan Update (City of Vista and BSD 2017), the proposed project would be expected to generate approximately 4,038 gallons per day (4.12 acres x 980 gallons per day per acre) of wastewater. The project's private sewer lines located under the surface parking lot main roadway that runs primarily east-west would connect with existing City sewer mains within Vista Village Drive and Hacienda Drive. The City system has an average flow of 2.28 million gallons

per day (City of Vista and BSD 2017).³ As stated previously, wastewater from the project would be treated by the Encina Water Pollution Control Facility. Wastewater generation from the proposed project would not exceed the capacity of the Encina facility to treat it. Therefore, the project's contribution of wastewater would not require new water/wastewater facilities to be built or existing facilities to expand; therefore, impacts would be less than significant.

Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?; and

Would the project comply with federal, state and local management and reduction statutes and regulations related to solid waste?

Development of the proposed project would result in a slight increase in domestic municipal solid waste generation because of the development of five commercial buildings. Solid waste generated by the proposed project would either be hauled to Sycamore Landfill in the city of San Diego, which has a permitted capacity of 2,500 tons per day and an average daily intake of 900 tons per day, or disposed of at the Palomar Waste Transfer Station in the city of Carlsbad, which has a permitted daily capacity of 2,250 tons per day. Either of these solid waste facilities is capable of accommodating the solid waste generated by the proposed project. Additionally, the California Integrated Waste Management Act of 1989, with certain exceptions, initially required diversion of 50 percent of all solid waste from landfill disposal or transformation by January 1, 2000. As of July 2012, AB 341 increased the State of California's waste diversion goal from 50 percent to 75 percent. AB 341 legislation also includes mandatory waste recycling measures acting to reduce greenhouse gas emissions. The project would comply with the California Integrated Waste Management Act and AB 341. Additionally, consistent with Section 5.408, Construction Waste Reduction, Disposal, and Recycling, of the California Green Building Standards (CALGreen), a minimum of 65 percent of the project's nonhazardous construction and demolition waste would be recycled or salvaged for reuse. Because the project's contribution would be negligible in terms of the remaining capacity of these available landfills and project compliance with state and local waste diversion regulations, impacts would be less than significant.

4.1.16 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Substantially impair an adopted emergency response plan or emergency evacuation plan?

Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or uncontrolled spread of wildfire?

³ The combined average measured flow total for Vista Sanitation District and BSD in 2015 was 6.87 million gallons per day (City of Vista and BSD 2017).

Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water resources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, postfire slope instability, or drainage changes?

California Government Code, Section 51175-89, directs the California Department of Forestry and Fire Protection to identify areas of very high fire hazards within Local Responsibility Areas. Mapping of these areas, referred to as Very High Fire Hazard Severity Zones, is based on data and models of potential fuels over a 30–50-year time horizon and their associated expected fire behavior and expected burn probabilities. The data quantifies the likelihood and nature of vegetation fire exposure (including firebrands) to buildings. Very High Fire Hazard Severity Zone Maps for Local Responsibility Area lands were initially developed in the mid-1990s and are now being updated based on improved science, mapping techniques, and data. In 2008, the CBC adopted a new chapter in the California Building Code (Chapter 7A), requiring new buildings in Very High Fire Hazard Severity Zones to use ignition-resistant construction methods and materials. These codes include provisions to improve the ignition resistance of buildings, especially from firebrands.

The project site is within a Non-Wildland/Non-Urban zone based on the City's Fire Hazard Severity Zones figure (Figure PSFS-6) (City of Vista 2012). The Non-Wildland/Non-Urban zone represents a very low threat from wildland fires because it is not located within the wildland-urban interface fire area. Therefore, no impacts from wildfires would occur with development of the site.

4.2 Significant Environmental Impacts

The Executive Summary and Chapter 3 provide a comprehensive identification of the proposed project's significant environmental effects, including the level of significance before and after mitigation.

4.3 Significant and Unavoidable Environmental Impacts

Section 15126.2(b) of the State CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. The environmental effects of the proposed project on various aspects of the environment are discussed in detail in Chapter 3 of the Recirculated DEIR. As analyzed in Section 3.2, Greenhouse Gas Emissions, greenhouse gas emissions cause two direct (or project-specific) and two cumulative impacts that cannot be avoided if the proposed project is approved. These impacts cannot be mitigated to a less than significant level; therefore, they remain significant and unavoidable. The remainder of the project impacts are less than significant or can be mitigated to a less than significant level through the adoption of recommended mitigation measures.

4.4 Significant Irreversible Environmental Changes

Section 15126.2(c) of the State CEQA Guidelines requires a discussion of any significant irreversible environmental changes that would be caused by the proposed project. Specifically, Section 15126.2(c) states the following:

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Generally, a project would result in significant irreversible environmental changes if:

- The primary and secondary impacts would generally commit future generations to similar uses.
- The project would involve a large commitment of nonrenewable resources.
- The project involves uses in which irreversible damage would result from any potential environmental accidents associated with the project.
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Implementation of the proposed project would result in the commitment of the project site to commercial uses, thereby precluding any other uses for the lifespan of the proposed project. Restoration of the site to pre-developed conditions would not be feasible given the degree of disturbance, the urbanization of the area, and the level of capital investment.

Resources that would be permanently and continually consumed by project implementation include water, electricity, natural gas, and fossil fuels. Wood products, asphalt, and concrete, as well as gas and diesel fuel, would be used during construction. Construction activities related to the proposed project would result in irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels, natural gas, and gasoline and diesel for automobiles and construction equipment. However, the amount and rate of consumption of these resources would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of resources. With respect to operational activities, compliance with applicable state and local building codes, as well as mitigation measures, planning policies, and standard conservation features, would ensure that resources are conserved to the maximum extent possible. Therefore, the potential for the proposed project to result in significant irretrievable commitment of resources would be less than significant.

The State CEQA Guidelines, Section 15126.2(d), also require a discussion of the potential for irreversible environmental damage caused by environmental accidents associated with the project. While the project would result in the use, transport, storage, and disposal of minor amounts of hazardous materials during project construction and operation, such activities would comply with applicable local, state, and federal laws related to the use, storage, and transport of hazardous materials, which significantly reduces the likelihood and severity of accidents that could result in irreversible environmental damage. The project itself does not include any uniquely hazardous uses that would require any special handling or storage. Further, the project does not contain any industrial uses that would use or store acutely hazardous materials. Implementation of the proposed project would result in the long-term commitment of resources to urban development. The most notable significant irreversible impacts include the use of nonrenewable and/or slowly renewable natural and energy resources, such as lumber and other forest products and water resources during construction activities. Operations associated with future uses would also consume natural gas and electricity. These irreversible impacts, which are unavoidable consequences of urban growth, are described in detail in the appropriate sections of the Recirculated DEIR (see Chapter 3 and Sections 4.1.1 through 4.1.16).

4.5 Growth-Inducing Impacts

As required by Section 15126.2(d) of the State CEQA Guidelines, an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Additionally, the EIR must discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, the stimulation of economic activity within the region, or the establishment of policies or other precedents that directly or indirectly encourage additional growth. Under CEQA, this growth is not to be considered necessarily detrimental, beneficial, or of significant consequence. Induced growth would be considered a significant impact if it can be demonstrated that the potential growth, directly or indirectly, significantly affects the environment.

In general, a project could foster spatial, economic, or population growth in a geographic area if the project removes an impediment to growth (e.g., the establishment of an essential public service, the provision of new access to an area, or a change in zoning or general plan amendment approval), or economic expansion or growth occurs in an area in response to the project (e.g., changes in revenue base, employment expansion). These circumstances are further described below.

4.5.1 Elimination of Obstacles to Growth

Elimination of obstacles to growth refers to the extent to which a proposed project removes infrastructure limitations or provides infrastructure capacity, or removes regulatory constraints that could result in growth unforeseen at the time of project approval.

The elimination of either physical or regulatory obstacles to growth is considered to be a growth-inducing effect, though not necessarily a significant one. A physical obstacle to growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines into areas that are not currently provided with these services, would be expected to support new development. Similarly, the elimination or change to a regulatory obstacle, including existing growth and development policies, could result in new growth. The proposed project would not extend roads or other infrastructure to areas not currently served with these facilities. The project would add a westbound right-turn lane on Hacienda Drive (along the project frontage), at Vista Village Drive. However, this is considered an improvement to the existing roadways and local circulation in an already developed area. Therefore, this is considered a less than significant impact.

4.5.2 Provision of Infrastructure

Impacts related to growth inducement would also be realized if a project provides infrastructure or service capacity that accommodates growth beyond the levels currently permitted by local or regional plans and policies. In general, growth induced by a project is considered a significant impact if it directly or indirectly affects the ability of agencies to provide needed public services or if it can be demonstrated that the potential growth significantly affects the environment in some other way. The proposed project would realize new commercial/retail uses and associated employment opportunities. The extent to which new job opportunities are filled by the existing resident population tends to reduce any growth-inducing effect of a project. It is anticipated that employment opportunities arising from the project (estimated at 107 jobs) would be filled predominantly by local residents, and would not induce substantial growth or result in permanent relocation of populations. Therefore, this is considered a less than significant impact.

4.5.3 Economic Effects

Economic effects refer to the extent to which a proposed project could cause increased activity in the local or regional economy. Economic effects can include such effects as the “multiplier effect.” A “multiplier” is an economic term used to describe interrelationships among various sectors of the economy. The multiplier effect provides a quantitative description of the direct employment effect of a project, as well as indirect and induced employment growth. The multiplier effect acknowledges that the on-site employment and population growth of each project is not the complete picture of growth caused by the project. The proposed project would construct new retail and restaurant uses on an existing vacant site. Once operational, the proposed project would

generate new tax revenue for the City. Therefore, this is considered a less than significant impact and a direct economic benefit to the City.

4.5.4 Impacts of Induced Growth

Investment in the proposed project would engender local and regional economic growth that may result in direct and indirect growth-inducing effects. The project's potential economic benefits may result in employment growth in the region. This growth, in combination with other anticipated employment growth in the region, could indirectly result in population growth. Such growth has a variety of potential effects on the physical environment, including but not limited to effects on air quality, greenhouse gas emissions, ambient noise levels, traffic impacts, and water quality. As discussed in Section 3.2, Greenhouse Gas Emissions, the proposed project would result in a significant and unavoidable impact associated with the generation of GHG emissions after the implementation of all feasible mitigation measures. This impact, combined with the development of other cumulative projects in the region would have the potential to result in a significant cumulative GHG emissions impact associated with growth inducement. The impacts associated with cultural resources and transportation (discussed in Sections 3.1 and 3.3, respectively) would be reduced to a less than significant level with mitigation and would not have a cumulatively considerable growth inducing impact.

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Chapter 5 Alternatives

Section 15126.6 of the California Environmental Quality Act (CEQA) Guidelines requires that an environmental impact report (EIR) describe a reasonable range of alternatives to a proposed project (in this case, the Sunroad Commercial Project [project]) that could feasibly attain most of the project objectives while avoiding or considerably reducing any of the significant impacts of the proposed project. In addition, a no project alternative must be analyzed in the document. CEQA also requires that an environmentally superior alternative be selected from among the alternatives. The environmentally superior alternative is the alternative with the fewest or least severe adverse environmental impacts. When the no project alternative is the environmentally superior alternative, an EIR must also identify an environmentally superior alternative from among the other alternatives (State CEQA Guidelines, Section 15126.6[e][2]).

To comply with the purposes of CEQA, it is necessary to identify alternatives that reduce the significant impacts that are anticipated to occur if the project is implemented while trying to meet most of the basic objectives of the project. State CEQA Guidelines, Section 15126.6(f), emphasizes a common sense approach. The alternatives shall be reasonable, “foster informed decision making and public participation,” and focus on alternatives that “avoid or substantially lessen the significant impacts.”

5.1 Development of Project Alternatives

This section discusses the reasoning for selecting the alternatives and summarizes the assumptions identified for the alternatives. The range of alternatives included for analysis in an EIR is governed by the “rule of reason.” The primary objective is formulating potential alternatives and choosing which ones to analyze to ensure that the selection and discussion of alternatives fosters informed decision-making and informed public participation. This is accomplished by providing sufficient information to enable readers to reach conclusions themselves about such alternatives. This approach avoids assessing an unmanageable number of alternatives or analyzing alternatives that differ too little to provide additional meaningful insights about their environmental effects. The alternatives addressed in the ~~this~~ Recirculated Draft EIR (DEIR) were selected in consideration of one or more of the following factors:

- The extent to which the alternative would accomplish most of the basic objectives of the project.
- The extent to which the alternative would avoid or reduce any of the identified significant effects of the project.
- The feasibility of the alternative, taking into account site suitability and parcel sizes, and consistency with applicable public plans, policies, and regulations.
- The appropriateness of the alternative in contributing to a reasonable range of alternatives necessary to permit a reasoned choice.

The alternatives analyzed in ~~this~~ Recirculated DEIR were chosen based on each alternative's ability to feasibly attain the basic project objectives, while avoiding or reducing one or more of the project's significant effects. The analysis provides readers with adequate information to compare the effectiveness of identified mitigation or significant adverse impacts and to enable readers to make decisions about the project. State CEQA Guidelines, Section 15126.6(a), states that an EIR need not consider every conceivable alternative to a project; however, it must consider a reasonable range of potentially feasible alternatives.

5.1.1 Project Objectives

As noted previously, an EIR must describe a reasonable range of alternatives to a project that would feasibly attain the basic project objectives while avoiding or reducing one or more of the project's significant effects (State CEQA Guidelines, Section 15126.6[a]). In identifying the range of alternatives for analysis in ~~this~~ Recirculated DEIR, the following objectives were considered:

1. Develop and implement a 91,893-square-foot commercial center, which includes five single-story buildings consisting of 23,520 square feet of restaurant and retail space and a car wash and associated landscaping, hardscape (e.g., sidewalks, patios), and parking stalls.
2. Implement Policy 6.3 of the City of Vista's (City's) Land Use and Community Identity (LUCI) Element by developing a commercial center within the North County Regional Center/Breeze Hill Road Opportunity Area (OA-10).
3. Implement Policy 7.2 of the City's LUCI Element to promote regionally oriented commercial development along the State Route (SR-) 78 corridor to serve the traveling public and provide freeway-oriented uses where direct access is available.
4. Implement Policy OA-10.2 of the City's LUCI Element to improve walkability in the area through enhanced pedestrian amenities by providing sidewalks, street trees, and lighting.

5.2 Significant Environmental Impacts

This section summarizes the impacts of the proposed project as analyzed in Chapter 3, Environmental Analysis, of ~~this~~ the Recirculated DEIR and those that were considered during the alternatives identification process. State CEQA Guidelines, Section 15126.6, requires that alternatives that can avoid or substantially lessen significant impacts of a project be considered. With the exception of greenhouse gas (GHG) emissions, project impacts were determined to be less than significant with mitigation, meaning that the significant project impacts could be reduced to a less than significant level through the implementation of identified ~~the~~ mitigation measures ~~identified in this DEIR~~.

5.3 Alternative Considered but Rejected

In accordance with State CEQA Guidelines, Section 15126.6(c), an EIR should identify any alternatives that were considered by the lead agency but were rejected as infeasible during the

scoping process, and should briefly explain the lead agency's determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are failure to meet most of the basic project objectives, infeasibility, or inability to avoid significant environmental effects. The following alternative has been rejected by the lead agency and will not be analyzed further in ~~theis~~ Recirculated DEIR.

5.3.1 Off-Site Alternative

Off-site alternatives are typically included in an environmental document to avoid, lessen, or eliminate the significant impacts of a project by considering the proposed development in a different location. The predominant question in the selection of an alternate site is whether any of the significant effects of the project would be avoided or substantially lessened by developing the project at another location. Development of an alternative site with the same amount and intensity of uses would likely result in the similar levels of traffic, potential impacts to unknown cultural and tribal cultural resources, and produce the same level of air pollutant and GHG emissions; therefore, it is reasonable to assume the impacts associated with the development of the project at any alternative location would be similar. Significant and unavoidable impacts were identified for the proposed project related to GHG emissions. Presumably, the development of the proposed project at any alternate location in the City would result in similar GHG emission impacts. Only locations that would avoid or substantially lessen the significant effects of a project need be considered in ~~theis~~ Recirculated DEIR. Because the development of similar uses at an alternate site would be expected to result in impacts similar to the proposed project, consideration of an alternate site alternative was rejected from further analysis.

5.4 Analysis of Project Alternatives Selected for Evaluation

This analysis focuses on alternatives capable of eliminating significant adverse environmental effects or reducing them to less than significant levels, even if these alternatives would impede the attainment of the project objectives to some degree. The following alternatives have been identified for analysis: No Project/No Build Alternative, No Project/Existing Zoning Alternative, and Reduced Footprint Alternative.

The No Project/No Build Alternative (Alternative 1) evaluates the existing baseline conditions at the time the Notice of Preparation was published and what would be reasonably expected to occur in the foreseeable future if the project were not approved and no other projects were approved for development in the foreseeable future. Under the No Project/Existing Zoning Alternative (Alternative 2), the project would not be approved as proposed, rather development would occur consistent with that allowed under the existing General Plan land use designation and zoning classification. The Reduced Footprint Alternative (Alternative 3) was developed to determine where specific features of the proposed project could be changed to help reduce GHG emissions.

The proposed project was reviewed against the applicable environmental issues contained in the Initial Study Checklist in Appendix G of the State CEQA Guidelines. Environmental topics for which potentially significant impacts have been identified are addressed in Chapter 3 of the Recirculated DEIR. Chapter 4, Other CEQA Considerations, of the Recirculated DEIR addresses the following environmental topics for which impacts have been found not to be significant or less than significant: Aesthetics, Agriculture and Forestry Resources, Air Quality, Biological Resources, Energy, Geology/Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Utilities/Service Systems, and Wildfire. As such, the project alternatives analysis compares impacts with that of the proposed project on the environmental topics for which potentially significant impacts have been identified and analyzed in Chapter 3: Cultural and Tribal Cultural Resources, Greenhouse Gas Emissions, and Transportation.

5.4.1 Alternative 1: No Project/No Build Alternative

State CEQA Guidelines, Section 15126.6(e)(3)(B), requires that a no project alternative be evaluated in an EIR. In the case where the project is a development project on identifiable property, such as the proposed project, the no project alternative analysis must discuss the circumstance under which the project does not proceed. The analysis allows decision makers to compare the impacts of approving the project with the impacts of not approving the project. Per State CEQA Guidelines, Section 15126.6(e)(2), “the no project analysis shall discuss the existing conditions . . . , as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.” State CEQA Guidelines, Section 15126.6(e)(3)(B), also indicates that “in certain instances, the no project alternative means ‘no build’ wherein the existing environmental setting is maintained.”

Therefore, the No Project/No Build Alternative evaluates the existing baseline conditions at the time the Notice of Preparation was published on February 25, 2019, and assumes that the site would not be developed as proposed with the project and that the property would remain in its current undeveloped state for the reasonably foreseeable future.

5.4.1.1 Alternative Impact Analysis

Cultural and Tribal Cultural Resources

This alternative would result in the continuance of existing site conditions, and no ground disturbance or development would occur. Therefore, the disturbance of known or unknown cultural and tribal cultural resources would not occur, and such resources would remain in their current state. The proposed project’s potential for disturbance of these resources, which could be mitigated to a less than significant level through implementation of Mitigation Measures CUL-1 through CUL-6 during construction, would not occur under the No Project/No Build Alternative. Therefore, this alternative would avoid the significant impacts of the proposed project on archaeological and tribal

cultural resources, as well as human remains. As such, under the No Project/No Build Alternative, impacts to cultural and tribal cultural resources would be less than the proposed project.

Greenhouse Gas Emissions

Under the No Project/No Build Alternative, no changes to the site would occur. No construction would occur; therefore, there would be no construction-related GHG emissions. The existing uses would remain on the site; however, none of the project-related GHG operational emissions would occur. The proposed project would exceed the City's Bright Line and Efficiency Thresholds, and as a result, the project would potentially conflict with the goals of the City's Climate Action Plan, and ~~may be seen to~~would exceed not contribute its fair share toward~~in~~ achieving the state's reduction targets. While implementation of Mitigation Measures GHG-1 through GHG-46 would reduce impacts to the extent feasible, they would not be reduced to below a level of~~below~~ significance. Therefore, the No Project/No Build Alternative would avoid the significant and unavoidable impacts of the proposed project on GHG emissions. As such, impacts related to GHG emissions would be ~~less than~~reduced compared to the proposed project.

Transportation

The project site would remain undeveloped under the No Project/No Build Alternative. This alternative would not generate an increase in vehicle trips that would be capable of reducing existing roadway or intersection level of service, or that would contribute to potential traffic congestion would occur. Existing level of service on roadways and at intersections in the area would remain consistent with current conditions and would not be affected by any on-site development. Under the proposed project, potentially significant impacts would occur to the performance of the circulation system. However, implementation of Mitigation Measure TRA-1 would reduce this impact to a less than significant level. No development would occur under the No Project/No Build Alternative. Therefore, no changes to the circulation system would occur. As such, impacts to transportation under the No Project/No Build Alternative would be less than the proposed project.

5.4.1.2 Ability to Meet Project Objectives

As shown in Table 5-3, the No Project/No Build Alternative would not meet the project objectives because development of the project site would not occur. The project site would remain a vacant and underused parcel. Because no development would occur, this alternative would not meet the project objectives of developing and implementing a 91,893-square-foot commercial center to include five single-story buildings consisting of a total of 23,520 square feet of restaurant and retail space and a car wash and associated landscape, hardscape (including sidewalks and asphalt), and parking stalls; develop a commercial center within the North County Regional Center/Breeze Hill Road Opportunity; promote regionally oriented commercial development along the SR-78 corridor to serve the traveling public and provide freeway-oriented uses where direct access is available; and improve walkability in the area through enhanced pedestrian amenities by providing sidewalks, street trees, and lighting.

However, not developing the site and leaving it in its current state would reduce potential environmental effects as described above. Therefore, the No Project/No Build Alternative would result in a reduction of impacts compared to the proposed project. Significant and unavoidable impacts relative to GHG emissions would be avoided with the No Project/No Build Alternative.

5.4.2 Alternative 2: No Project /Existing Zoning Alternative

This alternative assumes that the proposed project would not be approved as proposed. If no action is taken on the proposed project, it is reasonable to assume that another project would be processed at some point in the future consistent with the General Plan and zoning designations. The City designates this project site as General Commercial (GC). This land use designation is characterized by retail sales and services, including community shopping centers; department stores; restaurants; financial institutions; automotive services; and sales and repair of consumer goods, such as home appliances and furniture. In addition, group assembly and hotels/motels intended for transient visitors only are encouraged in this category (City of Vista 2012). The City's Zoning Ordinance zones this site General Commercial (C-1), which is intended to provide commercial uses including department store, professional or business office, retail, and restaurant uses.

Under this alternative, the 4.12-acre site would be developed as a business office building, which is an allowed use under the existing General Plan Land Use designation (GC) and the existing zoning (C-1). While the GC land use designation allows a floor area ratio of 0.75, the buildout assumption in the City's General Plan is a floor area ratio of 0.33 for this land use designation as shown in Table LUCI-1 in the City's LUCI Element (City of Vista 2012). Therefore, this alternative assumes a total floor area ratio of 0.33 for a total assumed business office building size of 59,224 square feet.

5.4.2.1 Alternative Impact Analysis

Cultural and Tribal Cultural Resources

This alternative would result in the development of 59,224 square feet of a business office building, which would result in a similar disturbance area as compared to the proposed project (91,893), when parking and landscaping are factored in. As such, though disturbed, significant impacts could occur to cultural resources uncovered by clearing and grading under this alternative. Additionally, the potential to encounter undiscovered cultural sites under this alternative during grading is considered high given the density of archaeological sites within proximity to the project site area. Therefore, as the disturbance area for the No Project/Existing Zoning alternative would be similar to that of the proposed project, potential impacts associated with this alternative would likely be the same.

While no cultural resources were identified on the project site, Mitigation Measures CUL-1 through CUL-6 would be required to reduce the impacts to undiscovered cultural resources. These same measures would be required for land disturbances associated with the construction of the No

Project/Existing Zoning Alternative. Therefore, cultural resources impacts would be similar for both the proposed project and No Project/Existing Zoning Alternative.

Greenhouse Gas Emissions

The GHG emissions study and analysis for the proposed project identified that the majority of GHG emissions would come from automobiles. The proposed alternative scenario assumes that the site would be developed with 59,224 square feet of general office use. No retail, restaurant, or car wash uses would be developed. A proposed 163-space parking lot is assumed for this alternative. The California Emission Estimator Model (CalEEMod) default assumptions are assumed for construction and utility demand of operation of the general office building. Consistent with the proposed project, the intensity factors for San Diego Gas & Electric service were adjusted to meet San Diego Gas & Electric's current renewable portfolio, and 2,200 cubic yards of import material is assumed. The weekday trip rate of 20 trips per 1,000 square feet per day and average trip length of 8.8 miles for a Standard Commercial Office from the San Diego Association of Governments' (Not So) Brief Guide of Vehicular Traffic General Rates for the San Diego Region (2002) are assumed for operational vehicle trips. This equates to approximately 1,184 average daily trips (20 trips x 59,224 square feet). Estimated annual operational emissions, and amortized construction emissions, are summarized in Table 5-1. Mitigation measures identified for the proposed project are assumed for this alternative. As shown in Table 5-1, with mitigation, the No Project/Existing Zoning Alternative would generate an estimated ~~1,044-234~~ metric tons of carbon dioxide equivalent (MTCO_{2e}) annually, and would ~~not~~ exceed the City's screening level of 1,185 ~~MTCO_{2e} metric tons of CO_{2e}~~. This alternative would not be mitigated to a less than significant level. Therefore, impacts under this alternative would be less than those under the proposed project, but ~~and~~ would ~~not result in~~ continue to be a significant and unavoidable impact.

Table 5-1. No Project/Existing Zoning Alternative Estimated Annual Operational GHG Emissions

Emissions Source	Unmitigated CO _{2e} Emissions (metric tons)	Mitigated CO _{2e} Emissions (metric tons)
Vehicle Emissions	935	929 904
Electricity	171	166 0
Natural Gas	64	64
Solid Waste	28	14
Water Use	58	49
Area Sources	<1	<1
Amortized Construction Emissions	12	12
Total Annual Emissions	1,268	1,234 044

Source: CalEEMod, Version 2016.3.2.

Notes: MTCO_{2e} = metric tons of carbon dioxide equivalent

¹ Assumes six MTCO_{2e} reduction from provision of six electric vehicle charging station, based on calculation methodology provided by Energy Policy Initiatives Center (EPIC) (Nilmini Silva-Send, Ph.D., Assistant Director/Adjunct Professor, Energy Policy Initiatives Center (EPIC); Co-Principal Investigator Climate Education Partners (CEP), University of San Diego School of Law, Email to Greg Wade, City Manager, City of Solana Beach, April 11, 2018.)

Transportation

This alternative would result in approximately 59,224 square feet of business office development on the project site. As previously discussed, under this alternative, approximately 1,184 daily trips would be generated, which is 8,870 daily trips less than the proposed project. This alternative would result in a significant reduction in daily trips. Since the proposed project, which would generate substantially more traffic than this alternative, would not result in a significant direct or cumulative impact on the surrounding local intersections, freeway mainline segments or freeway ramps after mitigation, then neither would the No Project/Existing Zoning Alternative. Additionally, because the site would be developed under the existing General Plan land use designation and zoning classification, this alternative would be consistent with the planned development intensity for the site and would not result in a substantial increase in traffic that would contribute to traffic congestion above that anticipated by the City. However, some or all of the improvements listed in Mitigation Measure TRA-1 for the proposed project would have the potential to apply to this alternative to reduce its potential to result in an impact associated with circulation system performance. As such, impacts under this alternative would be less than that of the proposed project.

In addition, similar to the proposed project, implementation of this alternative would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The No Project/Existing Zoning Alternative, similar to the proposed project, would not result in a change in air traffic patterns, result in inadequate emergency access nor would it conflict with applicable policies, plans, or programs, regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

5.4.2.2 Ability to Meet Project Objectives

The No Project/Existing Zoning Alternative would eliminate the drive-through restaurant, retail, and car wash components of the proposed project and replace these components with an office building. GHG emissions impacts under this alternative would result in 1,040-26834 MTCO₂e during the operational phase, which is ~~below~~ above the City's screening level of 1,185 MTCO₂e. As discussed and demonstrated, the No Project/Existing Zoning Alternative would generate less GHG emissions than the proposed project, but because it would exceed the City's screening level of 1,185 MTCO₂e, it would require the same GHG mitigation measures as the proposed project. Similar to the proposed project, with the implementation of mitigation measures, -and would not impacts under this alternative would result in a-result in a significant and unavoidable GHG impact.

As shown in Table 5-3, this alternative would not meet Project Objective 1, which is to develop and implement a 91,893-square-foot commercial center, which includes five single-story buildings consisting of 23,520 square feet of restaurant and retail space and a car wash, and associated

landscaping, hardscape (e.g., sidewalks, patios), and parking stalls. However, this alternative would have the ability to meet the other project objectives of developing a commercial center within the North County Regional Center/Breeze Hill Road Opportunity; promoting regionally oriented commercial development along the SR-78 corridor to serve the traveling public and provide freeway-oriented uses where direct access is available; and improving walkability in the area through enhanced pedestrian amenities, by providing sidewalks, street trees, and lighting.

5.4.3 Alternative 3: Reduced Footprint Alternative

Under this alternative, two restaurant buildings (Pad 1 and Pad 3) totaling approximately 9,300 square feet of restaurant use and the 4,200-square-foot car wash (Pad 5) would be eliminated from the project footprint. This would result in a 57 percent reduction (from 23,520 square feet to 10,020 square feet) of proposed building square footage. The total restaurant space would be 6,020 square feet and the retail space would be 4,000 square feet under this alternative. Pads 2 and 4 containing retail and restaurant space and the parking lot would be constructed on the project site. The remainder of the site would be left as undeveloped open space. This alternative was developed to reduce the significant and unavoidable GHG emissions impact of the proposed project while still maintaining some of its proposed uses.

5.4.3.1 Alternative Impact Analysis

Cultural and Tribal Cultural Resources

Under this alternative, the proposed building square footage would be significantly reduced compared to the proposed project, which would result in less disturbance area on the project site. However, the potential to encounter undiscovered cultural sites under this alternative during grading is considered high given the density of archaeological sites within proximity to the project site area. Additionally, though disturbed, significant impacts could occur to cultural resources uncovered by clearing and grading. Therefore, as the disturbance area for the Reduced Footprint Alternative would be less than that of the proposed project, potential impacts associated with this alternative would likely be reduced. While no cultural resources were identified on the project site, Mitigation Measures CUL-1 through CUL-6 would still be required to reduce potential impacts to undiscovered cultural resources. These same measures would be required for the land disturbances associated with the construction of the Reduced Footprint Alternative, although within a smaller area of disturbance. Therefore, cultural resources impacts associated for the Reduced Footprint Alternative would be reduced as compared to the proposed project.

Greenhouse Gas Emissions

The project could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment because it would exceed the City's Bright Line and Efficiency Thresholds. Additionally, the project could conflict with the City's interim guidance and Climate

Action Plan and the long-term statewide emissions reduction goals, resulting in potentially significant impacts. However, even with the implementation of Mitigation Measures GHG-1 through GHG-46, impacts to this issue area would continue to be significant and unavoidable.

As shown in Table 3.2-32, Estimated ~~Construction~~ Annual Operational Emissions, in Section 3.2, Greenhouse Gas Emissions, of the Recirculated DEIR, the proposed project would result in approximately 2,517 unmitigated MTCO₂e emissions. As shown in Table 3.2-6, Estimated Mitigated Annual Operational Emissions, in Section 3.2 of the Recirculated DEIR, with mitigation, the proposed project would generate an estimated 2,451 MTCO₂e annually, which would continue to exceed the City's screening level of 1,185 MTCO₂e. With implementation of feasible mitigation measures, proposed project emissions would continue to be significant and unavoidable.

The Reduced Footprint Alternative would result in reduced restaurant space and car wash use and associated grading and the reduction of other components (e.g., extension of utilities) compared to the proposed project. Table 5-2 shows the estimated annual operation emissions levels. Compared to the proposed project, this alternative would result in 770 MTCO₂e (unmitigated) during the operational phase, which is below the City's screening level of 1,185 MTCO₂e. As shown, impacts relative to GHG emissions would be reduced compared to the proposed project. Therefore, GHG emissions impacts under this alternative would be less than the proposed project and would not result in a significant and unavoidable impact.

Table 5-2. Reduced Footprint Alternative Estimated Annual Operational GHG Emissions

Emissions Source	Unmitigated CO ₂ e Emissions (metric tons)
Vehicle Emissions	627
Electricity	52
Natural Gas	42
Solid Waste	28
Water Use	7
Area Sources	<1
Amortized Construction Emissions	13
Total Annual Emissions	770

Source: CalEEMod, Version 2016.3.2.

Notes: CO₂e = carbon dioxide equivalent

Transportation

The proposed project is anticipated to generate approximately 10,054 daily trips with 668 AM peak-hour trips and 726 PM peak-hour trips. Using the proposed trip generation rates and applying 4,000

square feet¹ (retail) and 6,020 square feet (restaurant with drive-through), the Reduced Footprint Alternative would reduce traffic trips from 10,054 average daily traffic to 3,913 average daily traffic for an overall reduction of 6,141 average daily traffic compared to the proposed project.

This alternative would result in a significant reduction in daily trips. Since the proposed project, which would generate substantially more traffic than this alternative, would not result in a significant direct or cumulative impact on the surrounding local intersections, freeway mainline segments or freeway ramps with implementation of mitigation, then neither would the Reduced Footprint Alternative. However, some or all of the improvements listed in Mitigation Measure TRA-1 for the proposed project would have the potential to apply to this alternative to reduce its potential to result in an impact associated with circulation system performance.

In addition, similar to the proposed project, implementation of this alternative would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The Reduced Footprint Alternative, similar to the proposed project, would not result in a change in air traffic patterns, result in inadequate emergency access nor would it conflict with applicable policies, plans, or programs, regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Further, because the site would be developed under the existing General Plan land use designation and zoning classification, this alternative would be consistent with the planned development intensity for the site and would not result in a substantial increase in traffic that would contribute to traffic congestion above that anticipated by the City. As such, traffic impacts under this alternative would be less than that of the proposed project.

5.4.3.2 Ability to Meet Project Objectives

The Reduced Footprint Alternative would result in the development of 10,020 square feet of retail and restaurant uses, which represents a 57 percent reduction in square footage relative to the proposed project. Therefore, GHG emissions impacts this alternative would result in 770 MTCO_{2e} during the operational phase, which is below the City's screening level of 1,185 MTCO_{2e}. As discussed and demonstrated, the Reduced Footprint Alternative would generate substantially less GHG emissions than the proposed project, would not require any GHG mitigation measures, and would not result in a significant and unavoidable GHG impact.

As shown in Table 5-3, the Reduced Footprint Alternative would advance almost all of the project objectives. This alternative would not meet Project Objective 1, which is to develop and implement

¹ In the context of trip generation rates, this is X per 1,000 square feet. For example, 40,000 square feet is 40 trips per 1,000 square feet.

a 91,893-square-foot commercial center, which includes five single-story buildings consisting of 23,520 square feet of restaurant and retail space and a car wash, and associated landscaping, hardscape (e.g., sidewalks, patios), and parking stalls. However, this alternative would have the ability to meet the other project objectives by developing a commercial center within the North County Regional Center/Breeze Hill Road Opportunity; promoting regionally oriented commercial development along the SR-78 corridor to serve the traveling public and provide freeway-oriented uses where direct access is available; and, improving walkability in the area through enhanced pedestrian amenities, by providing sidewalks, street trees, and lighting.

5.5 Environmentally Superior Alternative

According to Section 15126.6(e)(2) of the State CEQA Guidelines, an EIR is required to identify the environmentally superior alternative, which is the alternative having the potential for the fewest significant environmental impacts, from among the range of reasonable alternatives that are evaluated in an EIR. Table 5-4, Comparison of Alternatives – Environmental Impacts, provides a summary comparison of the alternatives evaluated in ~~the~~^{this} Recirculated DEIR with the purpose of highlighting whether the alternative would result in a similar, greater, or lesser impact compared to the proposed project.

Table 5-4 summarizes the potential impacts of the alternatives evaluated in this section compared to the potential impacts of the proposed project. As discussed in the analysis in Chapter 3 of ~~the~~^{this} Recirculated DEIR, the proposed project would result in potentially significant impacts with regard to cultural and tribal cultural resources, GHG emissions, and transportation. However, with implementation of the mitigation measures in Sections 3.1 through 3.3, potentially significant cultural and tribal cultural resources and transportation impacts would be reduced to less than significant levels. However, even with the implementation of Mitigation Measures GHG-1 through GHG-~~46~~, impacts relative to GHG emissions would remain significant and unavoidable.

As shown in Table 5-4, impacts under the No Project/No Build Alternative would generally be less than the proposed project for most of the environmental topics and also, the operational impacts are below the City’s Bright Line threshold of 1,185 MTCO₂e. However, the No Project/No Build Alternative would not accomplish the project objectives. State CEQA Guidelines, Section 15126.6(e)(2), also states that “the EIR shall also identify an environmentally superior alternative among the other alternatives” if the environmentally superior alternative is the “No Project” alternative. Therefore, the environmentally superior alternative would be the Reduced Footprint Alternative, which would result in the reduction of operational CO₂e emissions below the City’s GHG screening level and would have the ability to meet all but one of the project’s objectives.

Table 5-3. Comparison of Project Alternative to the Project Objectives

Project Objectives	Does the Alternative Meet the Project Objectives?		
	Alternative 1: <u>No Project/ No Build</u>	Alternative 2: <u>No Project/ Existing Zoning</u>	Alternative 3: <u>Reduced Footprint</u>
1. Develop and implement a 91,893-square-foot commercial center, which includes five single-story buildings consisting of 23,520 square feet of restaurant and retail space and a car wash and associated landscaping, hardscape (e.g., sidewalks, patios), and parking stalls.	No	No	No
2. Implement Policy 6.3 of the City's LUCI Element by developing a commercial center within the North County Regional Center/Breeze Hill Road Opportunity Area (OA-10).	No	Yes	Yes
3. Implement Policy 7.2 of the City's LUCI Element to promote regionally oriented commercial development along the SR-78 corridor to serve the traveling public and provide freeway-oriented uses where direct access is available.	No	Yes	Yes
4. Implement Policy OA-10.2 of the City's LUCI Element to improve walkability in the area through enhanced pedestrian amenities by providing sidewalks, street trees, and lighting.	No	Yes	Yes

Table 5-4. Comparison of Alternatives – Environmental Impacts

Environmental Topic Area	Proposed Project	Alternative 1: No Project/No Build	Alternative 2: No Project/ Existing Zoning	Alternative 3: Reduced Footprint
Cultural and Tribal Cultural Resources				
Historical Resources	NI	—	—	—
Archaeological Resources	PS	▼	—	▼
Tribal Cultural Resources	PS	▼	—	▼
Human Remains	LS	▼	—	▼
Greenhouse Gas Emissions				
Generation of GHG Emissions	SU	▼	==▼	▼
Consistency with Local Plans Adopted for the Purpose of Reducing GHG Emissions	SU	▼	==▼	▼
Transportation				
Circulation System Performance	PS	▼	▼	▼
Traffic Hazards	LS	—	—	—
Emergency Access	LS	—	—	—
Alternative Transportation Facilities	LS	—	—	—

Notes: GHG = greenhouse gas; NI = No Impact; LS = Less than Significant Impact; PS = Potentially Significant Impact; SU = Significant and Unavoidable Impact

▲ Alternative is likely to result in greater impacts to issue when compared to proposed project.

— Alternative is likely to result in similar impacts to issue when compared to proposed project.

▼ Alternative is likely to result in reduced impacts to issue when compared to proposed project.

Chapter 7 **References**

All referenced documents that are starred (*) are on file and available for review at the City of Vista Planning Division office located at 200 Civic Center Drive, Vista, California 92084.

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Appendix C: Greenhouse Gas Emissions Analysis

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Greenhouse Gas Emissions Analysis

Sunroad Commercial Project

March 2020~~September 2019~~

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Appendices

Appendix A. CalEEMod Output

Acronyms and Abbreviations

AB	Assembly Bill
AEP	Association of Environmental Professionals
BAU	business-as-usual
CAA	Clean Air Act
CalEEMod	California Emission Estimator Model
CALGreen	California Green Building Standards Code
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
<u>CARB</u>	<u>California Air Resources Board</u>
CAT	California Climate Action Team
CCR	California Code of Regulations
CEP	Climate Education Partners
CEQA	California Environmental Quality Act
CH ₄	Methane
City	City of Vista
CO ₂	carbon dioxide
CO _{2e}	carbon dioxide equivalent
EO	Executive Order
EPIC	Energy Policy Initiatives Center
GHG	greenhouse gas
HCFC-22	chlorodifluoromethane
HFC	hydrofluorocarbon
HVAC	heating, ventilation, and air conditioning
IPCC	Intergovernmental Panel on Climate Change
LCFS	Low Carbon Fuel Standard
MMT	million metric tons
MT	metric ton
MTCO _{2e}	Metric tons of carbon dioxide equivalent
N ₂ O	Nitrous oxide
NHTSA	National Highway Traffic Safety Administration
PFC	perfluorocarbons
project	Sunroad Commercial Project

SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
<u>SDG&E</u>	<u>San Diego Gas & Electric</u>
SF	square foot
SF ₆	sulfur hexafluoride
SLO County APCD	San Luis Obispo County Air Pollution Control District
SR	State Route
VMT	vehicle miles traveled
ZNE	Zero Net Energy

Executive Summary

This greenhouse gas (GHG) emissions analysis assesses the potential GHG-related impacts of implementation of the proposed Sunroad Commercial Project (project), which would include a car wash, restaurants with drive-throughs, and retail space. The project site is located at the intersection of Vista Village Drive and Hacienda Drive in the city of Vista. This report presents an evaluation of existing conditions in the region, thresholds of significance, and potential impacts associated with construction and operation of the project.

Results of this report show that there would not be significant impacts from the project related to potential hazards related to climate change. However, direct GHG emissions of the proposed project would exceed the City of Vista's (City's) interim threshold for evaluating the significance of GHG emissions. Mitigation Measures GHG-1 through GHG-46 would reduce impacts, but not to a less than significant level. As such, emissions would be significant and would potentially conflict with the City's Climate Action Plan (CAP) and long-term statewide emissions reduction goals. Impacts would remain significant with implementation of feasible mitigation.

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Section 1 Introduction

1.1 Purpose of the Report

This greenhouse gas (GHG) emissions evaluation was prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) to assess if any potentially significant impacts related to GHG emissions are likely to occur in conjunction with the type and scale of development associated with the proposed project.

1.2 Project Location and Description

The project site is located at 460 Hacienda Drive immediately east of Vista Village Drive and south of State Route (SR) 78 (see Figure 1-1, Regional Location Map, and Figure 1-2, Project Vicinity). The site consists of four parcels (APN 164-231-01, 02, 03, and 04) totaling 4.12 acres. The project site has been previously graded and is vacant. The project proposes to construct a 91,893-square-foot (SF) commercial center consisting of single-story retail, restaurant, and car wash uses. Five single-story buildings would be constructed, each with its own drive-through. Approximately 161 surface parking spaces would be provided on site (see Figure 1-3, Site Plan). The proposed project is consistent with the existing GC-General Commercial General Plan land use designation and C-1 Commercial Zoning designation for the site.

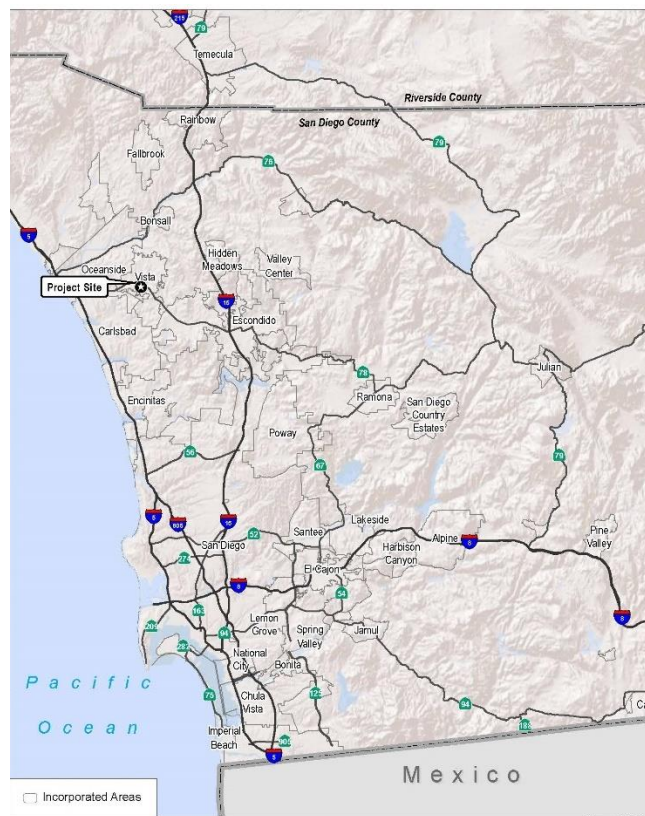


Figure 1-1. Regional Location Map



Figure 1-2. Project Vicinity



Figure 1-3. Site Plan

1.3 Regulatory Requirements and Project Design Features That Reduce GHG Emissions

The following regulatory requirements and project features are assumed as part of the proposed project.

1.3.1 Regulatory Requirements

1.3.1.1 Energy Efficiencies

The project would be designed to meet current Title 24 energy-efficiency standards, including requirements for insulation; window treatments and glazing; and heating, ventilation, and air conditioning (HVAC) unit efficiency; ~~and roof anchors and pre-wiring to allow for the installation of photovoltaic systems. Although the buildings would be required to be solar-ready, installation of solar panels is not currently proposed and are not included as a project feature.~~

1.3.1.2 Water Conservation

Section 18.56 of the City's Development Code, Water Efficient Landscaping, requires that the project submit a landscape documentation package demonstrating compliance with water efficiency requirements. In accordance with City requirements, the following water conservation features have been incorporated into the proposed landscape plan:

- All plant materials selected for this site were appropriate for the geographical location and local climate, including their adaptability to drought.
- Plants with similar water use requirements would be grouped together.
- 100 percent of landscape areas would be planted with low or moderate water use plants. No high water use plants are proposed.
- Irrigation sections/hydrozones would be separated by considering plant species factor, plant density and microclimate. If low water use plants are mixed with moderate water use plants in the same hydrozone, the moderate water use factor is used for water use calculations to conservatively estimate maximum water use.
- The irrigation system would utilize a low-volume distribution system with a master valve, flow sensor, check valves, automatic controllers water budgeting capability, weather station, rain shut-off.
- No turf is proposed. All tree, shrub and groundcover areas would be dressed with 3" layer of mulch moisture retention and to discourage weeds.
- There are no special landscape areas proposed for this project.

1.3.1.3 Solid Waste Reduction

In accordance with Assembly Bill (AB) 341 and the 2016 CALGreen standards, the project would provide areas for storage and collection of recyclables.

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Section 2 Environmental Setting

2.1 Global Climate Change Overview

Climate change refers to any substantial change in measures of climate (such as temperature, precipitation, or wind) lasting for decades or longer. According to the U.S. Environmental Protection Agency (USEPA), the earth's climate has changed many times during the planet's history, including events ranging from ice ages to long periods of warmth. Historically, natural factors such as volcanic eruptions, changes in the earth's orbit, and the amount of energy released from the sun have affected the earth's climate. Some GHGs, such as water vapor, occur naturally and are emitted to the atmosphere through natural processes, while others are emitted through human activities. Since the 1700s, human activities associated with the Industrial Revolution have also changed the composition of the atmosphere and therefore very likely are influencing the earth's climate. For over the past 200 years, the burning of fossil fuels, such as coal and oil, and deforestation has increased CO₂ concentrations in the atmosphere (USEPA 2018).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effects of GHGs, the earth's temperature would be about 34 degrees Celsius cooler (CAT 2007). However, it is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

2.2 Greenhouse Gases

Carbon dioxide (CO₂) enters the atmosphere through the burning of fossil fuels, solid waste, trees and wood products, and as a result of other chemical reactions such as through the manufacturing of cement. Globally, the largest source of CO₂ emissions is the combustion of fossil fuels in power plants, automobiles, industrial facilities, and other similar sources (USEPA 2018). Methane (CH₄) is emitted from a variety of both natural and human-related sources, including fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management (USEPA 2017e). Nitrous oxide (N₂O) is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste (USEPA 2017e). Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) are synthetic, powerful GHGs that are emitted from a variety of industrial processes, and the production of chlorodifluoromethane. Construction or operation of the proposed project would not include any industrial processes, and chlorodifluoromethane has been mostly phased out of use in the U.S. (UNEP 2012); therefore, these GHGs are not discussed further in this report.

Individual GHGs have varying heat-trapping properties and atmospheric lifetimes. Table 2-1 identifies the carbon dioxide equivalent (CO₂e) and atmospheric lifetimes of basic GHGs. The CO₂e is a consistent methodology for comparing GHG emissions because it normalizes various

GHG emissions to a consistent measure. Each GHG is compared to CO₂ with respect to its ability to trap infrared radiation, its atmospheric lifetime, and its chemical structure. For example, CH₄ is a GHG that is 28 times more potent than CO₂; therefore, one metric ton (MT) of CH₄ is equal to 28 MTCO₂e.

Table 2-1. Global Warming Potentials and Atmospheric Lifetimes of Common GHGs

GHG	Formula	100-Year Global Warming Potential ¹	Atmospheric Lifetime
Carbon dioxide	CO ₂	1	~100
Methane	CH ₄	28	12
Nitrous oxide	N ₂ O	265	121

Source: CARB 2014. Consistent with CalEEMod Version 2016.3.2.

Notes: CH₄ = methane; CO₂ = carbon dioxide; GHG = greenhouse gas; N₂O = nitrous oxide

¹ The warming effects over a 100-year time frame relative to other GHGs.

2.2.1 Carbon Dioxide

CO₂ enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and also as a result of other chemical reactions such as through the manufacturing of cement. Globally, the largest source of CO₂ emissions is the combustion of fossil fuels in power plants, automobiles, industrial facilities, and other similar sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and petroleum-based products also produce CO₂ emissions. CO₂ is also removed from the atmosphere (or “sequestered”) when it is absorbed by plants as part of the biological carbon cycle. As part of the carbon cycle, billions of tons of atmospheric CO₂ are removed from the atmosphere by oceans and growing plants, also known as “sinks,” and are emitted back into the atmosphere annually through respiration, decay, and combustion, also known as “sources.” When in balance, the total CO₂ emissions and removals from the entire carbon cycle are roughly equal. Since the Industrial Revolution in the 1700s, human activities, such as the burning of oil, coal and gas or deforestation, have increased CO₂ concentrations in the atmosphere (USEPA 2018).

2.2.2 Methane

CH₄ is emitted from a variety of both human-related and natural sources. Human-related activities include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. CH₄ is emitted during the production and transport of fossil fuels. CH₄ emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills. It is estimated that 60 percent of global CH₄ emissions are related to human activities. Natural sources of CH₄ include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. Natural processes in soil and chemical reactions in the atmosphere help remove CH₄ from the atmosphere (USEPA 2018).

2.2.3 Nitrous Oxide

N₂O is produced by both natural and human-related sources. N₂O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. Primary human-related sources of N₂O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production. N₂O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. Globally, about 40 percent of total N₂O emissions come from human activities (USEPA 2018).

2.3 Global, National, Statewide, and Local Greenhouse Gas Inventories

In an effort to evaluate and reduce the potential adverse impact of climate change, global, national, state, and local organizations have conducted GHG inventories to estimate levels of and trends in GHG emissions and removals. The following summarizes these GHG inventories.

2.3.1 Global

Worldwide anthropogenic GHG emissions in 2010 were approximately 49,000 million metric tons (MMT) CO₂e, including ongoing emissions from industrial and agricultural sources and emissions from land use changes (i.e., deforestation, biomass decay) (IPCC 2014). CO₂ emissions from fossil fuel use and industrial processes accounts for 65 percent of the total emissions of 49,000 MMT CO₂e (which includes land use changes) and all CO₂ emissions are 77 percent of the total GHG emissions. CH₄ emissions account for 16 percent and N₂O emissions for six percent of total GHG emissions (IPCC 2014).

2.3.2 National

The USEPA publication, Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016, provides a comprehensive emissions inventory of the nation's primary anthropogenic sources and sinks of GHGs. Total U.S. GHG emissions in 2016 were 6,511.3 MMTCO₂e, a decrease from 2015 by 1.9 percent. Emissions from transportation activities, in aggregate, accounted for the largest portion (28.5 percent) of total U.S. GHG emissions in 2016. Electric power generation accounted for the second largest portion (28.4 percent), while emissions from industry accounted for the third largest portion (21.6 percent) of total U.S. GHG emissions in 2016. Emissions from industry have in general declined over the past decade, due to a number of factors, including structural changes in the U.S. economy (i.e., shifts from a manufacturing-based to a service-based economy), fuel switching, and energy-efficiency improvements. The remaining U.S. GHG emissions were contributed by, in order of magnitude, the agriculture, commercial, and residential sectors (USEPA 2018).

2.3.3 Statewide

Total California GHG emissions in 2016 were 429 MMTCO₂e, according to the California Greenhouse Gas Emissions Inventory for 2006 to 2016, which tracks the emissions of seven GHGs for the years 2000 through 2016. During the 2000 to 2016 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14 tons per person to 10.8 tons per person in 2016, a 23 percent decrease. The transportation sector remains the largest source of GHG emissions in the state, accounting for 39 percent of the inventory, and shows a small increase in emissions in 2016. Emissions from the electricity sector (16 percent in 2016) continue to decline due to growing zero-GHG energy generation sources. Emissions from the industrial sector contributed 21 percent to total GHG emissions in 2015 and 2016, the commercial sector contributed five percent, residential sector contributed seven percent, and agriculture contributed eight percent (CARB 2018a).

2.3.4 Local

In 2009, the City prepared an inventory of community GHG emissions based on 2005 emissions data. The inventory was prepared in compliance with the guidance in CARB's Scoping Plan to create an emissions reduction goal of 15 percent below "current" levels by 2020, and aided in establishing a baseline of GHG emissions for the preparation of the City's Climate Action Plan (CAP), adopted in 2013. The City completed the update of its CAP in November 2019 and anticipates adoption of the updated CAP in mid-2020; however, ~~it has is not yet to available to be adopted.~~ According to the 2005-GHG emissions inventory, the Vista community emitted approximately 547,039 MTCO₂e as a result of activities that took place within the transportation, residential energy use, commercial and industrial energy use, solid waste, and wastewater sectors. The largest contributors of GHG emissions were the transportation (57 percent), commercial/industrial energy use (20 percent), and residential energy use (16 percent) sectors. According to the CAP, under the business-as-usual scenario, Vista's GHG emissions are projected to grow approximately 14 percent above 2005 GHG emissions levels by the year 2020, from 547,039 MTCO₂e to 625,957 MTCO₂e. The City commits in the CAP to reduce its GHG emissions to 464,983 MTCO₂e, which is 15 percent below 2005 levels by 2020, consistent with Assembly Bill (AB) 32, described in Section 2.5, Regulatory Framework.

2.4 Regional Adverse Effects of Climate Change

As referenced in the City's CAP, the Regional Focus 2050 Working Paper and Technical Assessment (Focus 2050) explored what the San Diego region would be like in 2050 if current climate change trends continue (San Diego Foundation 2008). The range of impacts presented in Focus 2050 are based on projections of climate change on the San Diego region using three climate models and two emissions scenarios drawn from those used by the Intergovernmental

Panel on Climate Change. A summary of the potential adverse effects of climate change on the San Diego region, as projected in Focus 2050, is provided below.

2.4.1 Climate

From observations and model historical simulations, it appears that temperatures began to warm more substantially in the 1970s. Some scientists attribute the change to the response to the effects of GHG accumulation, which began to increase substantially during this time. All of the climate model simulations exhibit warming across San Diego county, ranging from about 1.5 degrees Fahrenheit to 4.5 degrees Fahrenheit, with some differences in the timing and geographic distribution of the changes. The models predict greater warming in the summer than in winter, with surface air temperatures warming from 0.7 degrees Fahrenheit to more than two degrees Fahrenheit over that found in winter. Temperature changes for areas along the coast would be moderated by the influence of the Pacific Ocean, but interior areas, where the greatest population growth would occur, would experience the greatest temperature increase.

The months when San Diego county experiences the most extreme warm temperatures, currently in July and August, will likely begin in June and extend until September. It is estimated that the inland portion of the county may have more than a threefold increase in hot days in 2050.

Experts generally conclude that rainfall will continue to vary widely from year to year, leaving the county highly vulnerable to drought.

2.4.2 Sea Level

If current climate change trends continue, rising sea levels will have a major impact on the San Diego region's environment and economy, particularly in coastal areas. When high tide occurs during a large storm, particularly in El Niño winters, flooding will threaten homes, businesses, and hotels in low-lying coastal communities such as Imperial Beach, Coronado, Mission Beach, La Jolla Shores, Del Mar, and Oceanside. Flooding may also impact military, port, and airport operations. High surf events will last for more hours, with waves causing even greater coastal erosion and related damage. Rising sea levels will wear away the foundations of sea bluffs and significantly change the county's coastline. Sandy beaches and nearby wetlands serve as barriers to protect coastline developments from high surf. As these areas shrink from more intense wave activity, there may be a greater need for beach sand replenishment. More seawalls and breakwaters may need to be built to defend homes and businesses from coastal flooding. In addition to being extremely costly, these structures will destroy beaches and wetlands that do not have space to shift inland. Wetlands and estuaries could be devastated, leaving beaches exposed to more pollutants that endanger human and marine life.

2.4.3 Water Supply

The San Diego County Water Authority predicts an increase in water demand for San Diego county of around 20 percent, from 648,030 acre-feet/year (the 2005–2010 average) to about 785,685 acre-feet/year in 2035. About 84 percent of this demand is expected to come from imported sources (SDCWA 2010). By 2050, the expected demand will increase to 915,000 acre-feet/year, which is an increase of 41 percent over the 2005-2010 period. By 2050, about 80 percent of the water supply is expected to be imported.

Drought years, which have historically increased water demand by another seven percent, might occur as much as 50 percent more often and be considerably drier. In drought years, parched soil soaks up more surface water and groundwater, increasing the need for imported and other water supplies. At the same time that the county's demand for water would increase, climate change could shrink the Colorado River flow (a major source of imported water for the county) by 20 percent or more. A decline in the Sierra Nevada snowpack, aggravated by increased temperatures, could impact the water flow of many Northern California rivers ~~which~~ that serve as primary sources of water to the California Aqueduct, a major source of imported water for the county. The county's water supply plans are likely to be severely challenged by climate change. Even with plans in place to conserve, recycle, and augment our available water, it is estimated San Diego county could face an 18 percent shortfall in water supply by 2050.

2.4.4 Wildfires

Fire occurrence has steadily increased in Southern California, in direct proportion to human population growth as most ignitions are caused by human activities. Most fires start during the summer, when coastal sage and chaparral vegetation have dried to a highly flammable state. Fires that start during the fall, however, burn many more acres because flames are intensified and spread by hot, dry Santa Ana winds. It is not entirely clear from climate change models how Santa Ana conditions will affect San Diego regional fire regimes in the future. Some models predict a decrease in the frequency and intensity of Santa Ana conditions while others predict an increase, particularly during the fire season. If Santa Ana conditions increase significantly earlier in the fire season, this shift could increase the incidence of massive Santa Ana fires, because the winds will begin gusting during the time of year when most fires start. More fires that are frequent would threaten native plant species by not allowing sufficient recovery time before they burn again. This would allow weedy, non-native species, which thrive in post-fire conditions, to multiply. Weedy invaders dry out earlier in the year, catch fire more easily, and burn faster than native plants.

Additionally, if current trends continue, the San Diego region will experience a population increase, with more development and human activities in backcountry areas over the coming decades. As a result of climate change, we can expect higher spring temperatures, scorching summers, drier vegetation, and longer fire seasons. A simultaneous occurrence of all of these

factors will increase the likelihood of more devastating firestorms similar to those that destroyed many homes and lives in unincorporated San Diego county during 2003 and 2007.

2.4.5 Ecosystems

San Diego county beaches, canyons, mountains, and deserts support a vast variety of plants and animals, some of which are found nowhere else on the planet. This biodiversity is already under stress from human population growth and land use changes that have broken up and reduced species habitat into fragmented areas. The impacts of climate change will add to the pressures on habitats and the species that live in the county. As a result, the locations where the temperature, moisture, and other environmental conditions are suitable for a particular species will shift. Plant and animal species are generally able to adapt to shifting habitats, but under existing trends, climate change would occur so rapidly that ecological conditions may shift faster than species are able to follow. To survive, some animals and plants will have to move up to 95 miles over the next century to find new habitat or they will face extinction. Drought and unusually warm years have already led to growing insect populations, such as bark beetles, which have attacked and killed drought-stressed trees in San Diego county. With warmer weather, the county's forests will lose even more trees. Ecological changes will cascade, as the loss of one species will challenge the ability of other species up and down the same food chain to survive. Top predators like coyotes may be lost if habitat patches become too small or isolated, and that can lead to an increase in smaller predators that prey on native songbirds.

2.4.6 Public Health

Increased heat, air pollution, wildfires, and infectious disease will cause illness and death in San Diego county, especially among the elderly, children, and the chronically ill. Californians experience the worst air quality in the nation, and San Diego region is currently out of compliance with the federal ozone standard. By 2050, more hot sunny days will increase ozone air pollution levels, which can exacerbate asthma and other respiratory and cardiovascular diseases. Fire-related injuries and death are likely to increase if intense wildfires occur more frequently. Wildfires can also be a significant contributor to air pollution. Wildfire smoke contains numerous toxic and hazardous pollutants that are dangerous to breathe and can worsen lung disease and other respiratory conditions.

Warmer temperatures year-round could lead to growing mosquito populations, increasing the occurrence of West Nile virus in the San Diego region. Hot weather could also bring tropical diseases such as malaria and dengue fever to the region for the first time. In coastal waters, conditions are likely to favor more frequent "red tides" or harmful algal blooms, which can harbor toxic bacteria and other diseases. In 2050, with an aging population and more residents living in areas with extreme-heat conditions and poor air quality, the San Diego region will face intensified public health concerns.

2.4.7 Energy Needs

If current climate change trends continue, warmer temperatures and a growing population will translate into big challenges for the San Diego region's energy supply by 2050. The main impact will be higher demand for electricity as a result of the greater need for summer cooling, especially in inland areas where both regional population growth and temperature increases will be highest. Hotter summers and more frequent, longer and intense heat waves will increase peak demand for electricity, which could result in blackouts and power outages, without adequate planning.

2.5 Regulatory Framework

2.5.1 Federal

The following section describes the federal regulation relevant to the proposed project's GHG analysis, the Federal Clean Air Act (CAA).

2.5.1.1 Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. USEPA* that CO₂ is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO₂, CH₄, N₂O, HFC, PFC, and SF₆) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards require compliance with progressively more stringent GHG emission standards for the 2012 through 2025 vehicle model years.

2.5.2 State

The following section summarizes statewide GHG emissions targets relevant to the proposed project's GHG analysis.

2.5.2.1 Executive Order S-3-05

On June 1, 2005, California's Governor announced, through Executive Order (EO) S-3-05, the following statewide GHG emission reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels
- By 2020, California shall reduce GHG emissions to 1990 levels
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels

The first California Climate Action Team (CAT) Report to the Governor in 2006 contained recommendations and strategies to help ensure the targets in EO S-3-05 are met (CalEPA 2006). The latest CAT Biennial Report was released in 2010. It expands on the policy-oriented 2006 assessment and provides updated information and scientific findings. The details in the CAT

Biennial Report include development of updated climate and sea-level projections using the latest information and tools available, and evaluation of climate change in the context of broader social changes such as land use changes and demographic shifts (CalEPA 2010).

2.5.2.2 Assembly Bill 32 – Global Warming Solution Act of 2006

In September 2006, the California State Legislature adopted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing GHG emissions in California. GHGs as defined under AB 32 include CO₂, CH₄, N₂O, CFCs, HFCs, PFCs, and SF₆. Under AB 32, the California Air Resources Board (CARB) has the primary responsibility for reducing GHG emissions and continues the CAT to coordinate statewide efforts and promote strategies that can be undertaken by many other California agencies. AB 32 required CARB to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020.

In general, AB 32 directed CARB to do the following:

- Prepare and approve a Scoping Plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of GHGs by 2020, and update the Scoping Plan every five years
- Maintain and continue reductions in emissions of GHG beyond 2020
- Identify the statewide level of GHG emissions in 1990 to serve as the emissions limit to be achieved by 2020
- Identify and adopt regulations for discrete early actions that could be enforceable on or before January 1, 2010
- Adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit GHG emissions
- Convene an Environmental Justice Advisory Committee to advise the Board in developing and updating the Scoping Plan and any other pertinent matter in implementing AB 32
- Appoint an Economic and Technology Advancement Advisory Committee to provide recommendations for technologies, research and GHG emission reduction measures

Regarding the first bullet, the first update to the Scoping Plan was adopted in May 2014. The first update identifies opportunities for GHG reductions using existing and new funding sources, defines CARB's climate change priorities for the next five years, and establishes the plan for meeting the long-term goals of EO S-3-05, described below. The first update highlights California's progress toward meeting the 2020 GHG emission reduction goals defined in the initial Scoping Plan and evaluates how GHG reduction strategies may be aligned with other state priorities for water, waste, natural resources, clean energy, transportation, and land use. According to the first update, California is on track to meet the 2020 GHG emission reduction

goal. While the first update discussed setting a mid-term target, the plan did not set a quantifiable target toward meeting the 2050 goal.

The 2017 Climate Change Scoping Plan Update was finalized in November 2017 and adopted in December 2017. This most recent Scoping Plan lays out the framework for achieving the 2030 reductions as established in EO B-30-15 and SB 32, described below. The 2017 Climate Change Scoping Plan Update identifies GHG reductions by emissions sector to achieve a statewide emissions level that is 40 percent below 1990 levels by 2030. CARB recommends statewide targets of no more than six metric tons CO₂e per capita by 2030 and no more than two metric tons CO₂e per capita by 2050. However, CARB specifically states that these goals are appropriate for the plan level (city, county, subregional, or regional level, as appropriate), but not for specific individual projects because they include all emissions sectors in the state.

The 2017 Climate Change Scoping Plan Update also includes recommendations for local governments when considering discretionary approvals and entitlements of individual projects through CEQA. Specifically, CARB recommends that projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize GHG emissions, and that achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development. When designing mitigation measures, CARB recommends that lead agencies prioritize on-site design features that reduce emissions, especially from vehicle miles traveled (VMT), and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits locally.

2.5.2.3 Senate Bill 32

Effective January 1, 2017, Senate Bill (SB) 32 (Stats. 2016, Ch. 249) added a new Section 38566 to the California Health and Safety Code. It provides that “in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by [Division 25.5 of the Health and Safety Code], [CARB] shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030.” In other words, SB 32 requires California, by the year 2030, to reduce its statewide GHG emissions so that they are 40 percent below those that occurred in 1990.

2.5.2.4 Senate Bill 350

In the 2015 legislative session, the Legislature passed SB 350 (Stats. 2015, ch. 547). This legislation added language to the Public Utilities Code that essentially puts into statute the 2050 GHG reduction target already identified in EO S-3-05, albeit in the limited context of new state policies (1) increasing the overall share of electricity that must be produced through renewable energy sources and (2) directing certain state agencies to begin planning for the widespread electrification of the California vehicle fleet. Section 740.12(a)(1)(D) of the Public Utilities Code

now states that “the Legislature finds and declares [that] . . . reducing emissions of [GHGs] to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050 will require widespread transportation electrification.” Furthermore, Section 740.12(b) now states that the California Public Utilities Commission (~~PUC~~), in consultation with CARB and the California Energy Commission (~~CEC~~), must “direct electrical corporations to file applications for programs and investments to accelerate widespread transportation electrification to reduce dependence on petroleum, meet air quality standards, . . . and reduce emissions of greenhouse gases to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050.”

2.5.2.5 Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve “the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State.” On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California’s enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2018b).

2.5.2.6 California Code of Regulations, Title 24, Part 6

California Code of Regulations, Title 24, Part 6, California’s Energy Efficiency Standards for Residential and Nonresidential Buildings, was first established in 1978 in response to a legislative mandate to reduce California’s energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. The Title 24 standards are updated periodically to allow the consideration and possible incorporation of new energy-efficiency technologies and methods. The latest update to the Title 24 standards occurred in 2016 and went into effect January 1, 2017. The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential standards include improvements for attics, walls, water heating, and lighting. The standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards – the energy budgets – that vary by climate zone (of which there are 16 in California) and building type; thus, the standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach.

2.5.2.7 California Green Building Standards Code

The California Green Building Standards Code (24 CCR Part 11) is a code with mandatory requirements for new residential and nonresidential buildings throughout California. The code is Part 11 of the California Building Standards Code in Title 24 of the California Code of Regulations (CBSC 2017). The current 2016 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings went into effect on January 1, 2017.

The development of the CALGreen Code is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction.

The CALGreen Code contains requirements for stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options that allow the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, such as heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

2.5.2.8 Assembly Bill 341

In 2011, the state legislature enacted AB 341 (California Public Resource Code, Section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 also requires the provision of recycling service to commercial and residential facilities that generate four cubic yards or more of solid waste per week. AB 341 does not include a recycling target for local municipalities.

2.5.2.9 Executive Order S-01-07

EO S-01-07 was enacted by the Governor on January 18, 2007, and mandates that (1) a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least ten percent by 2020 and (2) a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California. According to the San Diego County Greenhouse Gas Inventory (EPIC 2013), the effects of the LCFS would be a ten percent reduction in GHG emissions from fuel use by 2020. On April 23, 2009, CARB adopted regulations to implement the LCFS.

2.5.3 Local

The following section summarizes the City's plans and guidance relevant to the proposed project's GHG analysis.

2.5.3.1 City of Vista Climate Action Plan

The City adopted a CAP in 2013 to reduce GHG emissions in Vista in order to comply with AB 32 and SB 97. The CAP provides an estimate of business-as-usual (BAU)¹ emissions by the year 2020, and a projection of the amount of reductions needed to meet the City's requirement to reduce GHG emissions to 1990 levels. The CAP estimates that a reduction of 27,187 MTCO₂e will be required. The CAP adopts climate action measures designed to provide the necessary reductions to meet the 2020 target, including measures designed to reduce vehicle miles traveled, increase tree planting, and resources to encourage small-scale renewable energy installation. The City updated its CAP in November 2019 and anticipates a mid-2020 adoption date.

2.5.3.2 City of Vista Interim Guidance

In 2016, the City developed interim guidance for evaluating GHG emissions from individual development projects within the city subject to CEQA in light of the 2015 Newhall Ranch project California Supreme Court Ruling.² The purpose of the City's Interim Policy on Greenhouse Gas Emissions Significance Thresholds for CEQA (2016 Interim GHG Policy) (April 6, 2016) is to provide guidance for a consistent and objective evaluation of significant climate change impacts in compliance with AB 32 until the CAP ~~can be updated to include such evaluation criteria~~ is adopted in mid-2020. The interim guidance identifies a numerical "Bright Line" threshold based on a review of projects within Vista. It was determined that a level of 1,185 MTCO₂e would capture 90 percent of the city's GHG emissions that are attributable to development projects. To determine if a project is making substantial progress towards meeting 2020 GHG emissions targets set forth in the CAP and AB 32, the total project GHG emissions in its first fully operational year must be less than the "Bright Line" threshold. If project emissions are below the threshold, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. If the project is estimated to provide annual emissions that are above 1,185 MTCO₂e per year, but at or below an Efficiency Threshold³ of 3.3 MTCO₂e per service population, that project would also result in less than significant impacts.

¹ The "business-as-usual" (BAU) scenario provides a forecast of GHG emissions in the year 2020 if consumption trends and behavior continue as they were in 2005, absent any new federal, state, regional, or local policies or actions to reduce emissions.

² Center for Biological Diversity v. California Department of Fish and Wildlife (11/30/2015, Case No. S217763).

³ Efficiency Thresholds apply necessary emissions reductions on a per-capita basis. This Efficiency Threshold represents the emissions per member of the service population (residents and employees) that, if achieved, would reduce the city's GHG emissions to below its reduction goals.

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Section 3 **Thresholds of Significance and Methodology**

3.1 Significance Criteria

Given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts.

According to Appendix G of the State CEQA Guidelines, a project would be considered to have a significant climate change impact if it would:

- Generate GHG either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.
- Exacerbate exposure to adverse effects of climate change.

The determination of significance is governed by State CEQA Guidelines, Section 15064.4, which states that “the determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to . . . [use a quantitative model or qualitative model].” In turn, State CEQA Guidelines, Section 15064.4(b), clarifies that a lead agency should consider “whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.”

Therefore, consistent with State CEQA Guidelines, Section 15064.4, the GHG analysis for the project appropriately relies upon a threshold based on the exercise of careful judgment and believed to be appropriate in the context of this particular project.

The City’s interim guidance for evaluating individual development projects within the city is the applicable threshold for evaluating whether the proposed project would generate a level of GHG emissions that may have a significant impact on the environment. This threshold is appropriate because it is designed to evaluate whether a project would make substantial progress towards achieving the emissions reduction goals of AB 32 and the CAP. Following the methods described by the California Air Pollution Control Officers Association (CAPCOA) in their report CEQA & Climate Change, dated January 2008, the City conducted a review of projects within

the city to determine a 90 percent capture rate (i.e., the screening level of emissions that would capture and require GHG-reducing features for 90 percent of GHG emissions from anticipated development). As identified in the City's 2016 Interim GHG Policy, it was determined that a level of 1,185 MTCO_{2e} would capture 90 percent of the city's emissions that are attributable to development projects (City of Vista 2016).

In accordance with the City's guidance, if the total project annual GHG emissions are less than 1,185 MTCO_{2e}, then the project would not generate GHG emissions that would have a significant impact on the environment. If the project is estimated to provide annual emissions that are above 1,185 MTCO_{2e} per year, but at or below an Efficiency Threshold of 3.3 MTCO_{2e} per service population, that project would result in less than significant impacts. Service population is defined by population and employees of the proposed development. If the project is estimated to produce GHG emissions over the City's Efficiency Threshold, the impact is considered significant.

The plans, policies, or regulations ~~adopted~~ for the purpose of reducing GHG emissions that are applicable to the proposed project include the City's interim guidance and the adopted CAP, as well as AB 32 and SB 32.

3.2 Methodology and Assumptions

The project's GHG emissions were calculated using the California Emission Estimator Model (CalEEMod), Version 2016.3.2. The emission sources include construction (off-road vehicles), mobile (on-road vehicles), area (landscape maintenance equipment), energy, water and wastewater, and solid waste sources. GHG emissions are estimated in terms of total MTCO_{2e}.

3.2.1 Construction Emissions

Emissions from the construction phase of the project are assessed using CalEEMod.

Construction of the proposed project is assumed to begin in June 2019 and last for approximately one year. The analysis assessed annual emissions from individual construction activities, including site preparation (one month), grading (two weeks), building construction (ten months), paving (one month), and architectural coating (one month). It is assumed that no overlap would occur between construction phases. The CalEEMod default construction equipment and vehicle trips are assumed for each construction phase. Soil import of 2,200 cubic yards is anticipated. A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report. Construction emissions were amortized over 30 years and added to operational emissions (SCAQMD 2008).

3.2.2 Operation Emissions

Operational emissions were also estimated using CalEEMod. The model estimates emissions from vehicle and stationary sources of pollutants. CalEEMod defaults for trip length,

distribution, and purpose were used. Trip generation rates were obtained from the Transportation Impact Analysis – Sunroad Restaurants (LLG 2019), which estimated that the project would generate 6,638 total primary vehicle trips from all proposed land uses. Primary trips are new trips on the street system that occur because a development is built, and therefore reflect the project's net increase in vehicle emissions. Trip lengths were obtained for each land use type from San Diego Association of Governments (SANDAG) estimates (SANDAG 2002). The CalEEMod energy emissions intensities for San Diego Gas & Electric (SDG&E) were modified to reflect that 43 percent of energy provided to customers in 2016 by SDG&E (2018) was from renewable sources. The Project Applicant anticipates that development on Pad 2 will exceed Title 24 energy standards by nine percent, and development on Pad 4 will exceed Title 24 by 12 percent (Jones, pers. comm. 2018). These building pads would both include retail and restaurant uses. Modeling assumes that the remaining development would meet but not exceed Title 24 standards. Total outdoor water use is estimated to be 906,675 gallons per year (SGPA 2018). CalEEMod defaults for indoor water use, natural gas, and solid waste are assumed for all land uses, with the exception of water use from the car wash, described below. All modeling output files are provided in Appendix A of this report.

CalEEMod does not include a default land use input for a car wash use. The General Light Industrial land use was selected to represent the energy use and solid waste disposal from the car wash because it reflects use of mechanical equipment. Water use is estimated based on information provided by the Project Applicant and industry publications. The proposed car wash is anticipated to use approximately 15–17 gallons of water per car and would use recycled water. This analysis conservatively assumes 17 gallons per car. The Transportation Impact Analysis estimates 900 one-way vehicle trips associated with the car wash, or 450 visitors. It is assumed that ten percent of these trips would be employee trips, and the remaining visiting vehicles (405 vehicles) would receive a car wash, resulting in a water use of 2.513 million gallons per year. Based on an industry report, approximately 75 percent of water used in each car wash may be recycled water (Auto Laundry News 2013). This analysis conservatively assumes that only 60 percent of water in each wash would be recycled to account for water that is lost and not recycled. As such total potable water use required for the car wash would be approximately one million gallons per year. This estimate is also conservative because it assumed that the car wash would be in operation every day of the year.

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Section 4 Project Impacts

This section evaluates potential impacts of the proposed project related to the generation of GHG emissions.

4.1 Direct and Indirect Emissions of Greenhouse Gases

4.1.1 Construction Emissions

GHG emissions would be associated with the construction phases of the project through use of heavy equipment, truck trips, and vehicle trips by the construction crew commuting to the project site. Emissions of GHGs related to the construction of the project would be temporary. Estimated Construction Emissions by phase are provided in Table 4-1. As shown, total GHG emissions associated with construction would be approximately 399 MTCO₂e for the duration of construction. Amortized construction activities would contribute 13 MTCO₂e emissions per year for 30 years.

Table 4-1. Estimated Construction Emissions

Construction Phase	CO ₂ e Emissions (metric tons)
Site Preparation	36
Grading	25
Building Construction	317
Paving	18
Architectural Coating	3
Total Construction Emissions	399
<i>Amortized Construction Emissions</i>	<i>13</i>

Source: CalEEMod, Version 2016.3.2.

Notes: CO₂e = carbon dioxide equivalent

4.1.2 Operational Emissions

Table 4-2 summarizes the estimated annual emissions from operation of the project. These include GHG emissions associated with vehicles, buildings (natural gas, purchased electricity), water consumption (energy embodied in potable water), solid waste management (including transport and landfill gas generation), and area sources (landscape equipment).

Table 4-2. Estimated Annual Operational Emissions

Emissions Source	CO ₂ e Emissions (metric tons)
Vehicle Emissions	2,123
Electricity	138
Natural Gas	132
Solid Waste	85
Water Use	25
Area Sources	<1
Amortized Construction Emissions	13
Total Annual Emissions	2,517

Source: CalEEMod, Version 2016.3.2

Notes: CO₂e = carbon dioxide equivalent

As shown in Table 4-2, the total CO₂e emissions from the project would be approximately 2,517 metric tons. The net emissions increase associated with the project exceeds the City's Bright Line threshold of 1,185 metric tons of CO₂e and would therefore be subject to the City's Efficiency Threshold of 3.3 MTCO₂e per year per service population.

Service population is defined as the number of residents plus the number of employees supported by a project. The proposed project would not support residents. The number of jobs that could be supported by the proposed project is based on data regarding the typical square footage of commercial floor space required per employee for various commercial land use types published by the San Luis Obispo County Air Pollution Control District (SLO County APCD 2012). The SLO County Air Pollution Control District GHG Thresholds and Supporting Evidence handbook serves as a general guide for consultants on quantifying project GHG emission impacts. Absent similar, local data for Vista or San Diego county, the jobs per square-footage information published by SLO County Air Pollution Control District provides the most relevant data published by a public agency for the purposes of reducing GHG and; therefore, is consistent with the State CEQA Guidelines, Section 15064.4. The number of jobs supported by the proposed project is summarized in Table 4-3.

Table 4-3. Proposed Project Service Population

Land Use	Employees per 1,000 SF	Project 1,000 SF	Project Service Population
Fast-Food Restaurant with Drive-Through	6.22	13.74	85
Retail ¹	2.39	5.58	13
Car Wash ²	2.22	4.2	9
Project Service Population			107

Source: SLO County APCD 2012.

Notes: SF = square feet

¹ Strip Mall land use type was determined to be most similar.

² Gasoline/Service Station was determined to be most similar.

Assuming a service population of 107, the proposed project would have a GHG efficiency of 23.5 MTCO_{2e} per year per service population. Therefore, the proposed project would exceed the significance criteria and would result in a significant GHG impact.

4.1.3 Mitigation Measures

4.1.3.1 Project Mitigation Measures

Assuming a service population of 107, annual operational GHG emissions from the proposed project would need to be reduced to 353 MTCO_{2e} or less to be considered less than significant under the City's Efficiency Threshold. However, this is well below the City's screening level of 1,185 MTCO_{2e}. Therefore, requiring the project to meet the Efficiency Threshold rather than the Bright Line threshold would be overly conservative and commit the project to reductions beyond its fair share. As previously stated, projects that result in annual emissions of 1,185 MTCO_{2e} or less have been determined to result in less than significant impacts by the city. As such, the proposed project emissions would need to be reduced to below 1,185 MTCO_{2e} per year to be considered less than significant.

In the 2017 Climate Change Scoping Plan Update, CARB recommends that individual projects demonstrate consistency with AB 32 and SB 32 by showing that they have implemented all feasible measures to reduce GHG emissions (CARB 2017). As such, this analysis has considered a range of possible measures to reduce GHG emissions, and incorporated those that could feasibly be implemented into mitigation measures. All measures from the City's CAP were considered as potential mitigation for the project, as well as the measures recommended in the CAPCOA report, Quantifying Greenhouse Gas Mitigation Measures (CAPCOA 2010). Note that, while the City's CAP was used as a source for potential GHG reduction measures, the CAP does not require individual development projects to implement the GHG reduction measures found within it. As outlined in Chapter 4, Implementation and Monitoring, of the City's CAP, the implementation plan outlines responsibilities and actions for various City departments but

does not include specific requirements for future development. Mitigation Measures GHG-1 through GHG-46 would reduce the project's GHG emissions impact. These measures are followed, in Section 4.1.3.2, by a description of GHG-reducing measures that were considered for the proposed project, but rejected.

GHG-1 ~~Zero-Net Energy-Reducing Features~~. Prior to the issuance of any building permit, the Project Applicant and/or Owner shall demonstrate in writing to the City of Vista's Community Development Director that the project has been designed ~~and shall be constructed to include, at a minimum, the following features to reduce energy demand achieve zero net energy, as defined by the California Energy Commission in its 2015 Integrated Energy Policy Report, or otherwise achieve an equivalent level of energy efficiency, renewable energy generation or greenhouse gas emissions savings.~~ The following measures ~~shall~~may be included to demonstrate the project's ~~achievement of zero net~~commitment to energy reduction:

- Install programmable thermostats in commercial spaces
- Use electric landscaping equipment to achieve a reduction in ~~non space/water heating residential~~ natural gas use
- ~~Provide heating, ventilation, and air conditioning commissioning and verification of energy savings during project design phase~~Obtain third party heating, ventilation, and air conditioning commissioning and verification of energy savings
- Install high-efficiency area lighting
- Limit outdoor lighting
- Maximize interior daylight
- ~~Install rooftop solar photovoltaic systems to the extent required to offset the project's remaining electricity demand with on-site solar renewable energy~~

~~Through incorporation of zero energy technology into the project, as prescribed by a qualified energy efficiency and design consultant, fossil fuel related sources of greenhouse gases associated with electricity use from project related, non-mobile source operational activities would be zero.~~

GHG-2 Conservation of Water. Prior to issuance of any building permit, the Project Applicant and/or Owner shall demonstrate in writing (including receipts or other evidence) that all installed low-flow plumbing fixtures and appliances are low-water use.

GHG-3 Solid Waste Reduction. Prior to issuance of a certificate of occupancy for any building, the property manager shall, as part of the standard tenant agreement, require commercial tenants to institute recycling and composting services with a 50 percent reduction target in waste disposed. A copy of this agreement shall be sent to the Director of Community Development prior to issuance of the certificate of occupancy.

GHG-4 Transportation Demand Management. Prior to issuance of a certificate of occupancy for any building, the Project Applicant and/or Owner shall implement the following measures to reduce vehicle miles traveled resulting from the project. The following measures are designed to influence the transportation choices of employees and serve to enhance the use of alternative transportation modes both on and off the project site through the provision of incentives and subsidies, and other innovative means. A copy of each shall be sent to the Director of Community Development prior to issuance of the certificate of occupancy.

- ~~Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer an employer-sponsored vanpool/shuttle service to the extent that at least 20 percent of employees are eligible for the program.~~
- ~~Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer an average transit fare subsidy of \$6.00 per employee per day.~~
- ~~Property manager shall, as part of the standard tenant agreement, require commercial tenants to offer a rideshare program to employees to the extent that at least 20 percent of employees are eligible for the program.~~
- ~~Property manager shall, as part of the standard tenant agreement, require commercial tenants to encourage telecommuting and alternative work schedules, such as a nine-day/80 hour schedule, four day/40 hour schedule, or part time telecommuting, to the extent that at least ten percent of employees are eligible for the program.~~

GHG-45 Promotion of Electric and Alternative Fuel Vehicles. Prior to issuance of any building permits, the Project Applicant and/or Owner shall demonstrate in writing and/or plan that six dedicated electric vehicle parking spaces with electric vehicle charging stations ~~(EVCS)~~ have been incorporated into the design of the project to encourage electric vehicle and alternative fuel vehicle use. ~~The parking spaces shall provide a mix of Level 2 and DC Fast Chargers in order to serve a variety of vehicles.~~

~~GHG-6 Parking Fee.~~ Prior to issuance of any building permit, the Project Applicant and/or Owner shall demonstrate in writing that the project parking lot includes a system to charge for parking on-site, such as numbered parking spaces and automated parking pay stations.

4.1.3.2 Mitigation Measures Considered but Rejected

As previously described, this analysis has considered a range of possible measures to reduce GHG, and incorporated those that could feasibly be implemented into mitigation measures. All measures from the City's CAP and the measures recommended in CAPCOA's Quantifying Greenhouse Gas Mitigation Measures (CAPCOA 2010) were considered as potential mitigation for the project. The following CAP measures were considered for the proposed project:

- **Implementation Action M-2.1.** Identify and secure additional funding to replace incandescent and mercury vapor street and traffic signal lights with LED, or other energy efficient lamps.
- **Implementation Action M-2.2.** Identify and secure additional funding to replace inefficient outdoor lights at City buildings and facilities as identified in the Vista Energy Roadmap.
- **Implementation Action M-3.1.** Identify cost-effective renewable energy opportunities for additional City properties and apply for federal, state, and utility grants and other funding opportunities when they become available.
- **Implementation Action M-5.1.** Identify City-owned or operated facilities that need recycling receptacles, such as parks and recreational facilities. Install receptacles at appropriate locations and post signs to encourage recycling at these locations.
- **Implementation Action T-1.1.** Continue to pursue public and private funding to expand and link the City's bicycle and pedestrian network in accordance with the General Plan 2030 Circulation Element.
- **Implementation Action T-2.1.** Coordinate with North County Transit District to continue to expand local rail and bus service to and within Vista.

Implementation Actions M-2.1, M-2.2, M-3.1, M-5.1, and T-1.1 in the City's CAP were ultimately rejected because these actions have been implemented, or funding has already been secured to implement these measures. Implementation Action T-2.1 was rejected because transit operations in the city are under the jurisdiction of the North County Transit District and are outside of the control of the City.

In addition, the following measures recommended in CAPCOA's Quantifying Greenhouse Gas Mitigation Measures (CAPCOA 2010) were considered for the project:

- **Measure AE-2.** Establish Onsite Renewable Energy Systems – Solar Power
- **Measure PDT-2.** Unbundle Parking Costs from Property Cost
- **Measure TRT-3.** Provide Ride-Sharing Programs
- **Measure TRT-4.** Implement Subsidized or Discounted Transit Program
- **Measure TRT-6.** Encourage Telecommuting and Alternative Work Schedules
- **Measure TRT-11.** Provide Employer-Sponsored Vanpool/Shuttle

Measure AE-2 was rejected because it was determined by the Project Architect and HMT Electric, the project's electrical professional commercial contractor, that inadequate rooftop space would be available to provide the necessary electricity generation to offset project use (Gordon 2020). The minimum roof area necessary to accommodate the required panels to meet projected energy demand is 16,544 square feet; however, the potentially usable roof area of the five buildings combined is approximately 6,000 square feet. Of that total area, over 90 percent

(5,520 square feet) would be located on restaurant rooftops. Photovoltaic module function is compromised on rooftops used for restaurant operations in two ways: (1) the toxic nature of the smoke and grease exhaust impairs the solar collection effectiveness, and (2) the toxins reduce the rated service life of the equipment. Therefore, solar photovoltaic panels were determined to be incompatible with the proposed project (Gordon 2020).

Measure PDT-2 was rejected because the site does not accommodate the stacking or turnarounds necessary for regulated parking mechanisms. Further, no other retail centers in the city require paid parking, and the City does not intend to require paid parking for commercial and retail centers. Paid parking at only one retail center would put the property owner at an unfair commercial disadvantage and would result in diverted traffic that could result in longer vehicle trip lengths (Gordon 2020).

Finally, Measures TRT-3, TRT-4, TRT-6, and TRT-11, which are Transportation Demand Management strategies, were rejected because the project is designed to accommodate several unrelated retail tenants. One of the primary goals of implementing Transportation Demand Management strategies is to reduce peak-period congestion by promoting sustainable modes such as public transit, walking, and biking. As such, Transportation Demand Management strategies focus on identifying alternatives to single-occupancy vehicle use during commuting hours (CAPCOA 2010). The anticipated mix of uses includes fast-food chains, each with their own independent operating requirements; a car wash; and retail tenants. The nature of each business is unlike a commercial office building, which would likely have most employees working full-time positions during typical business hours (9:00 a.m. to 5:00 p.m.) and commuting during the AM and PM peak periods to and from work. Instead, the proposed tenants would have employees working various shifts, including staggered and overlapping shifts, throughout the day. At no time would there be a critical mass of employees from a single employer arriving or departing at the same time to make ride-sharing or shuttle programs feasible (Gordon 2020). Work would typically need to be performed on site and at specific hours and could not accommodate telecommuting or alternative schedules. Additionally, it is anticipated that businesses occupying the site would be chain stores or restaurants, and individual site managers or franchise owners may not have control over employee benefits, such as transit subsidies. Therefore, it is technically infeasible for an off-site property manager to implement and enforce these requirements.

Additionally, off-site carbon offsets were considered for the project to offset the remaining reduction required to reduce project emissions to the City's screening level. The City has considered the applicability of the use of offsets outside of the city to meet local GHG reduction goals and has concluded that purchase of offsets outside of the region would not aid the City in meeting its CAP reduction goals. A San Diego County Superior Court decision ~~Recent~~

legislation has also indicated that these offsets ~~are~~ may be inappropriate for mitigation of impacts under CEQA.⁴

4.1.4 Significance After Mitigation

Table 4-4 summarizes the GHG emission reduction that is calculated to result from each mitigation measure. Table 4-5 summarizes the project's annual GHG emissions with implementation of these measures. As shown in Table 4-5, with mitigation the proposed project would generate an estimated ~~2,044,451~~ 2,451,044 MTCO_{2e} annually and would continue to exceed the City's screening level of 1,185 MTCO_{2e}. With implementation of feasible mitigation measures, project emissions would be significant and unavoidable.

Table 4-4. Calculated Mitigation GHG Emissions Reductions

Emissions Source	CO _{2e} Emissions Reduction (metric tons)
GHG-1 Zero Net Energy-Reducing Features	3138
GHG-2 Conservation of Water	5
GHG-3 Solid Waste Reduction	42
GHG-4 Transportation Demand Management and GHG-6 Parking Fee	272
GHG-45 Promotion of Electric and Alternative Fuel Vehicles	16
Total Annual Emissions Reduction	66473

Source: CalEEMod, Version 2016.3.2. Electric vehicle charging stations reduction based on calculation methodology provided by Energy Policy Initiatives Center (EPIC) (Nilmini Silva-Send, Ph.D., Assistant Director/Adjunct Professor, Energy Policy Initiatives Center (EPIC); Co-Principal Investigator Climate Education Partners (CEP), University of San Diego School of Law, Email to Greg Wade, City Manager, City of Solana Beach, April 11, 2018.)

Notes: CO_{2e} = carbon dioxide equivalent; GHG = greenhouse gas

Table 4-5. Estimated Mitigated Annual Operational Emissions

Emissions Source	CO _{2e} Emissions (metric tons)
Vehicle Emissions	2,107,141 ¹ <u>2,451,044</u>
Electricity	1350
Natural Gas	132
Solid Waste	43
Water Use	20
Area Sources	<1
Amortized Construction Emissions	13
Total Annual Emissions	2,451,044

Source: CalEEMod, Version 2016.3.2.

Notes: CO_{2e} = carbon dioxide equivalent

¹ Assumes 16 MTCO_{2e} reduction from provision of six electric vehicle charging stations, based on calculation methodology provided by Energy Policy Initiatives Center (EPIC) (Nilmini Silva-Send, Ph.D., Assistant Director/Adjunct Professor, Energy Policy Initiatives Center (EPIC); Co-Principal Investigator Climate Education Partners (CEP), University of San Diego School of Law, Email to Greg Wade, City Manager, City of Solana Beach, April 11, 2018).

⁴ Golden Door Properties v. County of San Diego. Case No. 2018-13324. Filed December 24, 2018. The case is currently on appeal.

4.2 Consistency with Local Plans Adopted for the Purpose of Reducing GHG Emissions

The plans, policies, or regulations adopted for the purpose of reducing GHG emissions that are applicable to the proposed project include the City's interim guidance and CAP, as well as the long-term statewide emissions reduction goals.

4.2.1 City Climate Action Plan

The City's CAP (2013) is the applicable plan adopted for the purpose of reducing GHG emissions. The City's Municipal Code and state regulations codify compliance with some CAP measures. As demonstrated in Table 4-6, the project would comply with the CAP measures that apply to new land development.

Table 4-6. Climate Action Plan Measure Consistency

Climate Action Plan Measure	Project Consistency
Measure E-1: Energy Efficiency Building Standards Ensure that new development complies with the energy efficiency and green building standards identified in Title 24 of the California Code of Regulations.	The proposed project is required by law to comply with Title 24 regulations. In addition, it is anticipated that development on Pad 2 will exceed Title 24 energy standards by nine percent, and development on Pad 4 will exceed Title 24 by 12 percent.
Measure T-4: Smart Growth Promote sustainable and smart growth land use patterns and development regulations and guidelines.	The proposed project would provide infill development by redeveloping a site in close proximity to existing development, pedestrian and bicycle facilities, and transit routes.
Measure S-1: Expanded Recycling Create a mandatory solid waste recycling program for multi-family residences and commercial operations.	The proposed project would make recycling services available to tenants, in compliance with AB 341.
Measure S-2: Construction and Demolition Debris Diversion Require the redirection of at least 50 percent of the total construction and demolition debris generated by a project via reuse or recycling.	The proposed project would comply with Chapter 13.17 of the City's Municipal Code, which codifies this measure.

Source: City of Vista [2013](#).

Notes: AB = Assembly Bill

As shown in Table 4-6, the project would be consistent with the measures of the local plan, policy, or regulation adopted for the purpose of reducing GHG emissions. However, because the project's emissions would exceed the City's emissions threshold for compliance with its emissions reduction goals, the project would potentially conflict with the goals of the City's CAP. This would result in a significant impact.

4.2.2 Long-Term Statewide Emissions Reduction Goals

As described in Section 2.5.2, State, EO B-30-15 established a statewide emissions reduction target of 40 percent below 1990 levels by 2030, which was codified by SB 32. EO S-3-05 established a statewide emissions reduction target of 80 percent below 1990 levels by 2050.

According to the most recent data included in the 2017 Climate Change Scoping Plan Update, the state is on track to achieve the 2020 target.

It can be difficult to quantitatively forecast future GHG emissions associated with the project, given the uncertainty in future state and federal policies, such as Title 24 energy-efficiency regulations. However, in the interest of full disclosure under CEQA, an attempt has been made to estimate the project's annual GHG emissions in the years 2030 and 2050. These estimates take into account (1) additional reductions in vehicle GHG emissions due to Advanced Clean Cars and increased percentage of electric and low-emission vehicles in the fleet and (2) implementation of the 50 percent Renewable Portfolio Standard. Table 4-7 presents the estimated GHG emissions for 2030 and 2050 with these measures in place.

Table 4-7. Estimated Future Greenhouse Gas Emissions

Emissions Source or Reduction	Annual Emissions (MTCO₂e) Horizon Year 2030	Annual Emissions (MTCO₂e) Horizon Year 2050
Vehicle Emissions	1,636	1,562
Electricity	121	121
Natural Gas	132	132
Solid Waste	85	85
Water Use	23	23
Area Sources	<1	<1
Amortized Construction Emissions	13	13
Annual Operational Emissions with Project Design Features	2,010	1,936
<i>Emissions per Year per Service Population</i>	<i>18.8</i>	<i>18.1</i>

Source: CalEEMod 2016.3.2. See Attachment A for model output.

Notes: MTCO₂e = metric tons of carbon dioxide equivalent

These emissions would likely be reduced further than shown in Table 4-7 due to implementation of additional GHG reduction measures and technological advances that cannot be quantified with reasonable certainty at this time. For example, it is likely that the state will increase the Renewable Portfolio Standard targets. The estimated future GHG emissions in Table 4-7 demonstrate that the project's emissions would likely continue to decrease due to reasonably foreseeable reductions in vehicular emissions attributable to existing regulatory standards. However, the project's future emissions projections continue to exceed the City's threshold for significance for 2020 impacts. Because the project's future emissions would not meet the City's short-term targets, which are less ambitious than the state's long-term targets, it is reasonable to assume that the project would potentially interfere with implementation of the 2030 or 2050 GHG reduction goals. This impact would be significant.

4.2.3 Summary

Because the project's emissions would exceed the City's emissions threshold for compliance with the City's emissions reduction goals, the project would potentially conflict with the goals of the City's CAP and may be seen to exceed its fair share in achieving the state's reduction target. This impact would be significant.

4.3 Adverse Effects of Climate Change

The proposed project would have the potential to result in a significant impact related to the adverse effects of climate change if it would exacerbate exposure to these effects. The project's potential to exacerbate each of the key issues for the project region is provided below.

4.3.1 Climate

San Diego county is anticipated to experience and increase in dangerously hot days, particularly in inland areas. However, the proposed project does not propose any new residences and would not support population growth in the region. As such, the proposed project would not increase exposure to hot days in the region. Additionally, the proposed project would include new trees and other vegetation that may reduce urban heat effects and reduce heat exposure.

4.3.2 Sea Level

If current climate change trends continue, rising sea levels will have a major impact on the San Diego region's environment and economy, particularly in coastal areas. The proposed project is located more than six miles inland and development of the project site would not increase exposure to sea-level rise.

4.3.3 Water Supply

Climate change is anticipated to increase drought and reduce water supply with regional population and water demand is anticipated to increase. The proposed project does not include any growth-inducing components and is consistent with anticipated development on the project site in the City's General Plan. As such, the project would not increase water demand beyond regional projections. The proposed project does not include any components that would result in intentional wasteful use of water. The proposed car wash would utilize recycled water to provide a potentially water-saving alternative to at-home car washes. Outdoor landscaping would comply with Section 18.56 of the City's Development Code, Water Efficient Landscaping. As such, the proposed project would not exacerbate impacts related to decreased water supply.

4.3.4 Wildfires

The frequency and severity of wildfire would potentially increase in the region, particularly as development extends into previously undeveloped areas. The proposed project would redevelop

a site surrounded by existing development in a developed area of Vista. It would not increase the wildland-urban interface. Therefore, the proposed project would not increase exposure to potential wildfire risk.

4.3.5 Ecosystems

The impacts of climate change will add to the pressures on habitats and the species that live in the county. However, the project site is previously developed and located in an urbanized area of Vista. Development of the site would not impact the ability of species to migrate to more suitable habitats or result in a loss of existing habitat.

4.3.6 Public Health

Increased heat, air pollution (ozone), wildfires, and infectious disease from increased pest populations will potentially cause illness and death in San Diego county. As previously described, the proposed project does not propose any growth-inducing components and would not increase exposure to public health risks. The Air Quality Technical Report prepared for the project (Harris & Associates 2019) modeled the potential emissions of ozone precursors (volatile organic compounds and nitrogen oxides) from project development. As detailed in this report, the proposed project would not result in cumulatively considerable emissions of these pollutants.

4.3.7 Energy Needs

Increased energy demand and a result of higher temperatures would potentially result in blackouts and power outages. The proposed project would exceed current energy-efficiency requirements. Additionally, the proposed project does not include any growth-inducing components and is consistent with projected growth for the city. As such, the proposed project would not exceed projected energy demand and would not interfere with the ability of SDG&E to adequately plan.

4.3.8 Summary

As demonstrated above, the proposed project would not exacerbate exposure to any of the potential adverse impacts of climate change. This impact would be less than significant.

Section 5 Cumulative Impacts

As discussed in Section 3.1, Significance Criteria, given the relatively small levels of emissions generated by a typical development in relationship to the total amount of GHG emissions generated on a national or global basis, individual development projects are not expected to result in significant, direct impacts with respect to climate change. The City's Bright Line and Efficiency Thresholds identified in its 2016 Interim GHG Policy (City of Vista 2016) are intended to require individual projects to contribute their fair share of GHG reductions to meet local and statewide cumulative GHG reduction goals. Thus, the analysis in Section 4.1, Direct and Indirect Emissions of Greenhouse Gases, compares the project's direct GHG emissions to the City's threshold for significance addresses the project's potential cumulative impact.

As summarized in Section 4.1, with the incorporation of mitigation, construction and operation of the proposed project would generate an estimated 2,451 MTCO₂e annually~~implementation of the project would result in GHG emissions of 2,517 MTCO₂e~~, which would exceed both the City's Bright Line and Efficiency Standard Thresholds identified in its 2016 Interim GHG Policy (City of Vista 2016). Therefore, the project would result in a cumulatively considerable contribution to a potentially significant cumulative impact with respect to GHG emissions and climate change.

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Section 6 **References**

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Appendix A. CalEEMod Output

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Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

Sunroad Commercial Plaza Project

San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.20	1000sqft	0.11	4,200.00	0
Parking Lot	163.00	Space	3.53	85,000.00	0
Fast Food Restaurant with Drive Thru	13.74	1000sqft	0.37	13,740.00	0
Strip Mall	5.58	1000sqft	0.11	5,580.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MW hr)	458.86	CH4 Intensity (lb/MW hr)	0.018	N2O Intensity (lb/MW hr)	0.004

1.3 User Entered Comments & Non-Default Data

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

Project Characteristics - Utility intensity adjusted to reflect 43% renewables (SDG&E 2018) consistent with methodology from Ascent Environmental (2016)

Land Use - Parking lot acreage adjusted so the site total is equal to 4.12 acres. General light industry represents car wash.

Construction Phase - Info provided by Sunroad.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No demolition is needed.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

On-road Fugitive Dust -

Demolition - No demolition needed for this project.

Grading - Entire site to be graded. No import/export

Architectural Coating -

Vehicle Trips - Adjusted to be consistent with October 2018 TIA Primary Trips and SANDAG Not so Brief Guide Trip lengths

Energy Use - Adjust to reflect anticipated reductions beyond Title 24

Water And Wastewater - Car wash water use estimated by 17 gallons per customer and 60 percent use of recycled water. Outdoor water use from landscape plan

Sequestration -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	8.00	10.00
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblEnergyUse	T24E	8.23	7.98
tblEnergyUse	T24E	3.18	2.83
tblGrading	AcresOfGrading	5.00	4.12
tblGrading	AcresOfGrading	0.00	4.12
tblGrading	MaterialImported	0.00	2,200.00
tblLandUse	LandUseSquareFeet	65,200.00	85,000.00
tblLandUse	LotAcreage	0.10	0.11
tblLandUse	LotAcreage	1.47	3.53
tblLandUse	LotAcreage	0.32	0.37
tblLandUse	LotAcreage	0.13	0.11
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.018
tblProjectCharacteristics	CO2IntensityFactor	720.49	458.86
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblSequestration	NumberOfNewTrees	0.00	100.00
tblVehicleTrips	CC_TL	7.30	4.70
tblVehicleTrips	CC_TL	7.30	2.80
tblVehicleTrips	CC_TL	7.30	4.30
tblVehicleTrips	CNW_TL	7.30	4.70
tblVehicleTrips	CNW_TL	7.30	2.80

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

tblVehicleTrips	CNW_TL	7.30	4.30
tblVehicleTrips	CW_TL	9.50	4.70
tblVehicleTrips	CW_TL	9.50	2.80
tblVehicleTrips	CW_TL	9.50	4.30
tblVehicleTrips	ST_TR	722.03	429.70
tblVehicleTrips	ST_TR	1.32	141.60
tblVehicleTrips	ST_TR	42.04	26.40
tblVehicleTrips	SU_TR	542.72	429.70
tblVehicleTrips	SU_TR	0.68	141.60
tblVehicleTrips	SU_TR	20.43	26.40
tblVehicleTrips	WD_TR	496.12	429.70
tblVehicleTrips	WD_TR	6.97	141.60
tblVehicleTrips	WD_TR	44.32	26.40
tblWater	IndoorWaterUseRate	971,250.00	1,005,000.00
tblWater	OutdoorWaterUseRate	266,205.52	0.00
tblWater	OutdoorWaterUseRate	253,328.02	906,675.00

2.0 Emissions Summary

Sunroad Commercial Plaza Project - San Diego Air Basin, Annual

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	0.2185	2.0723	1.4831	2.8300e-003	0.2490	0.1109	0.3599	0.1255	0.1036	0.2291	0.0000	253.2491	253.2491	0.0540	0.0000	254.5990
2020	0.4139	0.9687	0.8742	1.6200e-003	0.0211	0.0517	0.0728	5.7000e-003	0.0486	0.0543	0.0000	142.6000	142.6000	0.0292	0.0000	143.3310
Maximum	0.4139	2.0723	1.4831	2.8300e-003	0.2490	0.1109	0.3599	0.1255	0.1036	0.2291	0.0000	253.2491	253.2491	0.0540	0.0000	254.5990

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	0.2185	2.0723	1.4831	2.8300e-003	0.1306	0.1109	0.2414	0.0615	0.1036	0.1651	0.0000	253.2489	253.2489	0.0540	0.0000	254.5988
2020	0.4139	0.9687	0.8742	1.6200e-003	0.0211	0.0517	0.0728	5.7000e-003	0.0486	0.0543	0.0000	142.5998	142.5998	0.0292	0.0000	143.3309
Maximum	0.4139	2.0723	1.4831	2.8300e-003	0.1306	0.1109	0.2414	0.0615	0.1036	0.1651	0.0000	253.2489	253.2489	0.0540	0.0000	254.5988

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	43.85	0.00	27.37	48.78	0.00	22.58	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2019	8-31-2019	1.0806	1.0806
2	9-1-2019	11-30-2019	0.8477	0.8477
3	12-1-2019	2-29-2020	0.7972	0.7972
4	3-1-2020	5-31-2020	0.6933	0.6933
5	6-1-2020	8-31-2020	0.1380	0.1380
		Highest	1.0806	1.0806

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	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003
Energy	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	268.7092	268.7092	7.9100e-003	3.6000e-003	269.9807
Mobile	1.4603	5.0696	10.6741	0.0230	1.6057	0.0255	1.6312	0.4300	0.0238	0.4539	0.0000	2,118.7508	2,118.7508	0.1629	0.0000	2,122.8234
Waste						0.0000	0.0000		0.0000	0.0000	34.3745	0.0000	34.3745	2.0315	0.0000	85.1613
Water						0.0000	0.0000		0.0000	0.0000	1.7731	17.2432	19.0163	0.1828	4.4500e-003	24.9122
Total	1.6013	5.1900	10.7770	0.0237	1.6057	0.0346	1.6403	0.4300	0.0330	0.4630	36.1476	2,404.7065	2,440.8541	2.3851	8.0500e-003	2,502.8812

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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	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003
Energy	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	265.1813	265.1813	7.7700e-003	3.5700e-003	266.4402
Mobile	1.4603	5.0696	10.6741	0.0230	1.6057	0.0255	1.6312	0.4300	0.0238	0.4539	0.0000	2,118.7508	2,118.7508	0.1629	0.0000	2,122.8234
Waste						0.0000	0.0000		0.0000	0.0000	17.1872	0.0000	17.1872	1.0157	0.0000	42.5807
Water						0.0000	0.0000		0.0000	0.0000	1.4185	14.2139	15.6323	0.1463	3.5600e-003	20.3506
Total	1.6013	5.1900	10.7770	0.0237	1.6057	0.0346	1.6403	0.4300	0.0330	0.4630	18.6057	2,398.1493	2,416.7550	1.3327	7.1300e-003	2,452.1984

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	48.53	0.27	0.99	44.12	11.43	2.02

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2.3 Vegetation**Vegetation**

	CO2e
Category	MT
New Trees	70.8000
Total	70.8000

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	6/3/2019	6/28/2019	5	20	
2	Grading	Grading	7/1/2019	7/12/2019	5	10	
3	Building Construction	Building Construction	7/15/2019	4/17/2020	5	200	
4	Paving	Paving	4/20/2020	5/15/2020	5	20	
5	Architectural Coating	Architectural Coating	5/18/2020	6/12/2020	5	20	

Acres of Grading (Site Preparation Phase): 4.12**Acres of Grading (Grading Phase): 4.12****Acres of Paving: 3.53**

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Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 35,280; Non-Residential Outdoor: 11,760; Striped Parking Area: 5,100 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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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	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	275.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	45.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1829	0.0000	0.1829	0.0995	0.0000	0.0995	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	0.0434	0.4557	0.2206	3.8000e-004	0.1829	0.0239	0.2068	0.0995	0.0220	0.1215	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390

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3.2 Site Preparation - 2019**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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0823	0.0000	0.0823	0.0448	0.0000	0.0448	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	0.0434	0.4557	0.2206	3.8000e-004	0.0823	0.0239	0.1062	0.0448	0.0220	0.0668	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389

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3.2 Site Preparation - 2019**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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0325	0.0000	0.0325	0.0168	0.0000	0.0168	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0325	6.9900e-003	0.0394	0.0168	6.4300e-003	0.0232	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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3.3 Grading - 2019**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	1.2100e-003	0.0421	9.1900e-003	1.1000e-004	2.3500e-003	1.6000e-004	2.5100e-003	6.5000e-004	1.5000e-004	8.0000e-004	0.0000	10.7194	10.7194	9.7000e-004	0.0000	10.7437
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	1.5100e-003	0.0424	0.0114	1.2000e-004	2.9500e-003	1.6000e-004	3.1200e-003	8.1000e-004	1.5000e-004	9.6000e-004	0.0000	11.2808	11.2808	9.9000e-004	0.0000	11.3055

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0146	0.0000	0.0146	7.5600e-003	0.0000	7.5600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0146	6.9900e-003	0.0216	7.5600e-003	6.4300e-003	0.0140	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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3.3 Grading - 2019**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	1.2100e-003	0.0421	9.1900e-003	1.1000e-004	2.3500e-003	1.6000e-004	2.5100e-003	6.5000e-004	1.5000e-004	8.0000e-004	0.0000	10.7194	10.7194	9.7000e-004	0.0000	10.7437
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	1.5100e-003	0.0424	0.0114	1.2000e-004	2.9500e-003	1.6000e-004	3.1200e-003	8.1000e-004	1.5000e-004	9.6000e-004	0.0000	11.2808	11.2808	9.9000e-004	0.0000	11.3055

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870

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3.4 Building Construction - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868

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3.4 Building Construction - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

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	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788

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3.4 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

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	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787

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3.4 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

3.5 Paving - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020**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	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

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	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020**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	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

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	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020**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	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

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	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020**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	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4603	5.0696	10.6741	0.0230	1.6057	0.0255	1.6312	0.4300	0.0238	0.4539	0.0000	2,118.7508	2,118.7508	0.1629	0.0000	2,122.8234
Unmitigated	1.4603	5.0696	10.6741	0.0230	1.6057	0.0255	1.6312	0.4300	0.0238	0.4539	0.0000	2,118.7508	2,118.7508	0.1629	0.0000	2,122.8234

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	5,904.08	5,904.08	5904.08	3,566,943	3,566,943
General Light Industry	594.72	594.72	594.72	565,874	565,874
Parking Lot	0.00	0.00	0.00		
Strip Mall	147.31	147.31	147.31	127,619	127,619
Total	6,646.11	6,646.11	6,646.11	4,260,436	4,260,436

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive	4.70	4.70	4.70	2.20	78.80	19.00	29	21	50
General Light Industry	2.80	2.80	2.80	59.00	28.00	13.00	92	5	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	4.30	4.30	4.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant with Drive Thru	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
General Light Industry	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
Parking Lot	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271
Strip Mall	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive 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	134.0677	134.0677	5.2600e-003	1.1700e-003	134.5474
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	137.5956	137.5956	5.4000e-003	1.2000e-003	138.0879
NaturalGas Mitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928
NaturalGas Unmitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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5.2 Energy by Land Use - NaturalGas**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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	528303	109.9586	4.3100e-003	9.6000e-004	110.3520
General Light Industry	34902	7.2643	2.8000e-004	6.0000e-005	7.2903
Parking Lot	29750	6.1920	2.4000e-004	5.0000e-005	6.2142
Strip Mall	68131.8	14.1806	5.6000e-004	1.2000e-004	14.2314
Total		137.5956	5.3900e-003	1.1900e-003	138.0879

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	518987	108.0196	4.2400e-003	9.4000e-004	108.4062
General Light Industry	33713.4	7.0170	2.8000e-004	6.0000e-005	7.0421
Parking Lot	26775	5.5728	2.2000e-004	5.0000e-005	5.5928
Strip Mall	64661	13.4583	5.3000e-004	1.2000e-004	13.5064
Total		134.0677	5.2700e-003	1.1700e-003	134.5474

6.0 Area Detail**6.1 Mitigation Measures Area**

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

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	ROG	NOx	CO	SO2	Fugitive 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	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003
Unmitigated	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003
Total	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003

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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	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003
Total	0.1277	2.0000e-005	1.7200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5600e-003

7.0 Water Detail**7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.6323	0.1463	3.5600e-003	20.3506
Unmitigated	19.0163	0.1828	4.4500e-003	24.9122

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.17055 / 0	12.6259	0.1363	3.3100e-003	17.0200
General Light Industry	1.005 / 0	3.0425	0.0329	8.0000e-004	4.1014
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.413325 / 0.906675	3.3479	0.0136	3.5000e-004	3.7909
Total		19.0163	0.1828	4.4600e-003	24.9123

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	3.33644 / 0	10.1007	0.1091	2.6500e-003	13.6160
General Light Industry	0.804 / 0	2.4340	0.0263	6.4000e-004	3.2811
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.33066 / 0.906675	3.0976	0.0109	2.8000e-004	3.4535
Total		15.6323	0.1462	3.5700e-003	20.3506

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	17.1872	1.0157	0.0000	42.5807
Unmitigated	34.3745	2.0315	0.0000	85.1613

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	158.27	32.1274	1.8987	0.0000	79.5942
General Light Industry	5.21	1.0576	0.0625	0.0000	2.6201
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.86	1.1895	0.0703	0.0000	2.9470
Total		34.3745	2.0315	0.0000	85.1613

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8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	79.135	16.0637	0.9493	0.0000	39.7971
General Light Industry	2.605	0.5288	0.0313	0.0000	1.3101
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	2.93	0.5948	0.0352	0.0000	1.4735
Total		17.1872	1.0157	0.0000	42.5807

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

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

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

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	70.8000	0.0000	0.0000	70.8000

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	100	70.8000	0.0000	0.0000	70.8000
Total		70.8000	0.0000	0.0000	70.8000

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.20	1000sqft	0.11	4,200.00	0
Parking Lot	163.00	Space	3.53	85,000.00	0
Fast Food Restaurant with Drive Thru	13.74	1000sqft	0.37	13,740.00	0
Strip Mall	5.58	1000sqft	0.11	5,580.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2030
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	402.51	CH4 Intensity (lb/MWhr)	0.016	N2O Intensity (lb/MWhr)	0.003

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Utility intensity adjusted to reflect 43% renewables (SDG&E 2018) consistent with methodology from Ascent Environmental (2016)

Land Use - Parking lot acreage adjusted so the site total is equal to 4.12 acres. General light industry represents car wash.

Construction Phase - Info provided by Sunroad.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No demolition is needed.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

On-road Fugitive Dust -

Demolition - No demolition needed for this project.

Grading - Entire site to be graded. No import/export

Architectural Coating -

Vehicle Trips - Adjusted to be consistent with October 2018 TIA Primary Trips

Energy Use - Adjust to reflect anticipated reductions beyond Title 24

Water And Wastewater - Car wash water use estimated by 17 gallons per customer and 60 percent use of recycled water. Outdoor water use from landscape plan

Sequestration -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	8.00	10.00

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tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblEnergyUse	T24E	8.23	7.95
tblEnergyUse	T24E	3.18	2.83
tblGrading	AcresOfGrading	5.00	4.12
tblGrading	AcresOfGrading	0.00	4.12
tblLandUse	LandUseSquareFeet	65,200.00	85,000.00
tblLandUse	LotAcreage	0.10	0.11
tblLandUse	LotAcreage	1.47	3.53
tblLandUse	LotAcreage	0.32	0.37
tblLandUse	LotAcreage	0.13	0.11
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.016
tblProjectCharacteristics	CO2IntensityFactor	720.49	402.51
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblSequestration	NumberOfNewTrees	0.00	100.00
tblVehicleTrips	CC_TL	7.30	4.70
tblVehicleTrips	CC_TL	7.30	2.80
tblVehicleTrips	CC_TL	7.30	4.30
tblVehicleTrips	CNW_TL	7.30	4.70
tblVehicleTrips	CNW_TL	7.30	2.80
tblVehicleTrips	CNW_TL	7.30	4.30
tblVehicleTrips	CW_TL	9.50	4.70
tblVehicleTrips	CW_TL	9.50	2.80
tblVehicleTrips	CW_TL	9.50	4.30
tblVehicleTrips	ST_TR	722.03	429.70
tblVehicleTrips	ST_TR	1.32	141.60
tblVehicleTrips	ST_TR	42.04	26.40

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tblVehicleTrips	SU_TR	542.72	429.70
tblVehicleTrips	SU_TR	0.68	141.60
tblVehicleTrips	SU_TR	20.43	26.40
tblVehicleTrips	WD_TR	496.12	429.70
tblVehicleTrips	WD_TR	6.97	141.60
tblVehicleTrips	WD_TR	44.32	26.40
tblWater	IndoorWaterUseRate	971,250.00	1,005,000.00
tblWater	OutdoorWaterUseRate	266,205.52	0.00
tblWater	OutdoorWaterUseRate	253,328.02	906,675.00

2.0 Emissions Summary

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2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2173	2.0302	1.4739	2.7200e-003	0.2465	0.1107	0.3572	0.1248	0.1035	0.2283	0.0000	242.5297	242.5297	0.0530	0.0000	243.8554
2020	0.4139	0.9687	0.8742	1.6200e-003	0.0211	0.0517	0.0728	5.7000e-003	0.0486	0.0543	0.0000	142.6000	142.6000	0.0292	0.0000	143.3310
Maximum	0.4139	2.0302	1.4739	2.7200e-003	0.2465	0.1107	0.3572	0.1248	0.1035	0.2283	0.0000	242.5297	242.5297	0.0530	0.0000	243.8554

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	0.2173	2.0302	1.4739	2.7200e-003	0.1282	0.1107	0.2389	0.0609	0.1035	0.1643	0.0000	242.5295	242.5295	0.0530	0.0000	243.8551
2020	0.4139	0.9687	0.8742	1.6200e-003	0.0211	0.0517	0.0728	5.7000e-003	0.0486	0.0543	0.0000	142.5998	142.5998	0.0292	0.0000	143.3309
Maximum	0.4139	2.0302	1.4739	2.7200e-003	0.1282	0.1107	0.2389	0.0609	0.1035	0.1643	0.0000	242.5295	242.5295	0.0530	0.0000	243.8551

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	44.23	0.00	27.52	49.02	0.00	22.65	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2019	8-31-2019	1.0442	1.0442
2	9-1-2019	11-30-2019	0.8477	0.8477
3	12-1-2019	2-29-2020	0.7972	0.7972
4	3-1-2020	5-31-2020	0.6933	0.6933
5	6-1-2020	8-31-2020	0.1380	0.1380
		Highest	1.0442	1.0442

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	0.1277	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Energy	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	251.7366	251.7366	7.3100e-003	3.3000e-003	252.9035
Mobile	0.8345	3.5768	6.0671	0.0175	1.6047	0.0134	1.6181	0.4295	0.0124	0.4419	0.0000	1,633.5049	1,633.5049	0.1020	0.0000	1,636.0535
Waste						0.0000	0.0000		0.0000	0.0000	34.3745	0.0000	34.3745	2.0315	0.0000	85.1613
Water						0.0000	0.0000		0.0000	0.0000	1.7731	15.1256	16.8987	0.1827	4.4100e-003	22.7816
Total	0.9755	3.6973	6.1700	0.0182	1.6047	0.0225	1.6272	0.4295	0.0216	0.4511	36.1476	1,900.3704	1,936.5180	2.3235	7.7100e-003	1,996.9036

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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	0.1277	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Energy	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	251.7366	251.7366	7.3100e-003	3.3000e-003	252.9035
Mobile	0.8345	3.5768	6.0671	0.0175	1.6047	0.0134	1.6181	0.4295	0.0124	0.4419	0.0000	1,633.5049	1,633.5049	0.1020	0.0000	1,636.0535
Waste						0.0000	0.0000		0.0000	0.0000	34.3745	0.0000	34.3745	2.0315	0.0000	85.1613
Water						0.0000	0.0000		0.0000	0.0000	1.7731	15.1256	16.8987	0.1827	4.4100e-003	22.7816
Total	0.9755	3.6973	6.1700	0.0182	1.6047	0.0225	1.6272	0.4295	0.0216	0.4511	36.1476	1,900.3704	1,936.5180	2.3235	7.7100e-003	1,996.9036

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2.3 Vegetation**Vegetation**

	CO2e
Category	MT
New Trees	70.8000
Total	70.8000

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	6/3/2019	6/28/2019	5	20	
2	Grading	Grading	7/1/2019	7/12/2019	5	10	
3	Building Construction	Building Construction	7/15/2019	4/17/2020	5	200	
4	Paving	Paving	4/20/2020	5/15/2020	5	20	
5	Architectural Coating	Architectural Coating	5/18/2020	6/12/2020	5	20	

Acres of Grading (Site Preparation Phase): 4.12**Acres of Grading (Grading Phase): 4.12****Acres of Paving: 3.53**

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Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 35,280; Non-Residential Outdoor: 11,760; Striped Parking Area: 5,100 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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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	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	45.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1829	0.0000	0.1829	0.0995	0.0000	0.0995	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	0.0434	0.4557	0.2206	3.8000e-004	0.1829	0.0239	0.2068	0.0995	0.0220	0.1215	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390

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3.2 Site Preparation - 2019**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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0823	0.0000	0.0823	0.0448	0.0000	0.0448	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	0.0434	0.4557	0.2206	3.8000e-004	0.0823	0.0239	0.1062	0.0448	0.0220	0.0668	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389

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3.2 Site Preparation - 2019**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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0323	0.0000	0.0323	0.0168	0.0000	0.0168	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0323	6.9900e-003	0.0393	0.0168	6.4300e-003	0.0232	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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3.3 Grading - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618

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					0.0145	0.0000	0.0145	7.5500e-003	0.0000	7.5500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0145	6.9900e-003	0.0215	7.5500e-003	6.4300e-003	0.0140	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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3.3 Grading - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870

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3.4 Building Construction - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868

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3.4 Building Construction - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

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	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788

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3.4 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

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	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787

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3.4 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

3.5 Paving - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020**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	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

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	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020**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	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

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	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020**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	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

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	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020**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	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

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	ROG	NOx	CO	SO2	Fugitive 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	0.8345	3.5768	6.0671	0.0175	1.6047	0.0134	1.6181	0.4295	0.0124	0.4419	0.0000	1,633.5049	1,633.5049	0.1020	0.0000	1,636.0535
Unmitigated	0.8345	3.5768	6.0671	0.0175	1.6047	0.0134	1.6181	0.4295	0.0124	0.4419	0.0000	1,633.5049	1,633.5049	0.1020	0.0000	1,636.0535

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	5,904.08	5,904.08	5904.08	3,566,943	3,566,943
General Light Industry	594.72	594.72	594.72	565,874	565,874
Parking Lot	0.00	0.00	0.00		
Strip Mall	147.31	147.31	147.31	127,619	127,619
Total	6,646.11	6,646.11	6,646.11	4,260,436	4,260,436

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive	4.70	4.70	4.70	2.20	78.80	19.00	29	21	50
General Light Industry	2.80	2.80	2.80	59.00	28.00	13.00	92	5	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	4.30	4.30	4.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant with Drive Thru	0.616428	0.037185	0.177402	0.097684	0.012090	0.005279	0.017663	0.025476	0.001931	0.001677	0.005617	0.000785	0.000782
General Light Industry	0.616428	0.037185	0.177402	0.097684	0.012090	0.005279	0.017663	0.025476	0.001931	0.001677	0.005617	0.000785	0.000782
Parking Lot	0.616428	0.037185	0.177402	0.097684	0.012090	0.005279	0.017663	0.025476	0.001931	0.001677	0.005617	0.000785	0.000782
Strip Mall	0.616428	0.037185	0.177402	0.097684	0.012090	0.005279	0.017663	0.025476	0.001931	0.001677	0.005617	0.000785	0.000782

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	120.6230	120.6230	4.7900e-003	9.0000e-004	121.0108
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	120.6230	120.6230	4.7900e-003	9.0000e-004	121.0108
NaturalGas Mitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928
NaturalGas Unmitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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5.2 Energy by Land Use - NaturalGas**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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	527891	96.3799	3.8300e-003	7.2000e-004	96.6898
General Light Industry	34902	6.3723	2.5000e-004	5.0000e-005	6.3927
Parking Lot	29750	5.4316	2.2000e-004	4.0000e-005	5.4491
Strip Mall	68131.8	12.4392	4.9000e-004	9.0000e-005	12.4792
Total		120.6230	4.7900e-003	9.0000e-004	121.0107

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	527891	96.3799	3.8300e-003	7.2000e-004	96.6898
General Light Industry	34902	6.3723	2.5000e-004	5.0000e-005	6.3927
Parking Lot	29750	5.4316	2.2000e-004	4.0000e-005	5.4491
Strip Mall	68131.8	12.4392	4.9000e-004	9.0000e-005	12.4792
Total		120.6230	4.7900e-003	9.0000e-004	121.0107

6.0 Area Detail**6.1 Mitigation Measures Area**

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

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	ROG	NOx	CO	SO2	Fugitive 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	0.1277	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Unmitigated	0.1277	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Total	0.1277	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003

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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	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Total	0.1277	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003

7.0 Water Detail**7.1 Mitigation Measures Water**

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	16.8987	0.1827	4.4100e-003	22.7816
Unmitigated	16.8987	0.1827	4.4100e-003	22.7816

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.17055 / 0	11.2378	0.1363	3.2800e-003	15.6234
General Light Industry	1.005 / 0	2.7080	0.0328	7.9000e-004	3.7649
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.413325 / 0.906675	2.9528	0.0136	3.4000e-004	3.3934
Total		16.8987	0.1827	4.4100e-003	22.7816

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.17055 / 0	11.2378	0.1363	3.2800e-003	15.6234
General Light Industry	1.005 / 0	2.7080	0.0328	7.9000e-004	3.7649
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.413325 / 0.906675	2.9528	0.0136	3.4000e-004	3.3934
Total		16.8987	0.1827	4.4100e-003	22.7816

8.0 Waste Detail**8.1 Mitigation Measures Waste**

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	34.3745	2.0315	0.0000	85.1613
Unmitigated	34.3745	2.0315	0.0000	85.1613

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	158.27	32.1274	1.8987	0.0000	79.5942
General Light Industry	5.21	1.0576	0.0625	0.0000	2.6201
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.86	1.1895	0.0703	0.0000	2.9470
Total		34.3745	2.0315	0.0000	85.1613

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8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	158.27	32.1274	1.8987	0.0000	79.5942
General Light Industry	5.21	1.0576	0.0625	0.0000	2.6201
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.86	1.1895	0.0703	0.0000	2.9470
Total		34.3745	2.0315	0.0000	85.1613

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

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

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Equipment Type	Number
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11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	70.8000	0.0000	0.0000	70.8000

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	100	70.8000	0.0000	0.0000	70.8000
Total		70.8000	0.0000	0.0000	70.8000

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	4.20	1000sqft	0.11	4,200.00	0
Parking Lot	163.00	Space	3.53	85,000.00	0
Fast Food Restaurant with Drive Thru	13.74	1000sqft	0.37	13,740.00	0
Strip Mall	5.58	1000sqft	0.11	5,580.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2050
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MW hr)	402.51	CH4 Intensity (lb/MW hr)	0.016	N2O Intensity (lb/MW hr)	0.003

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Utility intensity adjusted to reflect 43% renewables (SDG&E 2018) consistent with methodology from Ascent Environmental (2016)

Land Use - Parking lot acreage adjusted so the site total is equal to 4.12 acres. General light industry represents car wash.

Construction Phase - Info provided by Sunroad.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - No demolition is needed.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

On-road Fugitive Dust -

Demolition - No demolition needed for this project.

Grading - Entire site to be graded. No import/export

Architectural Coating -

Vehicle Trips - Adjusted to be consistent with October 2018 TIA Primary Trips

Energy Use - Adjust to reflect anticipated reductions beyond Title 24

Water And Wastewater - Car wash water use estimated by 17 gallons per customer and 60 percent use of recycled water. Outdoor water use from landscape plan

Sequestration -

Construction Off-road Equipment Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	230.00	200.00
tblConstructionPhase	NumDays	8.00	10.00

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tblConstructionPhase	NumDays	18.00	20.00
tblConstructionPhase	NumDays	5.00	20.00
tblEnergyUse	T24E	8.23	7.95
tblEnergyUse	T24E	3.18	2.83
tblGrading	AcresOfGrading	5.00	4.12
tblGrading	AcresOfGrading	0.00	4.12
tblLandUse	LandUseSquareFeet	65,200.00	85,000.00
tblLandUse	LotAcreage	0.10	0.11
tblLandUse	LotAcreage	1.47	3.53
tblLandUse	LotAcreage	0.32	0.37
tblLandUse	LotAcreage	0.13	0.11
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.016
tblProjectCharacteristics	CO2IntensityFactor	720.49	402.51
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblSequestration	NumberOfNewTrees	0.00	100.00
tblVehicleTrips	CC_TL	7.30	4.70
tblVehicleTrips	CC_TL	7.30	2.80
tblVehicleTrips	CC_TL	7.30	4.30
tblVehicleTrips	CNW_TL	7.30	4.70
tblVehicleTrips	CNW_TL	7.30	2.80
tblVehicleTrips	CNW_TL	7.30	4.30
tblVehicleTrips	CW_TL	9.50	4.70
tblVehicleTrips	CW_TL	9.50	2.80
tblVehicleTrips	CW_TL	9.50	4.30
tblVehicleTrips	ST_TR	722.03	429.70
tblVehicleTrips	ST_TR	1.32	141.60
tblVehicleTrips	ST_TR	42.04	26.40

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tblVehicleTrips	SU_TR	542.72	429.70
tblVehicleTrips	SU_TR	0.68	141.60
tblVehicleTrips	SU_TR	20.43	26.40
tblVehicleTrips	WD_TR	496.12	429.70
tblVehicleTrips	WD_TR	6.97	141.60
tblVehicleTrips	WD_TR	44.32	26.40
tblWater	IndoorWaterUseRate	971,250.00	1,005,000.00
tblWater	OutdoorWaterUseRate	266,205.52	0.00
tblWater	OutdoorWaterUseRate	253,328.02	906,675.00

2.0 Emissions Summary

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2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.2173	2.0302	1.4739	2.7200e-003	0.2465	0.1107	0.3572	0.1248	0.1035	0.2283	0.0000	242.5297	242.5297	0.0530	0.0000	243.8554
2020	0.4139	0.9687	0.8742	1.6200e-003	0.0211	0.0517	0.0728	5.7000e-003	0.0486	0.0543	0.0000	142.6000	142.6000	0.0292	0.0000	143.3310
Maximum	0.4139	2.0302	1.4739	2.7200e-003	0.2465	0.1107	0.3572	0.1248	0.1035	0.2283	0.0000	242.5297	242.5297	0.0530	0.0000	243.8554

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	0.2173	2.0302	1.4739	2.7200e-003	0.1282	0.1107	0.2389	0.0609	0.1035	0.1643	0.0000	242.5295	242.5295	0.0530	0.0000	243.8551
2020	0.4139	0.9687	0.8742	1.6200e-003	0.0211	0.0517	0.0728	5.7000e-003	0.0486	0.0543	0.0000	142.5998	142.5998	0.0292	0.0000	143.3309
Maximum	0.4139	2.0302	1.4739	2.7200e-003	0.1282	0.1107	0.2389	0.0609	0.1035	0.1643	0.0000	242.5295	242.5295	0.0530	0.0000	243.8551

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	44.23	0.00	27.52	49.02	0.00	22.65	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2019	8-31-2019	1.0442	1.0442
2	9-1-2019	11-30-2019	0.8477	0.8477
3	12-1-2019	2-29-2020	0.7972	0.7972
4	3-1-2020	5-31-2020	0.6933	0.6933
5	6-1-2020	8-31-2020	0.1380	0.1380
		Highest	1.0442	1.0442

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	0.1277	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Energy	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	251.7366	251.7366	7.3100e-003	3.3000e-003	252.9035
Mobile	0.5412	3.7199	4.6015	0.0165	1.6065	6.6500e-003	1.6131	0.4302	6.1700e-003	0.4364	0.0000	1,560.0384	1,560.0384	0.0915	0.0000	1,562.3265
Waste						0.0000	0.0000		0.0000	0.0000	34.3745	0.0000	34.3745	2.0315	0.0000	85.1613
Water						0.0000	0.0000		0.0000	0.0000	1.7731	15.1256	16.8987	0.1827	4.4100e-003	22.7816
Total	0.6821	3.8404	4.7043	0.0173	1.6065	0.0158	1.6223	0.4302	0.0153	0.4455	36.1476	1,826.9039	1,863.0515	2.3130	7.7100e-003	1,923.1766

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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	0.1277	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Energy	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	251.7366	251.7366	7.3100e-003	3.3000e-003	252.9035
Mobile	0.5412	3.7199	4.6015	0.0165	1.6065	6.6500e-003	1.6131	0.4302	6.1700e-003	0.4364	0.0000	1,560.0384	1,560.0384	0.0915	0.0000	1,562.3265
Waste						0.0000	0.0000		0.0000	0.0000	34.3745	0.0000	34.3745	2.0315	0.0000	85.1613
Water						0.0000	0.0000		0.0000	0.0000	1.7731	15.1256	16.8987	0.1827	4.4100e-003	22.7816
Total	0.6821	3.8404	4.7043	0.0173	1.6065	0.0158	1.6223	0.4302	0.0153	0.4455	36.1476	1,826.9039	1,863.0515	2.3130	7.7100e-003	1,923.1766

[illegible]

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2.3 Vegetation**Vegetation**

	CO2e
Category	MT
New Trees	70.8000
Total	70.8000

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	6/3/2019	6/28/2019	5	20	
2	Grading	Grading	7/1/2019	7/12/2019	5	10	
3	Building Construction	Building Construction	7/15/2019	4/17/2020	5	200	
4	Paving	Paving	4/20/2020	5/15/2020	5	20	
5	Architectural Coating	Architectural Coating	5/18/2020	6/12/2020	5	20	

Acres of Grading (Site Preparation Phase): 4.12**Acres of Grading (Grading Phase): 4.12****Acres of Paving: 3.53**

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Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 35,280; Non-Residential Outdoor: 11,760; Striped Parking Area: 5,100 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

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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	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	45.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2019**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1829	0.0000	0.1829	0.0995	0.0000	0.0995	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390
Total	0.0434	0.4557	0.2206	3.8000e-004	0.1829	0.0239	0.2068	0.0995	0.0220	0.1215	0.0000	34.1687	34.1687	0.0108	0.0000	34.4390

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3.2 Site Preparation - 2019**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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0823	0.0000	0.0823	0.0448	0.0000	0.0448	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0434	0.4557	0.2206	3.8000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389
Total	0.0434	0.4557	0.2206	3.8000e-004	0.0823	0.0239	0.1062	0.0448	0.0220	0.0668	0.0000	34.1687	34.1687	0.0108	0.0000	34.4389

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3.2 Site Preparation - 2019**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	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484
Total	7.1000e-004	5.4000e-004	5.2700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3473	1.3473	4.0000e-005	0.0000	1.3484

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					0.0323	0.0000	0.0323	0.0168	0.0000	0.0168	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0323	6.9900e-003	0.0393	0.0168	6.4300e-003	0.0232	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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3.3 Grading - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618

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					0.0145	0.0000	0.0145	7.5500e-003	0.0000	7.5500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0129	0.1417	0.0815	1.5000e-004		6.9900e-003	6.9900e-003		6.4300e-003	6.4300e-003	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265
Total	0.0129	0.1417	0.0815	1.5000e-004	0.0145	6.9900e-003	0.0215	7.5500e-003	6.4300e-003	0.0140	0.0000	13.3211	13.3211	4.2100e-003	0.0000	13.4265

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3.3 Grading - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618
Total	3.0000e-004	2.3000e-004	2.1900e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5614	0.5614	2.0000e-005	0.0000	0.5618

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4136	143.4136	0.0349	0.0000	144.2870

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3.4 Building Construction - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

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	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868
Total	0.1440	1.2858	1.0470	1.6400e-003		0.0787	0.0787		0.0740	0.0740	0.0000	143.4134	143.4134	0.0349	0.0000	144.2868

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3.4 Building Construction - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1400e-003	0.1378	0.0370	3.0000e-004	7.2900e-003	9.5000e-004	8.2400e-003	2.1000e-003	9.1000e-004	3.0200e-003	0.0000	29.1714	29.1714	2.3400e-003	0.0000	29.2300
Worker	0.0108	8.3000e-003	0.0803	2.3000e-004	0.0220	1.6000e-004	0.0222	5.8500e-003	1.5000e-004	6.0000e-003	0.0000	20.5462	20.5462	6.6000e-004	0.0000	20.5628
Total	0.0160	0.1461	0.1174	5.3000e-004	0.0293	1.1100e-003	0.0304	7.9500e-003	1.0600e-003	9.0200e-003	0.0000	49.7177	49.7177	3.0000e-003	0.0000	49.7927

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	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3279	90.3279	0.0220	0.0000	90.8788

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3.4 Building Construction - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

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	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787
Total	0.0827	0.7483	0.6571	1.0500e-003		0.0436	0.0436		0.0410	0.0410	0.0000	90.3278	90.3278	0.0220	0.0000	90.8787

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3.4 Building Construction - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6700e-003	0.0800	0.0213	1.9000e-004	4.6600e-003	3.9000e-004	5.0500e-003	1.3500e-003	3.7000e-004	1.7200e-003	0.0000	18.5231	18.5231	1.4200e-003	0.0000	18.5586
Worker	6.4700e-003	4.7900e-003	0.0470	1.4000e-004	0.0141	1.0000e-004	0.0142	3.7400e-003	9.0000e-005	3.8300e-003	0.0000	12.7216	12.7216	3.8000e-004	0.0000	12.7311
Total	9.1400e-003	0.0848	0.0682	3.3000e-004	0.0187	4.9000e-004	0.0192	5.0900e-003	4.6000e-004	5.5500e-003	0.0000	31.2446	31.2446	1.8000e-003	0.0000	31.2897

3.5 Paving - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020**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	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

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	0.0118	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006
Paving	4.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0165	0.1180	0.1228	1.9000e-004		6.5100e-003	6.5100e-003		6.0100e-003	6.0100e-003	0.0000	16.3720	16.3720	5.1400e-003	0.0000	16.5006

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3.5 Paving - 2020**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	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508
Total	7.4000e-004	5.5000e-004	5.3500e-003	2.0000e-005	1.6000e-003	1.0000e-005	1.6200e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4498	1.4498	4.0000e-005	0.0000	1.4508

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	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020**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	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

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	0.3021					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582
Total	0.3045	0.0168	0.0183	3.0000e-005		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	2.5533	2.5533	2.0000e-004	0.0000	2.5582

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3.6 Architectural Coating - 2020**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	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529
Total	3.3000e-004	2.5000e-004	2.4100e-003	1.0000e-005	7.2000e-004	1.0000e-005	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6524	0.6524	2.0000e-005	0.0000	0.6529

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

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	ROG	NOx	CO	SO2	Fugitive 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	0.5412	3.7199	4.6015	0.0165	1.6065	6.6500e-003	1.6131	0.4302	6.1700e-003	0.4364	0.0000	1,560.0384	1,560.0384	0.0915	0.0000	1,562.3265
Unmitigated	0.5412	3.7199	4.6015	0.0165	1.6065	6.6500e-003	1.6131	0.4302	6.1700e-003	0.4364	0.0000	1,560.0384	1,560.0384	0.0915	0.0000	1,562.3265

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Fast Food Restaurant with Drive Thru	5,904.08	5,904.08	5904.08	3,566,943	3,566,943
General Light Industry	594.72	594.72	594.72	565,874	565,874
Parking Lot	0.00	0.00	0.00		
Strip Mall	147.31	147.31	147.31	127,619	127,619
Total	6,646.11	6,646.11	6,646.11	4,260,436	4,260,436

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Fast Food Restaurant with Drive	4.70	4.70	4.70	2.20	78.80	19.00	29	21	50
General Light Industry	2.80	2.80	2.80	59.00	28.00	13.00	92	5	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Strip Mall	4.30	4.30	4.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Fast Food Restaurant with Drive Thru	0.615011	0.035959	0.175734	0.096057	0.010793	0.005300	0.020678	0.029891	0.002015	0.001593	0.005502	0.000799	0.000668
General Light Industry	0.615011	0.035959	0.175734	0.096057	0.010793	0.005300	0.020678	0.029891	0.002015	0.001593	0.005502	0.000799	0.000668
Parking Lot	0.615011	0.035959	0.175734	0.096057	0.010793	0.005300	0.020678	0.029891	0.002015	0.001593	0.005502	0.000799	0.000668
Strip Mall	0.615011	0.035959	0.175734	0.096057	0.010793	0.005300	0.020678	0.029891	0.002015	0.001593	0.005502	0.000799	0.000668

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	120.6230	120.6230	4.7900e-003	9.0000e-004	121.0108
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	120.6230	120.6230	4.7900e-003	9.0000e-004	121.0108
NaturalGas Mitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928
NaturalGas Unmitigated	0.0133	0.1204	0.1012	7.2000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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5.2 Energy by Land Use - NaturalGas**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					
Fast Food Restaurant with Drive Thru	2.39598e+006	0.0129	0.1175	0.0987	7.0000e-004		8.9300e-003	8.9300e-003		8.9300e-003	8.9300e-003	0.0000	127.8587	127.8587	2.4500e-003	2.3400e-003	128.6185
General Light Industry	48552	2.6000e-004	2.3800e-003	2.0000e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.5909	2.5909	5.0000e-005	5.0000e-005	2.6063
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Strip Mall	12443.4	7.0000e-005	6.1000e-004	5.1000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.6640	0.6640	1.0000e-005	1.0000e-005	0.6680
Total		0.0133	0.1204	0.1012	7.1000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	131.1136	131.1136	2.5100e-003	2.4000e-003	131.8928

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	527891	96.3799	3.8300e-003	7.2000e-004	96.6898
General Light Industry	34902	6.3723	2.5000e-004	5.0000e-005	6.3927
Parking Lot	29750	5.4316	2.2000e-004	4.0000e-005	5.4491
Strip Mall	68131.8	12.4392	4.9000e-004	9.0000e-005	12.4792
Total		120.6230	4.7900e-003	9.0000e-004	121.0107

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Fast Food Restaurant with Drive Thru	527891	96.3799	3.8300e-003	7.2000e-004	96.6898
General Light Industry	34902	6.3723	2.5000e-004	5.0000e-005	6.3927
Parking Lot	29750	5.4316	2.2000e-004	4.0000e-005	5.4491
Strip Mall	68131.8	12.4392	4.9000e-004	9.0000e-005	12.4792
Total		120.6230	4.7900e-003	9.0000e-004	121.0107

6.0 Area Detail**6.1 Mitigation Measures Area**

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

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	ROG	NOx	CO	SO2	Fugitive 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	0.1277	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Unmitigated	0.1277	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Total	0.1277	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003

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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	0.0302					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0974					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003
Total	0.1277	2.0000e-005	1.7000e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3300e-003	3.3300e-003	1.0000e-005	0.0000	3.5500e-003

7.0 Water Detail**7.1 Mitigation Measures Water**

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	16.8987	0.1827	4.4100e-003	22.7816
Unmitigated	16.8987	0.1827	4.4100e-003	22.7816

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.17055 / 0	11.2378	0.1363	3.2800e-003	15.6234
General Light Industry	1.005 / 0	2.7080	0.0328	7.9000e-004	3.7649
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.413325 / 0.906675	2.9528	0.0136	3.4000e-004	3.3934
Total		16.8987	0.1827	4.4100e-003	22.7816

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Fast Food Restaurant with Drive Thru	4.17055 / 0	11.2378	0.1363	3.2800e-003	15.6234
General Light Industry	1.005 / 0	2.7080	0.0328	7.9000e-004	3.7649
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.413325 / 0.906675	2.9528	0.0136	3.4000e-004	3.3934
Total		16.8987	0.1827	4.4100e-003	22.7816

8.0 Waste Detail**8.1 Mitigation Measures Waste**

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	34.3745	2.0315	0.0000	85.1613
Unmitigated	34.3745	2.0315	0.0000	85.1613

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	158.27	32.1274	1.8987	0.0000	79.5942
General Light Industry	5.21	1.0576	0.0625	0.0000	2.6201
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.86	1.1895	0.0703	0.0000	2.9470
Total		34.3745	2.0315	0.0000	85.1613

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8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Fast Food Restaurant with Drive Thru	158.27	32.1274	1.8987	0.0000	79.5942
General Light Industry	5.21	1.0576	0.0625	0.0000	2.6201
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	5.86	1.1895	0.0703	0.0000	2.9470
Total		34.3745	2.0315	0.0000	85.1613

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

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

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Equipment Type	Number
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11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	70.8000	0.0000	0.0000	70.8000

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	100	70.8000	0.0000	0.0000	70.8000
Total		70.8000	0.0000	0.0000	70.8000

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	59.22	1000sqft	1.36	59,224.00	0
Parking Lot	163.00	Space	1.47	65,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2021
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	458.86	CH4 Intensity (lb/MWhr)	0.018	N2O Intensity (lb/MWhr)	0.004

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Adjusted intensity factors based on currently renewable portfolio

Land Use -

Construction Phase -

Grading -

Vehicle Trips - Revised consistent with SANDAG trips rate

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblGrading	MaterialImported	0.00	2,200.00
tblLandUse	LandUseSquareFeet	59,220.00	59,224.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.018
tblProjectCharacteristics	CO2IntensityFactor	720.49	458.86
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblVehicleTrips	CC_TL	7.30	8.80
tblVehicleTrips	CNW_TL	7.30	8.80
tblVehicleTrips	CW_TL	9.50	8.80
tblVehicleTrips	WD_TR	11.03	20.00

2.0 Emissions Summary

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2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0724	0.6171	0.4388	9.6000e-004	0.0359	0.0291	0.0650	0.0141	0.0277	0.0418	0.0000	85.3017	85.3017	0.0146	0.0000	85.6658
2020	0.9412	1.8125	1.5440	3.1200e-003	0.0451	0.0885	0.1336	0.0123	0.0847	0.0970	0.0000	268.4090	268.4090	0.0441	0.0000	269.5117
Maximum	0.9412	1.8125	1.5440	3.1200e-003	0.0451	0.0885	0.1336	0.0141	0.0847	0.0970	0.0000	268.4090	268.4090	0.0441	0.0000	269.5117

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	0.0724	0.6171	0.4388	9.6000e-004	0.0237	0.0291	0.0528	8.4100e-003	0.0277	0.0361	0.0000	85.3017	85.3017	0.0146	0.0000	85.6658
2020	0.9412	1.8125	1.5440	3.1200e-003	0.0451	0.0885	0.1336	0.0123	0.0847	0.0970	0.0000	268.4088	268.4088	0.0441	0.0000	269.5115
Maximum	0.9412	1.8125	1.5440	3.1200e-003	0.0451	0.0885	0.1336	0.0123	0.0847	0.0970	0.0000	268.4088	268.4088	0.0441	0.0000	269.5115

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	15.07	0.00	6.15	21.65	0.00	4.11	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	9-20-2019	12-19-2019	0.5892	0.5892
2	12-20-2019	3-19-2020	0.7357	0.7357
3	3-20-2020	6-19-2020	0.7340	0.7340
4	6-20-2020	9-19-2020	0.8184	0.8184
5	9-20-2020	9-30-2020	0.5648	0.5648
		Highest	0.8184	0.8184

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	0.3066	2.0000e-005	2.0500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.9700e-003	3.9700e-003	1.0000e-005	0.0000	4.2300e-003
Energy	6.4500e-003	0.0586	0.0492	3.5000e-004		4.4500e-003	4.4500e-003		4.4500e-003	4.4500e-003	0.0000	234.2281	234.2281	7.9100e-003	2.6600e-003	235.2172
Mobile	0.2579	1.1314	3.0341	0.0101	0.8647	8.6600e-003	0.8733	0.2316	8.0900e-003	0.2397	0.0000	933.8109	933.8109	0.0502	0.0000	935.0653
Waste						0.0000	0.0000		0.0000	0.0000	11.1787	0.0000	11.1787	0.6606	0.0000	27.6948
Water						0.0000	0.0000		0.0000	0.0000	3.3392	43.4425	46.7817	0.3447	8.4800e-003	57.9247
Total	0.5710	1.1901	3.0853	0.0105	0.8647	0.0131	0.8778	0.2316	0.0126	0.2441	14.5179	1,211.4855	1,226.0035	1.0634	0.0111	1,255.9062

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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	0.3066	2.0000e-005	2.0500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.9700e-003	3.9700e-003	1.0000e-005	0.0000	4.2300e-003
Energy	6.4500e-003	0.0586	0.0492	3.5000e-004		4.4500e-003	4.4500e-003		4.4500e-003	4.4500e-003	0.0000	229.0567	229.0567	7.7100e-003	2.6100e-003	230.0273
Mobile	0.2579	1.1314	3.0341	0.0101	0.8647	8.6600e-003	0.8733	0.2316	8.0900e-003	0.2397	0.0000	933.8109	933.8109	0.0502	0.0000	935.0653
Waste						0.0000	0.0000		0.0000	0.0000	5.5894	0.0000	5.5894	0.3303	0.0000	13.8474
Water						0.0000	0.0000		0.0000	0.0000	2.6714	37.7375	40.4088	0.2759	6.8100e-003	49.3339
Total	0.5710	1.1901	3.0853	0.0105	0.8647	0.0131	0.8778	0.2316	0.0126	0.2441	8.2607	1,200.6091	1,208.8698	0.6641	9.4200e-003	1,228.2781

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	43.10	0.90	1.40	37.55	15.44	2.20

3.0 Construction Detail**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/18/2019	10/22/2019	5	3	
2	Grading	Grading	10/23/2019	10/30/2019	5	6	
3	Building Construction	Building Construction	10/31/2019	9/2/2020	5	220	
4	Paving	Paving	9/3/2020	9/16/2020	5	10	
5	Architectural Coating	Architectural Coating	9/17/2020	9/30/2020	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.47

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 88,836; Non-Residential Outdoor: 29,612; Striped Parking Area: 3,912 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	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	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	275.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	46.00	20.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6300e-003	0.0323	0.0179	4.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281
Total	2.6300e-003	0.0323	0.0179	4.0000e-005	2.3900e-003	1.2800e-003	3.6700e-003	2.6000e-004	1.1800e-003	1.4400e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281

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3.2 Site Preparation - 2019**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	5.0000e-005	4.0000e-005	3.5000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0898	0.0898	0.0000	0.0000	0.0899
Total	5.0000e-005	4.0000e-005	3.5000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0898	0.0898	0.0000	0.0000	0.0899

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					1.0700e-003	0.0000	1.0700e-003	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6300e-003	0.0323	0.0179	4.0000e-005		1.2800e-003	1.2800e-003		1.1800e-003	1.1800e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281
Total	2.6300e-003	0.0323	0.0179	4.0000e-005	1.0700e-003	1.2800e-003	2.3500e-003	1.2000e-004	1.1800e-003	1.3000e-003	0.0000	3.3020	3.3020	1.0400e-003	0.0000	3.3281

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3.2 Site Preparation - 2019**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	5.0000e-005	4.0000e-005	3.5000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0898	0.0898	0.0000	0.0000	0.0899
Total	5.0000e-005	4.0000e-005	3.5000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0898	0.0898	0.0000	0.0000	0.0899

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					0.0198	0.0000	0.0198	0.0101	0.0000	0.0101	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0900e-003	0.0682	0.0305	6.0000e-005		3.2200e-003	3.2200e-003		2.9600e-003	2.9600e-003	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993
Total	6.0900e-003	0.0682	0.0305	6.0000e-005	0.0198	3.2200e-003	0.0230	0.0101	2.9600e-003	0.0131	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993

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3.3 Grading - 2019**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	1.2100e-003	0.0421	9.1900e-003	1.1000e-004	2.3500e-003	1.6000e-004	2.5100e-003	6.5000e-004	1.5000e-004	8.0000e-004	0.0000	10.7194	10.7194	9.7000e-004	0.0000	10.7437
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	9.0000e-005	8.8000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2246	0.2246	1.0000e-005	0.0000	0.2247
Total	1.3300e-003	0.0422	0.0101	1.1000e-004	2.5900e-003	1.6000e-004	2.7500e-003	7.1000e-004	1.5000e-004	8.7000e-004	0.0000	10.9440	10.9440	9.8000e-004	0.0000	10.9684

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					8.9200e-003	0.0000	8.9200e-003	4.5600e-003	0.0000	4.5600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.0900e-003	0.0682	0.0305	6.0000e-005		3.2200e-003	3.2200e-003		2.9600e-003	2.9600e-003	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993
Total	6.0900e-003	0.0682	0.0305	6.0000e-005	8.9200e-003	3.2200e-003	0.0121	4.5600e-003	2.9600e-003	7.5200e-003	0.0000	5.5554	5.5554	1.7600e-003	0.0000	5.5993

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3.3 Grading - 2019**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	1.2100e-003	0.0421	9.1900e-003	1.1000e-004	2.3500e-003	1.6000e-004	2.5100e-003	6.5000e-004	1.5000e-004	8.0000e-004	0.0000	10.7194	10.7194	9.7000e-004	0.0000	10.7437
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	9.0000e-005	8.8000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2246	0.2246	1.0000e-005	0.0000	0.2247
Total	1.3300e-003	0.0422	0.0101	1.1000e-004	2.5900e-003	1.6000e-004	2.7500e-003	7.1000e-004	1.5000e-004	8.7000e-004	0.0000	10.9440	10.9440	9.8000e-004	0.0000	10.9684

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	0.0563	0.4160	0.3356	5.5000e-004		0.0240	0.0240		0.0230	0.0230	0.0000	46.1460	46.1460	9.6000e-003	0.0000	46.3859
Total	0.0563	0.4160	0.3356	5.5000e-004		0.0240	0.0240		0.0230	0.0230	0.0000	46.1460	46.1460	9.6000e-003	0.0000	46.3859

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3.4 Building Construction - 2019**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0600e-003	0.0552	0.0148	1.2000e-004	2.9200e-003	3.8000e-004	3.3000e-003	8.4000e-004	3.7000e-004	1.2100e-003	0.0000	11.6898	11.6898	9.4000e-004	0.0000	11.7133
Worker	3.9900e-003	3.0600e-003	0.0296	8.0000e-005	8.1200e-003	6.0000e-005	8.1700e-003	2.1600e-003	5.0000e-005	2.2100e-003	0.0000	7.5748	7.5748	2.4000e-004	0.0000	7.5809
Total	6.0500e-003	0.0583	0.0445	2.0000e-004	0.0110	4.4000e-004	0.0115	3.0000e-003	4.2000e-004	3.4200e-003	0.0000	19.2646	19.2646	1.1800e-003	0.0000	19.2942

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	0.0563	0.4160	0.3356	5.5000e-004		0.0240	0.0240		0.0230	0.0230	0.0000	46.1459	46.1459	9.6000e-003	0.0000	46.3859
Total	0.0563	0.4160	0.3356	5.5000e-004		0.0240	0.0240		0.0230	0.0230	0.0000	46.1459	46.1459	9.6000e-003	0.0000	46.3859

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3.4 Building Construction - 2019**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0600e-003	0.0552	0.0148	1.2000e-004	2.9200e-003	3.8000e-004	3.3000e-003	8.4000e-004	3.7000e-004	1.2100e-003	0.0000	11.6898	11.6898	9.4000e-004	0.0000	11.7133
Worker	3.9900e-003	3.0600e-003	0.0296	8.0000e-005	8.1200e-003	6.0000e-005	8.1700e-003	2.1600e-003	5.0000e-005	2.2100e-003	0.0000	7.5748	7.5748	2.4000e-004	0.0000	7.5809
Total	6.0500e-003	0.0583	0.0445	2.0000e-004	0.0110	4.4000e-004	0.0115	3.0000e-003	4.2000e-004	3.4200e-003	0.0000	19.2646	19.2646	1.1800e-003	0.0000	19.2942

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	0.2013	1.5342	1.3110	2.2000e-003		0.0834	0.0834		0.0800	0.0800	0.0000	182.7271	182.7271	0.0371	0.0000	183.6542
Total	0.2013	1.5342	1.3110	2.2000e-003		0.0834	0.0834		0.0800	0.0800	0.0000	182.7271	182.7271	0.0371	0.0000	183.6542

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3.4 Building Construction - 2020**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	6.7100e-003	0.2006	0.0533	4.8000e-004	0.0117	9.8000e-004	0.0127	3.3700e-003	9.4000e-004	4.3100e-003	0.0000	46.4396	46.4396	3.5600e-003	0.0000	46.5286
Worker	0.0149	0.0111	0.1083	3.2000e-004	0.0325	2.3000e-004	0.0327	8.6300e-003	2.2000e-004	8.8400e-003	0.0000	29.3430	29.3430	8.8000e-004	0.0000	29.3650
Total	0.0216	0.2117	0.1616	8.0000e-004	0.0441	1.2100e-003	0.0454	0.0120	1.1600e-003	0.0132	0.0000	75.7826	75.7826	4.4400e-003	0.0000	75.8936

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	0.2013	1.5342	1.3110	2.2000e-003		0.0834	0.0834		0.0800	0.0800	0.0000	182.7269	182.7269	0.0371	0.0000	183.6540
Total	0.2013	1.5342	1.3110	2.2000e-003		0.0834	0.0834		0.0800	0.0800	0.0000	182.7269	182.7269	0.0371	0.0000	183.6540

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3.4 Building Construction - 2020**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	6.7100e-003	0.2006	0.0533	4.8000e-004	0.0117	9.8000e-004	0.0127	3.3700e-003	9.4000e-004	4.3100e-003	0.0000	46.4396	46.4396	3.5600e-003	0.0000	46.5286
Worker	0.0149	0.0111	0.1083	3.2000e-004	0.0325	2.3000e-004	0.0327	8.6300e-003	2.2000e-004	8.8400e-003	0.0000	29.3430	29.3430	8.8000e-004	0.0000	29.3650
Total	0.0216	0.2117	0.1616	8.0000e-004	0.0441	1.2100e-003	0.0454	0.0120	1.1600e-003	0.0132	0.0000	75.7826	75.7826	4.4400e-003	0.0000	75.8936

3.5 Paving - 2020**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.9300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	7.7000e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143

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3.5 Paving - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.0000e-004	2.0100e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5437	0.5437	2.0000e-005	0.0000	0.5441
Total	2.8000e-004	2.0000e-004	2.0100e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5437	0.5437	2.0000e-005	0.0000	0.5441

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.9300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	7.7000e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143

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3.5 Paving - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.0000e-004	2.0100e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5437	0.5437	2.0000e-005	0.0000	0.5441
Total	2.8000e-004	2.0000e-004	2.0100e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5437	0.5437	2.0000e-005	0.0000	0.5441

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	0.7089					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	0.7101	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791

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3.6 Architectural Coating - 2020**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.2000e-004	1.2000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3262	0.3262	1.0000e-005	0.0000	0.3264
Total	1.7000e-004	1.2000e-004	1.2000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3262	0.3262	1.0000e-005	0.0000	0.3264

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	0.7089					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	0.7101	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791

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3.6 Architectural Coating - 2020**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.2000e-004	1.2000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3262	0.3262	1.0000e-005	0.0000	0.3264
Total	1.7000e-004	1.2000e-004	1.2000e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3262	0.3262	1.0000e-005	0.0000	0.3264

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

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	ROG	NOx	CO	SO2	Fugitive 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	0.2579	1.1314	3.0341	0.0101	0.8647	8.6600e-003	0.8733	0.2316	8.0900e-003	0.2397	0.0000	933.8109	933.8109	0.0502	0.0000	935.0653
Unmitigated	0.2579	1.1314	3.0341	0.0101	0.8647	8.6600e-003	0.8733	0.2316	8.0900e-003	0.2397	0.0000	933.8109	933.8109	0.0502	0.0000	935.0653

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	1,184.40	145.68	62.18	2,294,383	2,294,383
Parking Lot	0.00	0.00	0.00		
Total	1,184.40	145.68	62.18	2,294,383	2,294,383

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	8.80	8.80	8.80	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193
Parking Lot	0.593936	0.041843	0.182569	0.108325	0.016436	0.005513	0.015940	0.023523	0.001912	0.001972	0.006090	0.000748	0.001193

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive 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	165.2479	165.2479	6.4800e-003	1.4400e-003	165.8392
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	170.4193	170.4193	6.6900e-003	1.4900e-003	171.0291
NaturalGas Mitigated	6.4500e-003	0.0586	0.0492	3.5000e-004		4.4500e-003	4.4500e-003		4.4500e-003	4.4500e-003	0.0000	63.8088	63.8088	1.2200e-003	1.1700e-003	64.1880
NaturalGas Unmitigated	6.4500e-003	0.0586	0.0492	3.5000e-004		4.4500e-003	4.4500e-003		4.4500e-003	4.4500e-003	0.0000	63.8088	63.8088	1.2200e-003	1.1700e-003	64.1880

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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					
General Office Building	1.19573e+006	6.4500e-003	0.0586	0.0492	3.5000e-004		4.4500e-003	4.4500e-003		4.4500e-003	4.4500e-003	0.0000	63.8088	63.8088	1.2200e-003	1.1700e-003	64.1880
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		6.4500e-003	0.0586	0.0492	3.5000e-004		4.4500e-003	4.4500e-003		4.4500e-003	4.4500e-003	0.0000	63.8088	63.8088	1.2200e-003	1.1700e-003	64.1880

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					
General Office Building	1.19573e+006	6.4500e-003	0.0586	0.0492	3.5000e-004		4.4500e-003	4.4500e-003		4.4500e-003	4.4500e-003	0.0000	63.8088	63.8088	1.2200e-003	1.1700e-003	64.1880
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		6.4500e-003	0.0586	0.0492	3.5000e-004		4.4500e-003	4.4500e-003		4.4500e-003	4.4500e-003	0.0000	63.8088	63.8088	1.2200e-003	1.1700e-003	64.1880

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	795971	165.6697	6.5000e-003	1.4400e-003	166.2625
Parking Lot	22820	4.7497	1.9000e-004	4.0000e-005	4.7667
Total		170.4193	6.6900e-003	1.4800e-003	171.0291

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	773406	160.9732	6.3100e-003	1.4000e-003	161.5492
Parking Lot	20538	4.2747	1.7000e-004	4.0000e-005	4.2900
Total		165.2479	6.4800e-003	1.4400e-003	165.8392

6.0 Area Detail**6.1 Mitigation Measures Area**

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	ROG	NOx	CO	SO2	Fugitive 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	0.3066	2.0000e-005	2.0500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.9700e-003	3.9700e-003	1.0000e-005	0.0000	4.2300e-003
Unmitigated	0.3066	2.0000e-005	2.0500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.9700e-003	3.9700e-003	1.0000e-005	0.0000	4.2300e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0709					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2355					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.9700e-003	3.9700e-003	1.0000e-005	0.0000	4.2300e-003
Total	0.3066	2.0000e-005	2.0500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.9700e-003	3.9700e-003	1.0000e-005	0.0000	4.2300e-003

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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	0.0709					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2355					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.9000e-004	2.0000e-005	2.0500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.9700e-003	3.9700e-003	1.0000e-005	0.0000	4.2300e-003
Total	0.3066	2.0000e-005	2.0500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.9700e-003	3.9700e-003	1.0000e-005	0.0000	4.2300e-003

7.0 Water Detail**7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	40.4088	0.2759	6.8100e-003	49.3339
Unmitigated	46.7817	0.3447	8.4800e-003	57.9247

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	10.5254 / 6.45105	46.7817	0.3447	8.4800e-003	57.9247
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		46.7817	0.3447	8.4800e-003	57.9247

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	8.42031 / 6.45105	40.4088	0.2759	6.8100e-003	49.3339
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		40.4088	0.2759	6.8100e-003	49.3339

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	5.5894	0.3303	0.0000	13.8474
Unmitigated	11.1787	0.6606	0.0000	27.6948

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	55.07	11.1787	0.6606	0.0000	27.6948
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		11.1787	0.6606	0.0000	27.6948

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8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	27.535	5.5894	0.3303	0.0000	13.8474
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		5.5894	0.3303	0.0000	13.8474

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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11.0 Vegetation

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