Air Quality Plan Consistency Worksheet; Air Quality Memorandum and Updated Criteria Emissions/GHG Modeling Results; and Air Quality, Greenhouse Gas Emissions and Energy Report

B

APPENDIX

row

MBUAPCD CONSISTENCY DETERMINATION PROCEDURE Ver. 4.0

Data entry	12/12/2023	*Data entered by user.*
Consistency Finding	**NO**	**YES**

row					
6	Jurisdiction:	**Gonzales**			*Lead Agency selects from pull down*
7	Project Name:	**Vista Lucia Annexation**			*Lead Agency enters*
8	Base Year for this determination:	**2015**	Project Buildout/ Occupancy Year	**2045**	*Lead Agency enters*
9			Proposed Project Occupied DU	**3,498**	*Total buildout of Project. Sum of all years, row 26.*

JURISDICTION DATA FROM AQMP & DOF (no data entry)

row		**Base Year**	**Period ending January 1st of:**						
		2015	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	*2045 Column Added by EMC Planning Group*
14	DOF Population	8,489	*From Calif. Dept of Finance. Est. for Jan 1 -- released in June of each year.*						
15	AMBAG DU Forecast for Jurisdiction	1,987	1,987	2,399	3,630	4,182	4,474	4,626	*DUs from AMBAG Travel Model, current version.*
16	AMBAG Pop Forecast for Jurisdiction	8,441	8,506	9,650	13,492	14,630	15,398	15,711	*Latest AMBAG Pop. Forecasts.*
17	AMBAG Forecast Population/ DU	4.25	4.28	4.02	3.72	3.50	3.44	3.40	*Row 16/ row 15*
18	Estimated Built DUs	1,987	*Entry for 2015 is DOF 1/2015 Estimate. Lead agency may overwrite with local data.*						

JURISDICTION DUs w/o PROJECT

row		**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	*2045 Column Added by EMC Planning Group*
21	Housing Stock (Built DUs, Total)	1,987	1,987	1,987	1,987	1,987	1,987	1,987	*2015 is constant baseline*
22	Approved but not Built DUs								*Lead Agency estimates.*
23	Total Built & Approved DUs	1,987	1,987	1,987	1,987	1,987	1,987	1,987	*Sum of Row 21 + 22*

PROPOSED NEW PROJECT DUs

row		**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	*2045 Column Added by EMC Planning Group*
26	Proposed New Project DUs		**400**	**600**	**800**	**800**	**898**	*Data entry by Lead Agency.*
27	TOTAL, New Project + Built & Approved DUs	**1,987**	**2,387**	**2,587**	**2,787**	**2,787**	**2,885**	*Sum of Row 23 + 26*

NEW PROJECT CONSISTENCY DETERMINATION

row								
29	Over (Under) AQMP DUs	**0**	**(12)**	**(1,043)**	**(1,395)**	**(1,687)**	**(1,741)**	*Row 27 - Row 15*
30	Is the project consistent in this Period?	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	*If Row 30 is (negative) = YES, if positive = NO.*

EMC PLANNING GROUP INC.
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To: File

From: EMC Planning Group Staff

Date: December 14, 2023

Re: **Vista Lucia Air Quality and GHG Modeling and Regulatory Setting Updates**

EMC Planning Group prepared an *Air Quality, Greenhouse Gas Emission, and Energy Report* for the proposed project in 2020. Information in the report supports discussions in the environmental setting, regulatory setting, and analysis, impacts, and mitigation measures sections of the air quality, energy, and greenhouse gas emissions (GHG) sections of the EIR. For a variety of reasons, the CEQA process for the proposed project was delayed for several years prior to a draft EIR being released. After the 2020 report was prepared, newer versions of Emissions Factor Model (EMFAC) and the California Emissions Estimator Model (CalEEMod) used to quantify criteria air emissions, energy demand, and GHG emissions for the project were released, vehicle miles traveled data for the project (used as an input to the EMFAC model), was updated, and new state legislation for reducing GHG emission in California has been passed.

The purpose of this "AQ/GHG memo" is to report updated air emissions, energy demand, and GHG emissions data using the updated EMFAC and CalEEMod models. In-lieu of the older data in the *Air Quality, Greenhouse Gas Emission, and Energy Report,* the updated results are used in the analysis of air quality, energy and GHG impacts in the EIR. Additional regulatory setting information for GHG emissions is also included in this memo that, in combination with regulatory setting information in the 2020 report, comprises the relevant comprehensive regulatory setting for this environmental topic.

MEMORANDUM

Updated EMFAC Modeling Results

EMFAC modeling results reported in the 2020 report were based on the EMFAC version 2017 1.0.3 developed by the California Air Resources Board. Monterey County was selected in the Area/Subarea Tab, 2043 selected as the calendar year of analysis, "annual" was selected as the season, and total daily vehicle miles traveled (VMT) was selected as the VMT input type. Once the custom activity template was generated, 2020 VMT data provided by the traffic consultant was utilized as input to run the model. "Planning Inventory" was selected as the output type. The output spreadsheet showing criteria air pollutant emissions, mobile source fuel consumption, and mobile-source GHG emissions is attached is included in Appendix A of the 2020 report.

EMFAC was used to model unmitigated and mitigated mobile source criteria emissions and GHG emissions from the project. The results reported in the 2020 report have been updated using EMFAC version 2021 v1.0.2, using updated VMT data generated in 2023. The results are attached to this memo and should be assumed to replace those referenced above that are contained in the 2020 report. The updated results are the basis for evaluating mobile source criteria air emissions effects, for reporting energy demand in the form of vehicle fuel consumption, and for reporting mobile source GHG emissions in the EIR.

Updated CalEEMod Results

CalEEMod was used to model unmitigated and mitigated non-mobile source criteria air emissions, energy demand, and GHG emissions. The modeling results in the 2020 report were based on CalEEMod version 2016.3.2. Assumptions used for the original modeling are identified in Appendix A of the 2020 report. Monterey County was selected in the Area/Subarea Tab, 2043 selected as the calendar year of analysis, "annual" was selected as the season, and total daily vehicle miles traveled (VMT) was selected as the VMT input type. Once the custom activity template was generated, the same VMT data provided by the traffic consultant was utilized as input to run the model.

The CalEEMod results in the 2020 report have been updated using CalEEMod version 2022.1. The modeling assumptions used are the same as those identified in 2020 modeling. The unmitigated and mitigated project model results are attached to this memo and should be assumed to replace those referenced above that are contained in the 2020 report. The updated results are the basis for evaluating non-mobile source criteria air emissions effects, for reporting electricity and natural gas energy demand, and reporting non-mobile source GHG emissions in the EIR.

Residential and Non-Residential Model Runs

Separate EMFAC and CalEEMod runs were conducted for the residential component of the project and for the non-residential component of the project. The attached model runs are denoted as "SF" for the residential component, and "Other" for the non-residential components.

Supplemental State Climate Change Regulatory Setting Information

Since 2020, several landmark pieces of state legislation have been passed that "raise the bar" for statewide efforts to reduce GHG emissions. The following summaries of this key legislation are provided to supplement to those identified in Section 3.2, Regulatory Setting, of the 2020 report regarding GHGs.

Assembly Bill 1279

In September 2022, the Legislature enacted AB 1279. The bill declares that is the policy of the state to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter. Additionally, the bill requires that by 2045, statewide anthropogenic GHG emissions be reduced to at least 85 percent below 1990 levels.

Senate Bill 1020

In September 2022, the Legislature enacted SB 1020. This bill which revises the standards from SB 100 (summarized in the 2020 report) regarding targets for using renewable energy for electricity generation, by increasing the required percentage of retail sales of electricity to California end-use customers to come from eligible renewable energy resources and zero-carbon resources to 90 percent by December 31, 2035, 95 percent by December 31, 2040, and 100 percent by December 31, 2045.

California has set a statutory goal of requiring that, by the year 2045, all electricity must come from renewable resources and other carbon-free resources. By that same year, the State as a whole is supposed to achieve carbon neutrality as codified in Assembly Bill 1279.

2022 Senate Bill 32 Scoping Plan

On December 15, 2022, CARB approved the *Final 2022 Scoping Plan for Achieving Carbon Neutrality*, which outlines the state's plan to reach carbon neutrality by 2045 or earlier, while also assessing the progress the state is making toward reducing GHG emissions by at least 40 percent below 1990 levels by 2030, as is required by SB 32. The carbon neutrality goal requires CARB to expand proposed actions from only the reduction of anthropogenic sources of GHG emissions to also include those that capture and store carbon (e.g., through natural and working lands, or mechanical technologies). The carbon reduction programs build on and accelerate those currently in place, including moving to zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high global warming potentials; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen.

The 2022 Scoping Plan also emphasizes that there is no realistic path to carbon neutrality without carbon removal and sequestration, and to achieve the state's carbon neutrality goal, carbon reduction programs must be supplemented by strategies to remove and sequester carbon. Strategies for carbon removal and sequestration include carbon capture and storage from anthropogenic point sources, where CO_2 is captured as it leaves a facility's smokestack and is injected into geologic formations or used in industrial materials (e.g., concrete); and carbon dioxide removal from ambient air, through mechanical (e.g., direct air capture with sequestration) or nature-based (e.g., management of natural and working lands) applications.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32, SB 32, and Executive Orders S-3-05 and B-30-15, by which Governors Schwarzenegger and Brown identified long-term GHG reduction goals for the State of California (80 percent below 1990 levels by 2050 and "carbon neutrality as soon as possible, and no later than 2045, and maintain and achieve negative emissions thereafter"). The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions.

California Energy Code

The California Energy Code (California Code of Regulations, Title 24, Part 6), which is incorporated into the California Building Standards Code, was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The California Energy Code is updated every three years by the California Energy Commission as the Building Energy Efficiency Standards (BEES) to allow consideration and possible incorporation of new energy efficiency technologies and construction methods. Although the BEES were not originally intended to reduce GHG emissions, increased energy efficiency results in decreased GHG emissions because energy efficient buildings require less electricity. The California Building Standards Code is enforceable at the project-level. Energy standards have supported California's long-term strategy to meet energy demand, and conserve resources. The Energy Code governs window and door materials, lighting, electrical panels, insulation, faucets and additional building features. The requirements vary between home and business buildings, as well as among climate zones in which they are implemented. The current 2022 Energy Code updates the prior 2019 code by requiring actions/features that continue to support California's gradual transition away from use of fossil fuels, and improve environmental quality.

California Green Building Standards Code

The purpose of the California Green Building Standards Code (California Code of Regulations Title 24, Part 11) ("CALGreen") is to improve public health and safety and to promote the general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: 1) planning and design; 2) energy efficiency; 3) water efficiency and conservation; 4) material conservation and resource efficiency; and 5) environmental quality. The code requires all new buildings in the state to be more energy efficient and environmentally responsible.

These comprehensive regulations are intended to achieve major reductions in interior and exterior building energy consumption. CALGreen institutes mandatory minimum environmental performance standards for all ground-up new construction of commercial, residential, and state-owned buildings, as well as schools and hospitals. CALGreen includes mandatory standards that address:

- Planning and Design (e.g., stormwater, bicycle facilities, clean air vehicles, EV support infrastructure, light pollution and grading and paving);
- Water Efficiency (metering, conserving fixtures, landscaping, outdoor recycle water supply);
- Materials Conservation and Efficiency (moisture control, construction waste management, soil and debris management, recycling, systems commissioning, etc.); and
- Environmental Quality (fireplaces and woodstoves, ducting, paints, carpets, flooring, interior air quality, noise, ozone and refrigerants, etc.).

The 2019 CALGreen code was in effect until December 31, 2022. Updates were adopted in July 2022, with the update taking effect on January 1, 2023. The primary changes in the 2022 code are to planning and design standards. The 2022 update encourages efficient electric heat pumps, establishes electric-ready requirements for new homes, expands solar photovoltaic and battery storage standards, strengthens ventilation standards, and promote electrification of the vehicle fleet by expanding standards for electric vehicle infrastructure (e.g., electric vehicle charging stations) for residential and non-residential development. These electric vehicle changes promote electrification of the vehicle fleet by expanding standards for electric vehicle infrastructure (e.g., electric vehicle charging stations) for residential and non-residential development. Changes in the water efficiency, materials conservations, and environmental quality standards were limited.

APPENDIX #
EMFAC2021
Vista Lucia Annexation
2043 Unmitigated Mobile Emissions

ROG	NO_x	PM_{10}	CO	SO_x	CO_2
1.15E-07	4.27E-06	5.03E-09	4.49E-06	1.11E-08	0.001158
3.64E-06	8.89E-05	5.17E-06	1.50E-05	1.08E-06	0.113578
5.19E-07	1.73E-05	1.35E-06	1.24E-05	1.39E-07	0.014577
0.003234	3.81E-06	1.03E-06	0.050256	0.000244	24.32302
0.000592	0.00237	5.20E-07	0.024015	7.22E-06	0.679202
0.000334	0.002374	6.12E-07	0.000857	5.67E-06	0.566193
0.00246	1.37E-05	2.07E-07	0.00078	3.11E-07	0.029645
0.001845	6.59E-05	6.69E-05	9.18E-09	2.45E-10	2.57E-05
0.000131	2.06E-09	0.000122	0.0037	1.84E-05	1.837348
2.37E-05	0.000199	0.000741	0.001887	5.90E-07	0.055625
5.63E-06	0.000193	0.000881	2.39E-05	1.58E-07	0.01579
5.52E-05	3.83E-07	5.84E-05	2.17E-05	9.87E-09	0.000945
0.0001	1.84E-06	1.23E-05	3.00E-05	5.87E-07	0.061492
8.45E-10	6.72E-06	2.03E-05	0.034121	0.000168	16.8204
0.000402	0.001686	4.18E-05	0.018296	5.27E-06	0.494539
7.00E-05	0.001793	1.14E-06	0.000267	1.76E-06	0.176248
2.88E-05	4.28E-06	5.31E-07	0.00025	1.20E-07	0.011486
0.000291	2.11E-05	6.14E-10	4.39E-05	5.50E-08	0.005763
0.000162	6.19E-05	6.07E-10	0.000429	8.85E-06	0.927513
2.36E-06	0.00074	3.16E-10	0.000301	8.66E-08	0.008098
5.11E-07	2.18E-06	8.76E-07	0.001521	1.95E-05	1.955298
1.57E-07	8.62E-05	1.59E-06	0.003785	2.85E-07	0.02217
8.90E-07	0.000561	5.79E-05	2.20E-05	4.53E-08	0.004743
2.80E-06	3.37E-05	5.61E-05	0.000262	4.97E-06	0.521066
2.72E-06	0.000538	4.55E-06	3.04E-05	1.01E-08	0.000953
0.00236	2.00E-07	1.03E-06	0.000157	2.22E-06	0.222641
0.00041	7.93E-06	5.72E-07	0.000394	2.81E-08	0.002162
0.000272	5.09E-05	1.18E-06	0.007664	1.38E-06	0.124407
0.001778	0.000375	2.94E-08	0.002467	1.22E-07	0.007258
0.00149	2.66E-05	1.31E-08	6.03E-05	1.33E-06	0.139344
3.53E-05	5.91E-06	1.97E-06	0.021057	0.000117	11.64032
6.73E-06	0.00134	1.93E-06	0.011612	3.79E-06	0.358122
1.75E-06	0.001265	1.03E-06	0.000162	1.07E-06	0.107084
1.43E-05	2.60E-06	7.50E-06	0.000154	8.98E-08	0.008686
3.21E-05	1.30E-05	1.37E-05	1.30E-05	4.87E-07	0.050979
5.29E-06	0.00013	0.000511	1.26E-05	1.52E-06	0.151964
0.00016	1.20E-05	0.000501	1.93E-06	2.21E-10	1.88E-05
0.00022	3.06E-07	3.60E-05	0.000106	1.44E-07	0.015045
3.41E-05	3.73E-05	7.74E-06	8.27E-06	3.32E-06	0.34789
2.51E-05	0.000217	6.36E-06	6.81E-06	4.16E-09	0.000403
1.26E-05	4.76E-05	1.31E-05	5.67E-05	8.54E-07	0.085458
0.000296	6.32E-08	3.45E-07	9.71E-05	7.08E-09	0.000541
0.000127	2.08E-05	1.60E-07	2.45E-05	2.15E-06	0.225652

APPENDIX #
EMFAC2021
Vista Lucia Annexation
2043 Unmitigated Mobile Emissions

2.66E-06	8.98E-06	1.32E-06	7.26E-05	1.87E-07	0.019647
9.50E-05	0.00034	0.00012	1.29E-05	2.14E-06	0.223787
2.26E-05	7.45E-05	1.84E-05	0.000128	3.87E-08	0.003605
3.42E-06	0.000101	3.59E-05	2.69E-05	1.02E-06	0.102128
2.30E-06	0.000102	9.77E-05	5.61E-05	3.37E-09	0.000241
1.11E-06	1.31E-06	2.00E-05	7.68E-07	1.46E-10	8.63E-05
3.01E-05	2.54E-05	0.000201	2.95E-06	1.96E-08	0.000472
1.10E-05	6.87E-06	2.06E-05	6.24E-08	1.80E-10	1.53E-05
0.000622	1.07E-07	3.30E-06	5.67E-08	2.70E-08	0.002053
0.001049	7.04E-08	1.58E-07	7.69E-08	8.08E-10	1.89E-05
0.000622	4.83E-08	6.60E-07	7.80E-08	6.97E-08	0.002827
0.001174	3.74E-07	6.69E-05	3.46E-07	1.94E-09	8.47E-05
0.000324	2.47E-07	8.82E-06	2.01E-07	6.78E-07	0.007304
2.12E-06	5.98E-08	2.14E-05	8.52E-07	3.15E-08	0.000204
0.001721	5.19E-07	2.61E-05	2.37E-06	6.05E-07	0.071073
0.000303	3.06E-07	4.58E-06	1.32E-05	1.48E-08	0.003307
0.000204	2.64E-07	2.38E-05	3.36E-06	2.78E-07	0.063439
0.001245	1.32E-06	2.09E-06	6.18E-06	5.14E-08	0.001556
0.001109	1.35E-06	3.20E-07	1.55E-06	9.85E-07	0.029126
2.20E-05	7.18E-07	1.24E-08	2.14E-05	1.47E-08	0.005386
4.24E-06	1.59E-05	9.04E-06	5.47E-06	4.20E-07	0.103278
1.06E-06	3.59E-06	3.01E-06	5.71E-06	1.22E-07	0.001544
9.05E-06	1.12E-05	1.56E-06	3.48E-06	2.46E-06	0.044009
1.98E-05	2.38E-05	1.02E-06	5.39E-07	2.27E-07	8.71E-05
4.33E-06	2.91E-05	3.43E-06	3.82E-06	4.58E-06	0.001097
1.64E-05	5.25E-06	3.28E-06	5.09E-05	1.70E-07	0.012801
2.63E-06	1.12E-05	6.60E-07	1.13E-05	3.42E-06	0.258099
9.05E-07	1.36E-05	6.74E-06	9.45E-05	1.78E-07	0.023795
9.23E-08	1.83E-05	1.23E-05	2.05E-05	3.39E-06	0.479697
9.01E-08	3.93E-05	0.000292	7.09E-05	1.06E-09	0.017825
7.17E-06	4.75E-05	0.000283	1.55E-05	2.55E-08	0.358946
2.40E-06	6.45E-06	2.12E-05	6.92E-05	7.94E-08	0.01869
5.07E-06	3.54E-05	4.83E-06	2.02E-05	2.12E-06	0.355276
8.61E-07	1.58E-05	3.86E-06	5.76E-06	1.57E-10	0.000879
8.81E-07	1.17E-07	7.92E-06	2.02E-05	2.18E-08	0.006295
2.70E-06	2.30E-07	2.14E-07	4.47E-07	1.94E-10	0.000111
5.67E-06	4.25E-05	1.02E-07	1.24E-07	2.99E-08	0.002677
4.68E-06	7.57E-05	2.12E-06	3.18E-05	8.68E-10	0.008328
2.04E-06	9.56E-05	7.55E-07	1.26E-05	7.78E-08	0.22227
1.75E-06	7.96E-05	1.71E-06	2.64E-06	1.06E-09	0.000371
1.96E-06	0.000136	3.55E-06	1.31E-05	5.11E-07	0.00402
8.45E-06	0.000178	9.46E-07	7.15E-08	1.20E-08	1.65E-05
1.24E-06	5.98E-05	1.16E-07	6.68E-08	1.59E-07	0.002283
1.66E-05	0.000104	2.70E-10	8.81E-08	1.77E-08	2.03E-05

APPENDIX #
EMFAC2021
Vista Lucia Annexation
2043 Unmitigated Mobile Emissions

1.12E-06	0.000134	3.05E-08	9.08E-08	2.33E-07	0.003135
5.88E-06	7.80E-05	1.85E-05	3.97E-07	1.55E-08	9.10E-05
2.54E-06	0.000199	2.73E-06	2.35E-07	2.06E-07	0.00816
3.61E-09	0.000165	5.42E-06	4.87E-07	3.99E-08	0.000112
1.55E-08	1.17E-06	1.13E-06	1.82E-06	6.43E-07	0.05355
1.47E-09	9.60E-07	6.05E-07	4.66E-06	3.51E-09	0.001261
1.11E-08	3.92E-07	2.46E-06	9.39E-07	1.00E-07	0.016692
1.82E-09	7.94E-07	6.58E-07	1.00E-06	6.64E-10	0.000108
1.53E-08	8.54E-07	7.09E-08	1.84E-06	1.89E-08	0.000554
8.17E-09	3.44E-05	7.25E-09	6.77E-06	7.38E-10	0.001853
3.92E-08	0.000111	5.39E-07	1.48E-06	2.57E-08	0.02438
2.01E-08	7.23E-05	2.60E-08	1.70E-06	1.70E-08	0.000187
4.62E-07	4.96E-07	9.64E-06	3.04E-06	4.31E-06	0.000929
3.11E-07	5.89E-07	2.58E-06	6.13E-06	2.78E-08	0.001628
3.89E-07	9.80E-08	8.25E-07	1.15E-06	1.66E-06	0.02163
1.46E-07	5.61E-07	3.45E-06	1.72E-06	2.18E-05	0.00019
1.80E-07	4.72E-07	1.76E-06	3.01E-06	2.17E-06	0.000924
5.06E-07	1.21E-07	5.92E-06	1.60E-05	3.16E-05	0.004181
6.29E-07	7.68E-07	1.05E-06	3.58E-06	9.33E-07	0.067394
1.37E-07	5.82E-07	1.39E-07	4.24E-06	1.15E-05	0.000465
4.55E-07	5.43E-07	4.45E-09	9.09E-06	9.98E-16	0.002778
4.66E-09	1.95E-06	4.21E-10	1.51E-06	5.13E-14	0.000368
1.23E-08	2.62E-06	2.13E-08	3.70E-07	4.05E-08	0.010477
1.21E-06	6.66E-07	5.70E-09	2.85E-07	9.86E-07	6.96E-05
1.53E-06	1.47E-05	1.75E-09	7.00E-08	1.07E-15	0.001981
2.24E-06	3.22E-06	2.17E-11	3.17E-07	3.97E-14	7.73E-05
2.71E-06	5.91E-06	8.58E-08	9.43E-08	8.10E-08	0.002697
1.68E-06	1.09E-05	2.43E-08	5.95E-05	1.98E-06	0.001597
2.05E-06	3.02E-06	1.11E-08	6.16E-05	3.00E-08	0.431989
1.66E-06	1.33E-07	5.47E-08	0.000267	7.63E-07	0.00232
2.91E-06	3.51E-08	3.10E-08	0.001341	9.72E-08	0.1735
4.56E-08	8.34E-06	2.65E-11	6.96E-05	1.76E-06	2.280586
6.69E-08	1.55E-05	1.18E-07	0.001828	3.42E-07	0.226954
1.07E-08	4.39E-06	3.35E-08	0.000103	6.30E-06	3.310487
1.96E-08	2.25E-07	1.54E-08	0.000789	3.17E-08	0.097816
7.61E-07	5.78E-08	7.49E-08	3.84E-05	2.29E-06	1.201709
1.76E-06	7.18E-06	4.25E-08	8.15E-13	7.99E-07	1.05E-10
1.89E-08	1.12E-05	1.19E-10	2.50E-13	9.62E-06	5.37E-09
4.41E-08	4.01E-06	3.06E-07	3.31E-05	3.56E-09	0.004249
1.70E-09	2.27E-07	8.68E-08	4.94E-06	1.67E-07	0.103337
1.35E-08	5.73E-08	3.96E-08	8.57E-13	1.71E-08	1.12E-10
2.09E-09	1.98E-05	1.97E-07	2.11E-13	4.18E-11	4.16E-09
1.81E-08	3.84E-05	1.12E-07	5.18E-05	2.01E-09	0.008489
9.39E-09	1.12E-05	2.91E-10	2.18E-05	6.15E-07	0.207966

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4.66E-08	5.60E-07	3.37E-06	2.60E-06	7.30E-10	0.000259
1.15E-08	1.73E-07	9.56E-07	1.45E-05		0.002574
3.55E-07	1.12E-06	4.61E-07	2.36E-05		0.003142
1.15E-07	2.03E-06	5.09E-07	2.44E-06		0.08001
2.19E-07	2.77E-06	2.89E-07	2.48E-06		0.00024
4.36E-09	2.13E-07	4.70E-09	7.66E-06		0.001994
7.61E-09	3.75E-07	2.87E-06	7.08E-05		0.010183
1.70E-07	5.24E-07	7.25E-07	7.28E-06		0.184676
3.69E-07	2.36E-07	1.25E-07	6.39E-06		0.000712
7.41E-09	4.98E-07	1.29E-06	2.14E-05		0.004525
1.25E-08	5.81E-07	6.51E-07	0.000253		0.035836
1.50E-07	2.18E-07	2.19E-09	2.51E-05		0.660272
2.58E-07	2.40E-05	1.32E-06	2.47E-05		0.002685
7.47E-09	2.42E-05	3.32E-07	7.68E-05		0.016845
1.24E-08	0.000699	5.72E-08	2.14E-05		0.003318
3.89E-07	0.002178	5.92E-07	4.52E-06		0.240495
7.93E-07	0.000317	2.99E-07	4.36E-05		0.005867
1.84E-08	0.001462	7.53E-09	0.000899		0.083158
3.75E-08	0.003637	4.68E-06	0.000635		0.083772
3.56E-08	0.000522	1.18E-06	3.85E-05		1.008138
5.30E-08	0.000631	2.00E-07	5.59E-06		0.000541
6.74E-09	0.001359	2.10E-06	8.84E-06		0.002324
1.00E-08	0.000225	1.06E-06	2.59E-06		0.000373
7.48E-09	4.59E-13	2.06E-09	1.17E-06		0.017458
1.35E-08	4.89E-12	1.95E-06	2.89E-05		0.001663
8.03E-06	4.81E-13	4.92E-07	4.96E-07		3.40E-06
1.14E-06	1.87E-05	1.28E-07	1.27E-08		0.00021
3.85E-06	9.85E-05	4.92E-07	4.15E-05		0.061566
3.66E-06	1.96E-05	2.48E-07	1.28E-05		5.23E-05
1.55E-05	5.21E-13	3.13E-10	1.43E-05		0.000385
1.42E-05	4.23E-12	5.24E-08			
9.07E-05	5.47E-13	1.32E-08			
2.06E-05	4.93E-05	1.29E-09			
0.000124	0.000348	1.98E-08			
3.03E-05	8.39E-05	1.14E-05			
5.34E-05	3.44E-07	3.05E-06			
1.14E-05	3.95E-07	8.60E-07			
5.52E-14	1.12E-05	5.45E-06			
3.96E-14	4.54E-05	2.92E-06			
2.24E-06	1.88E-05	3.36E-08			
7.80E-07	3.29E-07	2.12E-05			
5.80E-14	3.13E-07	5.66E-06			
3.23E-14	3.98E-05	1.53E-06			
3.72E-06	0.000142	1.01E-05			

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5.08E-06	6.48E-05	5.42E-06		
1.13E-08	9.97E-07	2.56E-08		
4.52E-08	1.02E-06	1.59E-05		
1.60E-06	0.000144	4.24E-06		
4.81E-07	0.000494	1.16E-06		
1.09E-08	0.000232	7.57E-06		
2.88E-08	3.74E-06	4.05E-06		
4.80E-06	3.57E-06	2.64E-08		
1.35E-06	1.69E-05	1.56E-05		
3.54E-08	9.78E-05	4.16E-06		
6.34E-08	2.29E-05	1.57E-06		
1.72E-05	2.71E-06	4.85E-06		
4.74E-06	4.21E-05	2.59E-06		
1.31E-07	0.00039	3.31E-09		
2.37E-07	0.000949	3.31E-07		
1.52E-06	0.00062	8.84E-08		
2.01E-06	7.59E-07	8.07E-09		
9.86E-08	4.00E-07	2.43E-10		
1.56E-06	1.49E-06	1.18E-07		
4.30E-05	1.23E-05	3.17E-08		
8.15E-06	1.45E-05	1.04E-08		
2.53E-08	2.11E-06	6.01E-08		
3.33E-08	3.64E-08	3.22E-08		
1.76E-07	6.15E-08	1.26E-08		
1.27E-07	1.17E-06	1.06E-05		
7.23E-09	5.83E-07	2.82E-06		
9.78E-10	1.69E-08	9.65E-07		
4.23E-07		1.07E-06		
1.46E-08		5.70E-07		
7.63E-11		1.50E-09		
1.16E-08		2.16E-07		
1.73E-07		5.77E-08		
4.83E-08		5.49E-09		
2.34E-07		2.75E-11		
1.94E-07		1.02E-07		
2.00E-07		2.89E-08		
1.88E-08		1.39E-08		
		3.21E-11		
		1.40E-07		
		3.96E-08		
		1.88E-08		
		1.44E-10		
		3.65E-07		
		1.04E-07		

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2.66E-06		
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3.70E-07		
3.20E-09		
7.06E-07		
1.83E-07		
7.59E-08		
2.69E-07		
1.40E-07		
5.47E-10		
2.78E-08		
7.23E-09		
1.08E-09		
3.90E-09		
1.02E-06		
2.66E-07		
1.02E-07		
3.86E-07		
2.01E-07		
9.29E-10		
4.59E-08		
1.19E-08		
1.78E-09		
3.32E-09		
9.15E-07		
2.38E-07		
8.04E-08		
3.45E-07		
1.79E-07		
9.37E-10		
4.54E-08		
1.18E-08		
1.77E-09		
9.01E-09		
2.89E-06		
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5.14E-10		
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9.73E-11		
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2.35E-08		
4.52E-09		
5.82E-08		
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3.19E-08		
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8.24E-08		
4.35E-08		
6.31E-06		
3.36E-06		
1.26E-05		
3.36E-06		
4.17E-07		
3.67E-08		
3.86E-07		
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6.46E-05		
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5.27E-07		
0.000222		
9.79E-05		
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2.27E-07		
8.08E-05		
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3.08E-05		
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3.72E-13		
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9.54E-09		
7.17E-06		
2.74E-06		
1.31E-06		
7.94E-07		
6.07E-07		
2.47E-16		
2.79E-13		
1.08E-13		
5.68E-14		
2.31E-14		
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1.64E-06		
3.91E-06		
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6.80E-09		
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4.45E-06		
2.21E-06		
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1.50E-07		
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7.71E-06
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1.37E-08
1.35E-06
5.61E-07
3.29E-08
1.19E-08
1.57E-05
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1.32E-05
2.26E-06
6.25E-08
1.83E-07
6.73E-05
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1.74E-05
6.18E-06
5.14E-06
3.05E-09
1.95E-07
8.22E-08
4.87E-09
7.47E-10
1.13E-06
4.06E-07
8.22E-08
3.94E-07
2.73E-07
4.32E-08
1.78E-08
9.11E-08
1.90E-08
1.48E-09
5.09E-11
2.16E-08
5.43E-09
1.17E-09

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			2.89E-05			
			1.22E-05			
			6.73E-06			
			5.92E-07			
			9.55E-08			
			3.09E-10			
			3.78E-08			
			9.50E-09			
			9.20E-11			
	ROG	**NO_x**	**PM_{10}**	**CO**	**SO_x**	**CO_2**
Total Emissions (Tons/Day)	0.026	0.032	0.006	0.193	0.001	75.384
Total Emissions (Lbs/Day)	52.450	64.361	12.074	385.662	1.495	
Total Emissions (MT/Day)						68.387

Vista Lucia Annexation Project_Single Family Homes Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Vista Lucia Annexation Project_Single Family Homes
Operational Year	2040
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	26.6
Location	Gonzales, CA, USA
County	Monterey
City	Gonzales
Air District	Monterey Bay ARD
Air Basin	North Central Coast
TAZ	3212
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.18

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	2,877	Dwelling Unit	448	5,610,150	33,697,890	—	9,552	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-1	Buildings Exceed 2019 Title 24 Building Envelope Energy Efficiency Standards

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2,290	2,343	83.9	3,194	6.20	420	0.00	420	416	0.00	416	49,362	75,690	125,052	254	3.75	40.2	132,559
Mit.	2,289	2,343	73.9	3,190	6.14	419	0.00	419	416	0.00	416	49,362	62,721	112,083	253	3.72	40.2	119,552
% Reduced	< 0.5%	< 0.5%	12%	< 0.5%	1%	< 0.5%	—	< 0.5%	< 0.5%	—	< 0.5%	—	17%	10%	< 0.5%	1%	—	10%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2,275	2,329	82.4	3,030	6.20	420	0.00	420	416	0.00	416	49,362	75,253	124,616	254	3.75	40.2	132,121
Mit.	2,274	2,328	72.4	3,026	6.13	419	0.00	419	416	0.00	416	49,362	62,285	111,647	253	3.72	40.2	119,114
% Reduced	< 0.5%	< 0.5%	12%	< 0.5%	1%	< 0.5%	—	< 0.5%	< 0.5%	—	< 0.5%	—	17%	10%	< 0.5%	1%	—	10%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	523	636	35.9	800	1.50	95.7	0.00	95.7	94.9	0.00	94.9	12,426	49,720	62,146	195	1.55	40.2	67,520
Mit.	522	636	25.9	796	1.44	94.9	0.00	94.9	94.1	0.00	94.1	12,426	36,751	49,177	194	1.52	40.2	54,513

% Reduced	< 0.5%	< 0.5%	28%	1%	4%	1%	—	1%	1%	—	1%	—	26%	21%	1%	2%	—	19%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	95.5	116	6.56	146	0.27	17.5	0.00	17.5	17.3	0.00	17.3	2,057	8,232	10,289	32.3	0.26	6.65	11,179
Mit.	95.3	116	4.74	145	0.26	17.3	0.00	17.3	17.2	0.00	17.2	2,057	6,085	8,142	32.1	0.25	6.65	9,025
% Reduced	< 0.5%	< 0.5%	28%	1%	4%	1%	—	1%	1%	—	1%	—	26%	21%	1%	2%	—	19%
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	550	150	—	—	82.0	—	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	No	Yes	No	—	—	Yes	—	—	—	—	—	—	—	—	—	—
Mit.	—	Yes	No	Yes	No	—	—	Yes	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	550	150	—	—	82.0	—	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	No	Yes	No	—	—	Yes	—	—	—	—	—	—	—	—	—	—
Mit.	—	Yes	No	Yes	No	—	—	Yes	—	—	—	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	2,288	2,342	62.8	3,185	6.07	418	—	418	415	—	415	47,638	33,754	81,392	76.2	2.84	—	84,144

Energy	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	40,530	40,530	4.59	0.32	—	40,740
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	2,290	2,343	83.9	3,194	6.20	420	0.00	420	416	0.00	416	49,362	75,690	125,052	254	3.75	40.2	132,559
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	2,273	2,328	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Energy	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	40,530	40,530	4.59	0.32	—	40,740
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	2,275	2,329	82.4	3,030	6.20	420	0.00	420	416	0.00	416	49,362	75,253	124,616	254	3.75	40.2	132,121
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	521	635	14.8	791	1.37	94.0	—	94.0	93.2	—	93.2	10,702	7,784	18,486	17.1	0.64	—	19,105
Energy	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	40,530	40,530	4.59	0.32	—	40,740
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	523	636	35.9	800	1.50	95.7	0.00	95.7	94.9	0.00	94.9	12,426	49,720	62,146	195	1.55	40.2	67,520
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	95.1	116	2.70	144	0.25	17.2	—	17.2	17.0	—	17.0	1,772	1,289	3,061	2.83	0.11	—	3,163
Energy	0.45	0.23	3.86	1.64	0.02	0.31	—	0.31	0.31	—	0.31	—	6,710	6,710	0.76	0.05	—	6,745
Water	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399

Waste	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65
Total	95.5	116	6.56	146	0.27	17.5	0.00	17.5	17.3	0.00	17.3	2,057	8,232	10,289	32.3	0.26	6.65	11,179

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	2,288	2,342	62.8	3,185	6.07	418	—	418	415	—	415	47,638	33,754	81,392	76.2	2.84	—	84,144
Energy	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	27,561	27,561	3.42	0.29	—	27,733
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	2,289	2,343	73.9	3,190	6.14	419	0.00	419	416	0.00	416	49,362	62,721	112,083	253	3.72	40.2	119,552
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	2,273	2,328	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Energy	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	27,561	27,561	3.42	0.29	—	27,733
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	2,274	2,328	72.4	3,026	6.13	419	0.00	419	416	0.00	416	49,362	62,285	111,647	253	3.72	40.2	119,114
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	521	635	14.8	791	1.37	94.0	—	94.0	93.2	—	93.2	10,702	7,784	18,486	17.1	0.64	—	19,105
Energy	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	27,561	27,561	3.42	0.29	—	27,733
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	522	636	25.9	796	1.44	94.9	0.00	94.9	94.1	0.00	94.1	12,426	36,751	49,177	194	1.52	40.2	54,513
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	95.1	116	2.70	144	0.25	17.2	—	17.2	17.0	—	17.0	1,772	1,289	3,061	2.83	0.11	—	3,163
Energy	0.24	0.12	2.03	0.87	0.01	0.16	—	0.16	0.16	—	0.16	—	4,563	4,563	0.57	0.05	—	4,592
Water	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399
Waste	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65
Total	95.3	116	4.74	145	0.26	17.3	0.00	17.3	17.2	0.00	17.2	2,057	6,085	8,142	32.1	0.25	6.65	9,025

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	13,708	13,708	2.22	0.27	—	13,843
Total	—	—	—	—	—	—	—	—	—	—	—	—	13,708	13,708	2.22	0.27	—	13,843
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	13,708	13,708	2.22	0.27	—	13,843
Total	—	—	—	—	—	—	—	—	—	—	—	—	13,708	13,708	2.22	0.27	—	13,843
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,270	2,270	0.37	0.04	—	2,292
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,270	2,270	0.37	0.04	—	2,292

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	13,409	13,409	2.17	0.26	—	13,541

Total	—	—	—	—	—	—	—	—	—	—	—	—	13,409	13,409	2.17	0.26	—	13,541
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	13,409	13,409	2.17	0.26	—	13,541
Total	—	—	—	—	—	—	—	—	—	—	—	—	13,409	13,409	2.17	0.26	—	13,541
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,220	2,220	0.36	0.04	—	2,242
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,220	2,220	0.36	0.04	—	2,242

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	26,822	26,822	2.37	0.05	—	26,896
Total	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	26,822	26,822	2.37	0.05	—	26,896
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	26,822	26,822	2.37	0.05	—	26,896
Total	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	26,822	26,822	2.37	0.05	—	26,896
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.45	0.23	3.86	1.64	0.02	0.31	—	0.31	0.31	—	0.31	—	4,441	4,441	0.39	0.01	—	4,453
Total	0.45	0.23	3.86	1.64	0.02	0.31	—	0.31	0.31	—	0.31	—	4,441	4,441	0.39	0.01	—	4,453

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	14,152	14,152	1.25	0.03	—	14,192
Total	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	14,152	14,152	1.25	0.03	—	14,192
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	14,152	14,152	1.25	0.03	—	14,192
Total	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	14,152	14,152	1.25	0.03	—	14,192
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.24	0.12	2.03	0.87	0.01	0.16	—	0.16	0.16	—	0.16	—	2,343	2,343	0.21	< 0.005	—	2,350
Total	0.24	0.12	2.03	0.87	0.01	0.16	—	0.16	0.16	—	0.16	—	2,343	2,343	0.21	< 0.005	—	2,350

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	2,273	2,196	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Consumer Products	—	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	15.0	14.2	1.51	164	0.01	0.07	—	0.07	0.06	—	0.06	—	436	436	0.02	< 0.005	—	438
Total	2,288	2,342	62.8	3,185	6.07	418	—	418	415	—	415	47,638	33,754	81,392	76.2	2.84	—	84,144
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	2,273	2,196	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Consumer Products	—	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	2,273	2,328	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	93.2	90.0	2.51	124	0.25	17.1	—	17.1	17.0	—	17.0	1,772	1,239	3,011	2.83	0.11	—	3,113
Consumer Products	—	21.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	2.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.87	1.77	0.19	20.5	< 0.005	0.01	—	0.01	0.01	—	0.01	—	49.5	49.5	< 0.005	< 0.005	—	49.7
Total	95.1	116	2.70	144	0.25	17.2	—	17.2	17.0	—	17.0	1,772	1,289	3,061	2.83	0.11	—	3,163

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	2,273	2,196	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Consumer Products	—	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	15.0	14.2	1.51	164	0.01	0.07	—	0.07	0.06	—	0.06	—	436	436	0.02	< 0.005	—	438
Total	2,288	2,342	62.8	3,185	6.07	418	—	418	415	—	415	47,638	33,754	81,392	76.2	2.84	—	84,144
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	2,273	2,196	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Consumer Products	—	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	2,273	2,328	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	93.2	90.0	2.51	124	0.25	17.1	—	17.1	17.0	—	17.0	1,772	1,239	3,011	2.83	0.11	—	3,113
Consumer Products	—	21.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	2.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.87	1.77	0.19	20.5	< 0.005	0.01	—	0.01	0.01	—	0.01	—	49.5	49.5	< 0.005	< 0.005	—	49.7
Total	95.1	116	2.70	144	0.25	17.2	—	17.2	17.0	—	17.0	1,772	1,289	3,061	2.83	0.11	—	3,163

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Total	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Total	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399
Total	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Total	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Total	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399
Total	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Total	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Total	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865
Total	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Total	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Total	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865
Total	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	1007
Gas Fireplaces	1582
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	288
Conventional Wood Stoves	0
Catalytic Wood Stoves	144
Non-Catalytic Wood Stoves	144

Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	1007
Gas Fireplaces	1582
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	288
Conventional Wood Stoves	0
Catalytic Wood Stoves	144
Non-Catalytic Wood Stoves	144
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
11360553.75	3,786,851	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO_2 and CH_4 and N_2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	24,528,466	204	0.0330	0.0040	83,692,003

5.11.2. Mitigated

Electricity (kWh/yr) and CO_2 and CH_4 and N_2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	23,993,119	204	0.0330	0.0040	44,159,517

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	120,279,027	481,981,803

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	120,279,027	481,981,803

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	2,772	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	2,772	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.09	annual days of extreme heat

Extreme Precipitation	1.10	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	42.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	17.7
AQ-PM	1.36
AQ-DPM	11.4
Drinking Water	77.8
Lead Risk Housing	81.6
Pesticides	92.8

Toxic Releases	3.54
Traffic	32.9
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	22.1
Haz Waste Facilities/Generators	35.6
Impaired Water Bodies	98.4
Solid Waste	71.1
Sensitive Population	—
Asthma	56.3
Cardio-vascular	77.7
Low Birth Weights	26.9
Socioeconomic Factor Indicators	—
Education	98.4
Housing	51.4
Linguistic	94.8
Poverty	79.7
Unemployment	2.29

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	14.59001668
Employed	8.417810856
Median HI	19.32503529
Education	—

Bachelor's or higher	3.259335301
High school enrollment	100
Preschool enrollment	36.44296163
Transportation	—
Auto Access	41.51161299
Active commuting	21.18567946
Social	—
2-parent households	71.48723213
Voting	20.55691005
Neighborhood	—
Alcohol availability	35.15975876
Park access	46.68292057
Retail density	5.877069165
Supermarket access	63.91633517
Tree canopy	6.467342487
Housing	—
Homeownership	19.78698832
Housing habitability	8.340818683
Low-inc homeowner severe housing cost burden	7.76337739
Low-inc renter severe housing cost burden	31.13050173
Uncrowded housing	3.195175157
Health Outcomes	—
Insured adults	29.25702554
Arthritis	0.0
Asthma ER Admissions	61.8
High Blood Pressure	0.0
Cancer (excluding skin)	0.0

Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	60.7
Cognitively Disabled	96.9
Physically Disabled	94.1
Heart Attack ER Admissions	59.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	50.9
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.7
SLR Inundation Area	0.0
Children	3.8
Elderly	87.4
English Speaking	9.9
Foreign-born	68.5
Outdoor Workers	1.6
Climate Change Adaptive Capacity	—

Impervious Surface Cover	81.2
Traffic Density	24.8
Traffic Access	0.0
Other Indices	—
Hardship	92.0
Other Decision Support	—
2016 Voting	35.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	66.0
Healthy Places Index Score for Project Location (b)	18.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification

Characteristics: Project Details	Adjusted to match project setting as indicated in previous model.
Land Use	Lot acreage adjusted to match previous model based on conceptual land use plan.
Operations: Hearths	Adjusted to match previous model.

Vista Lucia Annex_Other Project Components Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Vista Lucia Annex_Other Project Components
Operational Year	2040
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	26.6
Location	Gonzales, CA, USA
County	Monterey
City	Gonzales
Air District	Monterey Bay ARD
Air Basin	North Central Coast
TAZ	3212
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.18

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Elementary School	732	1000sqft	24.0	731,500	0.00	0.00	—	—

Elementary School	549	1000sqft	18.0	548,856	0.00	0.00	—	—
Other Asphalt Surfaces	102	Acre	102	0.00	0.00	0.00	—	—
City Park	73.0	Acre	73.0	0.00	0.00	0.00	—	—
Apartments Low Rise	528	Dwelling Unit	22.0	559,680	0.00	—	1,753	—
Apartments Low Rise	93.0	Dwelling Unit	0.00	98,580	0.00	—	309	—
Strip Mall	96.0	1000sqft	8.00	96,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-1	Buildings Exceed 2019 Title 24 Building Envelope Energy Efficiency Standards

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	15.8	61.5	18.3	109	0.11	1.46	0.00	1.46	1.43	0.00	1.43	1,337	26,862	28,199	137	0.48	10.3	31,770
Mit.	15.3	61.2	13.2	105	0.08	1.07	0.00	1.07	1.04	0.00	1.04	1,337	20,056	21,393	136	0.45	10.3	24,939
% Reduced	4%	< 0.5%	28%	4%	28%	26%	—	26%	27%	—	27%	—	25%	24%	< 0.5%	5%	—	22%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	1.94	48.6	17.5	13.7	0.11	1.34	0.00	1.34	1.34	0.00	1.34	1,337	26,522	27,859	137	0.48	10.3	31,428
Mit.	1.38	48.3	12.4	9.70	0.08	0.95	0.00	0.95	0.95	0.00	0.95	1,337	19,715	21,052	136	0.45	10.3	24,598
% Reduced	29%	1%	29%	29%	29%	29%	—	29%	29%	—	29%	—	26%	24%	< 0.5%	5%	—	22%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.5	57.5	18.0	78.9	0.11	1.42	0.00	1.42	1.40	0.00	1.40	1,337	26,755	28,092	137	0.48	10.3	31,662
Mit.	10.9	57.2	13.0	74.9	0.08	1.04	0.00	1.04	1.02	0.00	1.02	1,337	19,949	21,285	136	0.45	10.3	24,832
% Reduced	5%	< 0.5%	28%	5%	28%	27%	—	27%	28%	—	28%	—	25%	24%	< 0.5%	5%	—	22%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.09	10.5	3.29	14.4	0.02	0.26	0.00	0.26	0.26	0.00	0.26	221	4,430	4,651	22.6	0.08	1.70	5,242
Mit.	1.99	10.4	2.37	13.7	0.01	0.19	0.00	0.19	0.19	0.00	0.19	221	3,303	3,524	22.5	0.07	1.70	4,111
% Reduced	5%	< 0.5%	28%	5%	28%	27%	—	27%	28%	—	28%	—	25%	24%	< 0.5%	5%	—	22%
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	550	150	—	—	82.0	—	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—
Mit.	—	No	No	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	550	150	—	—	82.0	—	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—
Mit.	—	No	No	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	13.9	60.6	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	0.00	340	340	0.01	< 0.005	—	342
Energy	1.94	0.97	17.5	13.7	0.11	1.34	—	1.34	1.34	—	1.34	—	26,310	26,310	2.72	0.14	—	26,420
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	15.8	61.5	18.3	109	0.11	1.46	0.00	1.46	1.43	0.00	1.43	1,337	26,862	28,199	137	0.48	10.3	31,770
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	47.7	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	1.94	0.97	17.5	13.7	0.11	1.34	—	1.34	1.34	—	1.34	—	26,310	26,310	2.72	0.14	—	26,420
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	1.94	48.6	17.5	13.7	0.11	1.34	0.00	1.34	1.34	0.00	1.34	1,337	26,522	27,859	137	0.48	10.3	31,428
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	9.51	56.5	0.57	65.3	< 0.005	0.08	—	0.08	0.06	—	0.06	0.00	233	233	0.01	< 0.005	—	234
Energy	1.94	0.97	17.5	13.7	0.11	1.34	—	1.34	1.34	—	1.34	—	26,310	26,310	2.72	0.14	—	26,420
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791

Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	11.5	57.5	18.0	78.9	0.11	1.42	0.00	1.42	1.40	0.00	1.40	1,337	26,755	28,092	137	0.48	10.3	31,662
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	1.74	10.3	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	38.6	38.6	< 0.005	< 0.005	—	38.7
Energy	0.35	0.18	3.19	2.50	0.02	0.24	—	0.24	0.24	—	0.24	—	4,356	4,356	0.45	0.02	—	4,374
Water	—	—	—	—	—	—	—	—	—	—	—	22.3	35.1	57.4	2.29	0.05	—	131
Waste	—	—	—	—	—	—	—	—	—	—	—	199	0.00	199	19.9	0.00	—	696
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.70	1.70
Total	2.09	10.5	3.29	14.4	0.02	0.26	0.00	0.26	0.26	0.00	0.26	221	4,430	4,651	22.6	0.08	1.70	5,242

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	13.9	60.6	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	0.00	340	340	0.01	< 0.005	—	342
Energy	1.38	0.69	12.4	9.70	0.08	0.95	—	0.95	0.95	—	0.95	—	19,503	19,503	2.06	0.12	—	19,590
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	15.3	61.2	13.2	105	0.08	1.07	0.00	1.07	1.04	0.00	1.04	1,337	20,056	21,393	136	0.45	10.3	24,939
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Area	0.00	47.7	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	1.38	0.69	12.4	9.70	0.08	0.95	—	0.95	0.95	—	0.95	—	19,503	19,503	2.06	0.12	—	19,590
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	1.38	48.3	12.4	9.70	0.08	0.95	0.00	0.95	0.95	0.00	0.95	1,337	19,715	21,052	136	0.45	10.3	24,598
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	9.51	56.5	0.57	65.3	< 0.005	0.08	—	0.08	0.06	—	0.06	0.00	233	233	0.01	< 0.005	—	234
Energy	1.38	0.69	12.4	9.70	0.08	0.95	—	0.95	0.95	—	0.95	—	19,503	19,503	2.06	0.12	—	19,590
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	10.9	57.2	13.0	74.9	0.08	1.04	0.00	1.04	1.02	0.00	1.02	1,337	19,949	21,285	136	0.45	10.3	24,832
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	1.74	10.3	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	38.6	38.6	< 0.005	< 0.005	—	38.7
Energy	0.25	0.13	2.27	1.77	0.01	0.17	—	0.17	0.17	—	0.17	—	3,229	3,229	0.34	0.02	—	3,243
Water	—	—	—	—	—	—	—	—	—	—	—	22.3	35.1	57.4	2.29	0.05	—	131
Waste	—	—	—	—	—	—	—	—	—	—	—	199	0.00	199	19.9	0.00	—	696
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.70	1.70
Total	1.99	10.4	2.37	13.7	0.01	0.19	0.00	0.19	0.19	0.00	0.19	221	3,303	3,524	22.5	0.07	1.70	4,111

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	3,279	3,279	0.53	0.06	—	3,312
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,543	1,543	0.25	0.03	—	1,558
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	467	467	0.08	0.01	—	472
Total	—	—	—	—	—	—	—	—	—	—	—	—	5,289	5,289	0.86	0.10	—	5,342
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	3,279	3,279	0.53	0.06	—	3,312

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,543	1,543	0.25	0.03	—	1,558
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	467	467	0.08	0.01	—	472
Total	—	—	—	—	—	—	—	—	—	—	—	—	5,289	5,289	0.86	0.10	—	5,342
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	543	543	0.09	0.01	—	548
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	0.01	—	258
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	77.4	77.4	0.01	< 0.005	—	78.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	876	876	0.14	0.02	—	884

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	2,648	2,648	0.43	0.05	—	2,674

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,505	1,505	0.24	0.03	—	1,519
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	395	395	0.06	0.01	—	399
Total	—	—	—	—	—	—	—	—	—	—	—	—	4,548	4,548	0.74	0.09	—	4,593
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	2,648	2,648	0.43	0.05	—	2,674
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,505	1,505	0.24	0.03	—	1,519
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	395	395	0.06	0.01	—	399
Total	—	—	—	—	—	—	—	—	—	—	—	—	4,548	4,548	0.74	0.09	—	4,593
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	438	438	0.07	0.01	—	443
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	249	249	0.04	< 0.005	—	252
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	65.4	65.4	0.01	< 0.005	—	66.0
Total	—	—	—	—	—	—	—	—	—	—	—	—	753	753	0.12	0.01	—	760

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	1.63	0.82	14.9	12.5	0.09	1.13	—	1.13	1.13	—	1.13	—	17,730	17,730	1.57	0.03	—	17,779
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.28	0.14	2.38	1.01	0.02	0.19	—	0.19	0.19	—	0.19	—	3,025	3,025	0.27	0.01	—	3,033
Strip Mall	0.02	0.01	0.22	0.19	< 0.005	0.02	—	0.02	0.02	—	0.02	—	265	265	0.02	< 0.005	—	266
Total	1.94	0.97	17.5	13.7	0.11	1.34	—	1.34	1.34	—	1.34	—	21,020	21,020	1.86	0.04	—	21,078
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	1.63	0.82	14.9	12.5	0.09	1.13	—	1.13	1.13	—	1.13	—	17,730	17,730	1.57	0.03	—	17,779
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.28	0.14	2.38	1.01	0.02	0.19	—	0.19	0.19	—	0.19	—	3,025	3,025	0.27	0.01	—	3,033
Strip Mall	0.02	0.01	0.22	0.19	< 0.005	0.02	—	0.02	0.02	—	0.02	—	265	265	0.02	< 0.005	—	266
Total	1.94	0.97	17.5	13.7	0.11	1.34	—	1.34	1.34	—	1.34	—	21,020	21,020	1.86	0.04	—	21,078
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	0.30	0.15	2.71	2.28	0.02	0.21	—	0.21	0.21	—	0.21	—	2,935	2,935	0.26	0.01	—	2,944
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.05	0.03	0.43	0.19	< 0.005	0.04	—	0.04	0.04	—	0.04	—	501	501	0.04	< 0.005	—	502
Strip Mall	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.9	43.9	< 0.005	< 0.005	—	44.1
Total	0.35	0.18	3.19	2.50	0.02	0.24	—	0.24	0.24	—	0.24	—	3,480	3,480	0.31	0.01	—	3,490

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	1.15	0.58	10.5	8.81	0.06	0.80	—	0.80	0.80	—	0.80	—	12,508	12,508	1.11	0.02	—	12,543
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.21	0.10	1.78	0.76	0.01	0.14	—	0.14	0.14	—	0.14	—	2,259	2,259	0.20	< 0.005	—	2,265
Strip Mall	0.02	0.01	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	188	188	0.02	< 0.005	—	189
Total	1.38	0.69	12.4	9.70	0.08	0.95	—	0.95	0.95	—	0.95	—	14,955	14,955	1.32	0.03	—	14,997
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	1.15	0.58	10.5	8.81	0.06	0.80	—	0.80	0.80	—	0.80	—	12,508	12,508	1.11	0.02	—	12,543
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.21	0.10	1.78	0.76	0.01	0.14	—	0.14	0.14	—	0.14	—	2,259	2,259	0.20	< 0.005	—	2,265
Strip Mall	0.02	0.01	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	188	188	0.02	< 0.005	—	189
Total	1.38	0.69	12.4	9.70	0.08	0.95	—	0.95	0.95	—	0.95	—	14,955	14,955	1.32	0.03	—	14,997
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	0.21	0.11	1.91	1.61	0.01	0.15	—	0.15	0.15	—	0.15	—	2,071	2,071	0.18	< 0.005	—	2,077
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.04	0.02	0.32	0.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	374	374	0.03	< 0.005	—	375
Strip Mall	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.2	31.2	< 0.005	< 0.005	—	31.3

Total	0.25	0.13	2.27	1.77	0.01	0.17	—	0.17	0.17	—	0.17	—	2,476	2,476	0.22	< 0.005	—	2,483

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	43.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	3.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	13.9	12.9	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	—	340	340	0.01	< 0.005	—	342
Total	13.9	60.6	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	0.00	340	340	0.01	< 0.005	—	342
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	43.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	3.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	47.7	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	8.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.74	1.61	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	—	38.6	38.6	< 0.005	< 0.005	—	38.7
Total	1.74	10.3	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	38.6	38.6	< 0.005	< 0.005	—	38.7

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	43.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	3.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	13.9	12.9	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	—	340	340	0.01	< 0.005	—	342
Total	13.9	60.6	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	0.00	340	340	0.01	< 0.005	—	342

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	43.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	3.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	47.7	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	8.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.74	1.61	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	—	38.6	38.6	< 0.005	< 0.005	—	38.7
Total	1.74	10.3	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	38.6	38.6	< 0.005	< 0.005	—	38.7

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	71.1	112	183	7.31	0.18	—	419
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	49.7	78.5	128	5.11	0.12	—	293
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	13.6	21.5	35.1	1.40	0.03	—	80.2
Total	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	71.1	112	183	7.31	0.18	—	419
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	49.7	78.5	128	5.11	0.12	—	293
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	13.6	21.5	35.1	1.40	0.03	—	80.2
Total	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	11.8	18.6	30.4	1.21	0.03	—	69.3

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	8.24	13.0	21.2	0.85	0.02	—	48.5
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	2.26	3.56	5.82	0.23	0.01	—	13.3
Total	—	—	—	—	—	—	—	—	—	—	—	22.3	35.1	57.4	2.29	0.05	—	131

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	71.1	112	183	7.31	0.18	—	419
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	49.7	78.5	128	5.11	0.12	—	293
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	13.6	21.5	35.1	1.40	0.03	—	80.2
Total	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Elementary	—	—	—	—	—	—	—	—	—	—	—	71.1	112	183	7.31	0.18	—	419
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	49.7	78.5	128	5.11	0.12	—	293
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	13.6	21.5	35.1	1.40	0.03	—	80.2
Total	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	11.8	18.6	30.4	1.21	0.03	—	69.3
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	8.24	13.0	21.2	0.85	0.02	—	48.5
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	2.26	3.56	5.82	0.23	0.01	—	13.3
Total	—	—	—	—	—	—	—	—	—	—	—	22.3	35.1	57.4	2.29	0.05	—	131

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	897	0.00	897	89.7	0.00	—	3,138
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	3.38	0.00	3.38	0.34	0.00	—	11.8
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	248	0.00	248	24.7	0.00	—	866
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	54.3	0.00	54.3	5.43	0.00	—	190
Total	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	897	0.00	897	89.7	0.00	—	3,138
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	3.38	0.00	3.38	0.34	0.00	—	11.8
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	248	0.00	248	24.7	0.00	—	866
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	54.3	0.00	54.3	5.43	0.00	—	190
Total	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	149	0.00	149	14.8	0.00	—	520

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.56	0.00	0.56	0.06	0.00	—	1.96
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	41.0	0.00	41.0	4.10	0.00	—	143
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	8.99	0.00	8.99	0.90	0.00	—	31.5
Total	—	—	—	—	—	—	—	—	—	—	—	199	0.00	199	19.9	0.00	—	696

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	897	0.00	897	89.7	0.00	—	3,138
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	3.38	0.00	3.38	0.34	0.00	—	11.8
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	248	0.00	248	24.7	0.00	—	866
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	54.3	0.00	54.3	5.43	0.00	—	190
Total	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Elementary	—	—	—	—	—	—	—	—	—	—	—	897	0.00	897	89.7	0.00	—	3,138
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	3.38	0.00	3.38	0.34	0.00	—	11.8
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	248	0.00	248	24.7	0.00	—	866
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	54.3	0.00	54.3	5.43	0.00	—	190
Total	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	149	0.00	149	14.8	0.00	—	520
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.56	0.00	0.56	0.06	0.00	—	1.96
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	41.0	0.00	41.0	4.10	0.00	—	143
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	8.99	0.00	8.99	0.90	0.00	—	31.5
Total	—	—	—	—	—	—	—	—	—	—	—	199	0.00	199	19.9	0.00	—	696

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.95	4.95
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.95	4.95
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.82	0.82
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.70	1.70

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.95	4.95
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.95	4.95
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Elementary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.82	0.82
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.70	1.70

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	528
Propane Fireplaces	0
Electric Fireplaces	0

No Fireplaces	0
Wood Fireplaces	0
Gas Fireplaces	93
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	528
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Wood Fireplaces	0
Gas Fireplaces	93
Propane Fireplaces	0
Electric Fireplaces	0

No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
1332976.5	444,326	2,064,534	688,178	266,587

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Elementary School	3,352,607	204	0.0330	0.0040	31,606,790
Elementary School	2,515,514	204	0.0330	0.0040	23,715,074
Other Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00
City Park	0.00	204	0.0330	0.0040	0.00
Apartments Low Rise	2,346,891	204	0.0330	0.0040	8,025,142
Apartments Low Rise	413,373	204	0.0330	0.0040	1,413,519
Strip Mall	836,359	204	0.0330	0.0040	828,058

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Elementary School	2,707,257	204	0.0330	0.0040	22,298,515
Elementary School	2,031,298	204	0.0330	0.0040	16,730,928
Other Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00
City Park	0.00	204	0.0330	0.0040	0.00
Apartments Low Rise	2,289,097	204	0.0330	0.0040	5,992,769
Apartments Low Rise	403,193	204	0.0330	0.0040	1,055,545
Strip Mall	706,711	204	0.0330	0.0040	587,337

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Elementary School	21,211,245	0.00

Elementary School	15,915,132	0.00
Other Asphalt Surfaces	0.00	0.00
City Park	0.00	0.00
Apartments Low Rise	22,074,149	0.00
Apartments Low Rise	3,888,060	0.00
Strip Mall	7,110,962	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Elementary School	21,211,245	0.00
Elementary School	15,915,132	0.00
Other Asphalt Surfaces	0.00	0.00
City Park	0.00	0.00
Apartments Low Rise	22,074,149	0.00
Apartments Low Rise	3,888,060	0.00
Strip Mall	7,110,962	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Elementary School	951	—
Elementary School	714	—
Other Asphalt Surfaces	0.00	—
City Park	6.28	—
Apartments Low Rise	390	—
Apartments Low Rise	68.8	—

Strip Mall	101	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Elementary School	951	—
Elementary School	714	—
Other Asphalt Surfaces	0.00	—
City Park	6.28	—
Apartments Low Rise	390	—
Apartments Low Rise	68.8	—
Strip Mall	101	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Elementary School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Elementary School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Elementary School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Elementary School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Elementary School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Elementary School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

Elementary School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Elementary School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Elementary School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Elementary School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

Elementary School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Elementary School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Elementary School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Elementary School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Elementary School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Elementary School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.09	annual days of extreme heat
Extreme Precipitation	1.10	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	42.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	17.7
AQ-PM	1.36
AQ-DPM	11.4
Drinking Water	77.8

Lead Risk Housing	81.6
Pesticides	92.8
Toxic Releases	3.54
Traffic	32.9
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	22.1
Haz Waste Facilities/Generators	35.6
Impaired Water Bodies	98.4
Solid Waste	71.1
Sensitive Population	—
Asthma	56.3
Cardio-vascular	77.7
Low Birth Weights	26.9
Socioeconomic Factor Indicators	—
Education	98.4
Housing	51.4
Linguistic	94.8
Poverty	79.7
Unemployment	2.29

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	14.59001668
Employed	8.417810856

Median HI	19.32503529
Education	—
Bachelor's or higher	3.259335301
High school enrollment	100
Preschool enrollment	36.44296163
Transportation	—
Auto Access	41.51161299
Active commuting	21.18567946
Social	—
2-parent households	71.48723213
Voting	20.55691005
Neighborhood	—
Alcohol availability	35.15975876
Park access	46.68292057
Retail density	5.877069165
Supermarket access	63.91633517
Tree canopy	6.467342487
Housing	—
Homeownership	19.78698832
Housing habitability	8.340818683
Low-inc homeowner severe housing cost burden	7.76337739
Low-inc renter severe housing cost burden	31.13050173
Uncrowded housing	3.195175157
Health Outcomes	—
Insured adults	29.25702554
Arthritis	0.0
Asthma ER Admissions	61.8

High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	60.7
Cognitively Disabled	96.9
Physically Disabled	94.1
Heart Attack ER Admissions	59.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	50.9
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.7
SLR Inundation Area	0.0
Children	3.8
Elderly	87.4
English Speaking	9.9
Foreign-born	68.5

Outdoor Workers	1.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	81.2
Traffic Density	24.8
Traffic Access	0.0
Other Indices	—
Hardship	92.0
Other Decision Support	—
2016 Voting	35.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	66.0
Healthy Places Index Score for Project Location (b)	18.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	Adjusted to match project location.
Land Use	Adjusted to match previous model based on conceptual land use plan. zero-out acreage of residential in mixed use to avoid double counting.
Operations: Hearths	Adjusted to match previous model.

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ROG	NO_x	PM_{10}	CO	SO_x	CO_2
1.12E-07	4.15E-06	4.89E-09	4.37E-06	1.07E-08	0.001125795
3.54E-06	8.64E-05	5.03E-06	1.46E-05	1.05E-06	0.110397832
5.04E-07	1.68E-05	1.31E-06	1.20E-05	1.35E-07	0.014168472
0.003144	3.70E-06	1.00E-06	0.0488491	0.000237	23.6419779
0.000576	0.002303	5.06E-07	0.0233424	7.02E-06	0.660183874
0.000325	0.002307	5.94E-07	0.0008332	5.51E-06	0.550339136
0.002391	1.34E-05	2.02E-07	0.0007577	3.03E-07	0.028815285
0.001793	6.40E-05	6.50E-05	8.92E-09	2.38E-10	2.50E-05
0.000127	2.01E-09	0.000118	0.0035963	1.79E-05	1.785902265
2.30E-05	0.000193	0.00072	0.0018344	5.74E-07	0.054067104
5.47E-06	0.000188	0.000856	2.32E-05	1.54E-07	0.015347665
5.36E-05	3.72E-07	5.67E-05	2.11E-05	9.60E-09	0.000919015
9.75E-05	1.78E-06	1.19E-05	2.91E-05	5.71E-07	0.059769917
8.22E-10	6.53E-06	1.98E-05	0.0331653	0.000164	16.34942838
0.000391	0.001639	4.06E-05	0.0177835	5.13E-06	0.480691907
6.81E-05	0.001743	1.11E-06	0.0002593	1.71E-06	0.171313078
2.80E-05	4.16E-06	5.16E-07	0.0002426	1.16E-07	0.011164458
0.000282	2.05E-05	5.97E-10	4.27E-05	5.35E-08	0.005601402
0.000158	6.01E-05	5.90E-10	0.0004175	8.61E-06	0.901542307
2.29E-06	0.000719	3.07E-10	0.0002926	8.42E-08	0.007871678
4.97E-07	2.12E-06	8.51E-07	0.001478	1.90E-05	1.900550064
1.52E-07	8.38E-05	1.55E-06	0.0036787	2.77E-07	0.021549169
8.65E-07	0.000545	5.63E-05	2.14E-05	4.40E-08	0.0046098
2.72E-06	3.28E-05	5.46E-05	0.0002551	4.84E-06	0.506476603
2.64E-06	0.000523	4.42E-06	2.96E-05	9.80E-09	0.000926161
0.002294	1.94E-07	1.00E-06	0.0001525	2.16E-06	0.216406567
0.000398	7.71E-06	5.56E-07	0.0003832	2.73E-08	0.002101667
0.000265	4.94E-05	1.14E-06	0.0074495	1.35E-06	0.120923642
0.001729	0.000365	2.86E-08	0.0023978	1.18E-07	0.007054639
0.001448	2.58E-05	1.28E-08	5.86E-05	1.29E-06	0.135442811
3.43E-05	5.74E-06	1.92E-06	0.0204677	0.000113	11.31439513
6.54E-06	0.001302	1.88E-06	0.0112866	3.69E-06	0.348094117
1.70E-06	0.00123	9.98E-07	0.0001576	1.04E-06	0.104085551
1.39E-05	2.53E-06	7.29E-06	0.0001494	8.73E-08	0.008443269
3.12E-05	1.26E-05	1.33E-05	1.27E-05	4.73E-07	0.049551456
5.15E-06	0.000126	0.000496	1.22E-05	1.47E-06	0.147709143
0.000155	1.17E-05	0.000487	1.88E-06	2.15E-10	1.83E-05
0.000214	2.97E-07	3.50E-05	0.000103	1.40E-07	0.014624053
3.32E-05	3.63E-05	7.52E-06	8.03E-06	3.23E-06	0.338148596
2.44E-05	0.000211	6.18E-06	6.62E-06	4.05E-09	0.000391447
1.23E-05	4.62E-05	1.27E-05	5.51E-05	8.30E-07	0.083065087
0.000288	6.15E-08	3.36E-07	9.44E-05	6.88E-09	0.000525449
0.000123	2.02E-05	1.56E-07	2.38E-05	2.09E-06	0.219333275

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2.58E-06	8.73E-06	1.28E-06	7.06E-05	1.82E-07	0.019096715
9.24E-05	0.000331	0.000116	1.26E-05	2.08E-06	0.217520532
2.20E-05	7.24E-05	1.79E-05	0.0001247	3.76E-08	0.003504308
3.32E-06	9.78E-05	3.49E-05	2.62E-05	9.91E-07	0.099268658
2.23E-06	9.89E-05	9.50E-05	5.45E-05	3.27E-09	0.000233869
1.08E-06	1.27E-06	1.95E-05	7.46E-07	1.42E-10	8.39E-05
2.93E-05	2.47E-05	0.000195	2.86E-06	1.90E-08	0.000458909
1.07E-05	6.68E-06	2.00E-05	6.06E-08	1.75E-10	1.49E-05
0.000604	1.04E-07	3.20E-06	5.51E-08	2.62E-08	0.0019955
0.001019	6.84E-08	1.53E-07	7.48E-08	7.85E-10	1.84E-05
0.000604	4.69E-08	6.42E-07	7.58E-08	6.77E-08	0.002747689
0.001141	3.63E-07	6.50E-05	3.36E-07	1.89E-09	8.23E-05
0.000315	2.40E-07	8.57E-06	1.95E-07	6.59E-07	0.007099472
2.06E-06	5.82E-08	2.08E-05	8.28E-07	3.07E-08	0.000197961
0.001673	5.04E-07	2.53E-05	2.30E-06	5.88E-07	0.069083183
0.000295	2.97E-07	4.45E-06	1.28E-05	1.44E-08	0.003214259
0.000198	2.57E-07	2.31E-05	3.26E-06	2.70E-07	0.061662961
0.00121	1.29E-06	2.03E-06	6.00E-06	5.00E-08	0.001512369
0.001078	1.32E-06	3.11E-07	1.51E-06	9.58E-07	0.028310511
2.14E-05	6.98E-07	1.20E-08	2.08E-05	1.43E-08	0.005235646
4.12E-06	1.54E-05	8.79E-06	5.31E-06	4.08E-07	0.100386608
1.03E-06	3.49E-06	2.93E-06	5.55E-06	1.19E-07	0.001501175
8.80E-06	1.09E-05	1.52E-06	3.39E-06	2.39E-06	0.042776401
1.92E-05	2.32E-05	9.88E-07	5.24E-07	2.21E-07	8.46E-05
4.21E-06	2.83E-05	3.34E-06	3.71E-06	4.45E-06	0.00106614
1.59E-05	5.11E-06	3.19E-06	4.95E-05	1.65E-07	0.012442412
2.56E-06	1.09E-05	6.42E-07	1.10E-05	3.33E-06	0.25087197
8.79E-07	1.32E-05	6.55E-06	9.19E-05	1.73E-07	0.023128581
8.97E-08	1.78E-05	1.19E-05	2.00E-05	3.29E-06	0.46626581
8.76E-08	3.82E-05	0.000284	6.89E-05	1.03E-09	0.017325792
6.97E-06	4.62E-05	0.000275	1.50E-05	2.48E-08	0.348895943
2.33E-06	6.27E-06	2.06E-05	6.73E-05	7.72E-08	0.018166508
4.93E-06	3.44E-05	4.70E-06	1.97E-05	2.06E-06	0.345328667
8.36E-07	1.53E-05	3.75E-06	5.60E-06	1.53E-10	0.000854085
8.56E-07	1.14E-07	7.70E-06	1.96E-05	2.12E-08	0.006119086
2.62E-06	2.24E-07	2.08E-07	4.34E-07	1.89E-10	0.000108296
5.51E-06	4.14E-05	9.90E-08	1.21E-07	2.91E-08	0.002601655
4.55E-06	7.36E-05	2.06E-06	3.09E-05	8.44E-10	0.008094405
1.98E-06	9.29E-05	7.34E-07	1.23E-05	7.57E-08	0.21604683
1.70E-06	7.74E-05	1.66E-06	2.56E-06	1.03E-09	0.00036058
1.90E-06	0.000132	3.45E-06	1.28E-05	4.97E-07	0.003907368
8.22E-06	0.000173	9.19E-07	6.95E-08	1.17E-08	1.60E-05
1.20E-06	5.82E-05	1.12E-07	6.49E-08	1.55E-07	0.002218902
1.61E-05	0.000101	2.63E-10	8.56E-08	1.72E-08	1.98E-05

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1.09E-06	0.00013	2.97E-08	8.83E-08	2.26E-07	0.003047004
5.72E-06	7.58E-05	1.80E-05	3.86E-07	1.51E-08	8.84E-05
2.47E-06	0.000193	2.66E-06	2.28E-07	2.01E-07	0.007931194
3.51E-09	0.000161	5.27E-06	4.73E-07	3.88E-08	0.00010841
1.50E-08	1.14E-06	1.10E-06	1.77E-06	6.25E-07	0.052051076
1.43E-09	9.33E-07	5.88E-07	4.53E-06	3.41E-09	0.001225292
1.08E-08	3.81E-07	2.39E-06	9.13E-07	9.72E-08	0.016224628
1.77E-09	7.72E-07	6.40E-07	9.76E-07	6.46E-10	0.000105087
1.48E-08	8.30E-07	6.89E-08	1.79E-06	1.84E-08	0.000538083
7.94E-09	3.35E-05	7.05E-09	6.58E-06	7.17E-10	0.001800757
3.81E-08	0.000108	5.24E-07	1.44E-06	2.50E-08	0.023697748
1.96E-08	7.03E-05	2.53E-08	1.66E-06	1.66E-08	0.000182055
4.49E-07	4.82E-07	9.37E-06	2.95E-06	4.19E-06	0.000902935
3.03E-07	5.72E-07	2.50E-06	5.96E-06	2.70E-08	0.001582731
3.78E-07	9.53E-08	8.02E-07	1.12E-06	1.61E-06	0.021024818
1.42E-07	5.46E-07	3.35E-06	1.67E-06	2.11E-05	0.000184409
1.75E-07	4.59E-07	1.71E-06	2.93E-06	2.10E-06	0.000897942
4.92E-07	1.17E-07	5.75E-06	1.55E-05	3.07E-05	0.004064117
6.12E-07	7.47E-07	1.02E-06	3.48E-06	9.07E-07	0.065507286
1.33E-07	5.66E-07	1.35E-07	4.12E-06	1.11E-05	0.000451814
4.42E-07	5.28E-07	4.33E-09	8.84E-06	9.70E-16	0.002699804
4.53E-09	1.89E-06	4.09E-10	1.47E-06	4.98E-14	0.000357758
1.20E-08	2.55E-06	2.07E-08	3.60E-07	3.94E-08	0.010183343
1.17E-06	6.47E-07	5.54E-09	2.77E-07	9.58E-07	6.77E-05
1.49E-06	1.43E-05	1.70E-09	6.81E-08	1.04E-15	0.001925834
2.17E-06	3.13E-06	2.11E-11	3.08E-07	3.86E-14	7.51E-05
2.63E-06	5.75E-06	8.34E-08	9.17E-08	7.87E-08	0.002621103
1.63E-06	1.06E-05	2.37E-08	5.78E-05	1.93E-06	0.001552624
2.00E-06	2.94E-06	1.08E-08	5.99E-05	2.91E-08	0.419893125
1.61E-06	1.29E-07	5.32E-08	0.0002597	7.42E-07	0.002254584
2.83E-06	3.41E-08	3.02E-08	0.001303	9.44E-08	0.168642086
4.44E-08	8.11E-06	2.58E-11	6.77E-05	1.71E-06	2.216729121
6.51E-08	1.51E-05	1.15E-07	0.001777	3.32E-07	0.220599042
1.04E-08	4.27E-06	3.26E-08	9.98E-05	6.12E-06	3.217793813
1.90E-08	2.19E-07	1.49E-08	0.0007666	3.08E-08	0.095077039
7.39E-07	5.62E-08	7.28E-08	3.73E-05	2.23E-06	1.168060729
1.71E-06	6.98E-06	4.13E-08	7.92E-13	7.77E-07	1.02E-10
1.84E-08	1.09E-05	1.16E-10	2.43E-13	9.35E-06	5.22E-09
4.28E-08	3.89E-06	2.97E-07	3.22E-05	3.46E-09	0.00413028
1.65E-09	2.21E-07	8.43E-08	4.80E-06	1.62E-07	0.10044368
1.31E-08	5.57E-08	3.85E-08	8.33E-13	1.66E-08	1.09E-10
2.03E-09	1.93E-05	1.92E-07	2.05E-13	4.06E-11	4.04E-09
1.76E-08	3.73E-05	1.09E-07	5.04E-05	1.95E-09	0.008251627
9.12E-09	1.08E-05	2.83E-10	2.12E-05	5.98E-07	0.202143302

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4.53E-08	5.45E-07	3.28E-06	2.53E-06	7.10E-10	0.00025205
1.12E-08	1.68E-07	9.30E-07	1.41E-05		0.002502403
3.45E-07	1.09E-06	4.48E-07	2.29E-05		0.003053676
1.11E-07	1.98E-06	4.95E-07	2.37E-06		0.077769722
2.13E-07	2.69E-06	2.81E-07	2.41E-06		0.000233541
4.24E-09	2.07E-07	4.57E-09	7.45E-06		0.001938199
7.39E-09	3.65E-07	2.79E-06	6.88E-05		0.009897922
1.65E-07	5.10E-07	7.05E-07	7.08E-06		0.179505406
3.58E-07	2.30E-07	1.21E-07	6.21E-06		0.000691945
7.20E-09	4.84E-07	1.25E-06	2.08E-05		0.004398095
1.22E-08	5.65E-07	6.33E-07	0.0002458		0.034832184
1.46E-07	2.12E-07	2.13E-09	2.44E-05		0.641784753
2.51E-07	2.33E-05	1.28E-06	2.40E-05		0.002609813
7.26E-09	2.35E-05	3.23E-07	7.47E-05		0.016372996
1.21E-08	0.00068	5.56E-08	2.08E-05		0.003224965
3.78E-07	0.002117	5.75E-07	4.40E-06		0.233760779
7.71E-07	0.000308	2.90E-07	4.24E-05		0.00570237
1.79E-08	0.001421	7.31E-09	0.0008739		0.080829187
3.65E-08	0.003535	4.55E-06	0.0006177		0.081425927
3.46E-08	0.000507	1.15E-06	3.74E-05		0.979909684
5.15E-08	0.000613	1.94E-07	5.43E-06		0.000526142
6.55E-09	0.001321	2.04E-06	8.60E-06		0.002259315
9.75E-09	0.000219	1.03E-06	2.52E-06		0.000362632
7.27E-09	4.46E-13	2.00E-09	1.14E-06		0.016968871
1.31E-08	4.75E-12	1.90E-06	2.81E-05		0.001616057
7.81E-06	4.67E-13	4.79E-07	4.83E-07		3.31E-06
1.11E-06	1.81E-05	1.24E-07	1.23E-08		0.000204318
3.74E-06	9.57E-05	4.78E-07	4.04E-05		0.059842174
3.56E-06	1.90E-05	2.41E-07	1.25E-05		5.09E-05
1.51E-05	5.07E-13	3.04E-10	1.39E-05		0.000374563
1.38E-05	4.11E-12	5.09E-08			
8.82E-05	5.31E-13	1.29E-08			
2.00E-05	4.79E-05	1.25E-09			
0.00012	0.000338	1.93E-08			
2.94E-05	8.15E-05	1.11E-05			
5.19E-05	3.34E-07	2.97E-06			
1.10E-05	3.84E-07	8.36E-07			
5.36E-14	1.09E-05	5.30E-06			
3.85E-14	4.41E-05	2.83E-06			
2.18E-06	1.83E-05	3.26E-08			
7.58E-07	3.20E-07	2.06E-05			
5.64E-14	3.05E-07	5.50E-06			
3.14E-14	3.87E-05	1.49E-06			
3.61E-06	0.000138	9.84E-06			

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4.94E-06	6.30E-05	5.26E-06
1.10E-08	9.69E-07	2.48E-08
4.39E-08	9.87E-07	1.54E-05
1.55E-06	0.00014	4.12E-06
4.67E-07	0.00048	1.13E-06
1.05E-08	0.000226	7.36E-06
2.80E-08	3.64E-06	3.94E-06
4.67E-06	3.47E-06	2.57E-08
1.32E-06	1.65E-05	1.51E-05
3.45E-08	9.50E-05	4.05E-06
6.16E-08	2.23E-05	1.53E-06
1.67E-05	2.63E-06	4.71E-06
4.61E-06	4.09E-05	2.52E-06
1.28E-07	0.000379	3.21E-09
2.30E-07	0.000922	3.21E-07
1.47E-06	0.000603	8.59E-08
1.95E-06	7.37E-07	7.85E-09
9.59E-08	3.89E-07	2.36E-10
1.52E-06	1.45E-06	1.15E-07
4.18E-05	1.19E-05	3.08E-08
7.92E-06	1.41E-05	1.01E-08
2.46E-08	2.05E-06	5.84E-08
3.24E-08	3.54E-08	3.13E-08
1.71E-07	5.97E-08	1.22E-08
1.23E-07	1.14E-06	1.03E-05
7.03E-09	5.67E-07	2.75E-06
9.51E-10	1.64E-08	9.38E-07
4.11E-07		1.04E-06
1.42E-08		5.54E-07
7.42E-11		1.46E-09
1.13E-08		2.10E-07
1.68E-07		5.60E-08
4.69E-08		5.33E-09
2.28E-07		2.67E-11
1.88E-07		9.90E-08
1.95E-07		2.81E-08
1.83E-08		1.35E-08
		3.12E-11
		1.36E-07
		3.85E-08
		1.83E-08
		1.40E-10
		3.55E-07
		1.01E-07

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4.73E-08		
1.62E-10		
2.58E-06		
7.32E-07		
3.60E-07		
3.11E-09		
6.86E-07		
1.78E-07		
7.38E-08		
2.61E-07		
1.36E-07		
5.32E-10		
2.70E-08		
7.03E-09		
1.05E-09		
3.79E-09		
9.95E-07		
2.59E-07		
9.94E-08		
3.76E-07		
1.95E-07		
9.03E-10		
4.46E-08		
1.16E-08		
1.73E-09		
3.23E-09		
8.89E-07		
2.31E-07		
7.82E-08		
3.35E-07		
1.74E-07		
9.11E-10		
4.42E-08		
1.15E-08		
1.72E-09		
8.76E-09		
2.80E-06		
7.29E-07		
2.56E-07		
8.76E-07		
4.55E-07		
2.24E-09		
1.33E-07		
3.47E-08		

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5.19E-09
5.00E-10
4.58E-07
1.21E-07
2.34E-08
3.00E-07
1.58E-07
9.46E-11
8.65E-08
2.28E-08
4.39E-09
5.66E-08
2.99E-08
1.05E-10
1.18E-07
3.11E-08
5.94E-09
8.01E-08
4.22E-08
6.13E-06
3.27E-06
1.23E-05
3.27E-06
4.05E-07
3.56E-08
3.75E-07
0.000143
6.28E-05
5.21E-05
2.01E-05
1.77E-05
5.12E-07
0.000216
9.52E-05
7.77E-05
2.21E-07
7.86E-05
3.46E-05
2.99E-05
2.28E-16
3.61E-13
1.38E-13
6.30E-14
4.52E-14

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9.27E-09		
6.97E-06		
2.66E-06		
1.27E-06		
7.71E-07		
5.90E-07		
2.40E-16		
2.71E-13		
1.05E-13		
5.53E-14		
2.24E-14		
1.72E-14		
3.81E-08		
1.33E-05		
4.46E-06		
1.59E-06		
3.80E-06		
2.52E-06		
1.38E-09		
1.90E-07		
6.54E-08		
6.15E-09		
6.61E-09		
4.77E-06		
1.94E-06		
7.47E-07		
3.04E-06		
2.47E-06		
1.31E-09		
1.62E-07		
6.60E-08		
4.13E-09		
2.03E-08		
1.04E-05		
4.33E-06		
2.15E-06		
4.08E-06		
3.31E-06		
3.45E-09		
3.51E-07		
1.46E-07		
8.42E-09		
7.25E-08		

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1.56E-05		
7.50E-06		
1.60E-05		
1.30E-05		
1.33E-08		
1.31E-06		
5.45E-07		
3.20E-08		
1.15E-08		
1.53E-05		
2.61E-06		
1.25E-06		
7.88E-06		
2.70E-06		
1.11E-09		
1.28E-05		
2.19E-06		
6.07E-08		
1.78E-07		
6.54E-05		
2.76E-05		
1.69E-05		
6.01E-06		
5.00E-06		
2.97E-09		
1.90E-07		
7.99E-08		
4.74E-09		
7.26E-10		
1.10E-06		
3.95E-07		
7.99E-08		
3.83E-07		
2.66E-07		
4.20E-08		
1.73E-08		
8.86E-08		
1.85E-08		
1.44E-09		
4.95E-11		
2.10E-08		
5.27E-09		
1.13E-09		

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			2.81E-05			
			1.19E-05			
			6.55E-06			
			5.75E-07			
			9.29E-08			
			3.01E-10			
			3.67E-08			
			9.23E-09			
			8.94E-11			
	ROG	**NO_x**	**PM_{10}**	**CO**	**SO_x**	**CO_2**
Total Emissions (Tons/Day)	0.025	0.031	0.006	0.187	0.001	73.273
Total Emissions (Lbs/Day)	50.981	62.559	11.736	374.863	1.453	
Total Emissions (MT/Day)						66.472

Vista Lucia Annexation Project_Single Family Homes_Mitigated Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Vista Lucia Annexation Project_Single Family Homes_Mitigated
Operational Year	2040
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	26.6
Location	Gonzales, CA, USA
County	Monterey
City	Gonzales
Air District	Monterey Bay ARD
Air Basin	North Central Coast
TAZ	3212
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.18

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	2,877	Dwelling Unit	448	5,610,150	33,697,890	—	9,552	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-1	Buildings Exceed 2019 Title 24 Building Envelope Energy Efficiency Standards
Area Sources	AS-2	Use Low-VOC Paints
Area Sources	E-14	Limit Wood Burning Devices and Natural Gas/Propane Fireplaces in Residential Development

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2,290	2,343	83.9	3,194	6.20	420	0.00	420	416	0.00	416	49,362	75,690	125,052	254	3.75	40.2	132,559
Mit.	16.3	137	12.7	169	0.08	0.97	0.00	0.97	0.96	0.00	0.96	1,724	29,403	31,128	177	0.88	40.2	35,846
% Reduced	99%	94%	85%	95%	99%	100%	—	100%	100%	—	100%	97%	61%	75%	30%	76%	—	73%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2,275	2,329	82.4	3,030	6.20	420	0.00	420	416	0.00	416	49,362	75,253	124,616	254	3.75	40.2	132,121
Mit.	1.30	123	11.1	4.74	0.07	0.90	0.00	0.90	0.90	0.00	0.90	1,724	28,967	30,691	177	0.88	40.2	35,408
% Reduced	100%	95%	86%	100%	99%	100%	—	100%	100%	—	100%	97%	62%	75%	30%	77%	—	73%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	523	636	35.9	800	1.50	95.7	0.00	95.7	94.9	0.00	94.9	12,426	49,720	62,146	195	1.55	40.2	67,520
Mit.	11.6	133	12.2	117	0.08	0.95	0.00	0.95	0.94	0.00	0.94	1,724	29,266	30,990	177	0.88	40.2	35,708
% Reduced	98%	79%	66%	85%	95%	99%	—	99%	99%	—	99%	86%	41%	50%	9%	43%	—	47%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	95.5	116	6.56	146	0.27	17.5	0.00	17.5	17.3	0.00	17.3	2,057	8,232	10,289	32.3	0.26	6.65	11,179
Mit.	2.11	24.2	2.22	21.4	0.01	0.17	0.00	0.17	0.17	0.00	0.17	285	4,845	5,131	29.2	0.15	6.65	5,912
% Reduced	98%	79%	66%	85%	95%	99%	—	99%	99%	—	99%	86%	41%	50%	9%	43%	—	47%
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	550	150	—	—	82.0	—	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	No	Yes	No	—	—	Yes	—	—	—	—	—	—	—	—	—	—
Mit.	—	Yes	No	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	550	150	—	—	82.0	—	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	No	Yes	No	—	—	Yes	—	—	—	—	—	—	—	—	—	—
Mit.	—	No	No	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	2,288	2,342	62.8	3,185	6.07	418	—	418	415	—	415	47,638	33,754	81,392	76.2	2.84	—	84,144
Energy	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	40,530	40,530	4.59	0.32	—	40,740
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	2,290	2,343	83.9	3,194	6.20	420	0.00	420	416	0.00	416	49,362	75,690	125,052	254	3.75	40.2	132,559
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	2,273	2,328	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Energy	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	40,530	40,530	4.59	0.32	—	40,740
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	2,275	2,329	82.4	3,030	6.20	420	0.00	420	416	0.00	416	49,362	75,253	124,616	254	3.75	40.2	132,121
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	521	635	14.8	791	1.37	94.0	—	94.0	93.2	—	93.2	10,702	7,784	18,486	17.1	0.64	—	19,105
Energy	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	40,530	40,530	4.59	0.32	—	40,740
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	523	636	35.9	800	1.50	95.7	0.00	95.7	94.9	0.00	94.9	12,426	49,720	62,146	195	1.55	40.2	67,520
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	95.1	116	2.70	144	0.25	17.2	—	17.2	17.0	—	17.0	1,772	1,289	3,061	2.83	0.11	—	3,163

Energy	0.45	0.23	3.86	1.64	0.02	0.31	—	0.31	0.31	—	0.31	—	6,710	6,710	0.76	0.05	—	6,745
Water	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399
Waste	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65
Total	95.5	116	6.56	146	0.27	17.5	0.00	17.5	17.3	0.00	17.3	2,057	8,232	10,289	32.3	0.26	6.65	11,179

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	15.0	137	1.51	164	0.01	0.07	—	0.07	0.06	—	0.06	0.00	436	436	0.02	< 0.005	—	438
Energy	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	27,561	27,561	3.42	0.29	—	27,733
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	16.3	137	12.7	169	0.08	0.97	0.00	0.97	0.96	0.00	0.96	1,724	29,403	31,128	177	0.88	40.2	35,846
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	122	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	27,561	27,561	3.42	0.29	—	27,733
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	1.30	123	11.1	4.74	0.07	0.90	0.00	0.90	0.90	0.00	0.90	1,724	28,967	30,691	177	0.88	40.2	35,408

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	10.2	132	1.03	112	< 0.005	0.05	—	0.05	0.04	—	0.04	0.00	299	299	0.01	< 0.005	—	300
Energy	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	27,561	27,561	3.42	0.29	—	27,733
Water	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Waste	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	11.6	133	12.2	117	0.08	0.95	0.00	0.95	0.94	0.00	0.94	1,724	29,266	30,990	177	0.88	40.2	35,708
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	1.87	24.1	0.19	20.5	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	49.5	49.5	< 0.005	< 0.005	—	49.7
Energy	0.24	0.12	2.03	0.87	0.01	0.16	—	0.16	0.16	—	0.16	—	4,563	4,563	0.57	0.05	—	4,592
Water	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399
Waste	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65
Total	2.11	24.2	2.22	21.4	0.01	0.17	0.00	0.17	0.17	0.00	0.17	285	4,845	5,131	29.2	0.15	6.65	5,912

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	13,708	13,708	2.22	0.27	—	13,843
Total	—	—	—	—	—	—	—	—	—	—	—	—	13,708	13,708	2.22	0.27	—	13,843
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	13,708	13,708	2.22	0.27	—	13,843
Total	—	—	—	—	—	—	—	—	—	—	—	—	13,708	13,708	2.22	0.27	—	13,843
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,270	2,270	0.37	0.04	—	2,292
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,270	2,270	0.37	0.04	—	2,292

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	13,409	13,409	2.17	0.26	—	13,541
Total	—	—	—	—	—	—	—	—	—	—	—	—	13,409	13,409	2.17	0.26	—	13,541
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	13,409	13,409	2.17	0.26	—	13,541
Total	—	—	—	—	—	—	—	—	—	—	—	—	13,409	13,409	2.17	0.26	—	13,541
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	2,220	2,220	0.36	0.04	—	2,242
Total	—	—	—	—	—	—	—	—	—	—	—	—	2,220	2,220	0.36	0.04	—	2,242

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	26,822	26,822	2.37	0.05	—	26,896
Total	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	26,822	26,822	2.37	0.05	—	26,896
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	26,822	26,822	2.37	0.05	—	26,896

Total	2.47	1.24	21.1	8.99	0.13	1.71	—	1.71	1.71	—	1.71	—	26,822	26,822	2.37	0.05	—	26,896
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.45	0.23	3.86	1.64	0.02	0.31	—	0.31	0.31	—	0.31	—	4,441	4,441	0.39	0.01	—	4,453
Total	0.45	0.23	3.86	1.64	0.02	0.31	—	0.31	0.31	—	0.31	—	4,441	4,441	0.39	0.01	—	4,453

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	14,152	14,152	1.25	0.03	—	14,192
Total	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	14,152	14,152	1.25	0.03	—	14,192
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	14,152	14,152	1.25	0.03	—	14,192
Total	1.30	0.65	11.1	4.74	0.07	0.90	—	0.90	0.90	—	0.90	—	14,152	14,152	1.25	0.03	—	14,192
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.24	0.12	2.03	0.87	0.01	0.16	—	0.16	0.16	—	0.16	—	2,343	2,343	0.21	< 0.005	—	2,350
Total	0.24	0.12	2.03	0.87	0.01	0.16	—	0.16	0.16	—	0.16	—	2,343	2,343	0.21	< 0.005	—	2,350

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	2,273	2,196	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Consumer Products	—	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	15.0	14.2	1.51	164	0.01	0.07	—	0.07	0.06	—	0.06	—	436	436	0.02	< 0.005	—	438
Total	2,288	2,342	62.8	3,185	6.07	418	—	418	415	—	415	47,638	33,754	81,392	76.2	2.84	—	84,144
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	2,273	2,196	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Consumer Products	—	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	12.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	2,273	2,328	61.3	3,021	6.06	418	—	418	415	—	415	47,638	33,318	80,956	76.2	2.84	—	83,706
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	93.2	90.0	2.51	124	0.25	17.1	—	17.1	17.0	—	17.0	1,772	1,239	3,011	2.83	0.11	—	3,113

Consumer Products	—	21.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	2.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.87	1.77	0.19	20.5	< 0.005	0.01	—	0.01	0.01	—	0.01	—	49.5	49.5	< 0.005	< 0.005	—	49.7
Total	95.1	116	2.70	144	0.25	17.2	—	17.2	17.0	—	17.0	1,772	1,289	3,061	2.83	0.11	—	3,163

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	2.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	15.0	14.2	1.51	164	0.01	0.07	—	0.07	0.06	—	0.06	—	436	436	0.02	< 0.005	—	438
Total	15.0	137	1.51	164	0.01	0.07	—	0.07	0.06	—	0.06	0.00	436	436	0.02	< 0.005	—	438
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00

Consum Products	—	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	2.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	122	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	21.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.87	1.77	0.19	20.5	< 0.005	0.01	—	0.01	0.01	—	0.01	—	49.5	49.5	< 0.005	< 0.005	—	49.7
Total	1.87	24.1	0.19	20.5	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	49.5	49.5	< 0.005	< 0.005	—	49.7

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Total	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Total	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399
Total	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Total	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Total	—	—	—	—	—	—	—	—	—	—	—	230	1,406	1,636	23.9	0.59	—	2,408
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399
Total	—	—	—	—	—	—	—	—	—	—	—	38.2	233	271	3.95	0.10	—	399

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Total	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Total	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865
Total	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Total	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Total	—	—	—	—	—	—	—	—	—	—	—	1,494	0.00	1,494	149	0.00	—	5,226
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865
Total	—	—	—	—	—	—	—	—	—	—	—	247	0.00	247	24.7	0.00	—	865

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40.2	40.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.65	6.65

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipme Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	1007
Gas Fireplaces	1582
Propane Fireplaces	0
Electric Fireplaces	0

No Fireplaces	288
Conventional Wood Stoves	0
Catalytic Wood Stoves	144
Non-Catalytic Wood Stoves	144
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	288
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
11360553.75	3,786,851	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00

Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	24,528,466	204	0.0330	0.0040	83,692,003

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	23,993,119	204	0.0330	0.0040	44,159,517

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	120,279,027	481,981,803

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	120,279,027	481,981,803

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	2,772	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	2,772	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0

Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.09	annual days of extreme heat
Extreme Precipitation	1.10	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	42.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	17.7
AQ-PM	1.36
AQ-DPM	11.4
Drinking Water	77.8

Lead Risk Housing	81.6
Pesticides	92.8
Toxic Releases	3.54
Traffic	32.9
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	22.1
Haz Waste Facilities/Generators	35.6
Impaired Water Bodies	98.4
Solid Waste	71.1
Sensitive Population	—
Asthma	56.3
Cardio-vascular	77.7
Low Birth Weights	26.9
Socioeconomic Factor Indicators	—
Education	98.4
Housing	51.4
Linguistic	94.8
Poverty	79.7
Unemployment	2.29

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	14.59001668
Employed	8.417810856

Median HI	19.32503529
Education	—
Bachelor's or higher	3.259335301
High school enrollment	100
Preschool enrollment	36.44296163
Transportation	—
Auto Access	41.51161299
Active commuting	21.18567946
Social	—
2-parent households	71.48723213
Voting	20.55691005
Neighborhood	—
Alcohol availability	35.15975876
Park access	46.68292057
Retail density	5.877069165
Supermarket access	63.91633517
Tree canopy	6.467342487
Housing	—
Homeownership	19.78698832
Housing habitability	8.340818683
Low-inc homeowner severe housing cost burden	7.76337739
Low-inc renter severe housing cost burden	31.13050173
Uncrowded housing	3.195175157
Health Outcomes	—
Insured adults	29.25702554
Arthritis	0.0
Asthma ER Admissions	61.8

High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	60.7
Cognitively Disabled	96.9
Physically Disabled	94.1
Heart Attack ER Admissions	59.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	50.9
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.7
SLR Inundation Area	0.0
Children	3.8
Elderly	87.4
English Speaking	9.9
Foreign-born	68.5

Outdoor Workers	1.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	81.2
Traffic Density	24.8
Traffic Access	0.0
Other Indices	—
Hardship	92.0
Other Decision Support	—
2016 Voting	35.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	66.0
Healthy Places Index Score for Project Location (b)	18.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	Adjust to match project location. No construction
Land Use	Lot acreage adjusted to match previous model based on land use plan.
Operations: Hearths	Adjusted to match previous model.

Vista Lucia Annex_Other Project Components_Mitigated Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Vista Lucia Annex_Other Project Components_Mitigated
Operational Year	2040
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	26.6
Location	Gonzales, CA, USA
County	Monterey
City	Gonzales
Air District	Monterey Bay ARD
Air Basin	North Central Coast
TAZ	3212
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.18

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Elementary School	732	1000sqft	24.0	731,500	0.00	0.00	—	—

Elementary School	549	1000sqft	18.0	548,856	0.00	0.00	—	—
Other Asphalt Surfaces	102	Acre	102	0.00	0.00	0.00	—	—
City Park	73.0	Acre	73.0	0.00	0.00	0.00	—	—
Apartments Low Rise	528	Dwelling Unit	22.0	559,680	0.00	0.00	1,753	—
Apartments Low Rise	93.0	Dwelling Unit	0.00	98,580	0.00	0.00	309	—
Strip Mall	96.0	1000sqft	8.00	96,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-1	Buildings Exceed 2019 Title 24 Building Envelope Energy Efficiency Standards
Area Sources	AS-2	Use Low-VOC Paints
Area Sources	E-14	Limit Wood Burning Devices and Natural Gas/Propane Fireplaces in Residential Development

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	15.8	61.5	18.3	109	0.11	1.46	0.00	1.46	1.43	0.00	1.43	1,337	26,862	28,199	137	0.48	10.3	31,770
Mit.	15.3	58.2	13.2	105	0.08	1.07	0.00	1.07	1.04	0.00	1.04	1,337	20,056	21,393	136	0.45	10.3	24,939

% Reduced	4%	5%	28%	4%	28%	26%	—	26%	27%	—	27%	—	25%	24%	< 0.5%	5%	—	22%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.94	48.6	17.5	13.7	0.11	1.34	0.00	1.34	1.34	0.00	1.34	1,337	26,522	27,859	137	0.48	10.3	31,428
Mit.	1.38	45.3	12.4	9.70	0.08	0.95	0.00	0.95	0.95	0.00	0.95	1,337	19,715	21,052	136	0.45	10.3	24,598
% Reduced	29%	7%	29%	29%	29%	29%	—	29%	29%	—	29%	—	26%	24%	< 0.5%	5%	—	22%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.5	57.5	18.0	78.9	0.11	1.42	0.00	1.42	1.40	0.00	1.40	1,337	26,755	28,092	137	0.48	10.3	31,662
Mit.	10.9	54.2	13.0	74.9	0.08	1.04	0.00	1.04	1.02	0.00	1.02	1,337	19,949	21,285	136	0.45	10.3	24,832
% Reduced	5%	6%	28%	5%	28%	27%	—	27%	28%	—	28%	—	25%	24%	< 0.5%	5%	—	22%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.09	10.5	3.29	14.4	0.02	0.26	0.00	0.26	0.26	0.00	0.26	221	4,430	4,651	22.6	0.08	1.70	5,242
Mit.	1.99	9.89	2.37	13.7	0.01	0.19	0.00	0.19	0.19	0.00	0.19	221	3,303	3,524	22.5	0.07	1.70	4,111
% Reduced	5%	6%	28%	5%	28%	27%	—	27%	28%	—	28%	—	25%	24%	< 0.5%	5%	—	22%
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	550	150	—	—	82.0	—	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—
Mit.	—	No	No	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshold	—	137	137	550	150	—	—	82.0	—	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—
Mit.	—	No	No	No	No	—	—	No	—	—	—	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	13.9	60.6	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	0.00	340	340	0.01	< 0.005	—	342
Energy	1.94	0.97	17.5	13.7	0.11	1.34	—	1.34	1.34	—	1.34	—	26,310	26,310	2.72	0.14	—	26,420
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	15.8	61.5	18.3	109	0.11	1.46	0.00	1.46	1.43	0.00	1.43	1,337	26,862	28,199	137	0.48	10.3	31,770
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	47.7	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	1.94	0.97	17.5	13.7	0.11	1.34	—	1.34	1.34	—	1.34	—	26,310	26,310	2.72	0.14	—	26,420
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	1.94	48.6	17.5	13.7	0.11	1.34	0.00	1.34	1.34	0.00	1.34	1,337	26,522	27,859	137	0.48	10.3	31,428

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	9.51	56.5	0.57	65.3	< 0.005	0.08	—	0.08	0.06	—	0.06	0.00	233	233	0.01	< 0.005	—	234
Energy	1.94	0.97	17.5	13.7	0.11	1.34	—	1.34	1.34	—	1.34	—	26,310	26,310	2.72	0.14	—	26,420
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	11.5	57.5	18.0	78.9	0.11	1.42	0.00	1.42	1.40	0.00	1.40	1,337	26,755	28,092	137	0.48	10.3	31,662
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	1.74	10.3	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	38.6	38.6	< 0.005	< 0.005	—	38.7
Energy	0.35	0.18	3.19	2.50	0.02	0.24	—	0.24	0.24	—	0.24	—	4,356	4,356	0.45	0.02	—	4,374
Water	—	—	—	—	—	—	—	—	—	—	—	22.3	35.1	57.4	2.29	0.05	—	131
Waste	—	—	—	—	—	—	—	—	—	—	—	199	0.00	199	19.9	0.00	—	696
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.70	1.70
Total	2.09	10.5	3.29	14.4	0.02	0.26	0.00	0.26	0.26	0.00	0.26	221	4,430	4,651	22.6	0.08	1.70	5,242

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	13.9	57.6	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	0.00	340	340	0.01	< 0.005	—	342
Energy	1.38	0.69	12.4	9.70	0.08	0.95	—	0.95	0.95	—	0.95	—	19,503	19,503	2.06	0.12	—	19,590
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791

Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	15.3	58.2	13.2	105	0.08	1.07	0.00	1.07	1.04	0.00	1.04	1,337	20,056	21,393	136	0.45	10.3	24,939
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	44.7	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Energy	1.38	0.69	12.4	9.70	0.08	0.95	—	0.95	0.95	—	0.95	—	19,503	19,503	2.06	0.12	—	19,590
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	1.38	45.3	12.4	9.70	0.08	0.95	0.00	0.95	0.95	0.00	0.95	1,337	19,715	21,052	136	0.45	10.3	24,598
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	9.51	53.5	0.57	65.3	< 0.005	0.08	—	0.08	0.06	—	0.06	0.00	233	233	0.01	< 0.005	—	234
Energy	1.38	0.69	12.4	9.70	0.08	0.95	—	0.95	0.95	—	0.95	—	19,503	19,503	2.06	0.12	—	19,590
Water	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Waste	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Total	10.9	54.2	13.0	74.9	0.08	1.04	0.00	1.04	1.02	0.00	1.02	1,337	19,949	21,285	136	0.45	10.3	24,832
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	1.74	9.76	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	38.6	38.6	< 0.005	< 0.005	—	38.7
Energy	0.25	0.13	2.27	1.77	0.01	0.17	—	0.17	0.17	—	0.17	—	3,229	3,229	0.34	0.02	—	3,243
Water	—	—	—	—	—	—	—	—	—	—	—	22.3	35.1	57.4	2.29	0.05	—	131
Waste	—	—	—	—	—	—	—	—	—	—	—	199	0.00	199	19.9	0.00	—	696
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.70	1.70

Total	1.99	9.89	2.37	13.7	0.01	0.19	0.00	0.19	0.19	0.00	0.19	221	3,303	3,524	22.5	0.07	1.70	4,111

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	3,279	3,279	0.53	0.06	—	3,312
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,543	1,543	0.25	0.03	—	1,558
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	467	467	0.08	0.01	—	472
Total	—	—	—	—	—	—	—	—	—	—	—	—	5,289	5,289	0.86	0.10	—	5,342

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	3,279	3,279	0.53	0.06	—	3,312
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,543	1,543	0.25	0.03	—	1,558
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	467	467	0.08	0.01	—	472
Total	—	—	—	—	—	—	—	—	—	—	—	—	5,289	5,289	0.86	0.10	—	5,342
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	543	543	0.09	0.01	—	548
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	0.01	—	258
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	77.4	77.4	0.01	< 0.005	—	78.1
Total	—	—	—	—	—	—	—	—	—	—	—	—	876	876	0.14	0.02	—	884

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	2,648	2,648	0.43	0.05	—	2,674
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,505	1,505	0.24	0.03	—	1,519
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	395	395	0.06	0.01	—	399
Total	—	—	—	—	—	—	—	—	—	—	—	—	4,548	4,548	0.74	0.09	—	4,593
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	2,648	2,648	0.43	0.05	—	2,674
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	1,505	1,505	0.24	0.03	—	1,519
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	395	395	0.06	0.01	—	399
Total	—	—	—	—	—	—	—	—	—	—	—	—	4,548	4,548	0.74	0.09	—	4,593
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	438	438	0.07	0.01	—	443

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	249	249	0.04	< 0.005	—	252
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	65.4	65.4	0.01	< 0.005	—	66.0
Total	—	—	—	—	—	—	—	—	—	—	—	—	753	753	0.12	0.01	—	760

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	1.63	0.82	14.9	12.5	0.09	1.13	—	1.13	1.13	—	1.13	—	17,730	17,730	1.57	0.03	—	17,779
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.28	0.14	2.38	1.01	0.02	0.19	—	0.19	0.19	—	0.19	—	3,025	3,025	0.27	0.01	—	3,033
Strip Mall	0.02	0.01	0.22	0.19	< 0.005	0.02	—	0.02	0.02	—	0.02	—	265	265	0.02	< 0.005	—	266
Total	1.94	0.97	17.5	13.7	0.11	1.34	—	1.34	1.34	—	1.34	—	21,020	21,020	1.86	0.04	—	21,078
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Element ary	1.63	0.82	14.9	12.5	0.09	1.13	—	1.13	1.13	—	1.13	—	17,730	17,730	1.57	0.03	—	17,779
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartme nts Low Rise	0.28	0.14	2.38	1.01	0.02	0.19	—	0.19	0.19	—	0.19	—	3,025	3,025	0.27	0.01	—	3,033
Strip Mall	0.02	0.01	0.22	0.19	< 0.005	0.02	—	0.02	0.02	—	0.02	—	265	265	0.02	< 0.005	—	266
Total	1.94	0.97	17.5	13.7	0.11	1.34	—	1.34	1.34	—	1.34	—	21,020	21,020	1.86	0.04	—	21,078
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Element ary School	0.30	0.15	2.71	2.28	0.02	0.21	—	0.21	0.21	—	0.21	—	2,935	2,935	0.26	0.01	—	2,944
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartme nts Low Rise	0.05	0.03	0.43	0.19	< 0.005	0.04	—	0.04	0.04	—	0.04	—	501	501	0.04	< 0.005	—	502
Strip Mall	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.9	43.9	< 0.005	< 0.005	—	44.1
Total	0.35	0.18	3.19	2.50	0.02	0.24	—	0.24	0.24	—	0.24	—	3,480	3,480	0.31	0.01	—	3,490

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Element School	1.15	0.58	10.5	8.81	0.06	0.80	—	0.80	0.80	—	0.80	—	12,508	12,508	1.11	0.02	—	12,543
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.21	0.10	1.78	0.76	0.01	0.14	—	0.14	0.14	—	0.14	—	2,259	2,259	0.20	< 0.005	—	2,265
Strip Mall	0.02	0.01	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	188	188	0.02	< 0.005	—	189
Total	1.38	0.69	12.4	9.70	0.08	0.95	—	0.95	0.95	—	0.95	—	14,955	14,955	1.32	0.03	—	14,997
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	1.15	0.58	10.5	8.81	0.06	0.80	—	0.80	0.80	—	0.80	—	12,508	12,508	1.11	0.02	—	12,543
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	0.21	0.10	1.78	0.76	0.01	0.14	—	0.14	0.14	—	0.14	—	2,259	2,259	0.20	< 0.005	—	2,265
Strip Mall	0.02	0.01	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	188	188	0.02	< 0.005	—	189
Total	1.38	0.69	12.4	9.70	0.08	0.95	—	0.95	0.95	—	0.95	—	14,955	14,955	1.32	0.03	—	14,997
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	0.21	0.11	1.91	1.61	0.01	0.15	—	0.15	0.15	—	0.15	—	2,071	2,071	0.18	< 0.005	—	2,077
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Apartme Low Rise	0.04	0.02	0.32	0.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	374	374	0.03	< 0.005	—	375
Strip Mall	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.2	31.2	< 0.005	< 0.005	—	31.3
Total	0.25	0.13	2.27	1.77	0.01	0.17	—	0.17	0.17	—	0.17	—	2,476	2,476	0.22	< 0.005	—	2,483

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	43.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	3.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	13.9	12.9	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	—	340	340	0.01	< 0.005	—	342
Total	13.9	60.6	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	0.00	340	340	0.01	< 0.005	—	342
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	43.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	3.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	47.7	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	8.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.74	1.61	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	—	38.6	38.6	< 0.005	< 0.005	—	38.7
Total	1.74	10.3	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	38.6	38.6	< 0.005	< 0.005	—	38.7

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	43.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	13.9	12.9	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	—	340	340	0.01	< 0.005	—	342

Total	13.9	57.6	0.83	95.3	0.01	0.12	—	0.12	0.09	—	0.09	0.00	340	340	0.01	< 0.005	—	342
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	43.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.00	44.7	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00
Consumer Products	—	8.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.74	1.61	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	—	38.6	38.6	< 0.005	< 0.005	—	38.7
Total	1.74	9.76	0.10	11.9	< 0.005	0.02	—	0.02	0.01	—	0.01	0.00	38.6	38.6	< 0.005	< 0.005	—	38.7

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	71.1	112	183	7.31	0.18	—	419
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	49.7	78.5	128	5.11	0.12	—	293
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	13.6	21.5	35.1	1.40	0.03	—	80.2
Total	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	71.1	112	183	7.31	0.18	—	419
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	49.7	78.5	128	5.11	0.12	—	293
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	13.6	21.5	35.1	1.40	0.03	—	80.2
Total	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	11.8	18.6	30.4	1.21	0.03	—	69.3

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	8.24	13.0	21.2	0.85	0.02	—	48.5
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	2.26	3.56	5.82	0.23	0.01	—	13.3
Total	—	—	—	—	—	—	—	—	—	—	—	22.3	35.1	57.4	2.29	0.05	—	131

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	71.1	112	183	7.31	0.18	—	419
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	49.7	78.5	128	5.11	0.12	—	293
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	13.6	21.5	35.1	1.40	0.03	—	80.2
Total	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Elementary	—	—	—	—	—	—	—	—	—	—	—	71.1	112	183	7.31	0.18	—	419
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	49.7	78.5	128	5.11	0.12	—	293
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	13.6	21.5	35.1	1.40	0.03	—	80.2
Total	—	—	—	—	—	—	—	—	—	—	—	135	212	347	13.8	0.33	—	791
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	11.8	18.6	30.4	1.21	0.03	—	69.3
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	8.24	13.0	21.2	0.85	0.02	—	48.5
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	2.26	3.56	5.82	0.23	0.01	—	13.3
Total	—	—	—	—	—	—	—	—	—	—	—	22.3	35.1	57.4	2.29	0.05	—	131

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	897	0.00	897	89.7	0.00	—	3,138
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	3.38	0.00	3.38	0.34	0.00	—	11.8
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	248	0.00	248	24.7	0.00	—	866
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	54.3	0.00	54.3	5.43	0.00	—	190
Total	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	897	0.00	897	89.7	0.00	—	3,138
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	3.38	0.00	3.38	0.34	0.00	—	11.8
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	248	0.00	248	24.7	0.00	—	866
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	54.3	0.00	54.3	5.43	0.00	—	190
Total	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	149	0.00	149	14.8	0.00	—	520

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.56	0.00	0.56	0.06	0.00	—	1.96
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	41.0	0.00	41.0	4.10	0.00	—	143
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	8.99	0.00	8.99	0.90	0.00	—	31.5
Total	—	—	—	—	—	—	—	—	—	—	—	199	0.00	199	19.9	0.00	—	696

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	897	0.00	897	89.7	0.00	—	3,138
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	3.38	0.00	3.38	0.34	0.00	—	11.8
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	248	0.00	248	24.7	0.00	—	866
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	54.3	0.00	54.3	5.43	0.00	—	190
Total	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Elementary	—	—	—	—	—	—	—	—	—	—	—	897	0.00	897	89.7	0.00	—	3,138
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	3.38	0.00	3.38	0.34	0.00	—	11.8
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	248	0.00	248	24.7	0.00	—	866
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	54.3	0.00	54.3	5.43	0.00	—	190
Total	—	—	—	—	—	—	—	—	—	—	—	1,202	0.00	1,202	120	0.00	—	4,206
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	149	0.00	149	14.8	0.00	—	520
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
City Park	—	—	—	—	—	—	—	—	—	—	—	0.56	0.00	0.56	0.06	0.00	—	1.96
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	41.0	0.00	41.0	4.10	0.00	—	143
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	8.99	0.00	8.99	0.90	0.00	—	31.5
Total	—	—	—	—	—	—	—	—	—	—	—	199	0.00	199	19.9	0.00	—	696

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.95	4.95
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.95	4.95
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.82	0.82
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.70	1.70

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.95	4.95
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Elementary School	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.95	4.95
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.71	4.71
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10.3	10.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Elementary	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.82	0.82
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.78	0.78
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.70	1.70

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	528
Propane Fireplaces	0
Electric Fireplaces	0

No Fireplaces	0
Wood Fireplaces	0
Gas Fireplaces	93
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	0
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0

No Fireplaces	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
1332976.5	444,326	2,064,534	688,178	266,587

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Elementary School	3,352,607	204	0.0330	0.0040	31,606,790
Elementary School	2,515,514	204	0.0330	0.0040	23,715,074
Other Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00
City Park	0.00	204	0.0330	0.0040	0.00
Apartments Low Rise	2,346,891	204	0.0330	0.0040	8,025,142
Apartments Low Rise	413,373	204	0.0330	0.0040	1,413,519
Strip Mall	836,359	204	0.0330	0.0040	828,058

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Elementary School	2,707,257	204	0.0330	0.0040	22,298,515
Elementary School	2,031,298	204	0.0330	0.0040	16,730,928
Other Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00
City Park	0.00	204	0.0330	0.0040	0.00
Apartments Low Rise	2,289,097	204	0.0330	0.0040	5,992,769
Apartments Low Rise	403,193	204	0.0330	0.0040	1,055,545
Strip Mall	706,711	204	0.0330	0.0040	587,337

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Elementary School	21,211,245	0.00

Elementary School	15,915,132	0.00
Other Asphalt Surfaces	0.00	0.00
City Park	0.00	0.00
Apartments Low Rise	22,074,149	0.00
Apartments Low Rise	3,888,060	0.00
Strip Mall	7,110,962	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Elementary School	21,211,245	0.00
Elementary School	15,915,132	0.00
Other Asphalt Surfaces	0.00	0.00
City Park	0.00	0.00
Apartments Low Rise	22,074,149	0.00
Apartments Low Rise	3,888,060	0.00
Strip Mall	7,110,962	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Elementary School	951	—
Elementary School	714	—
Other Asphalt Surfaces	0.00	—
City Park	6.28	—
Apartments Low Rise	390	—
Apartments Low Rise	68.8	—

Strip Mall	101	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Elementary School	951	—
Elementary School	714	—
Other Asphalt Surfaces	0.00	—
City Park	6.28	—
Apartments Low Rise	390	—
Apartments Low Rise	68.8	—
Strip Mall	101	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Elementary School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Elementary School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Elementary School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Elementary School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Elementary School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Elementary School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

Elementary School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Elementary School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Elementary School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Elementary School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

Elementary School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Elementary School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Elementary School	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Elementary School	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Elementary School	Stand-alone retail refrigerators and freezers	R-134a	1,430	< 0.005	1.00	0.00	1.00
Elementary School	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00

Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	9.09	annual days of extreme heat
Extreme Precipitation	1.10	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	42.1	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	17.7
AQ-PM	1.36
AQ-DPM	11.4
Drinking Water	77.8

Lead Risk Housing	81.6
Pesticides	92.8
Toxic Releases	3.54
Traffic	32.9
Effect Indicators	—
CleanUp Sites	50.3
Groundwater	22.1
Haz Waste Facilities/Generators	35.6
Impaired Water Bodies	98.4
Solid Waste	71.1
Sensitive Population	—
Asthma	56.3
Cardio-vascular	77.7
Low Birth Weights	26.9
Socioeconomic Factor Indicators	—
Education	98.4
Housing	51.4
Linguistic	94.8
Poverty	79.7
Unemployment	2.29

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	14.59001668
Employed	8.417810856

Median HI	19.32503529
Education	—
Bachelor's or higher	3.259335301
High school enrollment	100
Preschool enrollment	36.44296163
Transportation	—
Auto Access	41.51161299
Active commuting	21.18567946
Social	—
2-parent households	71.48723213
Voting	20.55691005
Neighborhood	—
Alcohol availability	35.15975876
Park access	46.68292057
Retail density	5.877069165
Supermarket access	63.91633517
Tree canopy	6.467342487
Housing	—
Homeownership	19.78698832
Housing habitability	8.340818683
Low-inc homeowner severe housing cost burden	7.76337739
Low-inc renter severe housing cost burden	31.13050173
Uncrowded housing	3.195175157
Health Outcomes	—
Insured adults	29.25702554
Arthritis	0.0
Asthma ER Admissions	61.8

High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	60.7
Cognitively Disabled	96.9
Physically Disabled	94.1
Heart Attack ER Admissions	59.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	50.9
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.7
SLR Inundation Area	0.0
Children	3.8
Elderly	87.4
English Speaking	9.9
Foreign-born	68.5

Outdoor Workers	1.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	81.2
Traffic Density	24.8
Traffic Access	0.0
Other Indices	—
Hardship	92.0
Other Decision Support	—
2016 Voting	35.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	66.0
Healthy Places Index Score for Project Location (b)	18.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Characteristics: Project Details	Adjusted to match project location.
Land Use	Adjust to match previous model based on conceptual land use plan. zero-out acreage of residential in mixed use to avoid double counting.
Operations: Hearths	Adjusted to match previous model.

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2043 Unmitigated Fuel Demand

Vehicle Class	Fuel	Process	Kgal/day
All Other Buses	Dsl	IDLEX	0.000104
All Other Buses	Dsl	RUNEX	0.010222
LDA	Dsl	RUNEX	0.001312
LDT1	Dsl	RUNEX	2.31E-06
LDT2	Dsl	RUNEX	0.005534
LHD1	Dsl	IDLEX	0.000519
LHD1	Dsl	RUNEX	0.083476
LHD2	Dsl	IDLEX	0.000427
LHD2	Dsl	RUNEX	0.046896
MDV	Dsl	RUNEX	0.012541
MH	Dsl	RUNEX	0.004588
Motor Coach	Dsl	IDLEX	0.001354
Motor Coach	Dsl	RUNEX	0.03131
PTO	Dsl	RUNEX	0.020309
SBUS	Dsl	IDLEX	0.001768
SBUS	Dsl	RUNEX	0.020141
T6 CAIRP Class 4	Dsl	IDLEX	1.38E-06
T6 CAIRP Class 4	Dsl	RUNEX	0.000185
T6 CAIRP Class 5	Dsl	IDLEX	1.70E-06
T6 CAIRP Class 5	Dsl	RUNEX	0.000254
T6 CAIRP Class 6	Dsl	IDLEX	7.62E-06
T6 CAIRP Class 6	Dsl	RUNEX	0.000657
T6 CAIRP Class 7	Dsl	IDLEX	1.83E-05
T6 CAIRP Class 7	Dsl	RUNEX	0.006397
T6 Instate Delivery (	Dsl	IDLEX	0.000298
T6 Instate Delivery (	Dsl	RUNEX	0.00571
T6 Instate Delivery (	Dsl	IDLEX	0.00014
T6 Instate Delivery (	Dsl	RUNEX	0.002621
T6 Instate Delivery (	Dsl	IDLEX	0.000485
T6 Instate Delivery (	Dsl	RUNEX	0.009295
T6 Instate Delivery (	Dsl	IDLEX	0.000139
T6 Instate Delivery (	Dsl	RUNEX	0.003961
T6 Instate Other Cla	Dsl	IDLEX	0.001152
T6 Instate Other Cla	Dsl	RUNEX	0.023229
T6 Instate Other Cla	Dsl	IDLEX	0.002142
T6 Instate Other Cla	Dsl	RUNEX	0.043173
T6 Instate Other Cla	Dsl	IDLEX	0.001604
T6 Instate Other Cla	Dsl	RUNEX	0.032305
T6 Instate Other Cla	Dsl	IDLEX	0.001682
T6 Instate Other Cla	Dsl	RUNEX	0.031975
T6 Instate Tractor C	Dsl	IDLEX	1.00E-05
T6 Instate Tractor C	Dsl	RUNEX	0.000241

Fuel Type	Demand
Diesel	
Kgal/day	1.34
KGal/yr	490.48
Gas	
Kgal/day	6.356727
KGal/yr	2320.205
Hybrid	
kgal/day	0.098014
Kgal/yr	35.77523
TOTAL	
KGal/yr	2846.46
Gal/yr	2846465
Mileage Check:	
VMT/yr	88198235
mpg	31.0

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T6 Instate Tractor C	Dsl	IDLEX	0.000749
T6 Instate Tractor C	Dsl	RUNEX	0.020004
T6 OOS Class 4	Dsl	IDLEX	1.48E-06
T6 OOS Class 4	Dsl	RUNEX	0.000205
T6 OOS Class 5	Dsl	IDLEX	1.83E-06
T6 OOS Class 5	Dsl	RUNEX	0.000282
T6 OOS Class 6	Dsl	IDLEX	8.19E-06
T6 OOS Class 6	Dsl	RUNEX	0.000734
T6 OOS Class 7	Dsl	IDLEX	1.00E-05
T6 OOS Class 7	Dsl	RUNEX	0.00482
T6 Public Class 4	Dsl	IDLEX	0.000113
T6 Public Class 4	Dsl	RUNEX	0.001502
T6 Public Class 5	Dsl	IDLEX	0.000167
T6 Public Class 5	Dsl	RUNEX	0.002194
T6 Public Class 6	Dsl	IDLEX	0.000147
T6 Public Class 6	Dsl	RUNEX	0.001947
T6 Public Class 7	Dsl	IDLEX	0.000376
T6 Public Class 7	Dsl	RUNEX	0.006065
T6 Utility Class 5	Dsl	IDLEX	3.31E-05
T6 Utility Class 5	Dsl	RUNEX	0.000943
T6 Utility Class 6	Dsl	IDLEX	6.27E-06
T6 Utility Class 6	Dsl	RUNEX	0.000178
T6 Utility Class 7	Dsl	IDLEX	6.96E-06
T6 Utility Class 7	Dsl	RUNEX	0.000243
T7 CAIRP Class 8	Dsl	IDLEX	0.015615
T7 CAIRP Class 8	Dsl	RUNEX	0.205253
T7 NNOOS Class 8	Dsl	IDLEX	0.020426
T7 NNOOS Class 8	Dsl	RUNEX	0.297944
T7 NOOS Class 8	Dsl	IDLEX	0.008803
T7 NOOS Class 8	Dsl	RUNEX	0.108154
T7 Other Port Class	Dsl	IDLEX	9.41E-12
T7 Other Port Class	Dsl	RUNEX	4.84E-10
T7 POAK Class 8	Dsl	IDLEX	0.000382
T7 POAK Class 8	Dsl	RUNEX	0.0093
T7 POLA Class 8	Dsl	IDLEX	1.01E-11
T7 POLA Class 8	Dsl	RUNEX	3.74E-10
T7 Public Class 8	Dsl	IDLEX	0.000764
T7 Public Class 8	Dsl	RUNEX	0.018717
T7 Single Concrete/	Dsl	IDLEX	0.000283
T7 Single Concrete/	Dsl	RUNEX	0.007201
T7 Single Dump Clas	Dsl	IDLEX	0.000916
T7 Single Dump Clas	Dsl	RUNEX	0.016621
T7 Single Other Clas	Dsl	IDLEX	0.003225

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T7 Single Other Clas	Dsl	RUNEX	0.059425
T7 SWCV Class 8	Dsl	IDLEX	0.000299
T7 SWCV Class 8	Dsl	RUNEX	0.021645
T7 Tractor Class 8	Dsl	IDLEX	0.007539
T7 Tractor Class 8	Dsl	RUNEX	0.090732
T7 Utility Class 8	Dsl	IDLEX	3.36E-05
T7 Utility Class 8	Dsl	RUNEX	0.001571
UBUS	Dsl	RUNEX	1.89E-05
LDA	Gas	RUNEX	2.598233
LDA	Gas	STREX	0.076986
LDT1	Gas	RUNEX	0.196255
LDT1	Gas	STREX	0.006296
LDT2	Gas	RUNEX	1.796701
LDT2	Gas	STREX	0.056242
LHD1	Gas	IDLEX	0.000924
LHD1	Gas	RUNEX	0.208441
LHD1	Gas	STREX	0.003039
LHD2	Gas	IDLEX	0.000108
LHD2	Gas	RUNEX	0.023731
LHD2	Gas	STREX	0.0003
MCY	Gas	RUNEX	0.01477
MCY	Gas	STREX	0.001299
MDV	Gas	RUNEX	1.242961
MDV	Gas	STREX	0.040465
MH	Gas	RUNEX	0.016182
MH	Gas	STREX	2.36E-06
OBUS	Gas	IDLEX	4.44E-05
OBUS	Gas	RUNEX	0.009109
OBUS	Gas	STREX	7.55E-05
SBUS	Gas	IDLEX	0.000413
SBUS	Gas	RUNEX	0.010879
SBUS	Gas	STREX	3.59E-05
T6TS	Gas	IDLEX	0.000182
T6TS	Gas	RUNEX	0.046006
T6TS	Gas	STREX	0.000297
T7IS	Gas	RUNEX	0.000182
T7IS	Gas	STREX	4.46E-07
UBUS	Gas	RUNEX	0.006562
UBUS	Gas	STREX	7.79E-06
LDA	Phe	RUNEX	0.060428
LDA	Phe	STREX	0.003322
LDT1	Phe	RUNEX	0.001685
LDT1	Phe	STREX	0.000105

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LDT2	Phe	RUNEX	0.018811
LDT2	Phe	STREX	0.001276
MDV	Phe	RUNEX	0.011429
MDV	Phe	STREX	0.000958

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Vehicle Class	Fuel	Process	Kgal/day
All Other Buses	Dsl	IDLEX	0.000104
All Other Buses	Dsl	RUNEX	0.010222
LDA	Dsl	RUNEX	0.001312
LDT1	Dsl	RUNEX	2.31E-06
LDT2	Dsl	RUNEX	0.005534
LHD1	Dsl	IDLEX	0.000519
LHD1	Dsl	RUNEX	0.083476
LHD2	Dsl	IDLEX	0.000427
LHD2	Dsl	RUNEX	0.046896
MDV	Dsl	RUNEX	0.012541
MH	Dsl	RUNEX	0.004588
Motor Coach	Dsl	IDLEX	0.001354
Motor Coach	Dsl	RUNEX	0.03131
PTO	Dsl	RUNEX	0.020309
SBUS	Dsl	IDLEX	0.001768
SBUS	Dsl	RUNEX	0.020141
T6 CAIRP Class 4	Dsl	IDLEX	1.38E-06
T6 CAIRP Class 4	Dsl	RUNEX	0.000185
T6 CAIRP Class 5	Dsl	IDLEX	1.70E-06
T6 CAIRP Class 5	Dsl	RUNEX	0.000254
T6 CAIRP Class 6	Dsl	IDLEX	7.62E-06
T6 CAIRP Class 6	Dsl	RUNEX	0.000657
T6 CAIRP Class 7	Dsl	IDLEX	1.83E-05
T6 CAIRP Class 7	Dsl	RUNEX	0.006397
T6 Instate Delive	Dsl	IDLEX	0.000298
T6 Instate Delive	Dsl	RUNEX	0.00571
T6 Instate Delive	Dsl	IDLEX	0.00014
T6 Instate Delive	Dsl	RUNEX	0.002621
T6 Instate Delive	Dsl	IDLEX	0.000485
T6 Instate Delive	Dsl	RUNEX	0.009295
T6 Instate Delive	Dsl	IDLEX	0.000139
T6 Instate Delive	Dsl	RUNEX	0.003961
T6 Instate Other	Dsl	IDLEX	0.001152
T6 Instate Other	Dsl	RUNEX	0.023229
T6 Instate Other	Dsl	IDLEX	0.002142
T6 Instate Other	Dsl	RUNEX	0.043173
T6 Instate Other	Dsl	IDLEX	0.001604
T6 Instate Other	Dsl	RUNEX	0.032305
T6 Instate Other	Dsl	IDLEX	0.001682
T6 Instate Other	Dsl	RUNEX	0.031975
T6 Instate Tracto	Dsl	IDLEX	1.00E-05
T6 Instate Tracto	Dsl	RUNEX	0.000241
T6 Instate Tracto	Dsl	IDLEX	0.000749

Fuel Type	Demand
Diesel	
Kgal/day	1.34
KGal/yr	490.4843
Gas	
Kgal/day	6.356727
KGal/yr	2320.205
Hybrid	
kgal/day	0.098014
Kgal/yr	35.77523
TOTAL	
KGal/yr	2846.465
Gal/yr	2846465

Mileage Check:	
VMT/yr	85728684
mpg	30

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T6 Instate Tracto	Dsl	RUNEX	0.020004
T6 OOS Class 4	Dsl	IDLEX	1.48E-06
T6 OOS Class 4	Dsl	RUNEX	0.000205
T6 OOS Class 5	Dsl	IDLEX	1.83E-06
T6 OOS Class 5	Dsl	RUNEX	0.000282
T6 OOS Class 6	Dsl	IDLEX	8.19E-06
T6 OOS Class 6	Dsl	RUNEX	0.000734
T6 OOS Class 7	Dsl	IDLEX	1.00E-05
T6 OOS Class 7	Dsl	RUNEX	0.00482
T6 Public Class 4	Dsl	IDLEX	0.000113
T6 Public Class 4	Dsl	RUNEX	0.001502
T6 Public Class 5	Dsl	IDLEX	0.000167
T6 Public Class 5	Dsl	RUNEX	0.002194
T6 Public Class 6	Dsl	IDLEX	0.000147
T6 Public Class 6	Dsl	RUNEX	0.001947
T6 Public Class 7	Dsl	IDLEX	0.000376
T6 Public Class 7	Dsl	RUNEX	0.006065
T6 Utility Class 5	Dsl	IDLEX	3.31E-05
T6 Utility Class 5	Dsl	RUNEX	0.000943
T6 Utility Class 6	Dsl	IDLEX	6.27E-06
T6 Utility Class 6	Dsl	RUNEX	0.000178
T6 Utility Class 7	Dsl	IDLEX	6.96E-06
T6 Utility Class 7	Dsl	RUNEX	0.000243
T7 CAIRP Class 8	Dsl	IDLEX	0.015615
T7 CAIRP Class 8	Dsl	RUNEX	0.205253
T7 NNOOS Class	Dsl	IDLEX	0.020426
T7 NNOOS Class	Dsl	RUNEX	0.297944
T7 NOOS Class 8	Dsl	IDLEX	0.008803
T7 NOOS Class 8	Dsl	RUNEX	0.108154
T7 Other Port Cla	Dsl	IDLEX	9.41E-12
T7 Other Port Cla	Dsl	RUNEX	4.84E-10
T7 POAK Class 8	Dsl	IDLEX	0.000382
T7 POAK Class 8	Dsl	RUNEX	0.0093
T7 POLA Class 8	Dsl	IDLEX	1.01E-11
T7 POLA Class 8	Dsl	RUNEX	3.74E-10
T7 Public Class 8	Dsl	IDLEX	0.000764
T7 Public Class 8	Dsl	RUNEX	0.018717
T7 Single Concre	Dsl	IDLEX	0.000283
T7 Single Concre	Dsl	RUNEX	0.007201
T7 Single Dump (	Dsl	IDLEX	0.000916
T7 Single Dump (	Dsl	RUNEX	0.016621
T7 Single Other (	Dsl	IDLEX	0.003225
T7 Single Other (	Dsl	RUNEX	0.059425
T7 SWCV Class 8	Dsl	IDLEX	0.000299

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T7 SWCV Class 8	Dsl	RUNEX	0.021645
T7 Tractor Class {	Dsl	IDLEX	0.007539
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LDA	Gas	STREX	0.076986
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LDT1	Gas	STREX	0.006296
LDT2	Gas	RUNEX	1.796701
LDT2	Gas	STREX	0.056242
LHD1	Gas	IDLEX	0.000924
LHD1	Gas	RUNEX	0.208441
LHD1	Gas	STREX	0.003039
LHD2	Gas	IDLEX	0.000108
LHD2	Gas	RUNEX	0.023731
LHD2	Gas	STREX	0.0003
MCY	Gas	RUNEX	0.01477
MCY	Gas	STREX	0.001299
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MDV	Gas	STREX	0.040465
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UBUS	Gas	RUNEX	0.006562
UBUS	Gas	STREX	7.79E-06
LDA	Phe	RUNEX	0.060428
LDA	Phe	STREX	0.003322
LDT1	Phe	RUNEX	0.001685
LDT1	Phe	STREX	0.000105
LDT2	Phe	RUNEX	0.018811
LDT2	Phe	STREX	0.001276
MDV	Phe	RUNEX	0.011429

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MDV	Phe	STREX	0.000958

Air Quality, Greenhouse Gas Emissions, and Energy Report

Vista Lucia Annexation

November 24, 2020

Prepared by

EMC Planning Group

Air Quality, Greenhouse Gas Emissions, and Energy Report

Vista Lucia Annexation

PREPARED FOR

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November 24, 2020

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Figures

Tables

1.0 Introduction

This air quality, greenhouse gas emissions, and energy report focuses on the criteria air pollutant emissions, greenhouse gas emissions, and energy demand associated with construction and operation of the proposed Vista Lucia Annexation project.

1.1 PROJECT LOCATION AND SETTING

Project Location

The Vista Lucia annexation area (project site) is located in unincorporated Monterey County on approximately 768 acres, immediately east of the existing Gonzales city limits. Figure 1-1, Location Map, presents the regional location of the project site.

Existing Site Conditions

The project site is comprised largely of agricultural land that is currently in agricultural production. Existing improvements include ancillary agricultural support structures, irrigation ditches, ponds, and unimproved roadways.

Surrounding Land Use

With the exception of the residential subdivision immediate to the west, the project site is bordered by farmland in unincorporated Monterey County. Two single-family subdivisions within the city limits, Canyon Creek and Arroyo Estates, are located to the west. Adjacent land to the north, south, and east is in agricultural use. The property to the north across Associated Lane is within an agricultural preserve. The property on the south is in agricultural use and designated in the *Gonzales 2010 General Plan* (general plan) for commercial and residential development. Land to the northwest is also in active agricultural use. Two rural residences are located immediately adjacent to the project site and one residence that is not a part of project is located just within the southern boundary of the site. Figure 1-2, Aerial Photograph, presents the project site boundary and surrounding land uses.

1.2 PROJECT DESCRIPTION

Annexation and Pre-zoning

Pembrook Development (applicant) has submitted an application to the City of Gonzales (City) requesting annexation and pre-zoning approvals for the project site. The proposed annexation and pre-zoning actions are intended to facilitate future development of the project site with a master-planned urban community. The applicant is requesting annexation of the entire 768-acre project site, which is currently within unincorporated Monterey County, to the Gonzales city limits. The applicant is requesting pre-zone of the project site to Planned Unit Development (PUD). The intent of the PUD zoning district is to allow development flexibility by enabling modifications to development standards for individual use types proposed within a site to which PUD zoning is being applied. That flexibility can address relationships of various buildings and structures, use types, open spaces, building heights, and other development features while still ensuring substantial compliance with development standards for the proposed use types.

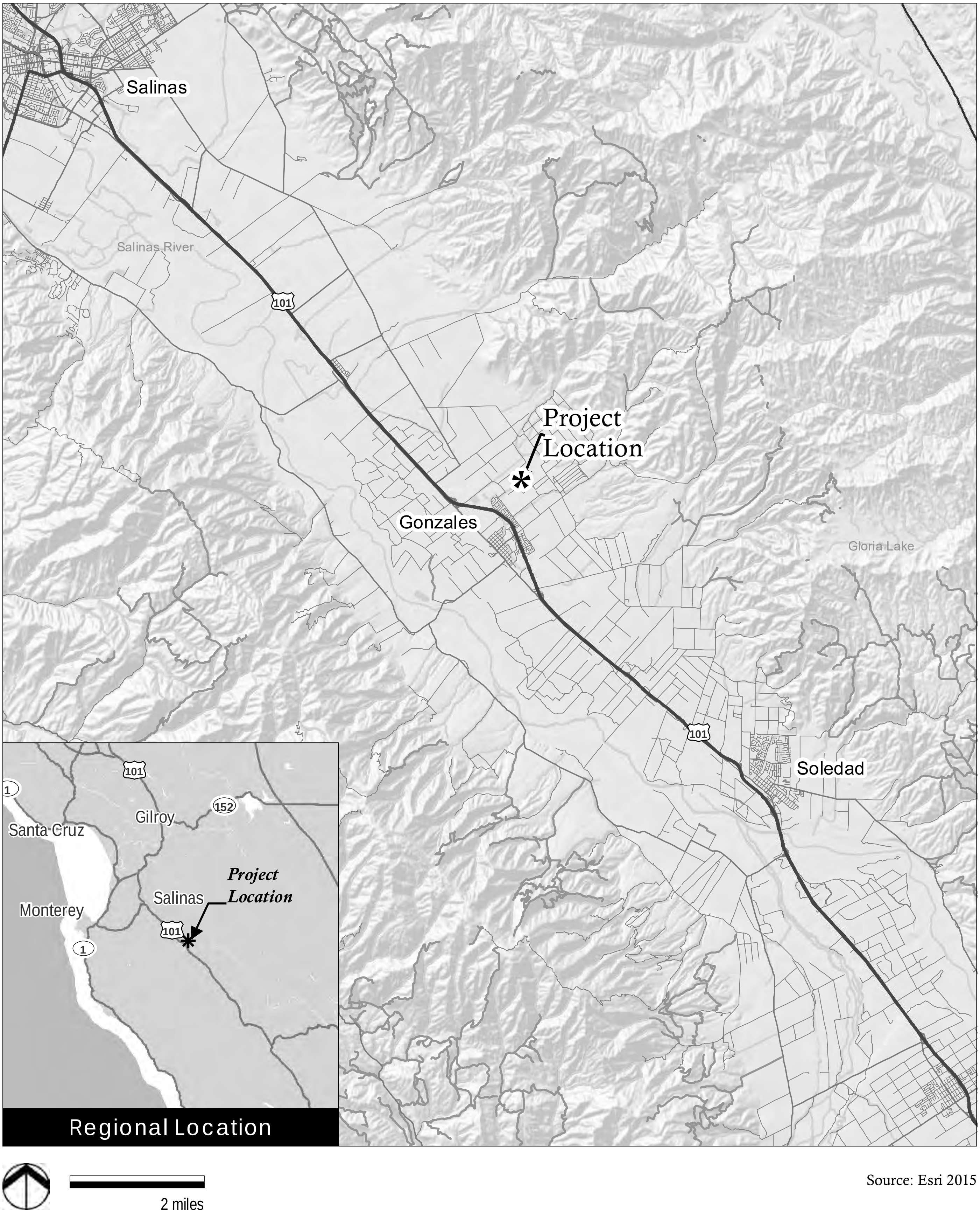
Conceptual Land Use Plan and Development Capacity

Conceptual Plan Use Plan

The applicant has submitted a conceptual land use plan that illustrates anticipated land uses and their relationship to each other. The conceptual land use plan is a primary basis for assessing the environmental impacts of future development. Figure 1-3, Vista Lucia Conceptual Land Use, presents the locations of residential, commercial, public facility (school), park and open space uses, along with the anticipated internal road network. The conceptual plan for the project site includes two development areas, Village One and Village Two, that would be developed in phases.

Village One comprises approximately 410 acres in the western half of the site and includes up to 260 acres of residential uses of varying densities, two acres of neighborhood commercial/mixed use a 12-acre elementary school site, 26 acres of community/neighborhood parks, 13 acres of promenade, and a village green. Storm water detention, storm water drainage facilities, buffers and other open space uses are planned on 30 acres. Roads and other miscellaneous uses make up the 66-acre balance of Village One. Bike trails and pedestrian paths would link uses within the village.

Village Two is approximately 358 acres and is comprised of up to 210 acres of residential uses at varying densities, an approximate six-acre neighborhood commercial/mixed-use center, a 12-acre elementary school site, an 18-acre middle school site, and 76 acres of parks, trails, promenades, drainage/detention areas; and other open space features. Roads and other miscellaneous uses make up the 36-acre balance of Village Two.



Source: Esri 2015

Figure 1-1

Location Map

Vista Lucia Annexation
Air Quality, Greenhouse Gas Emissions, and Energy Report

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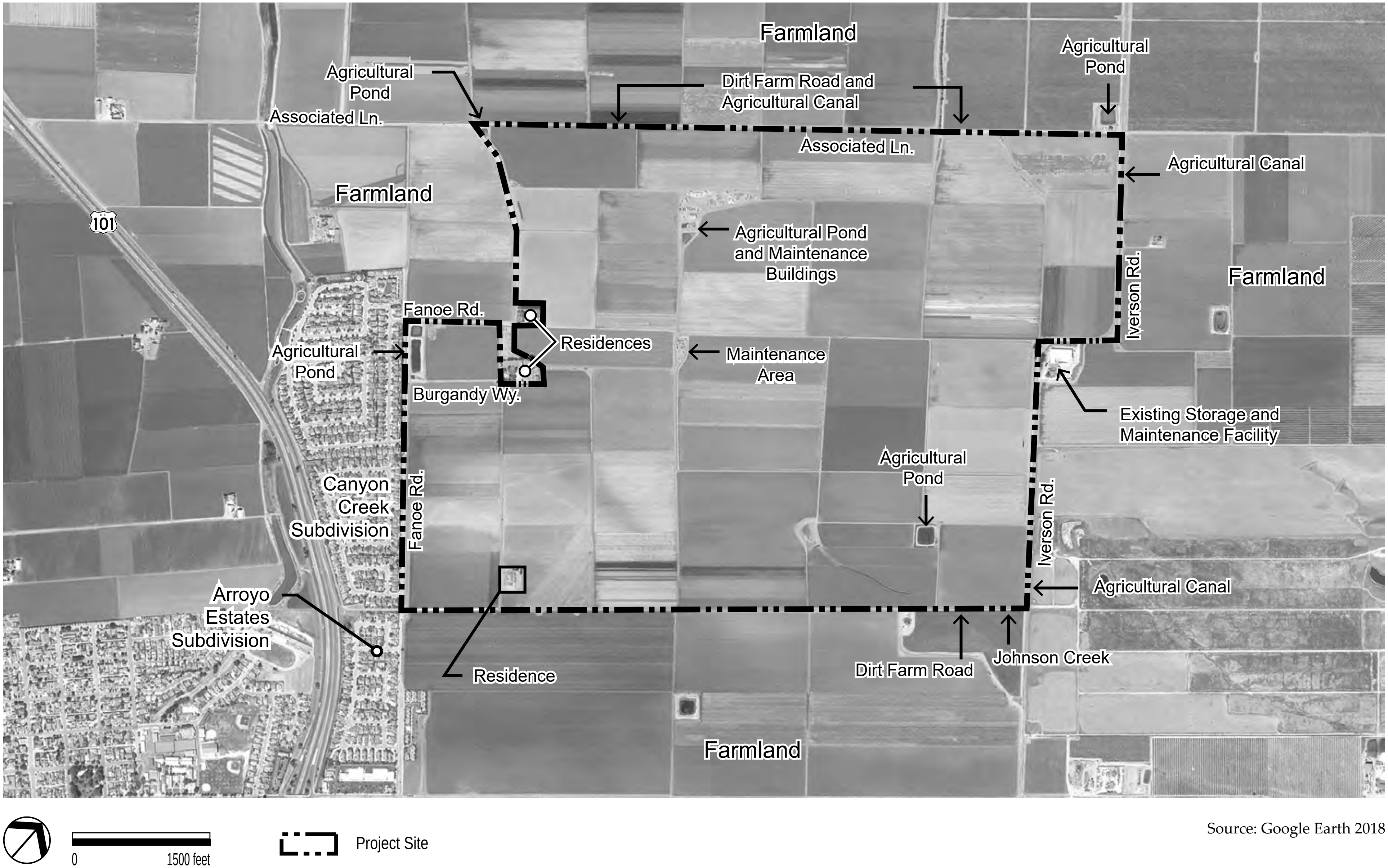

Source: Google Earth 2018

Figure 1-2
Aerial Photograph

Vista Lucia Annexation
Air Quality, Greenhouse Gas Emissions, and Energy Report

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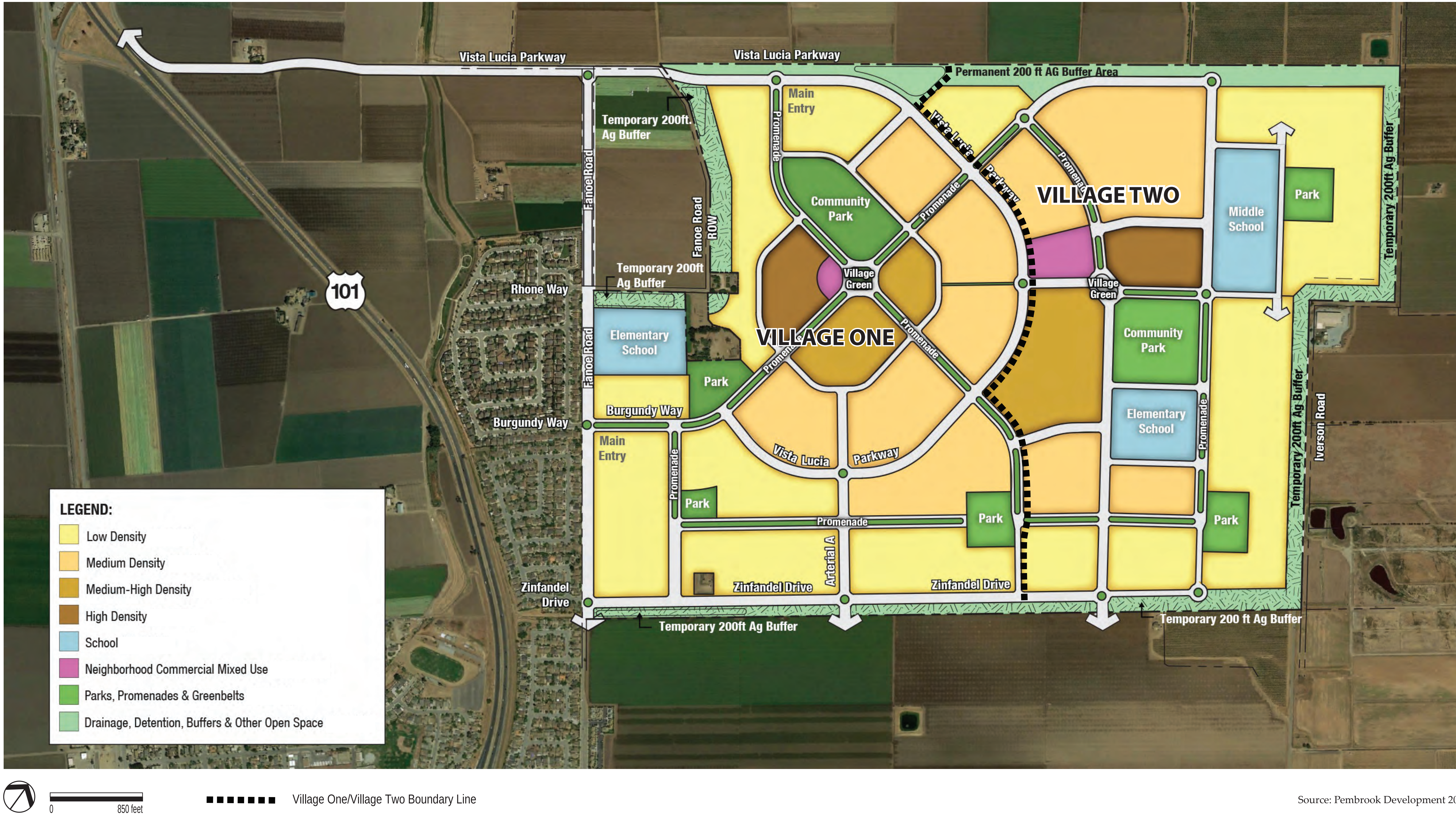

Source: Pembrook Development 2020

E M C

Figure 1-3

Vista Lucia Conceptual Land Use

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Projected Development Capacity

Table 1-1, Projected Vista Lucia Development Capacity Summary, shows each land use type identified in the conceptual land use plan, along with its projected gross acreage and amount of residential development capacity (dwelling units) and/or non-residential development capacity (square feet of building). Table 1-2, Residential Development Summary, provides detailed residential use development capacity.

Table 1-1 Projected Vista Lucia Development Capacity Summary

Land Use	Approximate Gross Acreages[1]			Maximum Capacity
	Village One	Village Two	Total Acreage	
Residential Uses				
Residential	260[2]	210[2]	470	3,498 dwelling units
Commercial Uses				
Neighborhood Commercial/Mixed Use	2	6	8	96,000 SF[3]
Other Land Uses				
Neighborhood Parks (5)	12	10	22	-
Community Parks (2)	14	15	29	-
Promenades[4]	13	7	20	-
Village Green	1	1	2	-
Detention, Drainage, Buffers, and Other Open Space	30	43	73	-
Parks and Open Space	70	76	146	-
Elementary Schools (2)	12	12	24	-
Middle School (1)		18	18	-
Major Roads & Other Misc.	66	36	102	-
Total	410	358	768	3,498 Dwelling Units 96,000 SF Commercial

SOURCE: Pembrook Development 2020

NOTES:

1 Approximate gross acreage includes all land (including interior local streets and rights-of-way) designated for a particular land use category.

2 Acreage does not include mixed use residential component to avoid double-counting mixed-use acreages for commercial component.

3 Commercial square footage allowance are based on a maximum 0.30 Floor Area Ratio factor. This factor does not include mixed use residential units.

4. Promenades are described as landscaped linear parks for pedestrian, cycling, and other park uses, that would extend across the villages and link parks, public places, and other community elements, forming a green corridor system. The promenades may feature amenities such as a wide multi-use paths, flower gardens, entry arbors, kiosks, shade trees, landscape sculptures, sitting areas, fitness areas, and other landscape and recreational features.

Table 1-2 Residential Development Summary

Land Use	Gross Acres		Gross Density Range (du/ac)[4]	Dwelling Units[2]		Total Units
	Village One[1]	Village Two[1]		Village One	Village Two	
Neighborhood Residential Low	137	105	3-6 (5 du/ac target)	690	520	1,210
Neighborhood Residential Medium	92	69	6-9 (7 du/ac target)	644	483	1,127
Neighborhood Residential Medium-High	20	25	9-15 (12 du/ac target)	240	300	540
Neighborhood Residential High	11	11	15-24 (24.5 du/ac target)	264	264	528
Neighborhood Commercial /Mixed Use[5]	2[5]	6[5]	10-12[5] (11.8 du/ac target)	23	70	93
Sub-Totals by Village	260	210		1,861	1,637	
Total	470		7.4 average du/ac			3,498

SOURCE: Pembrook Development 2020

NOTES:

1 Gross acreage includes all land parcels (including interior local streets and rights-of-way) designated for a particular residential category. According to City standards, the density of dwelling units per gross residential acre "is calculated exclusive of schools, parks, drainages, commercial areas, and major rights-of-way."

2. Unit counts within each residential land use category or parcel may vary, as long as the City requirement of a 7.0 du/ac overall minimum density is met for the overall project, and the overall unit count shown above is not exceeded.

3. Unit counts must conform to general plan requirements for minimum percentage of units by density category.

4. Allowable gross density ranges for parcels within each category are taken from City's 2008 "Neighborhood Design Guidelines and Standards" for the New Growth Area.

5. Mixed Use residential units may be either "horizontal" (uses in separate buildings) or "vertical" (uses in the same building). The residential component of this mixed-use area allows for up to 12 du/ac within mixed use sites. (Acreages of this land use are not included in total acreage to avoid double-counting the retail commercial component in Table 2-1 above).

2.0
Air Quality

This section includes a discussion of the regional climate and topography, common criteria air pollutants, toxic air contaminants, and applicable regulations, and provides an evaluation of criteria air pollutant emissions that could be generated during construction and operation of the proposed project.

2.1 ENVIRONMENTAL SETTING

Regional Climate and Topography

Gonzales is located within the North Central Coast Air Basin ("air basin"), a 5,159 square mile area along the central coast of California comprised of the Monterey, Santa Cruz, and San Benito counties.

A semi-permanent high-pressure cell in the eastern Pacific Ocean is the basic controlling factor in the air basin's climate. In the summer, a dominant, high pressure cell causes persistent west and northwest winds over the coast transporting pollutants from the air basin to the Central Valley. Air descends in the high-pressure cell forming a stable temperature inversion of hot air over a cool coastal layer of air. Onshore air currents pass over cool ocean waters to bring fog and relatively cool air into the coastal valleys. Warmer air aloft acts to inhibit vertical air movement.

The generally northwest-southeast orientation of mountain ranges restricts and channels summer on-shore air currents. Surface heating in the interior portion of the Salinas and San Benito valleys creates a weak low-pressure cell, which intensifies on-shore airflows during the afternoon and evening. In the fall, the surface winds become weak, and the marine layer grows shallow, dissipating altogether on some days. Airflow is occasionally reversed in a weak offshore movement, and the relatively stationary air mass is held in place by the high-pressure cell, which allows pollutants to build up over a period of a few days. It is most often during this season that the north or east winds develop, which can transport pollutants from either the San Francisco Bay Area or the Central Valley into the air basin.

During the winter, the high-pressure cell migrates southward and has less influence on the air basin. Air frequently flows in a southeasterly direction out of the Salinas and San Benito valleys, especially during night and morning hours, transporting pollutants from the air basin to the Central Valley. Northwest winds are nevertheless still dominant in winter, but easterly flow is more frequent. The general absence of deep, persistent inversions and the occasional storm systems usually result in good air quality for the air basin as a whole in winter and early spring.

Criteria Air Pollutants and Their Effects on Human Health

The six most common and widespread air pollutants of concern, or "criteria air pollutants," are ground level ozone, nitrogen dioxide, particulate matter, carbon monoxide, sulfur dioxide, and lead. In addition, volatile organic compounds are a key contributor to the criteria pollutants because they react with other substances to form ground-level ozone. The common properties, sources, and related health and environmental effects of these pollutants are summarized in Table 2-1, Common Criteria Air Pollutants.

Health effects of criteria air pollutants include, but are not limited to, asthma, bronchitis, chest pain, coughing, throat irritation, and airway inflammation. Currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's criteria air pollutant emissions and specific human health impacts. An air district's thresholds of significance for criteria air pollutants are not intended to be indicative of any localized human health impact that an individual project may have. For the purposes of the California Environmental Quality Act ("CEQA"), air quality analysis for criteria air pollutants is not really a localized, project-level impact analysis but one of regional, cumulative impacts. For these reasons, it is not the norm for CEQA practitioners to conduct an analysis of the localized health impacts associated with a project's criteria air pollutant emissions as part of the CEQA process.

Ozone (O_3)

Ground-level O_3 is created by complex chemical reactions between nitrogen oxides and volatile organic compounds in the presence of sunlight. Since ground-level O_3 is not emitted directly into the atmosphere, but is formed because of photochemical reactions, it is considered a secondary pollutant.

O_3 is a strong irritant that attacks the respiratory system, leading to the damage of lung tissue. Asthma, bronchitis, and other respiratory ailments, as well as cardiovascular diseases, are aggravated by exposure to O_3. A healthy person exposed to high concentrations may become nauseated or dizzy, may develop a headache or cough, or may experience a burning sensation in the chest. Research has shown that exposure to O_3 damages the alveoli (the individual air sacs in the lung where the exchange of oxygen and carbon dioxide between the air and blood takes place). Research has shown that O_3 also damages vegetation.

If project-generated concentrations of volatile organic compounds and/or nitrogen oxides exceed the applicable thresholds of significance, concentrations of ground-level O_3 resulting from these pollutants could potentially result in significant resulting in adverse human health impacts.

Table 2-1 Common Criteria Air Pollutants

Pollutant	Properties	Major Sources	Related Health & Environmental Effects
Ozone	Ground-level ozone is not emitted directly into the air. It results from chemical reactions between nitrogen oxides and volatile organic compounds in presence of sunlight.	▪ Automobiles; ▪ Industrial facilities; ▪ Gasoline vapors; ▪ Chemical solvents; ▪ Electric utilities.	▪ Chest pain, coughing, throat irritation, and airway inflammation ▪ Worsens bronchitis, emphysema, and asthma. ▪ Affects sensitive vegetation and ecosystems.
Nitrogen Dioxide	Reddish-brown gas formed during combustion of fuel. Nitrogen dioxide is a part of a group of highly reactive gases known as nitrogen oxides.	▪ Combustion of fuel; ▪ Automobiles; ▪ Power plant; ▪ Off-road Equipment.	▪ Irritate respiratory system / increase respiratory infections ▪ Development of asthma ▪ Forms acid rain – harms sensitive ecosystems ▪ Creates hazy air ▪ Contributes to nutrient pollution in coastal waters
Respirable and Fine Particulate Matter	Mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, soot, dirt, or smoke can be seen with the naked eye. Others are so small that they can only be detected with an electron microscope.	▪ Automobiles; ▪ Power Plants; ▪ Construction sites; ▪ Tilled farm fields; ▪ Unpaved roads; ▪ Smokestacks.	▪ Aggravated asthma; ▪ Irritation of the airways, coughing, and difficulty breathing; ▪ Decreased lung function; ▪ Premature death; ▪ Reduced visibility.
Carbon Monoxide	Colorless, odorless gas released when something is burned.	▪ Fuel combustion; ▪ Industrial processes; ▪ Highly congested traffic.	▪ Chest pain for those with heart disease; ▪ Vision problems; ▪ Dizziness, unconsciousness, and death (at high levels).
Sulfur Dioxide	Colorless acid gas with a pungent odor formed during combustion of fuel. In the entire group of sulfur oxides, sulfur dioxide is the component of the greatest concern.	▪ Fuel combustion; ▪ Industrial processes; ▪ Locomotives, ships, and other heavy equipment; ▪ Volcanoes.	▪ Makes breathing difficult; ▪ Worsens asthma; ▪ Contributes to acid rain; ▪ Reduced visibility; ▪ Damages statues and monuments.
Lead	Lead is a naturally occurring element found in small amounts in the earth's crust.	▪ Ore and metal processing; ▪ Leaded aviation fuel; ▪ Waste Incinerators; ▪ Utilities; ▪ Lead-acid battery manufacturers.	▪ High blood pressure and heart disease in adults; ▪ Behavioral problems, learning deficits, and lowered IQ in infants and young children; ▪ Decreased plant and animal growth; ▪ Neurological effects in vertebrates.

SOURCE: United States Environmental Protection Agency 2018

Volatile Organic Compounds (VOC)

VOCs are emitted from a variety of sources, including liquid and solid fuel combustion, evaporation of organic solvents, and waste disposal. VOCs are any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, as well as a list of compounds specifically excluded by the California Air Resources Board or the United States Environmental Protection Agency.

Nitrogen Dioxide (NO_2)

NO_2 primarily gets in the air from the combustion of fuel in cars, trucks and buses, power plants, and off-road equipment. NO_2 is a reddish-brown gas that can irritate the lungs and can cause breathing difficulties at high concentrations. NO_2 is one of a group of highly reactive gases known as nitrogen oxides (NO_X). NO_2 is used as the indicator for the larger group of NO_X, which also include nitrous acid and nitric acid. NO_X is a major contributor to ozone formation. NO_X also contributes to the formation of particulate matter (see discussion below).

Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter refers to a wide range of solid or liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. Particulate matter with diameter of 10 micrometers or less is referred to as PM_{10}. $PM_{2.5}$ includes a subgroup of finer particles that have a diameter of 2.5 micrometers or less. Particulate matter is directly emitted to the atmosphere as a byproduct of fuel combustion, wind erosion of soil and unpaved roads, and from construction or agricultural operations. Small particles are also created in the atmosphere through chemical reactions. Approximately 64 percent of fugitive dust is respirable particulate matter. Minimal grading typically generates about 10 pounds per day per acre on average while excavation and earthmoving activities typically generate about 38 pounds per day per acre.

Although particles greater than 10 micrometers in diameter can cause irritation in the nose, throat, and bronchial tubes, natural mechanisms remove much of these particles. Particles less than 10 micrometers in diameter are able to pass through the body's natural defenses and the mucous membranes of the upper respiratory tract and enter into the lungs. The particles can damage the alveoli. The particles may also carry carcinogens and other toxic compounds, which can adhere to the particle surfaces and enter the lungs.

Carbon Monoxide (CO)

CO is an odorless, colorless gas that is released when fuel is burned. The greatest sources of CO to outdoor air are cars, trucks and other vehicles or machinery that burn fossil fuels. A variety of household items such as gas space heaters, furnaces, fireplaces, lanterns, gas stoves, grills, and lawn equipment also release CO and can affect air quality indoors.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease or anemia, as well as fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.

Sulfur Dioxide (SO_2)

Within the larger group of gaseous sulfur oxides (SO_X), SO_2 is the component of greatest concern, and is used as the indicator for the group. Emissions that lead to high concentrations of SO_2 generally also lead to the formation of other SO_X. SO_2 is a colorless acid gas with a pungent odor. SO_2 is produced by the combustion of sulfur-containing fuels, such as oil, coal and diesel. SO_2 dissolves in water vapor to form acid, and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and their environment. Health effects of SO_2 include damage to lung tissue and increased risk of acute and chronic respiratory disease.

Lead (Pb)

Pb is a metal found naturally in the environment as well as in manufactured products. Thirty years ago, mobile sources were the main contributor to ambient Pb concentrations in the air. Pb was phased out of on-road vehicle gasoline between 1975 and 1996 (Newell and Rogers 2003). Consequently, levels of Pb in the air decreased 98 percent between 1980 and 2014 (United States Environmental Protection Agency 2017). As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of Pb in air are generally found near Pb smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Toxic Air Contaminants and their Effects on Human Health

Toxic air contaminants ("TACs") are pollutants that may be expected to result in an increase in mortality or serious illness or may pose a present or potential hazard to human health. Health effects include cancer, birth defects, neurological damage, damage to the body's natural defense system, and diseases that lead to death. TACs can be classified as either carcinogens or non-carcinogens.

Diesel Emissions

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs. Diesel engines emit a complex mix of pollutants including nitrogen oxides, particulate matter, and TACs. The most visible constituents of diesel exhaust are very small carbon particles or soot, known as diesel particulate matter. Diesel exhaust also contains over 40 cancer-causing substances, most of which are readily adsorbed on the soot particles. Among the TACs contained in diesel exhaust are dioxin, lead, polycyclic organic matter, and acrolein. Diesel engine emissions are responsible for about 70 percent of California's estimated cancer risk attributable to TACs (California Air Resources Board 2020a). As a significant fraction of particulate pollution, diesel particulate matter contributes to numerous health impacts, including increased hospital admissions, particularly for heart disease, but also for respiratory illness, and even premature death.

Diesel exhaust is especially common during the grading stage of construction (when most of the heavy equipment is used), and adjacent to heavily trafficked roadways where diesel trucks are common. The United States Environmental Protection Agency ("EPA") regulates diesel engine design and fuel composition at the federal level, and has implemented a series of measures since 1993 to reduce NO_X and particulate emissions from off-road and highway diesel equipment. Before EPA began regulating sulfur in diesel, diesel fuel contained as much as 5,000 parts per million ("ppm") of sulfur. In 2006, EPA introduced stringent regulations to lower the amount of sulfur in diesel fuels to 15 ppm (United States Environmental Protection Agency 2019). This fuel is known as ultra-low sulfur diesel.

EPA Tier 1 non-road diesel engine standards were introduced in 1996, Tier 2 in 2001, Tier 3 in 2006, with final Tier 4 in 2014 (DieselNet 2017). Table 2-2, Typical Non-road Engine Emissions Standards, compares emissions standards for NO_X and particulate matter from non-road engine Tier 1 through Tier 4 for typical engine sizes. As illustrated in the table, emissions for these pollutants have decreased significantly for construction equipment manufactured over the past 20 years, and especially for construction equipment manufactured in the past five years.

Table 2-2 Typical Non-road Engine Emissions Standards

Engine Tier and Year Introduced	NO_X Emissions[1]			Particulate Emissions[1]		
	100-175 HP	175-300 HP	300-600 HP	100-175 HP	175-300 HP	300-600 HP
Tier 1 (1996)	6.90	6.90	6.90	--	0.40	0.40
Tier 2 (2001)	--[2]	--[2]	--[2]	0.22	0.15	0.15
Tier 3 (2006)	--[2]	--[2]	--[2]	-- †[3]	-- †[3]	-- †[3]
Tier 4 (2014)	0.30	0.30	0.30	0.015	0.015	0.015

SOURCE: DieselNet 2017
NOTES:
1. Expressed in g/bhp-hr, where g/bhp-hr stands for grams per brake horsepower-hour.
2. Tier 1 standards for NO_X remained in effect.
3. † - Not adopted, engines must meet Tier 2 PM standard.

In California, non-road equipment fleets can retain older equipment, but fleets must meet averaged emissions limits, equipment added to fleets must be Tier 3 or better after January 2018 (for large and medium fleets) or January 2023 (for small fleets), and over time the older equipment must be fitted with particulate filters. Large and medium fleets have increasingly strict fleet compliance targets through 2023 and small fleets through 2029. A small fleet has total horse power of 2,500 or less, and a medium fleet has total horsepower of between 2,500 and 5,000. Owners or operators of portable engines and other types of equipment can register their units under the California Air Resources Board's ("CARB") statewide Portable Equipment Registration Program in order to operate their equipment throughout California without having to obtain individual permits from local air districts (California Air Resources Board 2020b).

Construction Emissions

Emissions generated during construction are "short-term" in the sense that they would be limited to the actual periods of site development and construction. Short-term construction emissions are typically generated by the use of heavy equipment, the transport of materials, and construction employee commute trips. Construction-related emissions consist primarily of volatile organic compounds, nitrogen oxides, diesel particulate matter, suspended particulate matter, and carbon monoxide. Emissions of volatile organic compounds, nitrogen oxides, diesel particulate matter, and carbon monoxide are generated primarily by the operation of gas and diesel-powered motor vehicles, asphalt paving activities, and the application of architectural coatings. Suspended particulate matter emissions are generated primarily by wind erosion of exposed graded surfaces.

Sensitive Receptors

Although air pollution can affect all segments of the population, certain groups are more susceptible to its adverse effects than others. Children, the elderly, and the chronically or acutely ill are the most sensitive population groups. These sensitive receptors are commonly associated with specific land uses such as residential areas, schools, retirement homes, and hospitals.

Existing sensitive receptors located adjacent to or in the vicinity of the project site include a residential subdivision located to the west of the project site, across from Fanoe Road. Additional off-site sensitive receptors include two single-family residential uses located in the vicinity of the proposed Elementary School on Fanoe Road and one single-family residential use located along Iverson Road to the northeast of the site (Google Earth 2020). A single-family residence, which is within the annexation boundary, but under separate ownership from the remainder of the site, is located within the southern boundary of the site. Refer to Figure 1-2, Aerial Photograph, for the location of sensitive residential receptors. Further, new sensitive receptors (residents) would be introduced as each phase of the project is developed.

2.2 REGULATORY SETTING

Federal

United States Environmental Protection Agency

The EPA was established on December 2, 1970 to create a single agency that covered several agency concerns: federal research, monitoring, standard-setting and enforcement. The purpose of the EPA is to protect the overall health of humans and the environment. The EPA does this by safeguarding all Americans from the hazardous risks in the environment where they live and work. Environmental safety is one of the primary concerns of U.S. policies and the following are commonly used to establish environmental policy: natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade.

Federal Clean Air Act

Air quality is regulated on the federal level. The Clean Air Act, adopted in 1970 and amended in 1990, set federal standards for air quality.

The federal Clean Air Act required the EPA to set National Ambient Air Quality Standards for several air pollutants on the basis of human health and welfare criteria. The Clean Air Act also set deadlines for the attainment of these standards. The Clean Air Act established two types of national air standards: primary and secondary standards. Primary standards set limits to protect public health, including the health of sensitive persons such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. Historically, air quality laws and regulations have divided air pollutants into two broad categories of airborne pollutants: criteria pollutants and TACs.

In general, the Clean Air Act creates a partnership between state and federal governments for implementation of the Clean Air Act provisions. The federal Clean Air Act requires states to prepare an air quality control plan known as a State Implementation Plan. California's State Implementation Plan contains the strategies and control measures that California will use to attain the National Ambient Air Quality Standards. If, when reviewing the State Implementation Plan for conformity with Clean Air Act Amendments mandates, the EPA determines a State Implementation Plan to be inadequate, EPA may prepare a Federal Implementation Plan for the non-attainment area and may impose additional control measures.

National Ambient Air Quality Standards

Ambient air quality is described in terms of compliance with the state and national standards. State standards are discussed below. In general, criteria pollutants are pervasive constituents, such as those emitted in vast quantities by the combustion of fossil fuels. Both the state and federal governments have developed ambient air quality standards for the most prevalent pollutants, which include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, suspended particulate matter, and fine particulate matter. Table 2-3, National and California Ambient Air Quality Standards, lists national and California ambient air quality standards for common air pollutants.

Table 2-3 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	National Standards[1]				California Standards[2]	
		Primary[3,4]		Secondary[3,5]		Concentration[3]	
		ppm	µg/m³	ppm	µg/m³	ppm	µg/m³
O_3[6]	1 Hour	-	-	-	-	0.09	180
	8 Hour	0.07	137	0.07	137	0.07	137
PM_{10}[7]	24 Hour	-	150	-	150	-	50
	Annual	-	-	-	-	-	20
$PM_{2.5}$[7]	24 Hour	-	35	-	35	-	-
	Annual	-	12	-	15	-	12
CO	8 Hour	9	10	-	-	9.0	10
	1 Hour	35	40	-	-	20.0	23
NO_2[8]	Annual	0.053	100	0.053	100	0.03	57
	1 Hour	0.10	188	-	-	0.18	339
SO_2[9]	Annual	0.03	See note 9	-	-	-	-
	24 Hour	0.14	See note 9	-	-	0.04	105
	3 Hour	-	-	0.5	1,300	-	-
	1 Hour	0.075	196	-	-	0.25	655
Pb[10,11]	30 Day Average	-	-	-	-	-	1.5
	Rolling 3-month Average	-	0.15	-	0.15	-	-
	Calendar Quarter	See note 10	1.5	See note 10	1.5	-	-
Visibility Reducing Paarticles[12]	8 Hour	No Federal Standards				See note 12	
Sulfates	24 Hour					-	25
Hydrogen Sulfide	1 Hour					0.03	42
Vinyl Chloride[10]	24 Hour					0.01	26

SOURCE: California Air Resources Board 2016

NOTES:

1. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.
2. California standards for ozone, carbon monoxide, sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
6. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
7. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
8. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
9. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
10. The CARB has identified lead and vinyl chloride as 'TACs' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
11. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
12. In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

National Emissions Standards for Hazardous Air Pollutants are emissions standards set by the EPA for an air pollutant not covered by National Ambient Air Quality Standards that may cause an increase in fatalities or in serious, irreversible, or incapacitating illness. The standards for a particular source category require the maximum degree of emission reduction that the EPA determines to be achievable, which is known as the Maximum Achievable Control Technology.

State

California Air Resources Board

The federal Clean Air Act gives states primary responsibility for directly monitoring, controlling, and preventing air pollution. CARB is responsible for coordination and oversight of federal, state, and local air pollution control programs in California and for implementing the requirements of the federal Clean Air Act and California Clean Air Act. The duties of CARB include coordinating air quality attainment efforts, setting standards, conducting research, and creating solutions to air pollution. The CARB, which is a state agency located within the California Environmental Protection Agency, oversees regional or local air quality management or air pollution control districts that are charged with developing attainment plans for the areas over which they have jurisdiction. CARB grants regional or local air districts explicit statutory authority to adopt indirect source regulations and transportation control measures, including measures to encourage the use of ridesharing, flexible work hours, or other measures that reduce the number or length of vehicle trips.

Air Quality Management Plans

The federal Clean Air Act requires areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop plans, known as State Implementation Plans. State Implementation Plans are comprehensive plans that describe how an area will attain national ambient air quality standards. State Implementation Plans are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. California grants air districts explicit statutory authority to adopt indirect source regulations and transportation control measures, including measures to encourage the use of ridesharing, flexible work hours, or other measures that reduce the number or length of vehicle trips. Local air districts prepare State Implementation Plan elements and submit them to the CARB for review and approval. CARB forwards State Implementation Plan revisions to the EPA for approval and publication in the Federal Register.

California Air Toxics Program

California has a comprehensive and effective Air Toxics Program. Several pieces of legislation form the basis for the CARB to identify and control air toxics from a multitude of sources, inform the public of significant toxic exposures and provide ways to reduce risks from these exposures.

The Toxic Air Contaminant Identification and Control Act of 1983 or Assembly Bill (“AB”) 1807 established the California Air Toxics Program that was designed to reduce exposure to air toxics. The program involves a two-step process: risk identification and risk management. In the risk identification step, upon CARB's request, the Office of Environmental Health

Hazard Assessment evaluates the health effects of substances other than pesticides and their pesticidal uses. Substances with the potential to be emitted or are currently being emitted into the ambient air may be identified as a TAC. Once a substance is identified as a TAC, and with the participation of local air districts, industry, and interested public, CARB prepares a report that outlines the need and degree to regulate the TAC through a control measure (California Air Resources Board 2020c).

The Air Toxics Hot Spots Information and Assessment Act or AB 2588 was enacted in 1987, and requires stationary sources to report the types and quantities of certain substances their facilities routinely release into the air. The goals of AB 2588 are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels (California Air Resources Board 2020d).

California Ambient Air Quality Standards

The California Ambient Air Quality Standards were established in 1959 by the California Department of Public Health to set air quality standards and controls for vehicle emissions. The California Ambient Air Quality Standards are often stricter than the National Ambient Air Quality Standards (refer to Table 2-3, National and California Ambient Air Quality Standards). When state thresholds are exceeded at regional monitoring stations, an "attainment plan" must be prepared that outlines how an air quality district will achieve compliance with the state standards.

California Supreme Court Decision Affecting Air Quality Analysis in CEQA Documents

The Friant Ranch Case

On December 24, 2018, the California Supreme Court released a decision on *Sierra Club v. County of Fresno (Friant Ranch, L.P.)* (2018) ("Friant Ranch Case").

The Friant Ranch project, which consists of a 942-acre master-planned, mixed-use development with over 2,500 senior residential units, 250,000 square feet of commercial space, and extensive open space/ recreational amenities on former agricultural land in north central Fresno County.

In 2011, litigation was filed by the Sierra Club and other groups challenging the adequacy of Fresno County's EIR for failing to comply with CEQA. The Superior Court upheld all aspects of the EIR, but an appeal then followed, ultimately reversing the decision.

The Supreme Court ruled that the EIR's air quality analysis failed to adequately disclose the nature and magnitude of significant, long-term air quality impacts from emissions of ozone precursors "in sufficient detail to enable those who did not participate in its preparation to understand and consider meaningfully the issues the proposed project raises." The Court noted that the air quality analysis did not provide a discussion of the foreseeable effects of project-generated emissions on the likelihood of exceeding the National Ambient Air Quality Standards and California Ambient Air Quality Standards, nor did it draw a connection between the project emissions and adverse health consequences or explain why it was not "scientifically possible" to define such a connection. The Court concluded that "because the EIR as written makes it impossible for the public to translate the bare numbers provided into adverse health impacts or to understand why such translation is not possible at this time," the EIR's discussion of air quality impacts was inadequate to inform the public.

Regional/Local

Monterey Bay Air Resources District

The Monterey Bay Air Resources District ("air district") was created in 1965 by the Monterey County Board of Supervisors. The air district is charged with regulatory authority over stationary sources of air emissions, monitoring air quality within the air basin, providing guidelines for analysis of air quality impacts pursuant to CEQA, and preparing an air quality management plan to maintain or improve air quality in the air basin. The air district has developed thresholds of significance for criteria air pollutants. These are contained in the *CEQA Air Quality Guidelines* ("CEQA Guidelines") (Monterey Bay Unified Air Pollution Control District 2008).

In accordance with the Clean Air Act, the CARB is required to designate regions of the state as attainment, non-attainment, or unclassified with regard to that region's compliance with criteria air pollutants standards. An "attainment" designation for a region signifies that pollutant concentrations do not violate the standard for that pollutant in that region. A "non-attainment" designation indicates that a pollutant concentration violated the standard at least once. An "unclassified" designation signifies that available data does not support either an attainment or non-attainment status. The air basin is in non-attainment with state mandated thresholds for ozone and suspended particulate matter as shown in Table 2-4, North Central Coast Air Basin Attainment Status. With respect to national standards, the air basin has achieved attainment.

The air district is delegated with the responsibility at the local level to implement both federal and state mandates for improving air quality in the air basin through an air quality plan. When thresholds are exceeded at regional monitoring stations on consecutive accounts, an attainment plan must be prepared that outlines how an air quality district will achieve compliance. Generally, these plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods. The air district periodically prepares and updates plans in order to attain state and national air quality standards, to comply with quality planning requirements, and to achieve the goal of clean and healthful air. These plans also report on progress in improving air quality and provide a road map to guide the air district's future activities.

Table 2-4 North Central Coast Air Basin Attainment Status

Pollutant	California Standards	National Standards
O_3	Non-attainment	Attainment
PM_{10}	Non-attainment	Attainment
$PM_{2.5}$	Attainment	Attainment
CO	Attainment (Monterey County)	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Pb	Attainment	Attainment

SOURCE: Monterey Bay Air Resources District 2017

2012-2015 Air Quality Management Plan

The *2012-2015 Air Quality Management Plan* ("air quality plan") was adopted by the air district in March 2017. This remains the currently adopted plan. The air quality plan focuses on achieving the 8-hour component of the California ozone standard (the air basin has already attained the 1-hour standard), by continuing successful programs carried forward from the prior air quality plan. Ozone exceedances at monitoring stations have declined from 63 (2006-2008), to 16 (2009-2011) to 9 (2013-2015). Mobile source NO_X emissions in the air basin have dropped significantly during the period 2000 to 2015, from about 56 tons per day to about 23 tons per day, largely attributable to state fuel and fuel efficiency standards. The NO_X emissions transported into the air basin from the San Francisco Bay Area and San Joaquin air basins are forecast to decline through the year 2030 (Monterey Bay Air Resources District 2017, page 2).

As identified above, the primary pollutants of concern in the formation of ozone are VOC and NO_X. Ozone formation in the air basin is more limited by the availability of NO_X than by the availability of VOCs, so reducing NO_X emissions is most crucial for reducing ozone formation (Monterey Bay Air Resources District 2017, pages 1-2). The majority of NO_X emissions originate from mobile sources. The air district only has direct permitting authority over emissions that originate from point sources, which constitute 21 percent of NO_X emissions. The air district can only indirectly affect mobile source and area source emissions, for example by influencing land use patterns which can reduce vehicle miles travelled. Since mobile sources are the primary source of NO_X emissions, the air district provides grant funding opportunities, which reduce NO_X from both on-road and off-road mobile sources.

Gonzales 2010 General Plan

General plan policy HS-6.1 requires new construction to be designed in accordance with the adopted Neighborhood Design Guidelines, and constructed to reduce the city's GHG emissions and other deleterious air quality impacts. Policy HS-6.2 requires new sources of

TACs, that are sited near existing residences or other sensitive receptors, to either provide adequate buffer distances or provide other measures to reduce potential exposure to acceptable levels. Policy HS-6.3 requires new residential or other sensitive receptors, proposed near existing sources of TACs, to either provide adequate buffer distances or provide other measures to reduce potential exposure to acceptable levels.

2.3 Air Quality Thresholds

Construction Emissions Thresholds

Construction activities are temporary impacts that, depending on the size and type of project, commonly occur in limited time periods. Construction emissions have the potential to significantly impact local air quality, or pose localized health risks.

Criteria Air Pollutants

The following are the impact thresholds for inhalable particulates, ozone, and other pollutants (Monterey Bay Unified Air Pollution Control District 2008):

- Construction activities that directly generate 82 pounds per day or more of PM_{10} would have a significant impact on local air quality when they are located nearby and upwind of sensitive receptors. Excavation and earthmoving activities generate about 38 pounds of PM_{10} per day per acre, and minimal grading generates about 10 pounds per day per acre. Absent modeling, an impact is assumed when daily major earthwork exceeds 2.2 acres or minimal grading exceeds 8.1 acres. However, air district-approved PM_{10} dispersion modeling can be used to refute (or validate) this determination. If modeling demonstrates that direct emissions under individual or cumulative conditions would not cause the exceedance of the state PM_{10} standard [50 micrograms per cubic meter ($\mu g/m^3$)] at existing receptors as averaged over 24 hours, the impact would not be considered significant. If ambient air quality in the project area already exceeds the state standard, a project would contribute substantially to this violation if it would emit 82 pounds per day or more. If there are existing PM_{10} emissions in the project area, dispersion modeling should be undertaken to determine if the project and existing emissions would cause a violation of the state PM_{10} standard;
- Construction projects using typical construction equipment, such as dump trucks, scrappers, bulldozers, compactors and front-end loaders that temporarily emit ozone precursors, are accommodated in the emission inventories of state- and federally-required air plans and would not have a significant impact on the attainment and maintenance of the ozone standard. The air district should be consulted regarding emissions from non-typical equipment such as grinders and portable equipment; and

- Construction projects that may cause or substantially contribute to the violation of other state or national air quality standards, or that could emit TACs, could result in temporary significant impacts.

Toxic Air Contaminants

According to the air district CEQA Guidelines, TAC emissions generated by construction equipment that result in a cancer risk greater than one incident per 100,000 population are considered significant. The *Air Quality and Land Use Handbook: A Community Health Perspective* (California Air Resources Board 2005) recommends that the siting of new sensitive land uses within 500 feet of a freeway or high-traffic volume roadway should be avoided. Although the proposed project does not involve siting new sensitive receptors near a freeway or high volume roadway, it can be inferred that construction activity located within 500 feet of sensitive receptors may, dependent on-site and project-specific conditions, contribute to exposures to concentrations of TACs that have the potential to adversely affect human health, albeit on a temporary basis.

Operational Emissions Thresholds

The majority of adverse impacts on air quality come from the long-term operations of a project.

Criteria Air Pollutant

Table 2-5, Thresholds of Significance for Criteria Air Pollutants, provides project-level thresholds of significance for criteria air pollutants during operation of a project.

Toxic Air Contaminants Thresholds

According to the air district CEQA Guidelines, TAC emissions generated by operational equipment or processes that result in a cancer risk greater than one incident per 100,000 population are considered significant. The air district regulates TACs from new or modified sources under Rule 1000, Permit Guidelines and Requirements for Sources Emitting Toxic Air Contaminants. Rule 1000 applies to any source which requires a permit to construct or operate pursuant to air district Regulation II and has the potential to emit carcinogenic or non-carcinogenic TACs into the atmosphere. Rule 1000 requires any new or modified source to prepare a risk assessment and reduce health risks to below the TAC thresholds. Therefore, operational equipment or processes that comply with Rule 1000 would not result in significant air quality impacts (Monterey Bay Unified Air Pollution Control District 2008, page 9-3).

Table 2-5 Thresholds of Significance for Criteria Air Pollutants[1]

Pollutants Source	Threshold(s) of Significance
VOC	137 lb/day (direct + indirect)[2]
NO_X, as NO_2	137 lb/day (direct + indirect)[2]
PM_{10}	82 lb/day (on-site)[3]
CO	550 lb/day (direct)
SO_X, as SO_2	150 lb/day (direct)

SOURCE: Monterey Bay Unified Air Pollution Control District 2008
NOTES:
1. Projects that emit other criteria pollutant emissions would have a significant impact if emissions would cause or substantially contribute to the violation of state or national ambient air quality standards. Criteria pollutant emissions could also have a significant impact if they would alter air movement, moisture, temperature, climate, or create objectionable odors in substantial concentrations. When estimating project emissions, local or project-specific conditions should be considered.
2. Because of the complexities of predicting ground level ozone concentrations in relation to the state and national ambient air quality standards, the air district has developed mass emissions thresholds for VOC and NO_X that can be used to make significance determinations. The air district ties these thresholds to the local attainment status of ozone. Exceedance of VOC and/or NO_X thresholds indicates that a project would be inconsistent with ozone standards, resulting in a significant contribution to ground level ozone impacts.
3. The air district's 82 pounds per day operational phase threshold of significance applies only to onsite emissions and project-related exceedances along unpaved roads. These impacts are generally less than significant. On large development projects, almost all travel is on paved roads (0% unpaved), and entrained road dust from vehicular travel can exceed the significance threshold. Please contact the air district to discuss estimating emissions from vehicular travel on paved roads. Air district-approved dispersion modeling can be used to refute (or validate) a determination of significance if modeling shows that emissions would not cause or substantially contribute to an exceedance of California and national ambient air quality standards.

2.4 ANALYSIS

This section includes information and data regarding air quality issues that are relevant to the proposed project based on the thresholds of significance described above.

Construction Emissions

Criteria Air Pollutants

The proposed project would include soil disturbance on approximately 738 acres of land. Construction activities with grading and excavation that disturb more than 2.2 acres per day and construction activities with minimal earthmoving that disturb more than 8.1 acres per day are assumed to be above the 82 pounds of particulate matter per day threshold of significance. Even though grading and construction would occur in phases, grading and construction activities are likely to result in soil disturbance that exceeds the air district particulate matter thresholds of 2.2 acres per day and 8.1 acres per day. Therefore, fugitive dust from grading and construction could result in significant PM_{10} emissions.

Toxic Air Contaminants

As discussed in Section 2.1, Environmental Setting, sensitive receptors in the vicinity of the project site include: a residential subdivision located to the west of the site across from Fanoe Road, two single-family residential uses located in the vicinity of the proposed Elementary School on Fanoe Road, and one single-family residential use located along Iverson Road to the northeast of the site. A single-family residence, which is under separate ownership from the remainder of the site, is located within the southern boundary of the site. In addition, the project would introduce new sensitive receptors (residents) as each phase is developed.

The distance between these sensitive receptors and the project site is within the 500-foot screening distance recommended by CARB. Therefore, exposure of sensitive receptors to TACs from heavy equipment diesel exhaust during construction is a potentially significant impact.

Operational Emissions

Criteria Air Pollutants

Operation of the proposed project would result in new mobile-, area-, and energy-source criteria air pollutant emissions. Operational, mobile-source criteria air pollutant emissions were estimated using the 2017 Emissions Factor Model (EMFAC) version 1.0.2. The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate area- and energy-source criteria air pollutant emissions generated during operation of the proposed project. Refer to Appendix A for the modeling results and a memorandum describing the CalEEMod and EMFAC modeling assumptions and methodology, *Vista Lucia Annexation – Emissions Modeling Methodology and Assumptions*.

The modeling results are summarized and reviewed against the air district thresholds in Table 2-6, Unmitigated Operational Criteria Air Pollutant Emissions.

Table 2-6 Unmitigated Operational Criteria Air Pollutant Emissions

Emissions[1,2]	VOC	NO_X	PM_{10}	$PM_{2.5}$	CO	SO_2
Mobile	69.00	135.80	41.60	17.20	666.20	2.20
Area	2,386.82	64.59	433.55	433.55	3,308.51	6.07
Energy[3]	0.65	5.85	0.45	0.45	4.38	0.04
Total	2,456.47	206.24	475.60	451.20	3,979.09	8.31
Air District Thresholds	137	137	82	N/A	550	150
Exceeds Thresholds?	*Yes*	*Yes*	*Yes*	*N/A*	*Yes*	*No*

SOURCE: EMC Planning Group 2020
NOTES:
1. Expressed in pounds per day.
2. Results have been rounded, and may, therefore, vary slightly.
3. Includes reductions from compliance with the current 2019 Building Energy Efficiency Standards.

From Table 2-6 above, operation of the proposed project would produce VOC, NO_X, PM_{10}, and CO emissions in excess of their respective thresholds of significance.

Toxic Air Contaminants

The proposed project does not include uses that would result in operational TACs. Therefore, operation of the proposed project would not expose sensitive receptors to TACs.

2.5 CONCLUSION

Construction Emissions

Criteria Air Pollutants

Construction activities would result in PM_{10} emissions that would likely exceed the air district thresholds. To reduce the PM_{10} emissions during construction to a less-than-significant level, the SEIR will include the feasible fugitive dust mitigation measures from page 8-2 of the air district CEQA Guidelines as a mitigation measure.

Furthermore, as discussed in Section 2.3, Air Quality Thresholds, the CEQA Guidelines state that ozone precursor emissions from construction projects using typical equipment were accounted for in the emission inventories of the air quality plan. The proposed project would use typical construction equipment; therefore, ozone precursor emissions from project construction were accounted for in the emission inventories and would have a less-than-significant impact on the attainment and maintenance of the national or California ambient air quality standards for ozone.

Toxic Air Contaminants

The exposure of sensitive receptors to TACs from heavy equipment diesel exhaust during construction is a potentially significant impact. Mitigation measures will be included in the SEIR to reduce health impacts from TACs generated during construction to a less-than-significant level. Representative mitigation measures include, but are not limited to: use of heavy-duty diesel vehicles and construction equipment that have 2010 or newer model year engines; stage heavy-duty diesel vehicles at least 500 feet away from the nearby single-family homes; avoid idling of construction equipment and heavy duty diesel trucks; and use of alternative fuels in construction equipment, where feasible.

Operational Emissions

Criteria Air Pollutants

As presented in Table 2-6, operation of the proposed project would result in VOC, NO_X, PM_{10}, and CO emissions that exceed the air district thresholds of significance.

While area sources dominate the operational emissions inventory, mobile sources are the second largest contributor to operational criteria air pollutant emissions. Area-source and mobile-source mitigation measures will be included in the SEIR to reduce the volume of VOC, NO_X, PM_{10}, and CO emissions. The following mitigations will be included in the SEIR: prohibit use of hearths (fireplaces) in new residential units, use of low VOC architectural coatings in new residential and non-residential development, provide pedestrian network, provide traffic calming measures, improve design of development, provide electric vehicle parking, and consult with the regional bus provider regarding incorporation of transit facilities. These measures will be included in the future project specific plan and into all individual tentative maps for future development.

Toxic Air Contaminants

As discussed in Section 2.4 above, operation of the proposed project would not generate TACs, resulting in no impact on the nearby residences.

3.0
Greenhouse Gas Emissions

This section includes a discussion of the science of climate change, existing setting conditions, applicable policy and regulatory direction regarding climate change, and evaluation of the proposed project's consistency with the applicable climate action plan.

3.1 ENVIRONMENTAL SETTING

This section provides a general overview of climate change science, causes and effects of climate change, greenhouse gas ("GHG") inventories in California and Gonzales, and GHG emissions produced from the current use of the project site.

Climate Change Science

The international scientific community has concluded with a high degree of confidence that human activities are causing an accelerated warming of the atmosphere. The resulting change in climate has serious global implications and consequently, human activities that contribute to climate change may have a potentially significant effect on the environment. In recent years, concern about climate change and its potential impacts has risen dramatically. That concern has translated into a range of international treaties and national and regional agreements aimed at diminishing the rate at which global warming is occurring. The federal government, under former President Obama, began to tackle concerns about climate change through a range of initiatives and regulatory actions. Many states and local agencies, private sector interests, and other public and private interests have also taken initiative to combat climate change. At the state level, California has taken a leadership role in tackling climate change, as evidenced by the programs outlined in the Regulatory Setting section below.

Causes of Climate Change

The greenhouse effect naturally regulates the Earth's temperature. However, human activity has increased the intensity of the greenhouse effect by releasing increasing amounts of greenhouse gasses GHGs into the atmosphere. GHGs can remain in the atmosphere for decades or even hundreds of thousands of years (depending on the particular GHG). The GHG emissions that are already in the atmosphere will continue to cause climate change for years to come, just as the warming being experienced now is the result of emissions produced in the past. Climatic changes are happening now and are projected to increase in frequency and severity before the benefits of GHG emission reductions will be realized. Increased concentrations of GHGs in the atmosphere result in increased air, surface, and ocean temperatures. Many of the effects and impacts of climate change stem from resulting changes in temperature and meteorological responses to those changes.

Effects of Climate Change

Increased concentrations of GHGs in the atmosphere result in increased air, surface, and ocean temperatures. Many of the effects and impacts of climate change stem from resulting changes in temperature and meteorological responses to those changes.

Rising Temperatures

The Intergovernmental Panel on Climate Change, which includes more than 1,300 scientists from the United States and other countries, estimated that global temperatures have increased by about 2 degrees Fahrenheit (°F) during the 20th century (NASA 2020). The Intergovernmental Panel on Climate Change forecasts indicate that global temperatures can be expected to continue to rise between 2.5 and 10°F over the next century. According to the *California's Fourth Climate Change Assessment: Statewide Summary Report* (2019), average temperatures in California are projected to increase 5.6°F to 8.8°F by 2100.

According to Cal-Adapt, a climate change projection modeling tool developed by California Energy Commission, temperatures in Gonzales have historically (1950-2005) averaged about 71.1°F. Average temperatures are projected to rise between 4.7 and 8.9°F by 2099, based on low and high emissions scenarios.

Gonzales has historically experienced five extreme heat days per year (over 93.3°F). The model projections fluctuate on an annual basis. The number of extreme heat days per year is expected to increase to eight days by 2099 (Cal-Adapt 2020a).

Reduced Snowpack

The Sierra Nevada snowpack acts as a large natural reservoir that stores water during the winter and releases it into rivers and reservoirs in the spring and summer. It is expected that there will be less snowfall in the Sierra Nevada and that the elevations at which snow falls will rise. Similarly, there will be less snowpack water storage to supply runoff water in the warmer months. It has already been documented that California's snow line is rising. More precipitation is expected to fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack. The spring snowpack in the Sierra Nevada decreased by 10 percent in the last century and may decrease as much as 70 to 90 percent by 2100 (Cal-Adapt 2020b). It is estimated that for each 1.8°F increase in Earth's average temperature, the Sierra snowpack will retreat 500 feet in elevation and an overall reduction of 25 to 40 percent reduction in snowpack by 2050 is projected. The Sierra Nevada snowpack provides approximately 80 percent of California's annual water supply. The rapid decrease in snowpack and spring melt poses a threat to groundwater resources in many parts of the state where rivers that recharge groundwater with melt water from the Sierra Nevada will have reduced groundwater recharge potential.

Water Supply

Climate change is expected to increase pressure on and competition for water resources, further exacerbating already stretched water supplies. Decreasing snowpack and spring stream flows and increasing demand for water from a growing population and hotter climate could lead to increasing water shortages. Water supplies are also at risk from rising sea levels. Competition for water between cities, farmers, and the environment is expected to increase.

Anticipated changes to source water conditions including more intense storm events, longer drought periods, reduced snowpack at lower elevations, and earlier spring runoff will likely impact the quality of the source waters. Changes in source water quantity and quality may result in increased treatment needs and increased treatment costs.

Precipitation Levels

Precipitation levels are difficult to predict compared to other indicators of climate change. Annual rain and snowfall patterns vary widely from year to year, especially in California. Generally, higher temperatures increase evaporation and decrease snowfall, resulting in a drier climate. On average, Cal-Adapt projections show little change in total annual precipitation in California (Cal-Adapt 2020c). Furthermore, among several models, precipitation projections do not show a consistent trend during the next century. The Mediterranean seasonal precipitation pattern is expected to continue, with most precipitation falling during winter from North Pacific storms. One of the four climate models projects slightly wetter winters, and another model projects slightly drier winters with a 10 to 20 percent decrease in total annual precipitation. However, even modest changes would have a significant impact because California ecosystems are conditioned to historical precipitation levels and water resources are nearly fully utilized.

The Gonzales area has historically averaged about 11.4 inches of rainfall per year. That number is forecast to average about 13.5 inches by the end of the century (Cal-Adapt 2020c).

More Frequent and Extreme Storm Events

Extreme weather is expected to become more common throughout California as a result of climate change. More extreme storm events are expected to increase water runoff to streams and rivers during the winter months, heightening flood risks. Warmer ocean surface temperatures have caused warmer and wetter conditions in the Sierra Nevada, increasing flood risk. Strong winter storms may produce atmospheric rivers that transport large amounts of water vapor from the Pacific Ocean to the California coast. As the strength of these storms increases, the risk of flooding increases.

Sea Level Rise

Sea level rise is one of the most significant effects of climate change. Sea level has been rising over the past century, and the rate has increased in recent decades. Global mean sea level in 2017 was the highest annual average in the satellite era (since 1993) with a value of 77 millimeters above the 1993 average (Hartfield, Blunden, and Arndt 2018). Globally, sea levels are rising due to two main reasons: thermal expansion of warming ocean water and melting of ice from glaciers and ice sheets. Rising sea levels amplify the threat and magnitude of storm surges in coastal areas. Water infrastructure, often located along the coast or tidally-influenced water bodies, can be vulnerable to greater changes in storm surge intensity. The threat of flooding and damage to water infrastructure will continue to increase over time as sea levels rise and the magnitude of storms increase. Rising sea levels will create stress on coastal ecosystems that provide recreation, protection from storms, and habitat for fish and wildlife, including commercially valuable fisheries. Rising sea levels can also introduce new, or exacerbate existing, saltwater intrusion into freshwater resources.

Diminished Air Quality

Climate change is expected to exacerbate air quality problems by increasing the frequency, duration, and intensity of conditions conducive to air pollution formation. Higher temperatures and increased ultraviolet radiation from climate change are expected to facilitate the chemical formation of more secondary air pollutants from ground-level sources. Conversely, decreased precipitation is expected to reduce the number of particulates cleansed from the air. Incidents of wildfires are expected to increase due to climate change, further contributing to air quality problems.

According to the American Lung Association's 2020 *State of the Air* report, nearly half of all Americans were exposed to unhealthy air in 2016-2018. The report found that California cities dominate the rankings of the nation's most widespread air pollutants, ozone and particle pollution. In California, over 38 million residents live in counties where ozone or particulate pollution placed their health at risk (American Lung Association 2020).

Ecosystem Changes

Climate change effects will have broad impacts on local and regional ecosystems, habitats, and wildlife as average temperatures increase, precipitation patterns change, and more extreme weather events occur. Species that cannot rapidly adapt are at risk of extinction. As temperatures increase, California vegetation is expected to change. Desert and grassland vegetation are projected to increase while forest vegetation is projected to generally decline. The natural cycle of plant flowering and pollination, as well as the temperature conditions necessary for a thriving locally adapted agriculture, may also be affected. Perennial crops, such as grapes, may take years to recover. Increased temperatures also provide a foothold for invasive species of weeds, insects, and animals.

Social Vulnerability to Climate Change

The impacts of climate change will not affect people equally. People exposed to the most severe climate-related hazards are often those least able to cope with the associated impacts, due to their limited resources and adaptive capacity. Climate change is expected to have a greater impact on larger populations living in poorer and developing countries with lower incomes that rely on natural resources and agricultural systems that will likely be affected by changing climates.

Certain groups in developed countries like the United States will also experience more impacts from climate change than others. People in rural areas are more likely to be affected by climate change related droughts or severe storms compared to their urban counterparts. However, certain groups living in cities will also be at higher risk than others. Place of residence is another vulnerability indicator, as renters, households without air conditioning, households lacking access to grocery stores, households in treeless areas, and households on impervious land cover are also more vulnerable to climate change impacts.

Gonzales residents who are at greatest risk include children, the elderly, those with existing health problems, the socially and/or economically disadvantaged, those who are less mobile, and those who work outdoors. Place of residence is another vulnerability indicator, as renters, households without air conditioning, households lacking access to grocery stores, households in treeless areas, and households on impervious land cover are also more vulnerable to climate change impacts.

Health Effects/Illness

As temperatures rise from global warming, the frequency and severity of heat waves will grow and increase the potential for bad air days, which can lead to increases in illness and death due to dehydration, heart attack, stroke, and respiratory disease. Additionally, dry conditions can lead to a greater number of wildfires producing smoke that puts people with asthma and respiratory conditions at risk of illness or death.

Higher temperatures and the increased frequency of heat waves are expected to significantly increase heat-related illnesses, such as heat exhaustion and heat stroke, while also exacerbating conditions associated with cardiovascular and respiratory diseases, diabetes, nervous system disorders, emphysema, and epilepsy. An increase of 10°F in average daily temperature is associated with a 2.3 percent increase in mortality. During heat waves mortality rates can increase to about nine percent. As temperatures in the area increase, vulnerable populations such as children, the elderly, people with existing illnesses, and people who work outdoors will face the greatest risk of heat-related illness.

As climate change affects the temperature, humidity, and rainfall levels across California, some areas could become more suitable habitats for insects (especially mosquitoes), ticks, and mites that may carry diseases. Wetter regions are typically more susceptible to vector-borne diseases, especially human hantavirus cardiopulmonary syndrome, Lyme disease, and West Nile virus.

Greenhouse Gas Types

GHGs are emitted by natural processes and human activities. The human-produced GHGs most responsible for global warming and their relative contribution to it are carbon dioxide, methane, nitrous oxide, and chlorofluorocarbons. The contribution of these GHGs to global warming based on the U.S. inventory of GHGs in 2018 (United States Environmental Protection Agency 2020) is summarized in Table 3-1, Greenhouse Gas Emissions Types and Their Contribution to Global Warming.

Table 3-1 Greenhouse Gas Emissions Types and Their Contribution to Global Warming

Greenhouse Gas	Percent of all GHG	Typical Sources
Carbon dioxide (CO_2)	81 percent	Combustion of fuels, solid waste, wood
Methane (CH_4)	10 percent	Fuel production/combustion; livestock, decay of organic materials
Nitrous Oxide (N_2O)	7 percent	Combustion of fuels, solid waste, agricultural/industrial processes
Chlorofluorocarbons (CFCs)	3 percent	Industrial processes

SOURCE: United States Environmental Protection Agency 2020
NOTE: Percentages may not add up to 100 percent due to independent rounding.

Greenhouse Gas Global Warming Potentials

Each type of GHG has a different capacity to trap heat in the atmosphere and each type remains in the atmosphere for a particular length of time. The ability of a GHG to trap heat is measured by an index called the global warming potential expressed as carbon dioxide equivalent. Carbon dioxide is considered the baseline GHG in this index and has a global warming potential of one.

The GHG volume produced by a particular source is often expressed in terms of carbon dioxide equivalent (“CO_2e”). Carbon dioxide equivalent describes how much global warming a given type of GHG will cause, with the global warming potential of CO_2 as the base reference. Carbon dioxide equivalent is useful because it allows comparisons of the impact from many different GHGs, such as methane, perfluorocarbons, or nitrous oxide. If a project is a source of several types of GHGs, their individual global warming potential can be standardized and expressed in terms of CO_2e. Table 3-2, Greenhouse Gas Emissions Global Warming Potentials presents a summary of the global warming potential of various GHGs.

Table 3-2 Greenhouse Gas Emissions Global Warming Potentials

GHG	Atmospheric Lifetime (Years)	Global Warming Potential (100-Year Time Horizon)
Carbon Dioxide CO_2	50-200	1
Methane CH_4	12 (+/- 3)	21
Nitrous Oxide N_2O	120	310
HFC-23	264	11,700
HFC-134a	14.6	1,300
HFC-152a	1.5	140
PFC Tetrafluoromethane CF_4	50,000	6,500
PFC Hexafluoroethane C_2F_6	10,000	9,200
Sulfur Hexafluoride SF_6	3,200	23,900

SOURCE: United Nations Framework Convention on Climate Change 2020

Methane has a global warming potential of 21 times that of carbon dioxide, and nitrous oxide has a global warming potential of 310 times that of CO_2. The families of chlorofluorocarbons, hydrofluorocarbons, and perfluorocarbons have a substantially greater global warming potential than other GHGs, generally ranging from approximately 1,300 to over 10,000 times that of CO_2. While CO_2 represents the vast majority of the total volume of GHGs released into the atmosphere, the release of even small quantities of other types of GHGs can be significant for their contribution to climate change.

Greenhouse Gas Inventories

California GHG Emissions Inventory

Based on the CARB's current state GHG inventory data, a net of about 424.1 million metric tons ("MMT") of CO_2e were generated in California in 2017 (California Air Resources Board 2020e). In 2017, about 41 percent of all GHG gases emitted in the state came from the transportation sector. Industrial uses and electric power generation (in state generation and out of state generation for imported electricity) were the second and third largest categories at about 24 percent and 15 percent, respectively. The commercial and residential use sectors combined to generate about 12 percent of the 2017 emissions, while the agricultural sector contributed about 8 percent.

Gonzales GHG Emissions Inventory

GHG emissions generated in Gonzales represent a small fraction of the statewide emissions inventory. The *Gonzales Climate Action Plan: 2018 Update* includes baseline community GHG emissions estimates for both the incorporated area of Gonzales and the currently unincorporated Urban Growth Area established by the general plan. The Gonzales community emitted 20,618 metric tons ("MT") of CO_2e in the year 2005 (Zero City LLC 2018a, Table CAP-2). The commercial/industrial sector is the largest source of emissions with almost 41 percent of the total community emissions. Emissions from the residential and transportation sectors accounted for 30 and 19 percent, respectively. Emissions from the solid waste sector accounted for 10 percent. Agricultural activity in the Urban Growth Area produced 4,520 MT of CO_2e (Zero City LLC 2018a, Table CAP-3). The total community-wide GHG emissions in 2005 were estimated at 25,138 MT of CO_2e.

Existing Sources of GHG Emissions within the Project Site

The project site is currently in active agricultural production. The existing agricultural production generates GHG emissions, primarily from the use of agricultural machinery and indirect emissions from pumping irrigation water.

3.2 Regulatory Setting

The federal government has taken significant regulatory steps toward addressing climate change. Generally, California policy and regulations and regulations implemented at the regional and local levels are as or more comprehensive and stringent than federal actions; therefore, this section focuses on state, regional, and local regulatory actions whose implementation would lessen the contribution of the proposed project to climate change.

State

Overall Statutory Framework

The California Legislature has enacted a series of statutes addressing the need to reduce GHG emissions across the State. These statutes can be categorized into four broad categories: (i) statutes setting numerical statewide targets for GHG reductions, and authorizing CARB to enact regulations to achieve such targets; (ii) statutes setting separate targets for increasing the use of renewable energy for the generation of electricity throughout the state; (iii) statutes addressing the carbon intensity of vehicle fuels, which prompted the adoption of regulations by CARB; and (iv) statutes intended to facilitate land use planning consistent with statewide climate objectives. The discussion below will address each of these key sets of statutes, as well as CARB "Scoping Plans" intended to achieve GHG reductions under the first set of statutes and recent building code requirements intended to reduce energy consumption.

Statutes Setting Statewide GHG Reduction Targets

Assembly Bill 32 (Global Warming Solutions Act)

In September 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as AB 32. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that was phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources.

Senate Bill 32

Effective January 1, 2017, Senate Bill ("SB") 32 added a new section to the Health and Safety Code. It requires CARB to ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below those that occurred in 1990 no later than December 31, 2030.

Between AB 32 and SB 32, the Legislature has codified some of the GHG emissions reduction targets included within certain Executive Orders issued by prior governors. The 2020 GHG emissions reduction target in AB 32 was consistent with the second of three statewide GHG emissions reduction targets set forth in the 2005 Executive Order known as S-3-05. Executive Order S-3-05 included the following GHG emissions reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. Executive Order, B-30-15, issued in 2015, created a new interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030. The 2030 GHG reduction target in SB 32 is consistent with the reduction target set forth in Executive Order B-30-15.

The Legislature has not yet set a 2050 target, though references to a 2050 target can be found in statutes outside the Health and Safety Code. In the 2015 legislative session, the Legislature passed SB 350, which is discussed in more detail below. This legislation essentially puts into statute the 2050 GHG reduction target already identified in Executive Order S-3-05, albeit in the limited context of new state policies (i) increasing the overall share of electricity that must be produced through renewable energy sources and (ii) 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 reducing GHG emissions to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050 will require widespread transportation electrification and that accelerating investments in transportation electrification is needed to reduce greenhouse gases to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050.

Statutes Setting Targets for the Use of Renewable Energy for the Generation of Electricity

California Renewables Portfolio Standard

In September 2002, the Legislature enacted SB 1078, which established the Renewables Portfolio Standard program, requiring retail sellers of electricity, including electrical corporations, community choice aggregators, and electric service providers, to purchase 20 percent of the State's electricity from renewable energy resources such as wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.

In September 2006, the Legislature enacted SB 107, which modified the Renewables Portfolio Standard to require that at least 20 percent of electricity retail sales be served by renewable energy resources by year 2010. In April 2011, the Legislature enacted SB X1-2, which set even more aggressive statutory target that 33 percent of the State's electricity come from renewables by 2020. This legislation applies to all electricity retailers in the State, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators.

In 2015, the Legislature enacted SB 350. SB 350 encourages a substantial increase in the use of electric vehicles and increased the Renewable Portfolio Standard to require 50 percent of electricity generated to be from renewables by 2030. In 2018, former Governor Jerry Brown signed into law SB 100 and Executive Order B-55-18. SB 100 raises California's Renewable Portfolio Standard requirement to 50 percent renewable resources target by December 31, 2026, and 60 percent by December 31, 2030. SB 100 also requires that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030. Executive Order B-55-18 establishes a carbon neutrality goal for California by 2045; and sets a goal to maintain net negative emissions thereafter.

In March 2012, former Governor Jerry Brown issued an Executive Order, B-16-12, which embodied a similar vision of a future in which zero-emission vehicles will play a big part in helping the state meet its GHG reduction targets. Executive Order B-16-12 directed state government to accelerate the market for in California through fleet replacement and electric vehicle infrastructure. The Executive Order set the following targets:

- By 2015, all major cities in California will have adequate infrastructure and be "zero-emission vehicles ready";
- By 2020, the state will have established adequate infrastructure to support one million zero-emission vehicles in California;
- By 2025, there will be 1.5 million zero-emission vehicles on the road in California; and
- By 2050, virtually all personal transportation in the State will be based on zero-emission vehicles, and greenhouse gas emissions from the transportation sector will be reduced by 80 percent below 1990 levels.

In sum, California has set a statutory goal of requiring that, by the year 2030, 60 percent of the electricity generated in California should be from renewable sources, with increased generation capacity intended to be sufficient to allow the mass conversion of the statewide vehicle fleet from petroleum-fueled vehicles to electrical vehicles and/or other zero-emission vehicles. The Legislature is thus looking to California drivers to buy electric cars, powered by green energy, to help the State meet its aggressive statutory goal, created by SB 32, of reducing statewide GHG emissions by 2030 to 40 percent below 1990 levels. Another key prong to this strategy is to make petroleum-based fuels less carbon intensive. A number of statutes in recent years have addressed that strategy. These are discussed below.

Statutes and California Air Resources Board Regulations Addressing the Carbon Intensity of Petroleum-based Transportation Fuels

Assembly Bill 1493, Pavley Clean Cars Standards

In July 2002, the Legislature enacted AB 1493 (Pavley Bill), which requires the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty trucks beginning with model year 2009. In September 2004, CARB approved regulations to reduce GHG emissions from new motor vehicles beginning with the 2009 model year. These regulations are commonly known as the "Pavley standards." In September 2009, CARB adopted amendments to the Pavley standards to reduce GHG emissions from new motor vehicles through the 2016 model year. These regulations created what are commonly known as the "Pavley II standards."

In January 2012, CARB adopted an Advanced Clean Cars program aimed at reducing both smog-causing pollutants and GHG emissions for vehicles model years 2017-2025. This program combined the control of smog-causing (criteria) pollutants and GHG emissions into a single coordinated set of requirements for model years 2015 through 2025. The regulations focus on substantially increasing the number of plug-in hybrid cars and zero-emission vehicles in the vehicle fleet and on making fuels such as electricity and hydrogen readily available for these vehicle technologies. The components of the Advanced Clean Cars program are the low-emission vehicle regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the zero-emission vehicle regulation, which requires manufacturers to produce an increasing number of pure zero-emission vehicles (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles in the 2018 through 2025 model years.

It is expected that the Advanced Clean Car regulations will reduce GHG emissions from California passenger vehicles by about 34 percent below 2016 levels by 2025, all while improving fuel efficiency and reducing motorists costs.

Statutes Intended to Facilitate Land Use Planning Consistent with Statewide Climate Objectives

Senate Bill 375 (Sustainable Communities' Strategy)

This 2008 legislation built on AB 32 by setting forth a mechanism for coordinating land use and transportation on a regional level for the purpose of reducing GHGs. The focus is to reduce miles traveled by passenger vehicles and light trucks. CARB is required to set GHG reduction targets for each metropolitan region for the years 2020 and 2035. Each of California's metropolitan planning organizations then prepares a sustainable communities' strategy that demonstrates how the region will meet its GHG reduction target through integrated land use, housing, and transportation planning. Once adopted by the metropolitan planning organizations, the sustainable communities' strategy is to be incorporated into that region's federally enforceable regional transportation plan. If a metropolitan planning organization is unable to meet the targets through the sustainable communities' strategy, then an alternative planning strategy must be developed that demonstrates how targets could be achieved, even if meeting the targets is deemed to be infeasible.

The Association of Monterey Bay Area Governments ("AMBAG") is the metropolitan planning organization responsible for preparing a sustainable communities' strategy. The current sustainable communities' strategy is embedded in AMBAG's *Moving Forward Monterey Bay 2040* ("Metropolitan Transportation Plan/Sustainable Communities' Strategy") (Association of Monterey Bay Area Governments 2018). The Metropolitan Transportation Plan/Sustainable Communities' Strategy sets forth a forecasted development pattern for the region; which, when integrated with the transportation network and other transportation measures and policies, is intended to reduce GHG emissions from passenger vehicles and light duty trucks to achieve the regional GHG reduction targets set by CARB.

For the AMBAG region, the CARB GHG reduction targets are a zero percent per capita change by 2020 and five percent per capita reduction by 2035. The Metropolitan Transportation Plan/Sustainable Communities' Strategy exceeds the GHG reduction targets set by CARB by achieving a four percent per capita reduction for 2020 and a seven percent per capita reduction for 2035.

Climate Change Scoping Plans

2008 AB 32 Scoping Plan

Since 2008, CARB has been tasked with preparing five-year strategies for how California will achieve GHG reductions embodied in key statewide GHG reduction target-setting legislation. The 2008 AB 32 Scoping plan included a quantified GHG reduction target and specified a number of GHG reduction strategies and their respective projected GHG emissions reduction outcomes.

With regard to land use planning, the 2008 Scoping Plan anticipated that reductions of approximately 3.0 MMT CO_2e will be achieved through implementation of SB 375, which is discussed further below.

2014 Scoping Plan Update

CARB prepared the first update to the 2008 Scoping Plan in 2014. The 2014 Scoping Plan contains the main strategies California needed to implement to achieve a statewide GHG reduction target of approximately 16 percent relative to the state's projected 2020 emission level. The 2014 Scoping Plan also includes a breakdown of the amount of GHG reductions CARB recommends for each emissions sector of the state's GHG inventory.

2017 Scoping Plan

With the passage of SB 32, the Legislature also passed companion legislation AB 197, which provides additional direction for developing the scoping plan. CARB's 2017 Scoping Plan is the most recent. It reflects the 2030 target of reducing statewide GHG emissions by 40 percent below 1990 levels codified by SB 32. The GHG reduction strategies in the plan that CARB proposes to implement to meet the target include:

- SB 350 - achieve 50 percent Renewables Portfolio Standard by 2030 and doubling of energy efficiency savings by 2030;
- Low Carbon Fuel Standard - increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020);
- Mobile Source Strategy (Cleaner Technology and Fuels Scenario) - maintaining existing GHG standards for light- and heavy-duty vehicles, put 4.2 million zero-emission vehicles on the roads, and increase zero-emission buses, delivery and other trucks;
- Sustainable Freight Action Plan - improve freight system efficiency, maximize use of near-zero emission vehicles and equipment powered by renewable energy, and deploy over 100,000 zero-emission trucks and equipment by 2030;
- Short-Lived Climate Pollutant Reduction Strategy - reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030 and reduce emissions of black carbon 50 percent below 2013 levels by 2030;
- SB 375 Sustainable Communities' Strategies - increased stringency of 2035 targets;
- Post-2020 Cap-and-Trade Program - declining caps, continued linkage with Québec, and linkage to Ontario, Canada;
- 20 percent reduction in greenhouse gas emissions from the refinery sector; and
- By 2018, develop an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Building Code Requirements Intended to Reduce GHG Emissions

California Energy Code

The California Energy Code (California Code of Regulations, Title 24, Part 6), which is incorporated into the California Building Standards Code, was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The California Energy Code is updated every three years by the California Energy Commission as the Building Energy Efficiency Standards ("BEES") to allow consideration and possible incorporation of new energy efficiency technologies and construction methods. Increased energy efficiency results in decreased GHG emissions because energy efficient buildings require less electricity produced by fossil fuel powered power plants that generate GHGs. The BEES apply to new construction of, and additions and alterations to, residential and non-residential buildings.

The current 2019 BEES went into effect on January 1, 2020. Residential and non-residential buildings permitted after January 1, 2020 are required to comply with the 2019 BEES. The 2019 BEES are structured to achieve the state's goal that all new low-rise residential buildings (single-family homes) be zero net energy. That is, the amount of energy provided by on-site renewable energy sources is equal to the amount of energy used by the homes. For residential buildings, the 2019 BEES encourage demand responsive technologies including battery storage and heat pump water heaters and require improved the building thermal envelopes through high performance attics, walls and windows. In non-residential buildings, the 2019 BEES update indoor and outdoor lighting making maximum use of LED technology.

Single-family homes built with the 2019 BEES will use about seven percent less energy versus those built under the 2016 BEES. Once rooftop solar electricity generation is factored in, homes built under the 2019 BEES will use about 53 percent less energy than those under the 2016 BEES. Non-residential buildings built under the 2019 BEES will use about 30 percent less energy compared to the 2016 BEES (California Energy Commission 2018).

California Green Building Standards Code

The purpose of the California Green Building Standards Code (California Code of Regulations Title 24, Part 11) is to improve building design and construction to reduce negative environmental impacts through sustainable construction practices. Design and construction categories include: 1) planning and design; 2) energy efficiency; 3) water efficiency and conservation; 4) material conservation and resource efficiency; and 5) environmental quality. The 2019 California Green Building Standards update instituted mandatory and voluntary environmental performance standards for all ground-up new construction of commercial, low-rise residential uses, and state-owned buildings, as well as schools and hospitals.

The mandatory standards require the following:

- Water conserving plumbing fixtures and fittings for indoor water use;
- 65 percent construction/demolition waste must be diverted from landfills;
- Mandatory inspections of energy systems to ensure optimal working efficiency; and
- Low pollutant-emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particle boards.

The voluntary standards require the following:

- Tier I: on-site renewable energy generation, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste, 10 percent recycled content, 20 percent permeable paving, 20 percent cement reduction, 90 percent resilient flooring systems, electric vehicle charging spaces, thermal insulation, and cool/solar reflective roof.
- Tier II: on-site renewable energy generation, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste, 15 percent recycled content, 30 percent permeable paving, 25 percent cement reduction, 100 percent resilient flooring systems, electric vehicle charging spaces, thermal insulation, and cool/solar reflective roof.

Regional/Local

Monterey Bay Air Resources District

The air district has been in the process of developing guidance for evaluation of GHG emissions impacts for several years. In June 2011, the air district proposed interim thresholds of significance for stationary sources for use in the CEQA analysis process. After release of the interim guidance, the air district consulted with various stakeholders within the air district regarding the proposed thresholds. However, to date, the air district has not adopted CEQA guidance for analysis of GHG effects of land use projects; nor has it prepared a qualified GHG reduction plan for use/reference by local agencies.

Gonzales 2010 General Plan

The general plan includes policies which directly or indirectly affect GHG emissions. Policy SUS-1.2 encourages sustainable and efficient land use patterns that promote walkability, reduce vehicular trips, and preserve open space and long-term agricultural lands. Policy SUS-1.4 is aimed at reducing transportation-related GHG emissions by encouraging alternative modes of transportation and increased fuel efficiency. Policy SUS-1.5 encourages the local use and production of renewable energy. Policy SUS-1.6 encourages employment of sustainable or "green" building techniques for the construction and operation of buildings.

Gonzales Grows Green Sustainable Community Initiative

The Gonzales Grows Green Sustainable Community Initiative ("G3 initiative") was established in 2008. The G3 initiative focuses on three principles: maintaining sustainability of natural resources through environmental stewardship, increased opportunity through economic development, and preserving quality of life through social equity programs. The objectives are to improve community sustainability, increase prosperity through fostering of business-to-business and public-private partnerships, improve regulatory compliance, and increase community environmental awareness and public safety. The G3 initiative includes strategies that address energy efficiency and conservation, green building practices, renewable energy and low carbon fuels, water and wastewater systems, waste reduction and recycling, climate friendly purchasing, and efficient transportation.

Gonzales Climate Action Plan

The *City of Gonzales Climate Action Plan* was adopted in 2013 and updated in 2018 as the *Gonzales Climate Action Plan: 2018 Update* ("CAP"). The City certified the *Gonzales 2010 General Plan Supplemental Environmental Impact Report (February 2013): (SCH# 2009121017) Addendum* (Zero City LLC 2018b) that was prepared to evaluate the impacts of implementing the CAP as a new component of the general plan.

The CAP identifies how the city will achieve near-term GHG emission reduction targets and to create a path to achieving long-term targets. The CAP projected GHG emissions volumes in the future based on forecasts of GHG emissions from individual land uses identified in the general plan, including land use assumptions for buildout of the Urban Growth Area. Community-wide GHG emissions are estimated to increase from 25,138 MT CO_2e in 2005 to 30,129 MT CO_2e by 2020. By 2030, these emissions are expected to reach 48,612 MT CO_2e, and 88,375 MT CO_2e by 2050 (Zero City LLC 2018a, Table CAP-3).

The CAP provides GHG reduction targets and associated GHG measures in the sectors of energy use, transportation, land use, water, and solid waste. The reduction targets are a 15 percent reduction in 2005 baseline emissions by 2020, a 49 percent reduction in 2005 baseline emissions by 2030, and an 83 percent reduction in 2005 baseline emissions by 2050.

3.3 Analysis

Project GHG Emissions

Project operations would result in new mobile, area, energy, waste, and water GHG emissions. Operational, mobile-source GHG emissions were estimated using EMFAC. CalEEMod was used to estimate area, energy, waste-, and water related sources of GHG emissions that would be generated during project operations. Refer to Appendix A for the

CalEEMod and EMFAC modeling results and a memorandum describing the modeling assumptions and methodology. The modeling results are summarized in Table 3-3, Unmitigated Operational Greenhouse Gas Emissions.

Table 3-3 Unmitigated Operational Greenhouse Gas Emissions

Emission Sources	GHG Emissions[1,2]
Mobile	33,833.37
Area	3,187.01
Energy[3]	2,495.49
Waste	2,855.23
Water	719.29
Total	43,090.39

SOURCE: EMC Planning Group 2020

NOTES:

1. Expressed in MT CO_2e per year.
2. Results have been rounded, and may, therefore, vary slightly.
3. Results include compliance with the current 2019 BEES.

From Table 3-3, projected GHG emissions are 43,090.39 MT CO_2e per year. The emissions volume is within the total GHG emissions inventory identified in the CAP for the years 2030 (48,612 MT CO_2e) and 2050 (88,375 MT CO_2e).

CEQA Streamlining

Pursuant to CEQA Guidelines Sections 15064(h)(3) and 15130(d), if a project is consistent with the requirements of an adopted plan, such as a climate action plan that is prepared consistent with CEQA Guidelines Section 15183.5(b), the lead agency may determine that the GHG impacts are less than significant with no further analysis required. If it is determined that a proposed project is not consistent with an adopted climate action plan or other plan for reducing GHGs, further analysis would be required to determine whether the impact is significant.

CEQA Guidelines Section 15183.5(b), Tiering and Streamlining the Analysis of Greenhouse Gas Emissions, outlines six elements that should be included in a plan to reduce GHG emissions. These include:

1. Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
2. Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;

3. Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;
4. Specify measures or a group of measures, including performance standards that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
5. Monitor the plan's progress; and
6. Adopt the GHG reduction strategy in a public process following environmental review.

The CAP meets the requirements of CEQA Guidelines Section 15183.5(b) presented above by quantifying GHG emissions from all sectors for years 2005, 2020, 2030, and 2050; defining emissions reduction targets of 15 percent below baseline by 2020, 49 percent below baseline by 2030, and 83 percent below baseline emissions by 2050; analyzing baseline and future emissions from all sectors; defining specific measures to achieve the overall reduction targets; requiring periodic monitoring of plan progress; complying with CEQA; and adopting in a public process. Consequently, analysis of the project GHG impacts can be "tiered off" the CAP.

Project Consistency with Climate Action Plan

An individual project can be considered consistent with the CAP if the project is designed to include applicable GHG reduction measures included in the CAP and or is required to incorporate such measures. The measures included in the CAP are summarized below as a basis to determine whether the project is consistent with the measures.

Gonzales Climate Action Plan GHG Emissions Reduction Measures

Table CAP-8, GHG Reduction Measures, on page VI-2 of the CAP identifies the GHG emission reduction measures that apply throughout the city and the expected savings from each of these reduction measures. Table CAP-8 is included as Appendix B. Four measures address residential emissions, three measures address commercial and industrial emissions, and one measure addresses emissions from transportation, solid waste, and government operations respectively.

Project Consistency with the Climate Action Plan

For the project to be determined consistent with the CAP and its impacts determined to be less than significant, it must comply with GHG reduction measures included in the CAP that apply to it as described in CEQA Guidelines 15183.5(b).

The project includes residential and commercial land uses that are the subject of GHG reduction measures included in the CAP. The applicable measures are summarized in Table 3-4, Applicable Climate Action Plan Greenhouse Gas Reduction Measures.

Table 3-4 Applicable Climate Action Plan Greenhouse Gas Reduction Measures

Measure Number	GHG Reduction Measures
Residential Measures	
P-1.3	Residential Electrification Program (New Residential)
P-1.4	Urban Forest
Commercial/Industrial Measures	
P-2.2	Monterey Bay Community Power 100 Percent Carbon-Free Power (New Commercial and Industrial)
P-2.3	Gonzalez Renewables Program (New Commercial and Industrial)
Transportation Measures	
P-3.1	Gonzales / Monterey Bay Community Power Electric Vehicle Program
Solid Waste Measures	
P-4.1	Solid Waste Reduction Program

SOURCE: Zero City LLC 2018a

3.4 CONCLUSION

The proposed project is an annexation and pre-zoning project whose impacts are being evaluated based on a conceptual land use plan for the project site. The current project description is not detailed enough to ascertain whether it incorporates the applicable GHG reduction measures included in Table 3-4. For development to occur in the future, additional project-specific entitlements would be required. These include, but may not be limited to a specific plan and one or more tentative maps. Consistency with the CAP can be assured by incorporating mitigation measures into the SEIR for the annexation and pre-zoning actions that require that the applicable reduction measures be incorporated into the specific plan and individual development project descriptions or otherwise required as conditions of approval.

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4.0 Energy

4.1 ENVIRONMENTAL SETTING

Population growth is a key driver for increasing residential and commercial energy electricity and natural gas demand, and Gonzales' and Monterey County's population and energy demand will continue to grow. To minimize the need for additional electricity generation facilities, both the state and regional energy utilities have focused investments on many energy related sector initiatives. Energy purveyors have also focused on obtaining larger shares of retail power from renewable sources.

Energy Provider and Baseline Energy Demand

In 2017, Gonzales joined with 18 other jurisdictions in the three-county Monterey Bay Region (Monterey, Santa Cruz, and San Benito counties) to form Monterey Bay Community Power ("MBCP"), a community choice aggregation agency. MBCP has been providing 100 percent carbon-free and renewable energy to its customers since March 2018, while retaining Pacific Gas & Electric for delivering power and maintaining electric infrastructure.

The project site is currently in active agricultural production. The existing agricultural production consumes energy for the use of agricultural machinery and for pumping of irrigation water.

4.2 REGULATORY SETTING

Energy Use and Conservation

For several decades, federal, state, and regional energy agencies and energy providers have been focused on reducing growth in fossil fuel-based energy demand, especially in the form of transportation fuels and electricity. Key related environmental goals have been to reduce air pollutants and GHGs. Public and private investments in a range of transportation technology, energy efficiency and energy conservation programs and technologies to improve transportation fuel efficiency have been increasing, as has the focus on land use planning as a tool to reduce vehicle trips/lengths and transportation-related energy use.

Energy conservation is embodied in many federal, state, and local statutes and policies. At the federal level, energy standards apply to numerous products (e.g., the EnergyStar™

program) and transportation (e.g., vehicle fuel efficiency standards). At the state level, Title 24 of the California Code of Regulations sets energy standards for buildings, rebates/tax credits are provided for installation of renewable energy systems, and the Flex Your Power program promotes conservation in multiple areas.

Representative state energy efficiency and conservation, and transportation energy demand guidance, regulations, and legislation are summarized below. Additional related regulations and legislation are found in Section 3.0, Greenhouse Gas Emissions.

State

California Energy Commission

The California Energy Commission is California's primary energy policy and energy planning agency. Created by the California Legislature in 1974, the California Energy Commission has five major responsibilities: 1) forecasting future energy needs and keeping historical energy data; 2) licensing thermal power plants 50 megawatts or larger; 3) promoting energy efficiency through appliance and building standards; 4) developing energy technologies and supporting renewable energy; and 5) planning for and directing state response to energy emergencies. Under the requirements of the California Public Resources Code, the California Energy Commission, in conjunction with the Department of Conservation's Division of Oil, Gas, and Geothermal Resources, is required to assess electricity and natural gas resources on an annual basis or as necessary. The Systems Assessment and Facilities Siting Division ensures that needed energy facilities are authorized in an expeditious, safe, and environmentally acceptable manner.

California 2008 Energy Action Plan Update

The state adopted the Energy Action Plan in 2003, followed by the Energy Action Plan II in 2005. The current plan, the California 2008 Energy Action Plan Update, is California's principal energy planning and policy document. The updated document examines the state's ongoing actions in the context of global climate change, describes a coordinated implementation plan for state energy policies, and identifies specific action areas to ensure that California's energy resources are adequate, affordable, technologically advanced, and environmentally sound. The Energy Action Plan Update establishes energy efficiency and demand response (i.e., reduction of customer energy usage during peak periods) as the first-priority actions to address increasing energy demands. Additional priorities include using renewable sources of power and distributed generation (e.g., using relatively small power plants near or at centers of high demand). To the extent that these actions are unable to satisfy increasing energy demand and transmission capacity needs, clean and efficient fossil-fired generation is supported. The Energy Action Plan Update examines policy changes in the areas of energy efficiency, demand response, renewable energy, electricity reliability and infrastructure, electricity market structure, natural gas supply and infrastructure, research and development, and climate change (California Energy Commission 2008).

California Building Codes

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were first established in 1978 to reduce energy consumption. The California Energy Code is updated every three years as the BEES to allow consideration and possible incorporation of new energy efficiency technologies and construction methods. Adopted by the California Energy Commission in May 2018, the 2019 BEES went into effect on January 1, 2020. The 2019 BEES are structured to achieve the state's goal that all new low-rise residential buildings (single-family homes) be zero net energy. Multi-family homes and non-residential buildings built to the 2019 BEES will use about 30 percent less energy compared to the 2016 BEES (California Energy Commission 2018).

The Green Building Standards Code, also known as CALGreen, which requires all new buildings in the state to be more energy efficient and environmentally responsible, was most recently updated in July 2019. These comprehensive regulations are intended to achieve major reductions in interior and exterior building energy consumption.

Assembly Bill 2021 (Energy Efficiency Act of 2006)

This bill encourages all investor-owned and municipal utilities to aggressively invest in achievable, cost-effective, energy efficiency programs in their service territories.

Assembly Bill 1493 (Pavley I Rule)

AB 1493 was enacted on July 22, 2002. It requires the CARB to develop and adopt regulations that improve fuel efficiency of vehicles and light-duty trucks. Pavley I requirements apply to these vehicles in the model years 2009 to 2016.

Advanced Clean Cars

In January 2012, CARB adopted an Advanced Clean Cars program, which is aimed at increasing the number of plug-in hybrid cars and zero-emission vehicles in the vehicle fleet and on making fuels such as electricity and hydrogen readily available for these vehicle technologies.

Renewable Energy Legislation/Orders

The California Renewable Portfolio Standard Program, which requires electric utilities and other entities under the jurisdiction of the California Public Utilities Commission to meet 20 percent of their retail sales with renewable power by 2017, was established by SB 1078 in 2002. The renewable portfolio standard was accelerated to 20 percent by 2010 by SB 107 in 2006. The program was subsequently expanded by the renewable electricity standard approved by CARB in September 2010, requiring all utilities to meet a 33 percent target by 2020. The Legislature then codified this mandate in 2011 with the enactment of SB X1-2. SB 350, adopted in September 2015, increases the standard to 50 percent by 2030. This same legislation includes statutes directing the California Energy Commission and Public Utilities

Commission to regulate utilities producing electricity so that they will create electricity-generation capacity sufficient for the widespread electrification of California's vehicle fleet, as a means of reducing GHG emissions associated with the combustion of gasoline and other fossil fuels. The Legislature envisions a dramatic increase in the sales and use of electric cars, which will be recharged with electricity produced with increasingly cleaner power sources.

On September 10, 2018, former Governor Jerry Brown signed into law SB 100 and Executive Order B-55-18. SB 100 raises California's Renewable Portfolio Standard requirement to 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. Executive Order B-55-18 establishes a carbon neutrality goal for California by 2045, and sets a goal to maintain net negative emissions thereafter.

Senate Bill 743

SB 743, which became effective September 2013, initiated reforms to the CEQA Guidelines to establish new criteria for determining the significance of transportation impacts that "promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses." Specifically, SB 743 directed the Governor's Office of Planning and Research to update the CEQA Guidelines to replace automobile delay—as described solely by LOS or similar measures of vehicular capacity or traffic congestion—with VMT as the recommended metric for determining the significance of transportation impacts. The Office of Planning and Research has updated the CEQA Guidelines for this purpose. Beginning July 1, 2020, the provisions of SB 743 apply statewide.

Regional/Local

Gonzales 2010 General Plan

The general plan includes policies that encourage efficient use of energy and promote energy conservation. Policy CC-2.3 encourages the incorporation of "green" building practices and materials within all developments. Policy HE-9.2 encourages energy efficient architectural design and site planning through zoning, subdivision, and building code regulations. Policy HE-9.5 encourages energy conservation through land use and transportation policies. Policy SUS-1.2 encourages sustainable and efficient land use patterns that promote walkability, reduce vehicular trips, and preserve open space and long-term agricultural lands. Policy SUS-1.6 encourages employment of sustainable or "green" building techniques for the construction and operation of buildings.

Gonzales Grows Green Sustainable Community Initiative

The City of Gonzales, through its G3 initiative, is taking proactive steps to become a more environmentally sustainable community. The G3 initiative includes strategies to address energy efficiency and conservation, green building practices, renewable energy and low carbon fuels, and efficient transportation.

Gonzales Climate Action Plan

The CAP measures that are intended to reduce energy demand include: Residential Electrification Program (New Residential), Urban Forest, MBCP 100 Percent Carbon-Free Power (New Commercial and Industrial), Gonzalez Renewables Program (New Commercial and Industrial), and Gonzales/MBCP Electric Vehicle Program.

4.3 ANALYSIS

Project Energy Consumption

The three primary sources of long-term energy consumption from future development of the project will be vehicle fuel, natural gas, and electricity. Each of these energy sources is described below. Energy demand will increase incrementally over the projected 20-year buildout time horizon.

Transportation Fuel

The daily VMT at project buildout is projected at 364,065 miles (Ollie Zhou, email message, September 14, 2020). This includes travel for all types of vehicles in the vehicle fleet including passenger cars and trucks and light and heavy-duty trucks.

EMFAC was used to forecast transportation fuel demand (gas and diesel) from future development based on the daily VMT. Fuel demand at project buildout is forecast at 11,170 gallons per day or 4,077,050 gallons per year. The EMFAC fuel demand results are included in Appendix A.

Electricity

According to the California Energy Commission Energy Consumption Data Management System (2020a), in 2018, total electricity consumption in Monterey County was 2,509,195,974 kilowatt-hour (kWh). Section 5.3, Energy by Land Use – Electricity, in the annual CalEEMod results in Appendix A show that the unmitigated electricity demand at buildout of the project site would be approximately 9,881,138 kWh/year (the electricity demand of single-family homes would be zero given the required compliance with the net zero energy standards in the 2019 BEES). This represents about 0.4 percent of the total 2018 Monterey County electricity demand.

Natural Gas

According to the California Energy Commission Energy Consumption Data Management System (2020b), in 2018, total natural gas consumption in Monterey County was 112,179,397 therms. Therm is the unit of measurement for natural gas use over time. One therm equals 100,000 British Thermal Unit (BTU). Table 5.2 Energy by Land Use – Natural Gas, in the annual CalEEMod results in Appendix A shows that the unmitigated natural gas demand at buildout of the project site would be about 22,064,534,000 BTU/year or 220,698 therms/year (the natural gas demand of single-family homes would be zero given the required compliance with the net zero energy standards in the 2019 BEES). This is about 0.2 percent of Monterey County's total 2018 natural gas demand.

4.4 CONCLUSION

A multitude of state regulations and legislative acts are aimed at improving vehicle fuel efficiency, energy efficiency, and enhancing energy conservation. For example, the Pavley I standards focus on transportation fuel efficiency. The gradual increased use of electric cars powered with cleaner electricity will reduce consumption of fossil fuel. VMT is expected to decline with the continuing implementation of SB 743, resulting in less vehicle travel and less fuel consumption. In the renewable energy use sector, representative legislation for the use of renewable energy includes, but is not limited to SB 350 and Executive Order B-16-12. In the building energy use sector, representative legislation and standards for reducing natural gas and electricity consumption include, but are not limited to AB 2021, CALGreen, and the California Building Standards Code.

The conceptual land use types proposed represent common land use development types whose energy demand would not be excessive. Further, Gonzales enforces the California Building Standards Code through the development review process. That enforcement is the primary mechanism through which the project will be required to implement state mandated energy efficiency/conservation measures that are within the control of the applicant and the city. The G3 initiative is another mechanism through which the city actively implements projects and programs that result in energy reduction benefits. Additionally, the project would be conditioned to comply with the CAP measures that reduce energy demand. As a result, the proposed project would result in a less-than-significant impact from inefficient, wasteful, and unnecessary consumption of energy resources.

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APPENDIX A

MODELING MEMORANDUM AND RESULTS

EMC PLANNING GROUP INC.
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To: Ron Sissem, Principal

From: Tanya Kalaskar, Associate Planner

Cc: File

Date: September 10, 2020

Re: **Vista Lucia Annexation – Emissions Modeling Methodology and Assumptions**

This memorandum describes the methodology and assumptions used in the emissions modeling prepared for the proposed 768-acre Vista Lucia Annexation (proposed project) located near the City of Gonzales, CA. The conceptual plan for future development of the project site includes two development areas that would be developed with single-family and multi-family residential units of varying densities, neighborhood commercial uses, elementary and middle schools, community/neighborhood parks, greenspace, pedestrian promenade, bike trails, landscape buffers, duel use detention and drainage areas, and other open space areas. The project site is located within the North Central Coast Air Basin administered by the Monterey Air Resources District (air district). The results of the emissions modeling are analyzed in the *Vista Lucia Annexation – Air Quality, Greenhouse Gas Emissions, and Energy Report*.

EMFAC

The 2017 Emissions Factor Model (EMFAC) version 1.0.2, developed by the California Air Resources Board (CARB), is used to assess emissions from on-road vehicles including cars, trucks, and buses in California.

EMFAC was used to model annual mobile-source criteria air pollutant and GHG emissions from buildout of the proposed project. EMFAC was also used to estimate the proposed project's transportation fuel demand from mobile sources. The Custom Activity Mode template was utilized. Monterey County was selected in the Area/Subarea Tab, 2043 selected as the calendar year of analysis, "annual" was selected as the season, and total daily vehicle miles traveled (VMT) was selected as the VMT input type. Once the custom activity template was generated, VMT data provided by the traffic consultant (Ollie Zhou, email communication, July 14, 2020) was utilized as input to run the model. "Planning Inventory" was selected as the output type. The output spreadsheet showing criteria air pollutant emissions and fuel consumption is attached to this memorandum.

CalEEMod

Methodology

The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 software was used to estimate the proposed project's non-mobile criteria air pollutant and GHG emissions. CalEEMod is a modeling platform recommended by CARB and accepted by the air district. For modeling purposes, data inputs to the model take into account the type and size of existing and proposed uses utilizing CalEEMod default land uses based on the size metrics provided by the applicant (Pembrook Development 2020).

The CalEEMod software utilizes emissions models USEPA AP-42 emission factors, CARB vehicle emission models studies and studies commissioned by other California agencies such as the California Energy Commission and CalRecycle. The CalEEMod platform allows calculations of criteria air pollutant and GHG emissions from land use projects.

Assumptions

Unless otherwise noted, the CalEEMod data inputs are based on or derived from information provided by the applicant. The following primary assumptions were utilized in the preparation of data for inputs into the model:

1. Construction of the proposed project is anticipated to begin in June 2023.
2. The anticipated operational year for the proposed project is 2043. However, the current version of CalEEMod can only accommodate future operational years of 2021-2035, 2040, 2045, and 2050. CalEEMod will use the operational year to determine the appropriate emission factors to be used in all operational module calculations. Since

emission factors decline with time, by selecting operational year as 2040 rather than 2045, the calculations will result in a conservative, slight overestimate of emissions. Therefore, 2040 was selected as the operational year for modeling purposes.

3. Operational, non-mobile criteria air pollutant and GHG emissions generated by the proposed project are estimated using the following CalEEMod default land use subtypes:

    a. Emissions generated by the proposed residential units within the Low Density, Medium Density, and Medium-High Density Districts are assumed to be similar to emissions that would be generated by the CalEEMod default land use subtype "Single Family Housing", which is defined as single-family detached homes on individual lots with a density of up to 15 units per acre;

    b. Emissions generated by the proposed residential units within the High Density District and within the Neighborhood Commercial/Mixed Use District are assumed to be similar to emissions that would be generated by the CalEEMod default land use subtype "Apartments Low Rise", which is defined as units located in rental buildings that have 1-2 levels;

    c. Emissions generated by proposed commercial uses within the Neighborhood Commercial/Mixed Use District are assumed to be similar to emissions that would be generated by the CalEEMod default land use subtype "Strip Mall", which is defined as having a variety of retail shops with specialties such as quality apparel and hard goods, and with services such as real estate offices, dance studios, florists, and small restaurants;

    d. Emissions generated by the proposed elementary schools and middle school are assumed to be similar to emissions that would be generated by the CalEEMod default land use subtype "Elementary School", which is defined as a school that typically serves students attending kindergarten through the fifth or sixth grade. These schools are usually located in residential communities in order to facilitate student access and have no student drivers. The proposed middle school is included in this category because middle schools also have no student drivers;

e. Emissions generated by the proposed Neighborhood Parks, Community Park, Promenades, and Village Green are assumed to be similar to emissions that would be generated by the CalEEMod default land use subtype "City Park", which is defined as a park that is owned and operated by a city; and

f. Emissions generated by the proposed roads and other miscellaneous paved areas are assumed to be similar to emissions that would be generated by the CalEEMod default land use subtype "Other Asphalt Surfaces", which is defined as an asphalt area not specifically used as a parking lot.

4. The proposed detention, drainage, buffers, and other open space are not sources of substantial operational emissions, and therefore, are not included in the model.

5. The model's default CO_2 intensity factor of 641 pounds/megawatt hour is adjusted to 290 pounds/megawatt hour to reflect Pacific Gas & Electric's (PG&E) energy intensity projections for 2020, which is the horizon year for the provider's energy intensity factor projections. The intensity factor has been falling due to the increasing percentage of PG&E's energy portfolio obtained from renewable energy. Emissions intensity data is from *PG&E's Greenhouse Gas Factors: Guidance for PG&E Customers*, dated November 2015. PG&E's intensity factor will be significantly lower in the buildout year of 2043, and therefore, this analysis is conservative.

CalEEMod Version 2016.3.2 utilizes the 2016 Title 24 Building Energy Efficiency Standards (BEES) to estimate emissions from energy consumption. Title 24 BEES are updated every three years. Currently, the 2019 BEES are in effect. Compliance with the Title 24 BEES as they are updated is anticipated to result in increased building energy efficiencies and corresponding reductions in energy demand over time that are not reflected in CalEEMod Version 2016.3.2. The 2019 BEES require new single-family homes to include solar electricity generation in order to achieve zero-net energy. Therefore, energy-source emissions from single-family homes can be zeroed. According to the California Energy Commission (2018), multi-family homes and non-residential buildings built under the 2019 BEES will use about 30 percent less energy compared to the 2016 BEES. The modeling for multi-family homes and non-residential buildings includes adjustments for compliance with the 2019 BEES. The proposed project will be required to comply with the BEES in effect at the time building permits are sought, and therefore, this analysis is conservative.

Proposed Emissions Sources

The size and type of proposed sources of non-mobile emissions on the project site and their respective CalEEMod land use default categories are presented in Table 1, Project Characteristics.

Table 1 Project Characteristics

Project Components	CalEEMod Land Use[1]	Proposed
Low Density, Medium Density, Medium-High Density Residential	Single Family Housing	2,877 units
High Density Residential	Apartments Low Rise	528 units
Neighborhood Commercial/Mixed Use: Residential	Apartments Low Rise	93 units
Neighborhood Commercial/Mixed Use: Commercial	Strip Mall	96,000 square feet[2]
Elementary Schools	Elementary School	731,500 square feet[3]
Middle School	Elementary School	548,856 square feet[4]
Neighborhood Parks, Community Park, Promenades, Village Green	City Park	73 acres
Roads and Other Miscellaneous Areas	Other Asphalt Surfaces	102 acres

SOURCE: Trinity Consultants 2017, Pembrook Development 2020.
NOTES:
1. CalEEMod default land use subtype. Descriptions of the model default land use categories and subtypes are found in the User's Guide for CalEEMod Version 2016.3.2 available online at: http://www.aqmd.gov/caleemod/user's-guide
2. Commercial square footage allowances are based on a maximum 0.30 Floor Area Ratio factor.
3. Square footage allowances for the Public Facilities District are based on a maximum Floor Area Ratio of 0.70 (City of Gonzales 2020). For a 24-acre lot, the building square footage for the elementary schools can be estimated at 731,500 square feet.
4. Square footage allowances for the Public Facilities District are based on a maximum Floor Area Ratio of 0.70 (City of Gonzales 2020). For an 18-acre lot, the building square footage for the middle school can be estimated at 548,856 square feet.

Results

Detailed EMFAC and CalEEMod results are attached to this memorandum. The modeling results are summarized in Table 2, Unmitigated Operational Criteria Air Pollutant Emissions and Table 3, Unmitigated Operational GHG Emissions.

Table 2 Unmitigated Operational Criteria Air Pollutant Emissions[1,2]

Source Category	Volatile Organic Compounds (VOC)	Nitrogen Oxides (NO_X)	Respirable Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)	Carbon Monoxide (CO)	Sulfur Dioxide (SO_2)
EMFAC Results[3]						
Mobile (project total)	69.00	135.80	41.60	17.20	666.20	2.20
CalEEMod Results[4]						
Area (single-family homes)[5]	2,332.92	64.00	433.27	433.27	3,257.34	6.07
Energy (single-family homes)[6]	0.00	0.00	0.00	0.00	0.00	0.00
Area (other project components)[7]	53.90	0.59	0.28	0.28	51.17	0.00
Energy (other project components)[8]	0.65	5.85	0.45	0.45	4.38	0.04
Area (project total)[5,7]	2,386.82	64.59	433.55	433.55	3,308.51	6.07
Energy (project total)[6,8]	0.65	5.85	0.45	0.45	4.38	0.04
Total Project Emissions	2,456.47	206.24	475.60	451.20	3,979.09	8.31

SOURCE: EMC Planning Group 2020
NOTES:
1. Results have been rounded, and may, therefore, vary slightly.
2. Expressed in pounds per day.
3. EMFAC estimates operational, mobile criteria air pollutant emissions in tons per day. A U.S. ton is equal to 2,000 pounds. The emissions estimates in tons per day are multiped by 2,000 pounds to arrive at emissions volume in pounds per day.
4. CalEEMod results for operational criteria air pollutant emissions in summer and winter are the same.
5. According to the results, the use of wood-burning hearths is the largest contributor of area emissions (VOC, PM_{10}, and CO) from single-family homes. CalEEMod default emissions factors for hearths assume that 35 percent of the proposed single-family homes will include wood-burning hearths, 55 percent will include natural gas hearths, and 10 percent will include no hearths.
6. The CalEEMod results for energy-source criteria air pollutant emissions from single-family homes are zeroed because compliance with the current 2019 BEES will result in zero-net energy homes (California Energy Commission 2018).
7. CalEEMod assumes that multi-family homes will include only natural gas hearths. Emissions from consumer products account for majority of the area emissions from multi-family homes and non-residential buildings.
8. Results are based on model adjustments for compliance with the current 2019 BEES. Multi-family homes and non-residential buildings built to the 2019 BEES will be 30 percent more energy efficient than those under the 2016 BEES (California Energy Commission 2018). Compliance with the BEES in effect at the time building permits are sought will result in reduced energy-related emissions.

Table 3 Unmitigated Operational GHG Emissions[1,2]

Source Category	GHG Emissions (CO_2e)
EMFAC Results[3]	
Mobile (project total)	33,833.37
CalEEMod Results	
Area (single-family homes)	3,176.26
Energy (single-family homes)[4]	0.00
Waste (single-family homes)	1,820.66
Water (single-family homes)	444.60
Area (other project components)	10.75
Energy (other project components)[5]	2,495.49
Waste (other project components)	1,034.57
Water (other project components)	274.69
Area (project total)	3,187.01
Energy (project total)[4,5]	2,495.49
Waste (project total)	2,855.23
Water (project total)	719.29
Total Project Emissions	43,090.39

SOURCE: EMC Planning Group 2020
NOTES:
1. Results have been rounded, and may, therefore, vary slightly.
2. Expressed in MT CO_2e per year.
3. EMFAC estimates operational, mobile GHG emissions in tons per day. A U.S. ton is equal to 0.907 MT. The converted GHG volume is in MT CO_2 per day. The daily volume is then multiplied by 347 days per year to arrive at annual CO_2 emissions. Daily emissions are multiplied by 347 days per year rather than 365 days per year (California Air Resources Board 2016) to scale average annual emissions to reflect that weekday VMT are higher than weekend VMT. EMFAC also calculates daily CH_4 emissions, but the total annual volume is incidental compared to CO_2, so is not included in the total annual volume.
4. The CalEEMod results for energy-source GHG emissions from single-family homes are zeroed because compliance with the current 2019 BEES will result in zero-net energy homes (California Energy Commission 2018).
5. Results are based on model adjustments for compliance with the current 2019 BEES. Multi-family homes and non-residential buildings built to the 2019 BEES will be 30 percent more energy efficient than those under the 2016 BEES (California Energy Commission 2018). Compliance with the BEES in effect at the time building permits are sought will result in reduced energy-related emissions.

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Area	Sub-Area	Cal. Year	Season	Veh_Tech	EMFAC2007 Category	VMT	ROG_TOTAL	CO_TOTEX	NOx_TOTEX	CO2_TOTEX	PM10_TOTAL	PM2_5_TOTAL	SOx_TOTEX	Fuel_GAS	Fuel_DSL
Sub-Areas	Monterey (NCC)	2043	Annual	All Vehicles	All Vehicles	364,065.0	0.0345	0.3331	0.0679	107.5	0.0208	0.0086	0.0011	9.11	2.05
Sub-Areas	Monterey (NCC)	2043	Annual	ALL OTHER BUSES - DSL	OBUS - DSL	343.1	0.0000	0.0001	0.0010	0.3553	0.0001	0.0000	0.0000		0.0320
Sub-Areas	Monterey (NCC)	2043	Annual	LDA - DSL	LDA - DSL	2,402.3	0.0000	0.0006	0.0000	0.4283	0.0001	0.0000	0.0000		0.0385
Sub-Areas	Monterey (NCC)	2043	Annual	LDA - GAS	LDA - GAS	205,845.9	0.0105	0.1330	0.0082	44.1	0.0103	0.0042	0.0004	4.72	
Sub-Areas	Monterey (NCC)	2043	Annual	LDT1 - DSL	LDT1 - DSL	2.57	0.0000	0.0000	0.0000	0.0009	0.0000	0.0000	0.0000		0.0001
Sub-Areas	Monterey (NCC)	2043	Annual	LDT1 - GAS	LDT1 - GAS	19,739.2	0.0014	0.0138	0.0009	5.09	0.0010	0.0004	0.0001	0.5439	
Sub-Areas	Monterey (NCC)	2043	Annual	LDT2 - DSL	LDT2 - DSL	643.8	0.0000	0.0002	0.0000	0.1538	0.0000	0.0000	0.0000		0.0138
Sub-Areas	Monterey (NCC)	2043	Annual	LDT2 - GAS	LDT2 - GAS	64,554.4	0.0053	0.0544	0.0029	16.7	0.0032	0.0013	0.0002	1.78	
Sub-Areas	Monterey (NCC)	2043	Annual	LHD1 - DSL	LHDT1 - DSL	3,174.4	0.0005	0.0022	0.0009	1.55	0.0003	0.0002	0.0000		0.1395
Sub-Areas	Monterey (NCC)	2043	Annual	LHD1 - GAS	LHDT1 - GAS	3,525.5	0.0010	0.0039	0.0009	3.22	0.0003	0.0001	0.0000	0.3434	
Sub-Areas	Monterey (NCC)	2043	Annual	LHD2 - DSL	LHDT2 - DSL	1,276.8	0.0002	0.0009	0.0005	0.7112	0.0002	0.0001	0.0000		0.0640
Sub-Areas	Monterey (NCC)	2043	Annual	LHD2 - GAS	LHDT2 - GAS	471.5	0.0001	0.0005	0.0001	0.4907	0.0001	0.0000	0.0000	0.0523	
Sub-Areas	Monterey (NCC)	2043	Annual	MCY - GAS	MCY - GAS	2,392.4	0.0097	0.0537	0.0033	0.5141	0.0001	0.0000	0.0000	0.0667	
Sub-Areas	Monterey (NCC)	2043	Annual	MDV - DSL	MDV - DSL	1,387.2	0.0000	0.0004	0.0000	0.4296	0.0001	0.0000	0.0000		0.0387
Sub-Areas	Monterey (NCC)	2043	Annual	MDV - GAS	MDV - GAS	40,053.9	0.0045	0.0360	0.0023	12.7	0.0020	0.0008	0.0001	1.35	
Sub-Areas	Monterey (NCC)	2043	Annual	MH - DSL	MH - DSL	66.6	0.0000	0.0000	0.0002	0.0621	0.0000	0.0000	0.0000		0.0056
Sub-Areas	Monterey (NCC)	2043	Annual	MH - GAS	MH - GAS	144.7	0.0000	0.0000	0.0000	0.2243	0.0000	0.0000	0.0000	0.0239	
Sub-Areas	Monterey (NCC)	2043	Annual	MOTOR COACH - DSL	OBUS - DSL	380.4	0.0000	0.0003	0.0010	0.5171	0.0001	0.0000	0.0000		0.0465
Sub-Areas	Monterey (NCC)	2043	Annual	OBUS - GAS	OBUS - GAS	195.7	0.0001	0.0004	0.0001	0.3076	0.0000	0.0000	0.0000	0.0328	
Sub-Areas	Monterey (NCC)	2043	Annual	PTO - DSL	HHDT - DSL	121.8	0.0000	0.0001	0.0007	0.2114	0.0000	0.0000	0.0000		0.0190
Sub-Areas	Monterey (NCC)	2043	Annual	SBUS - DSL	SBUS - DSL	315.3	0.0000	0.0002	0.0009	0.3173	0.0003	0.0001	0.0000		0.0286
Sub-Areas	Monterey (NCC)	2043	Annual	SBUS - GAS	SBUS - GAS	145.8	0.0000	0.0003	0.0000	0.1190	0.0001	0.0001	0.0000	0.0127	
Sub-Areas	Monterey (NCC)	2043	Annual	T6 AG - DSL	MHDT - DSL	1.39	0.0000	0.0000	0.0000	0.0022	0.0000	0.0000	0.0000		0.0002
Sub-Areas	Monterey (NCC)	2043	Annual	T6 CAIRP HEAVY - DSL	MHDT - DSL	190.1	0.0000	0.0000	0.0002	0.1417	0.0000	0.0000	0.0000		0.0128
Sub-Areas	Monterey (NCC)	2043	Annual	T6 CAIRP SMALL - DSL	MHDT - DSL	25.0	0.0000	0.0000	0.0000	0.0209	0.0000	0.0000	0.0000		0.0019
Sub-Areas	Monterey (NCC)	2043	Annual	T6 INSTATE CONSTRUCTION HEAVY - DSL	MHDT - DSL	159.9	0.0000	0.0000	0.0005	0.1780	0.0000	0.0000	0.0000		0.0160
Sub-Areas	Monterey (NCC)	2043	Annual	T6 INSTATE CONSTRUCTION SMALL - DSL	MHDT - DSL	711.5	0.0000	0.0002	0.0019	0.7398	0.0001	0.0001	0.0000		0.0666
Sub-Areas	Monterey (NCC)	2043	Annual	T6 INSTATE HEAVY - DSL	MHDT - DSL	2,092.4	0.0000	0.0003	0.0045	1.79	0.0003	0.0002	0.0000		0.1612
Sub-Areas	Monterey (NCC)	2043	Annual	T6 INSTATE SMALL - DSL	MHDT - DSL	2,680.4	0.0000	0.0004	0.0061	2.39	0.0004	0.0002	0.0000		0.2151
Sub-Areas	Monterey (NCC)	2043	Annual	T6 OOS HEAVY - DSL	MHDT - DSL	112.7	0.0000	0.0000	0.0001	0.0840	0.0000	0.0000	0.0000		0.0076
Sub-Areas	Monterey (NCC)	2043	Annual	T6 OOS SMALL - DSL	MHDT - DSL	13.2	0.0000	0.0000	0.0000	0.0110	0.0000	0.0000	0.0000		0.0010
Sub-Areas	Monterey (NCC)	2043	Annual	T6 PUBLIC - DSL	MHDT - DSL	45.0	0.0000	0.0000	0.0002	0.0524	0.0000	0.0000	0.0000		0.0047
Sub-Areas	Monterey (NCC)	2043	Annual	T6 UTILITY - DSL	MHDT - DSL	36.1	0.0000	0.0000	0.0001	0.0342	0.0000	0.0000	0.0000		0.0031
Sub-Areas	Monterey (NCC)	2043	Annual	T6TS - GAS	MHDT - GAS	922.5	0.0001	0.0012	0.0002	1.43	0.0001	0.0001	0.0000	0.1520	
Sub-Areas	Monterey (NCC)	2043	Annual	T7 AG - DSL	HHDT - DSL	0.4138	0.0000	0.0000	0.0000	0.0018	0.0000	0.0000	0.0000		0.0002
Sub-Areas	Monterey (NCC)	2043	Annual	T7 CAIRP - DSL	HHDT - DSL	2,162.5	0.0002	0.0022	0.0067	2.44	0.0003	0.0001	0.0000		0.2199
Sub-Areas	Monterey (NCC)	2043	Annual	T7 CAIRP CONSTRUCTION - DSL	HHDT - DSL	114.9	0.0000	0.0001	0.0005	0.1623	0.0000	0.0000	0.0000		0.0146
Sub-Areas	Monterey (NCC)	2043	Annual	T7 NNOOS - DSL	HHDT - DSL	2,637.1	0.0003	0.0039	0.0087	3.14	0.0004	0.0002	0.0000		0.2824
Sub-Areas	Monterey (NCC)	2043	Annual	T7 NOOS - DSL	HHDT - DSL	849.6	0.0001	0.0010	0.0028	0.9827	0.0001	0.0001	0.0000		0.0884
Sub-Areas	Monterey (NCC)	2043	Annual	T7 OTHER PORT - DSL	HHDT - DSL	0.0000	0	0	0	0.0000	0	0	0		0.0000
Sub-Areas	Monterey (NCC)	2043	Annual	T7 POAK - DSL	HHDT - DSL	269.6	0.0000	0.0002	0.0013	0.3469	0.0000	0.0000	0.0000		0.0312
Sub-Areas	Monterey (NCC)	2043	Annual	T7 POLA - DSL	HHDT - DSL	0.0000	0	0	0	0.0000	0	0	0		0.0000
Sub-Areas	Monterey (NCC)	2043	Annual	T7 PUBLIC - DSL	HHDT - DSL	62.8	0.0000	0.0001	0.0004	0.1012	0.0000	0.0000	0.0000		0.0091
Sub-Areas	Monterey (NCC)	2043	Annual	T7 SINGLE - DSL	HHDT - DSL	613.5	0.0000	0.0004	0.0022	0.8280	0.0001	0.0000	0.0000		0.0745
Sub-Areas	Monterey (NCC)	2043	Annual	T7 SINGLE CONSTRUCTION - DSL	HHDT - DSL	284.9	0.0000	0.0002	0.0012	0.4364	0.0000	0.0000	0.0000		0.0393
Sub-Areas	Monterey (NCC)	2043	Annual	T7 SWCV - DSL	HHDT - DSL	201.0	0.0000	0.0009	0.0004	0.6084	0.0000	0.0000	0.0000		0.0601
Sub-Areas	Monterey (NCC)	2043	Annual	T7 TRACTOR - DSL	HHDT - DSL	1,674.4	0.0001	0.0007	0.0039	1.73	0.0002	0.0001	0.0000		0.1561
Sub-Areas	Monterey (NCC)	2043	Annual	T7 TRACTOR CONSTRUCTION - DSL	HHDT - DSL	235.0	0.0000	0.0002	0.0012	0.3526	0.0000	0.0000	0.0000		0.0317
Sub-Areas	Monterey (NCC)	2043	Annual	T7 UTILITY - DSL	HHDT - DSL	10.3	0.0000	0.0000	0.0000	0.0139	0.0000	0.0000	0.0000		0.0013
Sub-Areas	Monterey (NCC)	2043	Annual	T7IS - GAS	HHDT - GAS	8.57	0.0000	0.0003	0.0000	0.0138	0.0000	0.0000	0.0000	0.0015	
Sub-Areas	Monterey (NCC)	2043	Annual	UBUS - DSL	UBUS - DSL	623.5	0.0000	0.0196	0.0004	1.13	0.0001	0.0000	0.0000		0.1277
Sub-Areas	Monterey (NCC)	2043	Annual	UBUS - GAS	UBUS - GAS	143.8	0.0000	0.0001	0.0000	0.2160	0.0000	0.0000	0.0000	0.0230	

Vista Lucia Annexation Project_Single Family Homes

Monterey Bay Unified APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	2,877.00	Dwelling Unit	448.00	5,178,600.00	8228

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted PG&E CO2 Intensity Factor for 2020

Land Use - from conceptual land use plan

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	2,332.9243	63.9962	3,257.3421	6.0730		433.2672	433.2672		433.2672	433.2672	47,637.9274	33,935.9732	81,573.9006	76.5808	3.3920	84,499.2469
Energy	2.4707	21.1128	8.9842	0.1348		1.7070	1.7070		1.7070	1.7070		26,952.5428	26,952.5428	0.5166	0.4941	27,112.7083
Total	**2,335.3950**	**85.1090**	**3,266.3263**	**6.2078**	**0.0000**	**434.9742**	**434.9742**	**0.0000**	**434.9742**	**434.9742**	**47,637.9274**	**60,888.5160**	**108,526.4433**	**77.0974**	**3.8862**	**111,611.9551**

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	229097	2.4707	21.1128	8.9842	0.1348		1.7070	1.7070		1.7070	1.7070		26,952.5428	26,952.5428	0.5166	0.4941	27,112.7083
Total		**2.4707**	**21.1128**	**8.9842**	**0.1348**		**1.7070**	**1.7070**		**1.7070**	**1.7070**		**26,952.5428**	**26,952.5428**	**0.5166**	**0.4941**	**27,112.7083**

6.0 Area Detail

6.1 Mitigation Measures Area

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	17.7555					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	110.8220					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2,197.2788	61.2685	3,021.0287	6.0605		431.9509	431.9509		431.9509	431.9509	47,637.9274	33,508.5882	81,146.5156	76.1740	3.3920	84,061.6919

Landscaping	7.0679	2.7277	236.3135	0.0125		1.3163	1.3163		1.3163	1.3163		427.3850	427.3850	0.4068		437.5550
Total	**2,332.9243**	**63.9962**	**3,257.3421**	**6.0730**		**433.2672**	**433.2672**		**433.2672**	**433.2672**	**47,637.9274**	**33,935.9732**	**81,573.9006**	**76.5808**	**3.3920**	**84,499.2469**

Vista Lucia Annexation Project_Single Family Homes

Monterey Bay Unified APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	2,877.00	Dwelling Unit	448.00	5,178,600.00	8228

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted PG&E CO2 Intensity Factor for 2020

Land Use - from conceptual land use plan

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area	2,332.9243	63.9962	3,257.3421	6.0730		433.2672	433.2672		433.2672	433.2672	47,637.9274	33,935.9732	81,573.9006	76.5808	3.3920	84,499.2469
Energy	2.4707	21.1128	8.9842	0.1348		1.7070	1.7070		1.7070	1.7070		26,952.5428	26,952.5428	0.5166	0.4941	27,112.7083
Total	**2,335.3950**	**85.1090**	**3,266.3263**	**6.2078**	**0.0000**	**434.9742**	**434.9742**	**0.0000**	**434.9742**	**434.9742**	**47,637.9274**	**60,888.5160**	**108,526.4433**	**77.0974**	**3.8862**	**111,611.9551**

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	229097	2.4707	21.1128	8.9842	0.1348		1.7070	1.7070		1.7070	1.7070		26,952.5428	26,952.5428	0.5166	0.4941	27,112.7083
Total		**2.4707**	**21.1128**	**8.9842**	**0.1348**		**1.7070**	**1.7070**		**1.7070**	**1.7070**		**26,952.5428**	**26,952.5428**	**0.5166**	**0.4941**	**27,112.7083**

6.0 Area Detail

6.1 Mitigation Measures Area

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	17.7555					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	110.8220					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2,197.2788	61.2685	3,021.0287	6.0605		431.9509	431.9509		431.9509	431.9509	47,637.9274	33,508.5882	81,146.5156	76.1740	3.3920	84,061.6919

Landscaping	7.0679	2.7277	236.3135	0.0125		1.3163	1.3163		1.3163	1.3163		427.3850	427.3850	0.4068		437.5550
Total	**2,332.9243**	**63.9962**	**3,257.3421**	**6.0730**		**433.2672**	**433.2672**		**433.2672**	**433.2672**	**47,637.9274**	**33,935.9732**	**81,573.9006**	**76.5808**	**3.3920**	**84,499.2469**

Vista Lucia Annexation Project_Single Family Homes

Monterey Bay Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	2,877.00	Dwelling Unit	448.00	5,178,600.00	8228

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted PG&E CO2 Intensity Factor for 2020

Land Use - from conceptual land use plan

2.0 Emissions Summary

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	114.4373	2.8530	153.4014	0.2501		17.8745	17.8745		17.8745	17.8745	1,771.8724	1,294.8023	3,066.6748	2.8794	0.1262	3,176.2568
Energy	0.4509	3.8531	1.6396	0.0246		0.3115	0.3115		0.3115	0.3115	0.0000	7,524.1373	7,524.1373	0.3917	0.1452	7,577.1870
Waste						0.0000	0.0000		0.0000	0.0000	734.8922	0.0000	734.8922	43.4309	0.0000	1,820.6644
Water						0.0000	0.0000		0.0000	0.0000	59.4686	187.8272	247.2959	6.1268	0.1481	444.6020
Total	**114.8882**	**6.7061**	**155.0410**	**0.2746**	**0.0000**	**18.1861**	**18.1861**	**0.0000**	**18.1861**	**18.1861**	**2,566.2333**	**9,006.7669**	**11,573.0002**	**52.8288**	**0.4194**	**13,018.7101**

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	8.36203e+007	0.4509	3.8531	1.6396	0.0246		0.3115	0.3115		0.3115	0.3115	0.0000	4,462.2957	4,462.2957	0.0855	0.0818	4,488.8129
Total		**0.4509**	**3.8531**	**1.6396**	**0.0246**		**0.3115**	**0.3115**		**0.3115**	**0.3115**	**0.0000**	**4,462.2957**	**4,462.2957**	**0.0855**	**0.0818**	**4,488.8129**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	2.32766e+007	3,061.8416	0.3062	0.0634	3,088.3741
Total		**3,061.8416**	**0.3062**	**0.0634**	**3,088.3741**

6.0 Area Detail

6.1 Mitigation Measures Area

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	3.2404					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	20.2250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	90.0884	2.5120	123.8622	0.2485		17.7100	17.7100		17.7100	17.7100	1,771.8724	1,246.3377	3,018.2101	2.8333	0.1262	3,126.6389
Landscaping	0.8835	0.3410	29.5392	1.5700e-003		0.1645	0.1645		0.1645	0.1645	0.0000	48.4646	48.4646	0.0461	0.0000	49.6179
Total	**114.4373**	**2.8530**	**153.4014**	**0.2501**		**17.8745**	**17.8745**		**17.8745**	**17.8745**	**1,771.8724**	**1,294.8023**	**3,066.6748**	**2.8794**	**0.1262**	**3,176.2568**

7.0 Water Detail

7.1 Mitigation Measures Water

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	187.448 / 118.174	247.2959	6.1268	0.1481	444.6020
Total		**247.2959**	**6.1268**	**0.1481**	**444.6020**

8.0 Waste Detail

8.1 Mitigation Measures Waste

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO_2	CH_4	N_2O	CO_2e
Land Use	tons	MT/yr			
Single Family Housing	3620.32	734.8922	43.4309	0.0000	1,820.6644
Total		**734.8922**	**43.4309**	**0.0000**	**1,820.6644**

Vista Lucia Annexation Project_Other Project Components

Monterey Bay Unified APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	731.50	1000sqft	24.00	731,500.00	0
Elementary School	548.86	1000sqft	18.00	548,856.00	0
Other Asphalt Surfaces	102.00	Acre	102.00	4,443,120.00	0
City Park	73.00	Acre	73.00	3,179,880.00	0
Apartments Low Rise	528.00	Dwelling Unit	22.00	528,000.00	1510
Apartments Low Rise	93.00	Dwelling Unit	0.00	93,000.00	266
Strip Mall	96.00	1000sqft	8.00	96,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 intensity factor for 2020

Land Use - from conceptual land use plan
zero-out acreage of residential in mixed use to avoid double counting

Energy Mitigation - For Multi-family and non-residential, compliance with 2019 BEES will result in 30 percent improvement over 2016 BEES

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	53.9013	0.5902	51.1656	2.7200e-003		0.2847	0.2847		0.2847	0.2847	0.0000	92.5905	92.5905	0.0887	0.0000	94.8076
Energy	0.6519	5.8456	4.3849	0.0356		0.4504	0.4504		0.4504	0.4504		7,111.8566	7,111.8566	0.1363	0.1304	7,154.1188
Total	**54.5533**	**6.4358**	**55.5505**	**0.0383**	**0.0000**	**0.7351**	**0.7351**	**0.0000**	**0.7351**	**0.7351**	**0.0000**	**7,204.4471**	**7,204.4471**	**0.2250**	**0.1304**	**7,248.9264**

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	11.6966	0.1261	1.0779	0.4587	6.8800e-003		0.0872	0.0872		0.0872	0.0872		1,376.0667	1,376.0667	0.0264	0.0252	1,384.2440
Apartments Low Rise	2.06019	0.0222	0.1899	0.0808	1.2100e-003		0.0154	0.0154		0.0154	0.0154		242.3754	242.3754	4.6500e-003	4.4400e-003	243.8157
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	19.8295	0.2139	1.9441	1.6330	0.0117		0.1478	0.1478		0.1478	0.1478		2,332.8813	2,332.8813	0.0447	0.0428	2,346.7444
Elementary School	26.4282	0.2850	2.5910	2.1764	0.0156		0.1969	0.1969		0.1969	0.1969		3,109.1992	3,109.1992	0.0596	0.0570	3,127.6756
Other Asphalt Surfaces	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

Strip Mall	0.43634	4.7100e-003	0.0428	0.0359	2.6000e-004		3.2500e-003	3.2500e-003		3.2500e-003	3.2500e-003		51.3341	51.3341	9.8000e-004	9.4000e-004	51.6391
Total		**0.6519**	**5.8456**	**4.3849**	**0.0356**		**0.4504**	**0.4504**		**0.4504**	**0.4504**		**7,111.8566**	**7,111.8566**	**0.1363**	**0.1304**	**7,154.1188**

6.0 Area Detail

6.1 Mitigation Measures Area

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.8803					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	44.4810					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.5400	0.5902	51.1656	2.7200e-003		0.2847	0.2847		0.2847	0.2847		92.5905	92.5905	0.0887		94.8076
Total	**53.9013**	**0.5902**	**51.1656**	**2.7200e-003**		**0.2847**	**0.2847**		**0.2847**	**0.2847**	**0.0000**	**92.5905**	**92.5905**	**0.0887**	**0.0000**	**94.8076**

Vista Lucia Annexation Project_Other Project Components

Monterey Bay Unified APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	731.50	1000sqft	24.00	731,500.00	0
Elementary School	548.86	1000sqft	18.00	548,856.00	0
Other Asphalt Surfaces	102.00	Acre	102.00	4,443,120.00	0
City Park	73.00	Acre	73.00	3,179,880.00	0
Apartments Low Rise	528.00	Dwelling Unit	22.00	528,000.00	1510
Apartments Low Rise	93.00	Dwelling Unit	0.00	93,000.00	266
Strip Mall	96.00	1000sqft	8.00	96,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 intensity factor for 2020

Land Use - from conceptual land use plan
zero-out acreage of residential in mixed use to avoid double counting

Energy Mitigation - For Multi-family and non-residential, compliance with 2019 BEES will result in 30 percent improvement over 2016 BEES

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	53.9013	0.5902	51.1656	2.7200e-003		0.2847	0.2847		0.2847	0.2847	0.0000	92.5905	92.5905	0.0887	0.0000	94.8076
Energy	0.6519	5.8456	4.3849	0.0356		0.4504	0.4504		0.4504	0.4504		7,111.8566	7,111.8566	0.1363	0.1304	7,154.1188
Total	**54.5533**	**6.4358**	**55.5505**	**0.0383**	**0.0000**	**0.7351**	**0.7351**	**0.0000**	**0.7351**	**0.7351**	**0.0000**	**7,204.4471**	**7,204.4471**	**0.2250**	**0.1304**	**7,248.9264**

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Low Rise	2.06019	0.0222	0.1899	0.0808	1.2100e-003		0.0154	0.0154		0.0154	0.0154		242.3754	242.3754	4.6500e-003	4.4400e-003	243.8157
Apartments Low Rise	11.6966	0.1261	1.0779	0.4587	6.8800e-003		0.0872	0.0872		0.0872	0.0872		1,376.0667	1,376.0667	0.0264	0.0252	1,384.2440
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Elementary School	19.8295	0.2139	1.9441	1.6330	0.0117		0.1478	0.1478		0.1478	0.1478		2,332.8813	2,332.8813	0.0447	0.0428	2,346.7444
Elementary School	26.4282	0.2850	2.5910	2.1764	0.0156		0.1969	0.1969		0.1969	0.1969		3,109.1992	3,109.1992	0.0596	0.0570	3,127.6756
Other Asphalt Surfaces	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

Strip Mall	0.43634	4.7100e-003	0.0428	0.0359	2.6000e-004		3.2500e-003	3.2500e-003		3.2500e-003	3.2500e-003		51.3341	51.3341	9.8000e-004	9.4000e-004	51.6391
Total		**0.6519**	**5.8456**	**4.3849**	**0.0356**		**0.4504**	**0.4504**		**0.4504**	**0.4504**		**7,111.8566**	**7,111.8566**	**0.1363**	**0.1304**	**7,154.1188**

6.0 Area Detail

6.1 Mitigation Measures Area

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	7.8803					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	44.4810					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.5400	0.5902	51.1656	2.7200e-003		0.2847	0.2847		0.2847	0.2847		92.5905	92.5905	0.0887		94.8076
Total	**53.9013**	**0.5902**	**51.1656**	**2.7200e-003**		**0.2847**	**0.2847**		**0.2847**	**0.2847**	**0.0000**	**92.5905**	**92.5905**	**0.0887**	**0.0000**	**94.8076**

Vista Lucia Annexation Project_Other Project Components

Monterey Bay Unified APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	731.50	1000sqft	24.00	731,500.00	0
Elementary School	548.86	1000sqft	18.00	548,856.00	0
Other Asphalt Surfaces	102.00	Acre	102.00	4,443,120.00	0
City Park	73.00	Acre	73.00	3,179,880.00	0
Apartments Low Rise	528.00	Dwelling Unit	22.00	528,000.00	1510
Apartments Low Rise	93.00	Dwelling Unit	0.00	93,000.00	266
Strip Mall	96.00	1000sqft	8.00	96,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.8	**Precipitation Freq (Days)**	53
Climate Zone	4			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E CO2 intensity factor for 2020

Land Use - from conceptual land use plan
zero-out acreage of residential in mixed use to avoid double counting

Energy Mitigation - For Multi-family and non-residential, compliance with 2019 BEES will result in 30 percent improvement over 2016 BEES

2.0 Emissions Summary

2.2 Overall Operational

<u>Unmitigated Operational</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 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	9.7484	0.0738	6.3957	3.4000e-004		0.0356	0.0356		0.0356	0.0356	0.0000	10.4996	10.4996	0.0101	0.0000	10.7510
Energy	0.1190	1.0668	0.8002	6.4900e-003		0.0822	0.0822		0.0822	0.0822	0.0000	2,477.2308	2,477.2308	0.1526	0.0485	2,495.4911
Waste						0.0000	0.0000		0.0000	0.0000	417.5950	0.0000	417.5950	24.6792	0.0000	1,034.5740
Water						0.0000	0.0000		0.0000	0.0000	26.8708	158.0336	184.9044	2.7757	0.0684	274.6909
Total	**9.8674**	**1.1406**	**7.1959**	**6.8300e-003**	**0.0000**	**0.1178**	**0.1178**	**0.0000**	**0.1178**	**0.1178**	**444.4658**	**2,645.7640**	**3,090.2299**	**27.6175**	**0.1169**	**3,815.5070**

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

5.2 Energy by Land Use - NaturalGas

<u>Unmitigated</u>

	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					
Apartments Low Rise	4.26925e+006	0.0230	0.1967	0.0837	1.2600e-003		0.0159	0.0159		0.0159	0.0159	0.0000	227.8233	227.8233	4.3700e-003	4.1800e-003	229.1771
Apartments Low Rise	751970	4.0500e-003	0.0347	0.0147	2.2000e-004		2.8000e-003	2.8000e-003		2.8000e-003	2.8000e-003	0.0000	40.1280	40.1280	7.7000e-004	7.4000e-004	40.3664
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Elementary School	7.23776e+006	0.0390	0.3548	0.2980	2.1300e-003		0.0270	0.0270		0.0270	0.0270	0.0000	386.2347	386.2347	7.4000e-003	7.0800e-003	388.5299
Elementary School	9.64629e+006	0.0520	0.4729	0.3972	2.8400e-003		0.0359	0.0359		0.0359	0.0359	0.0000	514.7628	514.7628	9.8700e-003	9.4400e-003	517.8218
Other Asphalt Surfaces	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	159264	8.6000e-004	7.8100e-003	6.5600e-003	5.0000e-005		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	8.4989	8.4989	1.6000e-004	1.6000e-004	8.5494
Total		**0.1190**	**1.0668**	**0.8002**	**6.5000e-003**		**0.0822**	**0.0822**		**0.0822**	**0.0822**	**0.0000**	**1,177.4476**	**1,177.4476**	**0.0226**	**0.0216**	**1,184.4446**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	2.23824e+006	294.4224	0.0294	6.0900e-003	296.9738
Apartments Low Rise	394236	51.8585	5.1900e-003	1.0700e-003	52.3079
City Park	0	0.0000	0.0000	0.0000	0.0000
Elementary School	2.70147e+006	355.3561	0.0355	7.3500e-003	358.4354
Elementary School	3.60044e+006	473.6087	0.0474	9.8000e-003	477.7128
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	946752	124.5375	0.0125	2.5800e-003	125.6166
Total		**1,299.7832**	**0.1300**	**0.0269**	**1,311.0465**

6.0 Area Detail

6.1 Mitigation Measures Area

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	1.4382					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	8.1178					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1925	0.0738	6.3957	3.4000e-004		0.0356	0.0356		0.0356	0.0356	0.0000	10.4996	10.4996	0.0101	0.0000	10.7510
Total	**9.7484**	**0.0738**	**6.3957**	**3.4000e-004**		**0.0356**	**0.0356**		**0.0356**	**0.0356**	**0.0000**	**10.4996**	**10.4996**	**0.0101**	**0.0000**	**10.7510**

7.0 Water Detail

7.1 Mitigation Measures Water

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	40.4606 / 25.5078	53.3788	1.3225	0.0320	95.9673
City Park	0 / 86.9781	40.0444	4.0000e-003	8.3000e-004	40.3914
Elementary School	37.1265 / 95.4681	82.1573	1.2168	0.0300	121.5238
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	7.11096 / 4.35833	9.3239	0.2324	5.6200e-003	16.8084
Total		**184.9044**	**2.7757**	**0.0684**	**274.6908**

8.0 Waste Detail

8.1 Mitigation Measures Waste

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	285.66	57.9864	3.4269	0.0000	143.6589
City Park	6.28	1.2748	0.0753	0.0000	3.1582
Elementary School	1664.47	337.8724	19.9677	0.0000	837.0645
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	100.8	20.4615	1.2092	0.0000	50.6925
Total		**417.5950**	**24.6792**	**0.0000**	**1,034.5740**

APPENDIX B

CLIMATE ACTION PLAN GHG REDUCTION MEASURES

GHG Emission Reduction Measures

Table CAP-8 presents GHG emission reduction measures to be implemented by the City of Gonzales and the expected savings from each of these reduction measures.

Table CAP-8
GHG REDUCTION MEASURES

Measure No.	Prescribed GHG Reduction Measures	2020		2030	
		Annual Savings MT CO_2e Emissions	Percent of Total	Annual Savings MT CO_2e Emissions	Percent of Total
P-1.0 Residential Emissions					
P-1.1	MBCP 100% Carbon-Free Power	1,698	10.4%	3,723	12.4%
P-1.2	Residential Electrification Program (500 Existing Units)	0	0.0%	1,154	3.9%
P-1.3	Residential Electrification Program (New Residential)	344	2.1%	6,042	20.2%
P-1.4	Urban Forest (2,200 Trees Planted)	0	0.0%	555	1.9%
	Subtotal	**2,042**	**12.5%**	**11,474**	**38.3%**
P-2.0 Commercial and Industrial Emissions					
P-2.1	MBCP 100% Carbon-Free Power (Existing C&I)	9,339	57.4%	9,339	31.2%
P-2.2	MBCP 100% Carbon-Free Power (New C&I)	0	0.0%	819	2.7%
P-2.3	Gonzales Renewables Program	274	1.7%	274	0.9%
	Subtotal	**9,613**	**59.1%**	**10,432**	**34.8%**
P-3.0 Transportation Emissions					
P-3.1	Gonzales/MBCP Electric Vehicle Program (600 vehicles)	0	0.0%	3,452	11.5%
P-4.0 Solid Waste Emissions					
P-4.1	Waste Reduction (75% Diversion)	1,071	6.6%	1,029	3.4%
P-5.0 Government Operations					
P-5.1	MBCP 100% Carbon-Free Power	440	2.7%	463	1.5%
Total Program Savings		**13,165**	**80.9%**	**26,849**	**89.6%**
Progress to Date (2017)		3,107	19.1%	3,107	10.4%
Total GHG Savings		**16,272**	**100.0%**	**29,956**	**100.0%**
Local CAP Reduction Target		5,548		29,553	
Account Balance (Exceeds GHG Reduction Target by:)		**10,724**	**293.3%**	**403**	**101.4%**

Source: ZeroCity LLC, City of Gonzales

row MBUAPCD CONSISTENCY DETERMINATION PROCEDURE Ver. 4.0

Data entry		*Data entered by user.*
Consistency Finding	NO	YES

row					
6	Jurisdiction:	**Gonzales**			*Lead Agency selects from pull down*
7	Project Name:	**Vista Lucia Annexation**			*Lead Agency enters*
8	Base Year for this determination:	**2015**	Project Buildout/ Occupancy Year	**2043**	*Lead Agency enters*
9			Proposed Project Occupied DU	**3,498**	*Total buildout of Project. Sum of all years, row 26.*

JURISDICTION DATA FROM AQMP & DOF (no data entry)

row		Base Year	Period ending January 1st of:					
		2015	**2020**	**2025**	**2030**	**2035**	**2040**	***Notes***
14	DOF Population	8,489	*From Calif. Dept of Finance. Est. for Jan 1 -- released in June of each year.*					
15	AMBAG DU Forecast for Jurisdiction	1,987	2,109	2,508	3,083	3,792	4,456	*DUs from AMBAG Travel Model, current version.*
16	AMBAG Pop Forecast for Jurisdiction	8,411	8,827	10,592	13,006	15,942	18,756	*Latest AMBAG Pop. & Employment forecasts.*
17	AMBAG Forecast Population/ DU	4.23	4.19	4.22	4.22	4.20	4.21	*Row 16/ row 15*
18	Estimated Built DUs	1,987	*Entry for 2015 is the DOF 1/2015 Housing Unit Estimate. Lead agency may overwrite if they have better data.*					

JURISDICTION DUs w/o PROJECT

row		2015	2020	2025	2030	2035	2040	
21	Housing Stock (Built DUs, Total)	1,987	1,987	1,987	1,987	1,987	1,987	*2015 Housing Stock is baseline across the project life*
22	Approved but not Built DUs							*Lead Agency estimates value at period end.*
23	Total Built & Approved DUs	1,987	1,987	1,987	1,987	1,987	1,987	*Sum of Row 21 + 22*

PROPOSED NEW PROJECT DUs

row		2020	2025	2030	2035	2040	
26	Proposed New Project DUs		**200**	**1,000**	**1,000**	**1,000**	*Data entry by Lead Agency.*
27	TOTAL, New Project + Built & Approved DUs	**1,987**	**2,187**	**2,987**	**2,987**	**2,987**	*Sum of Row 23 + 26*

NEW PROJECT CONSISTENCY DETERMINATION

row		2020	2025	2030	2035	2040	
29	Over (Under) AQMP DUs	**(122)**	**(321)**	**(96)**	**(805)**	**(1,469)**	*Row 27 - Row 15*
30	Is the project consistent in this Period?	**YES**	**YES**	**YES**	**YES**	**YES**	*If Row 30 is (negative) = YES, if positive = NO.*

OPTIONS IF INCONSISTENT (Choose one):

row	Year:	2020	2025	2030	2035	2040	
38	**A. Consult CEQA Statute and Guidelines for appropriate mitigation options**						
	B. Lead Agency preparation of consistency determination via an alternative method						
40	**C. Regional offset of significant cumulative air quality impact; For EIRs, declare Statement of Overriding Consideration**						

row **MBUAPCD CONSISTENCY DETERMINATION PROCEDURE Ver. 4.0**

Data entry		*Data entered by user.*
Consistency Finding	NO	YES

6	Jurisdiction:	Gonzales			*Lead Agency selects from pull down*
7	Project Name:	Vista Lucia and Puente del Monte Cumulative			*Lead Agency enters*
8	Base Year for this determination:	2015	Project Buildout/ Occupancy Year	2043	*Lead Agency enters*
9			Proposed Project Occupied DU	6,121	*Total buildout of Project. Sum of all years, row 26.*

JURISDICTION DATA FROM AQMP & DOF (no data entry)

		Base Year	Period ending January 1st of:					
		2015	2020	2025	2030	2035	2040	***Notes***
14	DOF Population	8,489	*From Calif. Dept of Finance. Est. for Jan 1 -- released in June of each year.*					
15	AMBAG DU Forecast for Jurisdiction	1,987	2,109	2,508	3,083	3,792	4,456	*DUs from AMBAG Travel Model, current version.*
16	AMBAG Pop Forecast for Jurisdiction	8,411	8,827	10,592	13,006	15,942	18,756	*Latest AMBAG Pop. & Employment forecasts.*
17	AMBAG Forecast Population/ DU	4.23	4.19	4.22	4.22	4.20	4.21	*Row 16/ row 15*
18	Estimated Built DUs	1,987	*Entry for 2015 is the DOF 1/2015 Housing Unit Estimate. Lead agency may overwrite if they have better data.*					

JURISDICTION DUs w/o PROJECT

		2015	2020	2025	2030	2035	2040	
21	Housing Stock (Built DUs, Total)	1,987	1,987	1,987	1,987	1,987	1,987	*2015 Housing Stock is baseline across the project life*
22	Approved but not Built DUs							*Lead Agency estimates value at period end.*
23	Total Built & Approved DUs	1,987	1,987	1,987	1,987	1,987	1,987	*Sum of Row 21 + 22*

PROPOSED NEW PROJECT DUs

		2020	2025	2030	2035	2040	*2045*	*****2045 Column Added by EMC Planning Group******
26	Proposed New Project DUs		520	1,086	1,702	2,102	*711*	*Data entry by Lead Agency.*
27	TOTAL, New Project + Built & Approved DUs	1,987	2,507	3,073	3,689	4,089	*TBD*	*Sum of Row 23 + 26*

NEW PROJECT CONSISTENCY DETERMINATION

		2020	2025	2030	2035	2040	
29	Over (Under) AQMP DUs	(122)	(1)	(10)	(103)	(367)	*Row 27 - Row 15*
30	Is the project consistent in this Period?	YES	YES	YES	YES	YES	*If Row 30 is (negative) = YES, if positive = NO.*

OPTIONS IF INCONSISTENT (Choose one):

	Year:	2020	2025	2030	2035	2040	
38	**A. Consult CEQA Statute and Guidelines for appropriate mitigation options**						
	B. Lead Agency preparation of consistency determination via an alternative method						
40	**C. Regional offset of significant cumulative air quality impact; For EIRs, declare Statement of Overriding Consideration**						