Appendix D

Appendix D.1 California Emission Estimator Model (CalEEMod) Results
Appendix D.2 Operational Energy Calculation

Appendix D.1

California Emission Estimator Model (CalEEMod) Calculations

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Los Amigos Cottages Project
Construction Start Date	1/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.20
Precipitation (days)	44.6
Location	263 Arata Ln, Windsor, CA 95492, USA
County	Sonoma-San Francisco
City	Windsor
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	891
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

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	32.0	Dwelling Unit	2.41	62,400	374,811	—	82.0	—

Parking Lot	33.0	Space	0.30	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction 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.	1.54	1.29	10.8	12.5	0.02	0.41	0.12	0.52	0.37	0.03	0.40	—	2,396	2,396	0.10	0.04	0.67	2,410
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	88.4	88.4	14.1	15.6	0.03	0.64	2.84	3.49	0.59	1.36	1.95	—	2,778	2,778	0.11	0.04	0.02	2,788
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.43	2.42	7.74	8.89	0.02	0.30	0.13	0.43	0.27	0.04	0.32	—	1,682	1,682	0.07	0.02	0.19	1,691
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.44	0.44	1.41	1.62	< 0.005	0.05	0.02	0.08	0.05	0.01	0.06	—	279	279	0.01	< 0.005	0.03	280

2.2. Construction Emissions by Year, Unmitigated

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

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

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	4.50	0.00	—
Grading	—	—	6.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.65

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.35	0%
Parking Lot	0.30	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

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

Single Family Housing	288	288	288	105,120	2,353	2,353	2,353	858,903
Parking Lot	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	0
Gas Fireplaces	6
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	26
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)
126360	42,120	0.00	0.00	776

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00

Summer Days	day/yr	180

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	578,775	204	0.0330	0.0040	0.00
Parking Lot	11,333	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	1,031,578	4,103,758
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	17.3	—
Parking Lot	0.00	—

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

Appendix D.2

Operational Energy Calculations

Los Amigos Cottages Project

Last Updated: 1/22/25

Populate one of the following tables (Leave the other blank):

Annual VMT		OR	Daily Vehicle Trips	
Annual VMT:	858,903		Daily Vehicle Trips:	
			Average Trip Distance:	

Fleet Class	Fleet Mix
Light Duty Auto (LDA)	0.474700
Light Duty Truck 1 (LDT1)	0.048087
Light Duty Truck 2 (LDT2)	0.213600
Medium Duty Vehicle (MDV)	0.143780
Light Heavy Duty 1 (LHD1)	0.043935
Light Heavy Duty 2 (LHD2)	0.011746
Medium Heavy Duty (MHD)	0.019400
Heavy Heavy Duty (HHD)	0.007906
Other Bus (OBUS)	0.001103
Urban Bus (UBUS)	0.000516
Motorcycle (MCY)	0.029040
School Bus (SBUS)	0.001698
Motorhome (MH)	0.004409

Fuel Economy (MPG) [1]	
Passenger Vehicles	24.8
Light-Med Duty Trucks	18.1
Heavy Trucks/Other	7.9
Motorcycles	44

Fleet Mix

Vehicle Type	Percent	Fuel Type	Annual VMT: VMT	Vehicle Trips: VMT	Fuel Consumption (Gallons)
Passenger Vehicles	*47.47%*	*Gasoline*	407,721	0.00	16,440
Light-Medium Duty Trucks	*40.55%*	*Gasoline*	348,257	0.00	19,241
Heavy Trucks/Other	*9.07%*	*Diesel*	77,913	0.00	9,862
Motorcycle	*2.90%*	*Gasoline*	24,943	0.00	567

Total Gasoline Consumption (gallons)	**36,248**
Total Diesel Consumption (gallons)	**9,862**

Sources:

[1] United States Department of Transportation, Bureau of Transportation Statistics. 2024. National Transportation Statistics. Available at: https://www.bts.gov/topics/national-transportation-statistics.