

APPENDIX D

Energy Calculations

Table 1. Summary of Energy Use During Construction

Fuel Type	Quantity
Diesel	
On-Site Construction Equipment	95,034 Gallons
Off-Site Motor Vehicles	9,988,929 Gallons
Total	10,083,963 Gallons
Gasoline	
On-Site Construction Equipment	0 Gallons
Off-Site Motor Vehicles	36,501,458 Gallons
Total	36,501,458 Gallons
Electricity	207 kWh

Table 2. Summary of Annual Energy Use During Operation

Source	Units	Project	Existing	Net Difference
Electricity				
Apartments	kWh/yr	1,278,960	778,113	500,847
Parking Structure	kWh/yr	1,199,860	27,456	1,172,404
Building Subtotal	kWh/yr	2,478,820	805,569	1,673,251
Indoor Water Use	kWh/yr	208,359	152,706	55,653
Outdoor Water Use	kWh/yr	131,552	82,143	49,410
Water Subtotal	kWh/yr	339,912	234,849	105,063
Electricity Total	kWh/yr	2,818,732	1,040,418	1,778,314
Natural Gas				
Apartments	kBtu/yr	3,697,000	2,350,630	1,346,370
Parking Structure	kBtu/yr	0	0	0
Natural Gas Total	kBtu/yr	3,697,000	2,350,630	1,346,370
Mobile				
Diesel	gallons	7,053	7,053	7,053
Gasoline	gallons	36,402	36,402	36,402

Table 3. Water by Land Use

Land Use	Units	Project			Existing			Net Difference		
		Indoor/Outdoor Use	Indoor Use	Outdoor Use	Indoor/Outdoor Use	Indoor Use	Outdoor Use	Indoor/Outdoor Use	Indoor Use	Outdoor Use
Apartments	Mgal	16.0018/11.8409	16.0018	11.8409	11.7277/7.39357	11.7277	7.39357	4.2741/4.44733	4.2741	4.44733
Parking Structure	Mgal	0/0	0	0	0/0	0	0	0/0	0	0

Water and Wastewater Electricity Intensity (kWh/gallon)

Supply Water	0.009727
Treat Water	0.000111
Distribute Water	0.001272
Wastewater Treatment	0.001911

Source: CalEEMod User's Guide, Appendix D, Table 9.2 Los Angeles - South Coast Air District

Indoor Water Factor	0.013021 kWh/gallon (supply, treat, distribute, wastewater treatment)
Outdoor Water Factor	0.01111 kWh/gallon (supply, treat, and distribute)

Notes:

Electricity and Natural Gas for the Project is total operational usage. Net difference, takes total Project usage and subtracts existing uses. Mobile gasoline and diesel usage was calculated using VMT which was provided by the Pasadena Traffic Study as further explained in **Table 7**. The VMT already assumes a net difference.

Table 4. Off-road Equipment Fuel Usage During Construction

Phase Name	Off-road Equipment Type	Amount	Hours per Day	Horsepower	Load Factor	Number of Days	Diesel Fuel Usage
							(Gallons per Project)
Demolition	Dumpers/Tenders	2	6	16	0.38	36	131
Demolition	Excavators	2	8	158	0.38	36	1,729
Demolition	Pressure Washers	1	6	13	0.3	36	42
Demolition	Tractors/Loaders/Backhoes	1	6	97	0.37	36	388
Demolition	Concrete/Industrial Saqs	1	8	81	0.73	36	851
Demolition	Rubber Tired Dozers	2	8	247	0.4	36	2,845
Site Preparation	Rubber Tired Dozers	3	8	247	0.4	5	593
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37	5	287
Grading	Dumpers/Tenders	31	6	16	0.38	176	9,952
Grading	Excavators	3	8	158	0.38	176	12,680
Grading	Forklifts	1	6	89	0.2	176	940
Grading	Pressure Washers	1	6	13	0.3	176	206
Grading	Pumps	1	6	84	0.74	176	3,282
Grading	Rubber Tired Dozers	1	8	247	0.4	176	6,956
Grading	Rubber Tired Dozers	1	6	203	0.36	176	3,859
Grading	Tractors/Loaders/Backhoes	3	8	97	0.37	176	7,580
Grading	Graders	1	8	187	0.41	176	5,398
Building Construction	Cranes	1	7	231	0.29	303	7,104
Building Construction	Forklifts	3	8	89	0.2	303	6,472
Building Construction	Generator Sets	1	8	84	0.74	303	7,534
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37	303	11,418
Building Construction	Welders	1	8	46	0.45	303	2,509
Paving	Cement and Mortar Mixers	2	6	9	0.56	18	54
Paving	Pavers	1	8	130	0.42	18	393
Paving	Paving Equipment	2	6	132	0.36	18	513
Paving	Rollers	2	6	80	0.38	18	328
Paving	Tractors/Loaders/Backhoes	1	8	97	0.37	18	258
Architectural Coating	Air Compressors	1	6	78	0.48	65	730

95,034

Notes:

Equipment assumptions from CalEEMod.

Fuel usage estimate of 0.05 gallons per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3 E.

Table 5. On road Vehicle Fuel Usage During Construction

Phase Name	Days	Daily	Total			Trip Length (Miles)			Total Length (Miles)			Fuel Consumption (Gallons)	
		Worker Trips	Worker Trips	Vendor Trips	Haul Trips	Worker	Vendor	Hauling	Worker	Vendor	Hauling	Gasoline	Diesel
Demolition	36	15	540	0	24	15	7	20	7,938	0	480	168,286	46,040
Site Preparation	5	18	90	0	0	15	7	20	1,323	0	0	28,048	7,673
Grading	176	105	18,480	0	11,000	15	7	20	271,656	0	220,000	5,759,107	1,575,605
Building Construction	303	309	93,627	67	0	15	7	20	1,376,317	462	0	29,177,918	7,985,319
Paving	18	20	360	0	0	15	7	20	5,292	0	0	112,190	30,694
Architectural Coating	65	62	4,030	0	0	15	7	20	59,241	0	0	1,255,909	343,598
Total	603	529	117,127	67	11,024	n/a	n/a	n/a	1,721,767	462	220,480	36,501,458	9,988,929

Fuel Efficiency

Workers 21.2
 Vendor/Haul Trucks 5.8

Notes:

Fuel efficiency calculated in **Table 10, EMFAC2014 Results - Construction.**

Table 6. Water Usage for Control of Fugitive Dust During Construction

Phase Name	Days	Total Disturbed Acreage	Gallons for Project	Electricity (kWh)
Demolition	36	3.53	10,661	104
Site Preparation	5	0	0	0
Grading	176	3.53	10,661	104
Building Construction	303	0	0	0
Paving	18	0	0	0
Architectural Coating	65	0	0	0
Total	603	7.06	21,321	207

Notes:

Total disturbed acreage for demolition per Project description, Project Site area. Total disturbed acreage for site preparation through architectural coating per CalEEMod for proposed Project.

Construction Schedule

5 days per week
22 days per month

Water Usage

3,020 gallons per acre per day

Source: Air & Waste Management Association, Air Pollution Engineering Manual, 1992 Edition

Supply Water Electricity Intensity

0.009727 kWh/gallons (CalEEMod default for South Coast Air Basin)

Table 7. On road Vehicles - Operational

Scenario	Annual VMT	Fuel Consumption (gal)	
		Gasoline	Diesel
Future Project	840,960	36,402	7,053

Table 8. Fuel Consumption Summary

Fuel	Fuel Efficiency (MPG)	%Fleet
Gasoline	21.3	92.2%
Diesel	9.3	7.8%

Notes:

Percent fleet based on VMT from EMFAC2014 as shown in

Table 9, EMFAC2014 Emissions Inventory-Operations .

Annual VMT obtained from the City of Pasadena Traffic Study for the proposed Project.

*Fuel efficiency based on calculations in **Table 9,***

EMFAC2014 Emissions Inventory-Operations, from EMFAC2014.

Table 9. EMFAC2014 Emissions Inventory - Operations

Fuel	VMT (miles/day)	Fuel Consumption (1,000 gal/day)	Fuel Efficiency (miles per gallon)	Fuel Percentage
GAS	214,170,492	10,063	21.3	92.2
DSL	18,117,850	1,940	9.3	7.8

Note: Fuel percentage based on VMT.

Fuel efficiency calculated using fuel consumption and VMT from EMFAC2014.

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: Sub-Area

Region: Los Angeles (SC)

Calendar Year: 2019

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
Los Angele	2019	All Other Buses	Aggregated	Aggregated	DSL	2944.918	198025.218	0	23.57184
Los Angele	2019	LDA	Aggregated	Aggregated	GAS	3596017.626	123207137.192	22645130	4743.933
Los Angele	2019	LDA	Aggregated	Aggregated	DSL	31077.049	1147736.749	191893.6	32.85423
Los Angele	2019	LDA	Aggregated	Aggregated	ELEC	56704.708	2618544.307	369594.6	0
Los Angele	2019	LDT1	Aggregated	Aggregated	GAS	315750.345	10640409.544	1917507	484.6389
Los Angele	2019	LDT1	Aggregated	Aggregated	DSL	455.967	12702.091	2385.39	0.505594
Los Angele	2019	LDT1	Aggregated	Aggregated	ELEC	314.046	9634.405	1896.425	0
Los Angele	2019	LDT2	Aggregated	Aggregated	GAS	1283290.441	46737089.490	8116771	2399.555
Los Angele	2019	LDT2	Aggregated	Aggregated	DSL	2077.240	82276.284	13407.2	3.067126
Los Angele	2019	LHD1	Aggregated	Aggregated	GAS	72850.451	2197787.086	1085363	202.5118
Los Angele	2019	LHD1	Aggregated	Aggregated	DSL	45130.167	1766614.424	567680.7	87.33444
Los Angele	2019	LHD2	Aggregated	Aggregated	GAS	15243.619	542913.748	227107.2	53.99463
Los Angele	2019	LHD2	Aggregated	Aggregated	DSL	20416.198	860177.960	256810.1	46.62064
Los Angele	2019	MCY	Aggregated	Aggregated	GAS	163245.079	1123841.410	326457.5	32.67085
Los Angele	2019	MDV	Aggregated	Aggregated	GAS	835359.729	28404092.696	5207320	1944.973
Los Angele	2019	MDV	Aggregated	Aggregated	DSL	12370.322	487892.450	79537.12	23.47933
Los Angele	2019	MH	Aggregated	Aggregated	GAS	19957.998	170633.305	1996.598	23.81639
Los Angele	2019	MH	Aggregated	Aggregated	DSL	4361.786	40413.517	436.1786	4.008039
Los Angele	2019	Motor Coach	Aggregated	Aggregated	DSL	743.073	109658.012	0	19.35589
Los Angele	2019	OBUS	Aggregated	Aggregated	GAS	5346.259	249511.249	106967.9	35.60178
Los Angele	2019	PTO	Aggregated	Aggregated	DSL	0.000	92516.118	0	19.61273
Los Angele	2019	SBUS	Aggregated	Aggregated	GAS	1186.163	46133.022	4744.653	4.057915
Los Angele	2019	SBUS	Aggregated	Aggregated	DSL	2735.378	104548.960	0	14.51831
Los Angele	2019	T6 Ag	Aggregated	Aggregated	DSL	147.059	2596.332	0	0.314979
Los Angele	2019	T6 CAIRP heavy	Aggregated	Aggregated	DSL	115.986	6266.044	0	0.721057
Los Angele	2019	T6 CAIRP small	Aggregated	Aggregated	DSL	295.536	19235.209	0	2.218013
Los Angele	2019	T6 instate construction heavy	Aggregated	Aggregated	DSL	1728.065	124960.470	0	14.65691
Los Angele	2019	T6 instate construction small	Aggregated	Aggregated	DSL	5702.724	330412.544	0	38.4863
Los Angele	2019	T6 instate heavy	Aggregated	Aggregated	DSL	17430.913	895060.564	0	104.2196
Los Angele	2019	T6 instate small	Aggregated	Aggregated	DSL	38694.194	2287430.890	0	265.9562
Los Angele	2019	T6 OOS heavy	Aggregated	Aggregated	DSL	68.536	3590.208	0	0.413566
Los Angele	2019	T6 OOS small	Aggregated	Aggregated	DSL	169.331	11021.052	0	1.270838
Los Angele	2019	T6 Public	Aggregated	Aggregated	DSL	3955.317	65086.142	0	7.770501
Los Angele	2019	T6 utility	Aggregated	Aggregated	DSL	812.831	15727.251	0	1.908664
Los Angele	2019	T6TS	Aggregated	Aggregated	GAS	12064.451	629224.849	241385.5	91.68088
Los Angele	2019	T7 Ag	Aggregated	Aggregated	DSL	116.098	1962.160	0	0.367396
Los Angele	2019	T7 CAIRP	Aggregated	Aggregated	DSL	4700.884	973850.119	0	167.3399
Los Angele	2019	T7 CAIRP construction	Aggregated	Aggregated	DSL	375.430	88646.005	0	15.22954
Los Angele	2019	T7 NNOOS	Aggregated	Aggregated	DSL	4815.769	1207575.360	0	193.8051
Los Angele	2019	T7 NOOS	Aggregated	Aggregated	DSL	1903.698	384670.510	0	67.49405
Los Angele	2019	T7 POLA	Aggregated	Aggregated	DSL	8133.807	1200091.393	0	222.4196
Los Angele	2019	T7 Public	Aggregated	Aggregated	DSL	4706.804	107857.999	0	21.85674
Los Angele	2019	T7 Single	Aggregated	Aggregated	DSL	4849.521	465929.664	0	79.08073
Los Angele	2019	T7 single construction	Aggregated	Aggregated	DSL	2459.860	229315.551	0	38.25459
Los Angele	2019	T7 SWCV	Aggregated	Aggregated	DSL	3930.665	181037.233	0	73.08243
Los Angele	2019	T7 tractor	Aggregated	Aggregated	DSL	9974.484	1384135.621	0	227.4035
Los Angele	2019	T7 tractor construction	Aggregated	Aggregated	DSL	1929.356	170971.692	0	28.82872
Los Angele	2019	T7 utility	Aggregated	Aggregated	DSL	358.633	8208.261	0	1.59162
Los Angele	2019	T7IS	Aggregated	Aggregated	GAS	487.533	66102.519	9754.564	14.3419
Los Angele	2019	UBUS	Aggregated	Aggregated	GAS	1348.459	155615.812	5393.838	31.34618
Los Angele	2019	UBUS	Aggregated	Aggregated	DSL	3657.074	421471.264	14628.29	90.53672

Table 10. EMFAC2014 Results - Construction

Vehicle Class	Fuel	VMT (miles per day)	Fuel (1,000 gal per day)	Fuel Efficiency (miles per gallon)
LDA	GAS	122,392,950	4,998	24.49
LDT1	GAS	10,632,074	510	20.85
LDT2	GAS	45,356,165	2,473	18.34
Average (LDA, LDT1, LDT2)				21.23
T7 Tractor Construction	DSL	159,857	28	5.78

Construction Worker Fleet Mix

LDA	50%
LDT1	25%
LDT2	25%

Vendor and Delivery/Haul Truck Fleet Mix

HHDT	100%
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EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: Sub-Area

Region: Los Angeles (SC)

Calendar Year: 2017

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdYr	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
Los Angeles (SC)	2017	LDA	Aggregated	Aggregated	GAS	3540792	122392949.734	22263381	4998.486
Los Angeles (SC)	2017	LDA	Aggregated	Aggregated	DSL	26374.23	994749.749	161060.3	30.31063
Los Angeles (SC)	2017	LDA	Aggregated	Aggregated	ELEC	26092.85	1190347.080	169760.8	0
Los Angeles (SC)	2017	LDT1	Aggregated	Aggregated	GAS	314531.7	10632073.691	1905395	509.8685
Los Angeles (SC)	2017	LDT1	Aggregated	Aggregated	DSL	504.267	14237.565	2648.679	0.584656
Los Angeles (SC)	2017	LDT1	Aggregated	Aggregated	ELEC	351.7908	11005.398	2131.833	0
Los Angeles (SC)	2017	LDT2	Aggregated	Aggregated	GAS	1236493	45356165.193	7799820	2473.284
Los Angeles (SC)	2017	LDT2	Aggregated	Aggregated	DSL	1664.01	69102.781	10753.07	2.688849
Los Angeles (SC)	2017	T7 tractor constr	Aggregated	Aggregated	DSL	1945.285	159856.875	0	27.63723

Los Robles - South Coast Air Basin, Annual

Los Robles
South Coast Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	521.00	Space	0.00	208,400.00	0
Apartment Mid Rise	307.00	Dwelling Unit	3.53	307,000.00	878

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2021
Utility Company	Pasadena Water & Power				
CO2 Intensity (lb/MWhr)	1664.14	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Construction to last approximately 2 years (23.5 months)

Land Use - Project site is on a 3.53 acre lot

Construction Phase - Based on project schedule provided by the applicant

Off-road Equipment -

Off-road Equipment - Based on estimated number of pieces of equipment during building construction

Off-road Equipment - Based on estimate of pieces of heavy equipment during each phase by Project applicant

Off-road Equipment - Based on estimate of number of pieces of heavy construction equipment from Project applicant

Off-road Equipment -

Off-road Equipment -

Trips and VMT -

Demolition - 60 tons of debris/wood and 180 tons of foundation/asphalt

Grading - 88,000 cy of export for subterrenean parking garage

Vehicle Trips - Based on traffic study of 2,042 trips - 5% transit trips = 1,940 trips

Woodstoves - No woodstoves

Energy Use -

Construction Off-road Equipment Mitigation - Per CARB Title 13 CCR Section 2520-2427, equipment required to be Tier 4 Final for new equipment. For conservative analysis, equipment set to Tier 2

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

Los Robles - South Coast Air Basin, Annual

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	33.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
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tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	18.00	65.00

Los Robles - South Coast Air Basin, Annual

tblConstructionPhase	NumDays	230.00	303.00
tblConstructionPhase	NumDays	20.00	36.00
tblConstructionPhase	NumDays	8.00	176.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberWood	15.35	0.00
tblGrading	AcresOfGrading	88.00	3.53
tblGrading	MaterialExported	0.00	88,000.00
tblLandUse	LotAcreage	4.69	0.00
tblLandUse	LotAcreage	8.08	3.53
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	23.00	15.00
tblTripsAndVMT	WorkerTripNumber	108.00	105.00
tblVehicleTrips	ST_TR	6.39	6.32
tblVehicleTrips	WD_TR	6.65	6.32
tblWoodstoves	NumberCatalytic	15.35	0.00
tblWoodstoves	NumberNoncatalytic	15.35	0.00
tblWoodstoves	WoodstoveDayYear	25.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

Los Robles - South Coast Air Basin, Annual

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.3892	4.1632	2.3286	6.4900e-003	0.7210	0.1641	0.8851	0.3534	0.1537	0.5071	0.0000	590.1445	590.1445	0.1004	0.0000	592.6556
2019	0.6506	5.7920	4.6292	0.0125	0.9989	0.2310	1.2299	0.4155	0.2172	0.6327	0.0000	1,136.4202	1,136.4202	0.1504	0.0000	1,140.1789
2020	1.2616	1.9651	2.2434	5.5900e-003	0.2738	0.0869	0.3606	0.0734	0.0818	0.1551	0.0000	503.8950	503.8950	0.0558	0.0000	505.2909
Maximum	1.2616	5.7920	4.6292	0.0125	0.9989	0.2310	1.2299	0.4155	0.2172	0.6327	0.0000	1,136.4202	1,136.4202	0.1504	0.0000	1,140.1789

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.2056	3.6530	2.2325	6.4900e-003	0.3645	0.1019	0.4663	0.1598	0.0989	0.2586	0.0000	590.1441	590.1441	0.1004	0.0000	592.6552
2019	0.4461	5.5679	4.5809	0.0125	0.6715	0.1621	0.8336	0.2373	0.1590	0.3963	0.0000	1,136.4197	1,136.4197	0.1504	0.0000	1,140.1784
2020	1.2134	2.1497	2.3137	5.5900e-003	0.2738	0.0701	0.3439	0.0734	0.0694	0.1427	0.0000	503.8948	503.8948	0.0558	0.0000	505.2907
Maximum	1.2134	5.5679	4.5809	0.0125	0.6715	0.1621	0.8336	0.2373	0.1590	0.3963	0.0000	1,136.4197	1,136.4197	0.1504	0.0000	1,140.1784

Los Robles - South Coast Air Basin, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	18.95	4.61	0.81	0.00	34.31	30.67	33.60	44.16	27.71	38.41	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-5-2018	10-4-2018	1.9302	1.6241
2	10-5-2018	1-4-2019	2.7452	2.3399
3	1-5-2019	4-4-2019	2.5170	2.2206
4	4-5-2019	7-4-2019	1.5591	1.4589
5	7-5-2019	10-4-2019	1.1156	1.1087
6	10-5-2019	1-4-2020	1.1198	1.1150
7	1-5-2020	4-4-2020	1.0119	1.0546
8	4-5-2020	7-4-2020	1.8463	1.9314
9	7-5-2020	9-30-2020	0.3049	0.3099
		Highest	2.7452	2.3399

Los Robles - South Coast Air Basin, Annual

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3249	0.0908	3.2026	5.1000e-004		0.0219	0.0219		0.0219	0.0219	0.0000	67.8483	67.8483	6.2500e-003	1.1500e-003	68.3468
Energy	0.0216	0.1847	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149	0.0000	2,275.9653	2,275.9653	0.0400	0.0114	2,280.3505
Mobile	1.0286	1.8855	11.1006	0.0270	2.4702	0.0212	2.4914	0.6593	0.0197	0.6790	0.0000	2,456.1433	2,456.1433	0.1604	0.0000	2,460.1529
Waste						0.0000	0.0000		0.0000	0.0000	28.6664	0.0000	28.6664	1.6941	0.0000	71.0198
Water						0.0000	0.0000		0.0000	0.0000	6.3458	302.3504	308.6962	0.6570	0.0165	330.0333
Total	2.3751	2.1611	14.3817	0.0287	2.4702	0.0581	2.5282	0.6593	0.0566	0.7159	35.0122	5,102.3073	5,137.3195	2.5578	0.0290	5,209.9033

Los Robles - South Coast Air Basin, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3249	0.0908	3.2026	5.1000e-004		0.0219	0.0219		0.0219	0.0219	0.0000	67.8483	67.8483	6.2500e-003	1.1500e-003	68.3468
Energy	0.0199	0.1704	0.0725	1.0900e-003		0.0138	0.0138		0.0138	0.0138	0.0000	2,068.4008	2,068.4008	0.0364	0.0104	2,072.3987
Mobile	0.7728	1.3072	7.1334	0.0162	1.4488	0.0133	1.4620	0.3867	0.0123	0.3990	0.0000	1,471.5250	1,471.5250	0.0998	0.0000	1,474.0194
Waste						0.0000	0.0000		0.0000	0.0000	7.1666	0.0000	7.1666	0.4235	0.0000	17.7549
Water						0.0000	0.0000		0.0000	0.0000	5.0766	256.5799	261.6565	0.5259	0.0132	278.7484
Total	2.1176	1.5683	10.4085	0.0178	1.4488	0.0489	1.4977	0.3867	0.0480	0.4347	12.2432	3,864.3540	3,876.5973	1.0918	0.0248	3,911.2683

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	10.84	27.43	27.63	38.05	41.35	15.76	40.76	41.35	15.19	39.28	65.03	24.26	24.54	57.31	14.63	24.93

3.0 Construction Detail

Construction Phase

Los Robles - South Coast Air Basin, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/5/2018	8/23/2018	5	36	
2	Site Preparation	Site Preparation	8/24/2018	8/30/2018	5	5	
3	Grading	Grading	8/31/2018	5/3/2019	5	176	
4	Building Construction	Building Construction	5/4/2019	7/1/2020	5	303	
5	Paving	Paving	6/1/2020	6/24/2020	5	18	
6	Architectural Coating	Architectural Coating	5/1/2020	7/30/2020	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3.53

Acres of Paving: 0

Residential Indoor: 621,675; Residential Outdoor: 207,225; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 12,504 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Dumpers/Tenders	2	6.00	16	0.38
Demolition	Excavators	2	8.00	158	0.38
Demolition	Pressure Washers	1	6.00	13	0.30
Demolition	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Dumpers/Tenders	31	6.00	16	0.38
Grading	Excavators	3	8.00	158	0.38
Grading	Forklifts	1	6.00	89	0.20
Grading	Pressure Washers	1	6.00	13	0.30

Los Robles - South Coast Air Basin, Annual

Grading	Pumps	1	6.00	84	0.74
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	6.00	203	0.36
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Los Robles - South Coast Air Basin, Annual

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	9	15.00	0.00	24.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	43	105.00	0.00	11,000.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	309.00	67.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	62.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.5700e-003	0.0000	2.5700e-003	3.9000e-004	0.0000	3.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0680	0.6866	0.3842	6.8000e-004		0.0354	0.0354		0.0330	0.0330	0.0000	60.5408	60.5408	0.0162	0.0000	60.9454
Total	0.0680	0.6866	0.3842	6.8000e-004	2.5700e-003	0.0354	0.0380	3.9000e-004	0.0330	0.0334	0.0000	60.5408	60.5408	0.0162	0.0000	60.9454

Los Robles - South Coast Air Basin, Annual

3.2 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-004	3.9000e-003	7.6000e-004	1.0000e-005	2.1000e-004	1.0000e-005	2.2000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.9311	0.9311	7.0000e-005	0.0000	0.9328
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4300e-003	1.1800e-003	0.0126	3.0000e-005	2.9600e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.8444	2.8444	1.0000e-004	0.0000	2.8469
Total	1.5400e-003	5.0800e-003	0.0134	4.0000e-005	3.1700e-003	3.0000e-005	3.2100e-003	8.5000e-004	3.0000e-005	8.8000e-004	0.0000	3.7755	3.7755	1.7000e-004	0.0000	3.7797

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0000e-003	0.0000	1.0000e-003	1.5000e-004	0.0000	1.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0382	0.5943	0.4009	6.8000e-004		0.0227	0.0227		0.0220	0.0220	0.0000	60.5408	60.5408	0.0162	0.0000	60.9453
Total	0.0382	0.5943	0.4009	6.8000e-004	1.0000e-003	0.0227	0.0237	1.5000e-004	0.0220	0.0222	0.0000	60.5408	60.5408	0.0162	0.0000	60.9453

Los Robles - South Coast Air Basin, Annual

3.2 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1000e-004	3.9000e-003	7.6000e-004	1.0000e-005	2.1000e-004	1.0000e-005	2.2000e-004	6.0000e-005	1.0000e-005	7.0000e-005	0.0000	0.9311	0.9311	7.0000e-005	0.0000	0.9328
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4300e-003	1.1800e-003	0.0126	3.0000e-005	2.9600e-003	2.0000e-005	2.9900e-003	7.9000e-004	2.0000e-005	8.1000e-004	0.0000	2.8444	2.8444	1.0000e-004	0.0000	2.8469
Total	1.5400e-003	5.0800e-003	0.0134	4.0000e-005	3.1700e-003	3.0000e-005	3.2100e-003	8.5000e-004	3.0000e-005	8.8000e-004	0.0000	3.7755	3.7755	1.7000e-004	0.0000	3.7797

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.1205	0.0562	1.0000e-004		6.4400e-003	6.4400e-003		5.9300e-003	5.9300e-003	0.0000	8.6900	8.6900	2.7100e-003	0.0000	8.7576
Total	0.0114	0.1205	0.0562	1.0000e-004	0.0452	6.4400e-003	0.0516	0.0248	5.9300e-003	0.0308	0.0000	8.6900	8.6900	2.7100e-003	0.0000	8.7576

Los Robles - South Coast Air Basin, Annual

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	2.0000e-004	2.1000e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4741	0.4741	2.0000e-005	0.0000	0.4745
Total	2.4000e-004	2.0000e-004	2.1000e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4741	0.4741	2.0000e-005	0.0000	0.4745

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0176	0.0000	0.0176	9.6800e-003	0.0000	9.6800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.7700e-003	0.0970	0.0570	1.0000e-004		3.6900e-003	3.6900e-003		3.5300e-003	3.5300e-003	0.0000	8.6900	8.6900	2.7100e-003	0.0000	8.7576
Total	5.7700e-003	0.0970	0.0570	1.0000e-004	0.0176	3.6900e-003	0.0213	9.6800e-003	3.5300e-003	0.0132	0.0000	8.6900	8.6900	2.7100e-003	0.0000	8.7576

Los Robles - South Coast Air Basin, Annual

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	2.0000e-004	2.1000e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4741	0.4741	2.0000e-005	0.0000	0.4745
Total	2.4000e-004	2.0000e-004	2.1000e-003	1.0000e-005	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4741	0.4741	2.0000e-005	0.0000	0.4745

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5368	0.0000	0.5368	0.2923	0.0000	0.2923	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2589	2.4473	1.4881	2.9900e-003		0.1184	0.1184		0.1112	0.1112	0.0000	257.5970	257.5970	0.0642	0.0000	259.2022
Total	0.2589	2.4473	1.4881	2.9900e-003	0.5368	0.1184	0.6552	0.2923	0.1112	0.4034	0.0000	257.5970	257.5970	0.0642	0.0000	259.2022

Los Robles - South Coast Air Basin, Annual

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0250	0.8838	0.1712	2.1500e-003	0.0827	3.3400e-003	0.0861	0.0217	3.1900e-003	0.0249	0.0000	210.9490	210.9490	0.0155	0.0000	211.3370
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0242	0.0199	0.2136	5.3000e-004	0.0501	4.1000e-004	0.0505	0.0133	3.8000e-004	0.0137	0.0000	48.1181	48.1181	1.6500e-003	0.0000	48.1593
Total	0.0492	0.9036	0.3847	2.6800e-003	0.1328	3.7500e-003	0.1366	0.0350	3.5700e-003	0.0385	0.0000	259.0671	259.0671	0.0172	0.0000	259.4963

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2094	0.0000	0.2094	0.1140	0.0000	0.1140	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1107	2.0528	1.3744	2.9900e-003		0.0717	0.0717		0.0697	0.0697	0.0000	257.5967	257.5967	0.0642	0.0000	259.2019
Total	0.1107	2.0528	1.3744	2.9900e-003	0.2094	0.0717	0.2811	0.1140	0.0697	0.1837	0.0000	257.5967	257.5967	0.0642	0.0000	259.2019

Los Robles - South Coast Air Basin, Annual

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0250	0.8838	0.1712	2.1500e-003	0.0827	3.3400e-003	0.0861	0.0217	3.1900e-003	0.0249	0.0000	210.9490	210.9490	0.0155	0.0000	211.3370
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0242	0.0199	0.2136	5.3000e-004	0.0501	4.1000e-004	0.0505	0.0133	3.8000e-004	0.0137	0.0000	48.1181	48.1181	1.6500e-003	0.0000	48.1593
Total	0.0492	0.9036	0.3847	2.6800e-003	0.1328	3.7500e-003	0.1366	0.0350	3.5700e-003	0.0385	0.0000	259.0671	259.0671	0.0172	0.0000	259.4963

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5368	0.0000	0.5368	0.2923	0.0000	0.2923	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2500	2.3291	1.5052	3.0500e-003		0.1098	0.1098		0.1032	0.1032	0.0000	260.3891	260.3891	0.0655	0.0000	262.0258
Total	0.2500	2.3291	1.5052	3.0500e-003	0.5368	0.1098	0.6466	0.2923	0.1032	0.3954	0.0000	260.3891	260.3891	0.0655	0.0000	262.0258

Los Robles - South Coast Air Basin, Annual

3.4 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0242	0.8554	0.1710	2.1700e-003	0.0830	3.1200e-003	0.0861	0.0218	2.9800e-003	0.0247	0.0000	213.1751	213.1751	0.0157	0.0000	213.5668
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0225	0.0179	0.1951	5.3000e-004	0.0513	4.1000e-004	0.0517	0.0136	3.8000e-004	0.0140	0.0000	47.6712	47.6712	1.4900e-003	0.0000	47.7085
Total	0.0467	0.8734	0.3661	2.7000e-003	0.1342	3.5300e-003	0.1378	0.0354	3.3600e-003	0.0387	0.0000	260.8462	260.8462	0.0172	0.0000	261.2754

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2094	0.0000	0.2094	0.1140	0.0000	0.1140	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1102	2.0585	1.4001	3.0500e-003		0.0711	0.0711		0.0692	0.0692	0.0000	260.3888	260.3888	0.0655	0.0000	262.0255
Total	0.1102	2.0585	1.4001	3.0500e-003	0.2094	0.0711	0.2805	0.1140	0.0692	0.1832	0.0000	260.3888	260.3888	0.0655	0.0000	262.0255

Los Robles - South Coast Air Basin, Annual

3.4 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0242	0.8554	0.1710	2.1700e-003	0.0830	3.1200e-003	0.0861	0.0218	2.9800e-003	0.0247	0.0000	213.1751	213.1751	0.0157	0.0000	213.5668
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0225	0.0179	0.1951	5.3000e-004	0.0513	4.1000e-004	0.0517	0.0136	3.8000e-004	0.0140	0.0000	47.6712	47.6712	1.4900e-003	0.0000	47.7085
Total	0.0467	0.8734	0.3661	2.7000e-003	0.1342	3.5300e-003	0.1378	0.0354	3.3600e-003	0.0387	0.0000	260.8462	260.8462	0.0172	0.0000	261.2754

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2031	1.8128	1.4761	2.3100e-003		0.1109	0.1109		0.1043	0.1043	0.0000	202.1896	202.1896	0.0493	0.0000	203.4210
Total	0.2031	1.8128	1.4761	2.3100e-003		0.1109	0.1109		0.1043	0.1043	0.0000	202.1896	202.1896	0.0493	0.0000	203.4210

Los Robles - South Coast Air Basin, Annual

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0229	0.6747	0.1720	1.4600e-003	0.0363	4.4100e-003	0.0407	0.0105	4.2200e-003	0.0147	0.0000	141.8743	141.8743	9.9600e-003	0.0000	142.1232
Worker	0.1280	0.1021	1.1097	3.0000e-003	0.2916	2.3300e-003	0.2939	0.0774	2.1400e-003	0.0796	0.0000	271.1211	271.1211	8.5000e-003	0.0000	271.3336
Total	0.1508	0.7768	1.2818	4.4600e-003	0.3279	6.7400e-003	0.3346	0.0879	6.3600e-003	0.0943	0.0000	412.9953	412.9953	0.0185	0.0000	413.4568

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1384	1.8593	1.5330	2.3100e-003		0.0808	0.0808		0.0801	0.0801	0.0000	202.1894	202.1894	0.0493	0.0000	203.4208
Total	0.1384	1.8593	1.5330	2.3100e-003		0.0808	0.0808		0.0801	0.0801	0.0000	202.1894	202.1894	0.0493	0.0000	203.4208

Los Robles - South Coast Air Basin, Annual

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0229	0.6747	0.1720	1.4600e-003	0.0363	4.4100e-003	0.0407	0.0105	4.2200e-003	0.0147	0.0000	141.8743	141.8743	9.9600e-003	0.0000	142.1232
Worker	0.1280	0.1021	1.1097	3.0000e-003	0.2916	2.3300e-003	0.2939	0.0774	2.1400e-003	0.0796	0.0000	271.1211	271.1211	8.5000e-003	0.0000	271.3336
Total	0.1508	0.7768	1.2818	4.4600e-003	0.3279	6.7400e-003	0.3346	0.0879	6.3600e-003	0.0943	0.0000	412.9953	412.9953	0.0185	0.0000	413.4568

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1389	1.2567	1.1036	1.7600e-003		0.0732	0.0732		0.0688	0.0688	0.0000	151.7045	151.7045	0.0370	0.0000	152.6298
Total	0.1389	1.2567	1.1036	1.7600e-003		0.0732	0.0732		0.0688	0.0688	0.0000	151.7045	151.7045	0.0370	0.0000	152.6298

Los Robles - South Coast Air Basin, Annual

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0149	0.4706	0.1187	1.1100e-003	0.0277	2.3000e-003	0.0300	7.9800e-003	2.2000e-003	0.0102	0.0000	107.3635	107.3635	7.1600e-003	0.0000	107.5426
Worker	0.0901	0.0694	0.7678	2.2100e-003	0.2221	1.7300e-003	0.2238	0.0590	1.5900e-003	0.0606	0.0000	200.0937	200.0937	5.7600e-003	0.0000	200.2377
Total	0.1050	0.5399	0.8865	3.3200e-003	0.2497	4.0300e-003	0.2537	0.0670	3.7900e-003	0.0707	0.0000	307.4572	307.4572	0.0129	0.0000	307.7803

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0986	1.3830	1.1628	1.7600e-003		0.0577	0.0577		0.0573	0.0573	0.0000	151.7044	151.7044	0.0370	0.0000	152.6296
Total	0.0986	1.3830	1.1628	1.7600e-003		0.0577	0.0577		0.0573	0.0573	0.0000	151.7044	151.7044	0.0370	0.0000	152.6296

Los Robles - South Coast Air Basin, Annual

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0149	0.4706	0.1187	1.1100e-003	0.0277	2.3000e-003	0.0300	7.9800e-003	2.2000e-003	0.0102	0.0000	107.3635	107.3635	7.1600e-003	0.0000	107.5426
Worker	0.0901	0.0694	0.7678	2.2100e-003	0.2221	1.7300e-003	0.2238	0.0590	1.5900e-003	0.0606	0.0000	200.0937	200.0937	5.7600e-003	0.0000	200.2377
Total	0.1050	0.5399	0.8865	3.3200e-003	0.2497	4.0300e-003	0.2537	0.0670	3.7900e-003	0.0707	0.0000	307.4572	307.4572	0.0129	0.0000	307.7803

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0107	0.1062	0.1105	1.7000e-004		5.8600e-003	5.8600e-003		5.4000e-003	5.4000e-003	0.0000	14.7348	14.7348	4.6300e-003	0.0000	14.8506
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0107	0.1062	0.1105	1.7000e-004		5.8600e-003	5.8600e-003		5.4000e-003	5.4000e-003	0.0000	14.7348	14.7348	4.6300e-003	0.0000	14.8506

Los Robles - South Coast Air Basin, Annual

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	6.2000e-004	6.8300e-003	2.0000e-005	1.9700e-003	2.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.7795	1.7795	5.0000e-005	0.0000	1.7808
Total	8.0000e-004	6.2000e-004	6.8300e-003	2.0000e-005	1.9700e-003	2.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.7795	1.7795	5.0000e-005	0.0000	1.7808

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.9200e-003	0.1427	0.1217	1.7000e-004		5.0700e-003	5.0700e-003		5.0400e-003	5.0400e-003	0.0000	14.7348	14.7348	4.6300e-003	0.0000	14.8506
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.9200e-003	0.1427	0.1217	1.7000e-004		5.0700e-003	5.0700e-003		5.0400e-003	5.0400e-003	0.0000	14.7348	14.7348	4.6300e-003	0.0000	14.8506

Los Robles - South Coast Air Basin, Annual

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-004	6.2000e-004	6.8300e-003	2.0000e-005	1.9700e-003	2.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.7795	1.7795	5.0000e-005	0.0000	1.7808
Total	8.0000e-004	6.2000e-004	6.8300e-003	2.0000e-005	1.9700e-003	2.0000e-005	1.9900e-003	5.2000e-004	1.0000e-005	5.4000e-004	0.0000	1.7795	1.7795	5.0000e-005	0.0000	1.7808

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9895					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.8700e-003	0.0547	0.0595	1.0000e-004		3.6100e-003	3.6100e-003		3.6100e-003	3.6100e-003	0.0000	8.2981	8.2981	6.4000e-004	0.0000	8.3141
Total	0.9973	0.0547	0.0595	1.0000e-004		3.6100e-003	3.6100e-003		3.6100e-003	3.6100e-003	0.0000	8.2981	8.2981	6.4000e-004	0.0000	8.3141

Los Robles - South Coast Air Basin, Annual

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9700e-003	6.9000e-003	0.0764	2.2000e-004	0.0221	1.7000e-004	0.0223	5.8700e-003	1.6000e-004	6.0300e-003	0.0000	19.9209	19.9209	5.7000e-004	0.0000	19.9352
Total	8.9700e-003	6.9000e-003	0.0764	2.2000e-004	0.0221	1.7000e-004	0.0223	5.8700e-003	1.6000e-004	6.0300e-003	0.0000	19.9209	19.9209	5.7000e-004	0.0000	19.9352

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9895					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.7000e-003	0.0765	0.0596	1.0000e-004		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	8.2981	8.2981	6.4000e-004	0.0000	8.3141
Total	0.9932	0.0765	0.0596	1.0000e-004		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	8.2981	8.2981	6.4000e-004	0.0000	8.3141

Los Robles - South Coast Air Basin, Annual

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9700e-003	6.9000e-003	0.0764	2.2000e-004	0.0221	1.7000e-004	0.0223	5.8700e-003	1.6000e-004	6.0300e-003	0.0000	19.9209	19.9209	5.7000e-004	0.0000	19.9352
Total	8.9700e-003	6.9000e-003	0.0764	2.2000e-004	0.0221	1.7000e-004	0.0223	5.8700e-003	1.6000e-004	6.0300e-003	0.0000	19.9209	19.9209	5.7000e-004	0.0000	19.9352

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Increase Transit Accessibility

Los Robles - South Coast Air Basin, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7728	1.3072	7.1334	0.0162	1.4488	0.0133	1.4620	0.3867	0.0123	0.3990	0.0000	1,471.5250	1,471.5250	0.0998	0.0000	1,474.0194
Unmitigated	1.0286	1.8855	11.1006	0.0270	2.4702	0.0212	2.4914	0.6593	0.0197	0.6790	0.0000	2,456.1433	2,456.1433	0.1604	0.0000	2,460.1529

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	1,940.24	1,940.24	1799.02	6,561,156	3,848,131
Enclosed Parking with Elevator	0.00	0.00	0.00		
Total	1,940.24	1,940.24	1,799.02	6,561,156	3,848,131

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.559412	0.045384	0.191147	0.127580	0.018001	0.005535	0.013222	0.007746	0.001217	0.000585	0.025535	0.000657	0.003979
Apartments Mid Rise	0.559412	0.045384	0.191147	0.127580	0.018001	0.005535	0.013222	0.007746	0.001217	0.000585	0.025535	0.000657	0.003979

Los Robles - South Coast Air Basin, Annual

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,871.1150	1,871.1150	0.0326	6.7500e-003	1,873.9405
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,062.0231	2,062.0231	0.0359	7.4300e-003	2,065.1369
NaturalGas Mitigated	0.0199	0.1704	0.0725	1.0900e-003		0.0138	0.0138		0.0138	0.0138	0.0000	197.2858	197.2858	3.7800e-003	3.6200e-003	198.4582
NaturalGas Unmitigated	0.0216	0.1847	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149	0.0000	213.9422	213.9422	4.1000e-003	3.9200e-003	215.2135

Los Robles - South Coast Air Basin, Annual

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					
Apartments Mid Rise	4.00913e+006	0.0216	0.1847	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149	0.0000	213.9422	213.9422	4.1000e-003	3.9200e-003	215.2135
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0216	0.1847	0.0786	1.1800e-003		0.0149	0.0149		0.0149	0.0149	0.0000	213.9422	213.9422	4.1000e-003	3.9200e-003	215.2135

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	3.697e+006	0.0199	0.1704	0.0725	1.0900e-003		0.0138	0.0138		0.0138	0.0138	0.0000	197.2858	197.2858	3.7800e-003	3.6200e-003	198.4582
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0199	0.1704	0.0725	1.0900e-003		0.0138	0.0138		0.0138	0.0138	0.0000	197.2858	197.2858	3.7800e-003	3.6200e-003	198.4582

Los Robles - South Coast Air Basin, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.32711e+006	1,001.7611	0.0175	3.6100e-003	1,003.2738
Enclosed Parking with Elevator	1.40462e+006	1,060.2620	0.0185	3.8200e-003	1,061.8631
Total		2,062.0231	0.0359	7.4300e-003	2,065.1369

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.27896e+006	965.4089	0.0168	3.4800e-003	966.8668
Enclosed Parking with Elevator	1.19986e+006	905.7060	0.0158	3.2700e-003	907.0737
Total		1,871.1150	0.0326	6.7500e-003	1,873.9405

6.0 Area Detail

6.1 Mitigation Measures Area

Los Robles - South Coast Air Basin, Annual

- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior
- Use only Natural Gas Hearths
- Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.3249	0.0908	3.2026	5.1000e-004		0.0219	0.0219		0.0219	0.0219	0.0000	67.8483	67.8483	6.2500e-003	1.1500e-003	68.3468
Unmitigated	1.3249	0.0908	3.2026	5.1000e-004		0.0219	0.0219		0.0219	0.0219	0.0000	67.8483	67.8483	6.2500e-003	1.1500e-003	68.3468

Los Robles - South Coast Air Basin, Annual

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1228					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.3300e-003	0.0541	0.0230	3.5000e-004		4.3700e-003	4.3700e-003		4.3700e-003	4.3700e-003	0.0000	62.6638	62.6638	1.2000e-003	1.1500e-003	63.0362
Landscaping	0.0968	0.0367	3.1795	1.7000e-004		0.0175	0.0175		0.0175	0.0175	0.0000	5.1845	5.1845	5.0500e-003	0.0000	5.3107
Total	1.3249	0.0908	3.2026	5.2000e-004		0.0219	0.0219		0.0219	0.0219	0.0000	67.8483	67.8483	6.2500e-003	1.1500e-003	68.3468

Los Robles - South Coast Air Basin, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1228					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	6.3300e-003	0.0541	0.0230	3.5000e-004		4.3700e-003	4.3700e-003		4.3700e-003	4.3700e-003	0.0000	62.6638	62.6638	1.2000e-003	1.1500e-003	63.0362
Landscaping	0.0968	0.0367	3.1795	1.7000e-004		0.0175	0.0175		0.0175	0.0175	0.0000	5.1845	5.1845	5.0500e-003	0.0000	5.3107
Total	1.3249	0.0908	3.2026	5.2000e-004		0.0219	0.0219		0.0219	0.0219	0.0000	67.8483	67.8483	6.2500e-003	1.1500e-003	68.3468

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

Los Robles - South Coast Air Basin, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	261.6565	0.5259	0.0132	278.7484
Unmitigated	308.6962	0.6570	0.0165	330.0333

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	20.0023 / 12.6101	308.6962	0.6570	0.0165	330.0333
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		308.6962	0.6570	0.0165	330.0333

Los Robles - South Coast Air Basin, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	16.0018 / 11.8409	261.6565	0.5259	0.0132	278.7484
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		261.6565	0.5259	0.0132	278.7484

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Los Robles - South Coast Air Basin, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	7.1666	0.4235	0.0000	17.7549
Unmitigated	28.6664	1.6941	0.0000	71.0198

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	141.22	28.6664	1.6941	0.0000	71.0198
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		28.6664	1.6941	0.0000	71.0198

Los Robles - South Coast Air Basin, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	35.305	7.1666	0.4235	0.0000	17.7549
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		7.1666	0.4235	0.0000	17.7549

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

Los Robles - South Coast Air Basin, Annual
