

Appendix B:
Air Quality and Greenhouse Gas Data

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CalEEMod Output Files

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

Livermore INP - Existing (2013) Operational Emissions
Alameda County, Summer

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	713.75	1000sqft	16.39	713,752.00	0
Junior College (2Yr)	7,237.00	Student	7.25	315,911.24	0
Industrial Park	231.55	1000sqft	5.32	231,547.00	0
Manufacturing	2,549.28	1000sqft	58.52	2,549,284.00	0
Apartments Mid Rise	1,314.00	Dwelling Unit	34.58	1,314,000.00	3758
Regional Shopping Center	902.98	1000sqft	20.73	902,975.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2013
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	427	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

Project Characteristics - 2013 SDG&E pounds of CO2/MWh

Land Use - Existing (2013) LU

Construction Phase - No construction

Off-road Equipment - No const.

Off-road Equipment - No const

Off-road Equipment - No const

Off-road Equipment - No const

Off-road Equipment - No const.

Off-road Equipment - No const

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for Existing (2013) LU adjusted to match daily vehicle trips from traffic data

Woodstoves - No woodstoves

Energy Use -

Waste Mitigation - Based on the City's 2013 solid waste diversion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,356,735.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,070,204.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	886,950.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	2,660,850.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstructionPhase	NumDays	200.00	0.00

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tblConstructionPhase	NumDays	120.00	0.00
tblConstructionPhase	NumDays	310.00	0.00
tblConstructionPhase	NumDays	3,100.00	0.00
tblConstructionPhase	NumDays	220.00	0.00
tblConstructionPhase	NumDays	220.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	197.10	373.37
tblFireplaces	NumberNoFireplace	52.56	99.57
tblFireplaces	NumberWood	223.38	0.00
tblLandUse	LandUseSquareFeet	713,750.00	713,752.00
tblLandUse	LandUseSquareFeet	231,550.00	231,547.00
tblLandUse	LandUseSquareFeet	2,549,280.00	2,549,284.00
tblLandUse	LandUseSquareFeet	902,980.00	902,975.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	427
tblTripsAndVMT	VendorTripNumber	913.00	0.00
tblTripsAndVMT	WorkerTripNumber	2,764.00	0.00
tblTripsAndVMT	WorkerTripNumber	553.00	0.00
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00

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tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.22
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00

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tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	6.63
tblVehicleTrips	ST_TR	2.49	6.80
tblVehicleTrips	ST_TR	0.42	1.22
tblVehicleTrips	ST_TR	1.49	3.80
tblVehicleTrips	ST_TR	1.64	11.38
tblVehicleTrips	ST_TR	49.97	42.50
tblVehicleTrips	SU_TR	5.86	6.63
tblVehicleTrips	SU_TR	0.73	6.80
tblVehicleTrips	SU_TR	0.04	1.22
tblVehicleTrips	SU_TR	0.62	3.80
tblVehicleTrips	SU_TR	0.76	11.38
tblVehicleTrips	SU_TR	25.24	42.50
tblVehicleTrips	WD_TR	6.65	6.63
tblVehicleTrips	WD_TR	6.83	6.80
tblVehicleTrips	WD_TR	1.23	1.22
tblVehicleTrips	WD_TR	3.82	3.80
tblVehicleTrips	WD_TR	11.42	11.38
tblVehicleTrips	WD_TR	42.70	42.50

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

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	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.1793	9,422.1793	0.3986	0.1691	9,482.5392
Energy	3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.5157	34,562.5157	0.6625	0.6337	34,767.9034
Mobile	362.5925	1,816.9212	4,182.4245	8.1933	540.9818	35.0402	576.0219	145.2867	33.3946	178.6813		824,088.4569	824,088.4569	54.1247		825,441.5748
Total	517.9799	1,854.1108	4,321.3550	8.4181	540.9818	38.4057	579.3874	145.2867	36.7601	182.0467	0.0000	868,073.1518	868,073.1518	55.1857	0.8028	869,692.0174

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.1793	9,422.1793	0.3986	0.1691	9,482.5392
Energy	3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.5157	34,562.5157	0.6625	0.6337	34,767.9034
Mobile	362.5925	1,816.9212	4,182.4245	8.1933	540.9818	35.0402	576.0219	145.2867	33.3946	178.6813		824,088.4569	824,088.4569	54.1247		825,441.5748
Total	517.9799	1,854.1108	4,321.3550	8.4181	540.9818	38.4057	579.3874	145.2867	36.7601	182.0467	0.0000	868,073.1518	868,073.1518	55.1857	0.8028	869,692.0174

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/3/2011	1/2/2011	5	0	
2	Site Preparation	Site Preparation	10/8/2011	10/7/2011	5	0	
3	Grading	Grading	3/24/2012	3/23/2012	5	0	
4	Building Construction	Building Construction	6/1/2013	5/31/2013	5	0	
5	Paving	Paving	4/19/2025	4/18/2025	5	0	
6	Architectural Coating	Architectural Coating	2/21/2026	2/20/2026	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	362.5925	1,816.9212	4,182.4245	8.1933	540.9818	35.0402	576.0219	145.2867	33.3946	178.6813		824,088.4569	824,088.4569	54.1247		825,441.5748
Unmitigated	362.5925	1,816.9212	4,182.4245	8.1933	540.9818	35.0402	576.0219	145.2867	33.3946	178.6813		824,088.4569	824,088.4569	54.1247		825,441.5748

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	8,711.82	8,711.82	8711.82	29,237,565	29,237,565
Industrial Park	1,574.54	1,574.54	1574.54	5,284,282	5,284,282
Junior College (2Yr)	8,829.14	8,829.14	8829.14	29,631,300	29,631,300
Manufacturing	9,687.26	9,687.26	9687.26	32,511,233	32,511,233
Office Park	8,122.48	8,122.48	8122.48	27,259,676	27,259,676
Regional Shopping Center	38,376.65	38,376.65	38376.65	128,795,108	128,795,108
Total	75,301.89	75,301.89	75,301.89	252,719,164	252,719,164

4.3 Trip Type Information

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

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	9.22	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Industrial Park	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Junior College (2Yr)	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Manufacturing	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Office Park	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Regional Shopping Center	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.5157	34,562.5157	0.6625	0.6337	34,767.9034
NaturalGas Unmitigated	3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.5157	34,562.5157	0.6625	0.6337	34,767.9034

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

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 Mid Rise	31102	0.3354	2.8663	1.2197	0.0183		0.2317	0.2317		0.2317	0.2317		3,659.0612	3,659.0612	0.0701	0.0671	3,680.8052
Industrial Park	10384.7	0.1120	1.0181	0.8552	6.1100e-003		0.0774	0.0774		0.0774	0.0774		1,221.7323	1,221.7323	0.0234	0.0224	1,228.9924
Junior College (2Yr)	20884.8	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	184247	1.9870	18.0634	15.1733	0.1084		1.3728	1.3728		1.3728	1.3728		21,676.1038	21,676.1038	0.4155	0.3974	21,804.9140
Office Park	41299.8	0.4454	4.0490	3.4012	0.0243		0.3077	0.3077		0.3077	0.3077		4,858.8049	4,858.8049	0.0931	0.0891	4,887.6784
Regional Shopping Center	5863.15	0.0632	0.5748	0.4829	3.4500e-003		0.0437	0.0437		0.0437	0.0437		689.7827	689.7827	0.0132	0.0127	693.8817
Total		3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.5157	34,562.5157	0.6625	0.6337	34,767.9034

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	31.102	0.3354	2.8663	1.2197	0.0183		0.2317	0.2317		0.2317	0.2317		3,659.0612	3,659.0612	0.0701	0.0671	3,680.8052
Industrial Park	10.3847	0.1120	1.0181	0.8552	6.1100e-003		0.0774	0.0774		0.0774	0.0774		1,221.7323	1,221.7323	0.0234	0.0224	1,228.9924
Junior College (2Yr)	20.8848	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	184.247	1.9870	18.0634	15.1733	0.1084		1.3728	1.3728		1.3728	1.3728		21,676.1038	21,676.1038	0.4155	0.3974	21,804.9140
Office Park	41.2998	0.4454	4.0490	3.4012	0.0243		0.3077	0.3077		0.3077	0.3077		4,858.8049	4,858.8049	0.0931	0.0891	4,887.6784
Regional Shopping Center	5.86315	0.0632	0.5748	0.4829	3.4500e-003		0.0437	0.0437		0.0437	0.0437		689.7827	689.7827	0.0132	0.0127	693.8817
Total		3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.5157	34,562.5157	0.6625	0.6337	34,767.9034

6.0 Area Detail

6.1 Mitigation Measures Area

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.179 3	9,422.179 3	0.3986	0.1691	9,482.539 2
Unmitigated	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.179 3	9,422.179 3	0.3986	0.1691	9,482.539 2

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	18.5357					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	128.9878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.8456	7.2258	3.0748	0.0461		0.5842	0.5842		0.5842	0.5842	0.0000	9,224.435 3	9,224.435 3	0.1768	0.1691	9,279.251 5
Landscaping	3.8501	1.3446	113.0035	5.8100e-003		0.5923	0.5923		0.5923	0.5923		197.7440	197.7440	0.2218		203.2877
Total	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.179 3	9,422.179 3	0.3986	0.1691	9,482.539 2

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	18.5357					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	128.9878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.8456	7.2258	3.0748	0.0461		0.5842	0.5842		0.5842	0.5842	0.0000	9,224.4353	9,224.4353	0.1768	0.1691	9,279.2515
Landscaping	3.8501	1.3446	113.0035	5.8100e-003		0.5923	0.5923		0.5923	0.5923		197.7440	197.7440	0.2218		203.2877
Total	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.1793	9,422.1793	0.3986	0.1691	9,482.5392

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Livermore INP - Existing (2013) Operational Emissions - Alameda County, Summer

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

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

Livermore INP - Existing (2013) Operational Emissions
Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	713.75	1000sqft	16.39	713,752.00	0
Junior College (2Yr)	7,237.00	Student	7.25	315,911.24	0
Industrial Park	231.55	1000sqft	5.32	231,547.00	0
Manufacturing	2,549.28	1000sqft	58.52	2,549,284.00	0
Apartments Mid Rise	1,314.00	Dwelling Unit	34.58	1,314,000.00	3758
Regional Shopping Center	902.98	1000sqft	20.73	902,975.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2013
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	427	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

Project Characteristics - 2013 SDG&E pounds of CO2/MWh

Land Use - Existing (2013) LU

Construction Phase - No construction

Off-road Equipment - No const.

Off-road Equipment - No const

Off-road Equipment - No const

Off-road Equipment - No const

Off-road Equipment - No const.

Off-road Equipment - No const

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for Existing (2013) LU adjusted to match daily vehicle trips from traffic data

Woodstoves - No woodstoves

Energy Use -

Waste Mitigation - Based on the City's 2013 solid waste diversion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,356,735.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,070,204.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	886,950.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	2,660,850.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstructionPhase	NumDays	200.00	0.00

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

tblConstructionPhase	NumDays	120.00	0.00
tblConstructionPhase	NumDays	310.00	0.00
tblConstructionPhase	NumDays	3,100.00	0.00
tblConstructionPhase	NumDays	220.00	0.00
tblConstructionPhase	NumDays	220.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	197.10	373.37
tblFireplaces	NumberNoFireplace	52.56	99.57
tblFireplaces	NumberWood	223.38	0.00
tblLandUse	LandUseSquareFeet	713,750.00	713,752.00
tblLandUse	LandUseSquareFeet	231,550.00	231,547.00
tblLandUse	LandUseSquareFeet	2,549,280.00	2,549,284.00
tblLandUse	LandUseSquareFeet	902,980.00	902,975.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	427
tblTripsAndVMT	VendorTripNumber	913.00	0.00
tblTripsAndVMT	WorkerTripNumber	2,764.00	0.00
tblTripsAndVMT	WorkerTripNumber	553.00	0.00
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.22
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	6.63
tblVehicleTrips	ST_TR	2.49	6.80
tblVehicleTrips	ST_TR	0.42	1.22
tblVehicleTrips	ST_TR	1.49	3.80
tblVehicleTrips	ST_TR	1.64	11.38
tblVehicleTrips	ST_TR	49.97	42.50
tblVehicleTrips	SU_TR	5.86	6.63
tblVehicleTrips	SU_TR	0.73	6.80
tblVehicleTrips	SU_TR	0.04	1.22
tblVehicleTrips	SU_TR	0.62	3.80
tblVehicleTrips	SU_TR	0.76	11.38
tblVehicleTrips	SU_TR	25.24	42.50
tblVehicleTrips	WD_TR	6.65	6.63
tblVehicleTrips	WD_TR	6.83	6.80
tblVehicleTrips	WD_TR	1.23	1.22
tblVehicleTrips	WD_TR	3.82	3.80
tblVehicleTrips	WD_TR	11.42	11.38
tblVehicleTrips	WD_TR	42.70	42.50

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

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	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.179 3	9,422.179 3	0.3986	0.1691	9,482.539 2
Energy	3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.51 57	34,562.51 57	0.6625	0.6337	34,767.90 34
Mobile	339.2507	1,948.206 1	4,208.743 2	7.6979	540.9818	35.3063	576.2881	145.2867	33.6492	178.9359		774,243.0 184	774,243.0 184	54.9439		775,616.6 163
Total	494.6381	1,985.395 7	4,347.673 7	7.9227	540.9818	38.6718	579.6536	145.2867	37.0147	182.3014	0.0000	818,227.7 133	818,227.7 133	56.0049	0.8028	819,867.0 589

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.179 3	9,422.179 3	0.3986	0.1691	9,482.539 2
Energy	3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.51 57	34,562.51 57	0.6625	0.6337	34,767.90 34
Mobile	339.2507	1,948.206 1	4,208.743 2	7.6979	540.9818	35.3063	576.2881	145.2867	33.6492	178.9359		774,243.0 184	774,243.0 184	54.9439		775,616.6 163
Total	494.6381	1,985.395 7	4,347.673 7	7.9227	540.9818	38.6718	579.6536	145.2867	37.0147	182.3014	0.0000	818,227.7 133	818,227.7 133	56.0049	0.8028	819,867.0 589

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/3/2011	1/2/2011	5	0	
2	Site Preparation	Site Preparation	10/8/2011	10/7/2011	5	0	
3	Grading	Grading	3/24/2012	3/23/2012	5	0	
4	Building Construction	Building Construction	6/1/2013	5/31/2013	5	0	
5	Paving	Paving	4/19/2025	4/18/2025	5	0	
6	Architectural Coating	Architectural Coating	2/21/2026	2/20/2026	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	339.2507	1,948.206 1	4,208.743 2	7.6979	540.9818	35.3063	576.2881	145.2867	33.6492	178.9359		774,243.0 184	774,243.0 184	54.9439		775,616.6 163
Unmitigated	339.2507	1,948.206 1	4,208.743 2	7.6979	540.9818	35.3063	576.2881	145.2867	33.6492	178.9359		774,243.0 184	774,243.0 184	54.9439		775,616.6 163

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	8,711.82	8,711.82	8711.82	29,237,565	29,237,565
Industrial Park	1,574.54	1,574.54	1574.54	5,284,282	5,284,282
Junior College (2Yr)	8,829.14	8,829.14	8829.14	29,631,300	29,631,300
Manufacturing	9,687.26	9,687.26	9687.26	32,511,233	32,511,233
Office Park	8,122.48	8,122.48	8122.48	27,259,676	27,259,676
Regional Shopping Center	38,376.65	38,376.65	38376.65	128,795,108	128,795,108
Total	75,301.89	75,301.89	75,301.89	252,719,164	252,719,164

4.3 Trip Type Information

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

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	9.22	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Industrial Park	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Junior College (2Yr)	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Manufacturing	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Office Park	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Regional Shopping Center	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.5157	34,562.5157	0.6625	0.6337	34,767.9034
NaturalGas Unmitigated	3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.5157	34,562.5157	0.6625	0.6337	34,767.9034

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

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 Mid Rise	31102	0.3354	2.8663	1.2197	0.0183		0.2317	0.2317		0.2317	0.2317		3,659.0612	3,659.0612	0.0701	0.0671	3,680.8052
Industrial Park	10384.7	0.1120	1.0181	0.8552	6.1100e-003		0.0774	0.0774		0.0774	0.0774		1,221.7323	1,221.7323	0.0234	0.0224	1,228.9924
Junior College (2Yr)	20884.8	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	184247	1.9870	18.0634	15.1733	0.1084		1.3728	1.3728		1.3728	1.3728		21,676.1038	21,676.1038	0.4155	0.3974	21,804.9140
Office Park	41299.8	0.4454	4.0490	3.4012	0.0243		0.3077	0.3077		0.3077	0.3077		4,858.8049	4,858.8049	0.0931	0.0891	4,887.6784
Regional Shopping Center	5863.15	0.0632	0.5748	0.4829	3.4500e-003		0.0437	0.0437		0.0437	0.0437		689.7827	689.7827	0.0132	0.0127	693.8817
Total		3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.5157	34,562.5157	0.6625	0.6337	34,767.9034

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	31.102	0.3354	2.8663	1.2197	0.0183		0.2317	0.2317		0.2317	0.2317		3,659.0612	3,659.0612	0.0701	0.0671	3,680.8052
Industrial Park	10.3847	0.1120	1.0181	0.8552	6.1100e-003		0.0774	0.0774		0.0774	0.0774		1,221.7323	1,221.7323	0.0234	0.0224	1,228.9924
Junior College (2Yr)	20.8848	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	184.247	1.9870	18.0634	15.1733	0.1084		1.3728	1.3728		1.3728	1.3728		21,676.1038	21,676.1038	0.4155	0.3974	21,804.9140
Office Park	41.2998	0.4454	4.0490	3.4012	0.0243		0.3077	0.3077		0.3077	0.3077		4,858.8049	4,858.8049	0.0931	0.0891	4,887.6784
Regional Shopping Center	5.86315	0.0632	0.5748	0.4829	3.4500e-003		0.0437	0.0437		0.0437	0.0437		689.7827	689.7827	0.0132	0.0127	693.8817
Total		3.1682	28.6191	22.8521	0.1728		2.1890	2.1890		2.1890	2.1890		34,562.5157	34,562.5157	0.6625	0.6337	34,767.9034

6.0 Area Detail

6.1 Mitigation Measures Area

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.179 3	9,422.179 3	0.3986	0.1691	9,482.539 2
Unmitigated	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.179 3	9,422.179 3	0.3986	0.1691	9,482.539 2

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	18.5357					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	128.9878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.8456	7.2258	3.0748	0.0461		0.5842	0.5842		0.5842	0.5842	0.0000	9,224.435 3	9,224.435 3	0.1768	0.1691	9,279.251 5
Landscaping	3.8501	1.3446	113.0035	5.8100e-003		0.5923	0.5923		0.5923	0.5923		197.7440	197.7440	0.2218		203.2877
Total	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.179 3	9,422.179 3	0.3986	0.1691	9,482.539 2

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	18.5357					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	128.9878					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.8456	7.2258	3.0748	0.0461		0.5842	0.5842		0.5842	0.5842	0.0000	9,224.4353	9,224.4353	0.1768	0.1691	9,279.2515
Landscaping	3.8501	1.3446	113.0035	5.8100e-003		0.5923	0.5923		0.5923	0.5923		197.7440	197.7440	0.2218		203.2877
Total	152.2192	8.5704	116.0784	0.0519		1.1765	1.1765		1.1765	1.1765	0.0000	9,422.1793	9,422.1793	0.3986	0.1691	9,482.5392

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Livermore INP - Existing (2013) Operational Emissions - Alameda County, Winter

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

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

Livermore INP - Existing (2013) Operational Emissions
Alameda County, Annual

1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	713.75	1000sqft	16.39	713,752.00	0
Junior College (2Yr)	7,237.00	Student	7.25	315,911.24	0
Industrial Park	231.55	1000sqft	5.32	231,547.00	0
Manufacturing	2,549.28	1000sqft	58.52	2,549,284.00	0
Apartments Mid Rise	1,314.00	Dwelling Unit	34.58	1,314,000.00	3758
Regional Shopping Center	902.98	1000sqft	20.73	902,975.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2013
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	427	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

Project Characteristics - 2013 SDG&E pounds of CO2/MWh

Land Use - Existing (2013) LU

Construction Phase - No construction

Off-road Equipment - No const.

Off-road Equipment - No const

Off-road Equipment - No const

Off-road Equipment - No const

Off-road Equipment - No const.

Off-road Equipment - No const

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for Existing (2013) LU adjusted to match daily vehicle trips from traffic data

Woodstoves - No woodstoves

Energy Use -

Waste Mitigation - Based on the City's 2013 solid waste diversion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	2,356,735.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	7,070,204.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	886,950.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	2,660,850.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	250.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	250.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	250.00
tblConstructionPhase	NumDays	200.00	0.00

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

tblConstructionPhase	NumDays	120.00	0.00
tblConstructionPhase	NumDays	310.00	0.00
tblConstructionPhase	NumDays	3,100.00	0.00
tblConstructionPhase	NumDays	220.00	0.00
tblConstructionPhase	NumDays	220.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	197.10	373.37
tblFireplaces	NumberNoFireplace	52.56	99.57
tblFireplaces	NumberWood	223.38	0.00
tblLandUse	LandUseSquareFeet	713,750.00	713,752.00
tblLandUse	LandUseSquareFeet	231,550.00	231,547.00
tblLandUse	LandUseSquareFeet	2,549,280.00	2,549,284.00
tblLandUse	LandUseSquareFeet	902,980.00	902,975.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	427
tblTripsAndVMT	VendorTripNumber	913.00	0.00
tblTripsAndVMT	WorkerTripNumber	2,764.00	0.00
tblTripsAndVMT	WorkerTripNumber	553.00	0.00
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TL	7.30	9.22
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.22
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	6.63
tblVehicleTrips	ST_TR	2.49	6.80
tblVehicleTrips	ST_TR	0.42	1.22
tblVehicleTrips	ST_TR	1.49	3.80
tblVehicleTrips	ST_TR	1.64	11.38
tblVehicleTrips	ST_TR	49.97	42.50
tblVehicleTrips	SU_TR	5.86	6.63
tblVehicleTrips	SU_TR	0.73	6.80
tblVehicleTrips	SU_TR	0.04	1.22
tblVehicleTrips	SU_TR	0.62	3.80
tblVehicleTrips	SU_TR	0.76	11.38
tblVehicleTrips	SU_TR	25.24	42.50
tblVehicleTrips	WD_TR	6.65	6.63
tblVehicleTrips	WD_TR	6.83	6.80
tblVehicleTrips	WD_TR	1.23	1.22
tblVehicleTrips	WD_TR	3.82	3.80
tblVehicleTrips	WD_TR	11.42	11.38
tblVehicleTrips	WD_TR	42.70	42.50

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

2.1 Overall Construction

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					
2011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2025	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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)
		Highest		

Livermore INP - Existing (2013) Operational Emissions - Alameda County, 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	27.2743	0.1613	10.1875	7.8000e-004		0.0566	0.0566		0.0566	0.0566	0.0000	62.7564	62.7564	0.0190	8.5000e-004	63.4860
Energy	0.5782	5.2230	4.1705	0.0315		0.3995	0.3995		0.3995	0.3995	0.0000	16,707.1388	16,707.1388	0.8557	0.2593	16,805.7921
Mobile	60.5504	345.5326	729.7960	1.4094	94.8543	6.3901	101.2443	25.5575	6.0900	31.6475	0.0000	128,666.9260	128,666.9260	8.8400	0.0000	128,887.9267
Waste						0.0000	0.0000		0.0000	0.0000	1,417.9609	0.0000	1,417.9609	83.7991	0.0000	3,512.9381
Water						0.0000	0.0000		0.0000	0.0000	297.5581	1,116.4749	1,414.0330	30.6379	0.7373	2,399.7032
Total	88.4028	350.9169	744.1540	1.4417	94.8543	6.8461	101.7004	25.5575	6.5461	32.1035	1,715.5190	146,553.2961	148,268.8151	124.1517	0.9974	151,669.8461

Livermore INP - Existing (2013) Operational Emissions - Alameda County, 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	27.2743	0.1613	10.1875	7.8000e-004		0.0566	0.0566		0.0566	0.0566	0.0000	62.7564	62.7564	0.0190	8.5000e-004	63.4860
Energy	0.5782	5.2230	4.1705	0.0315		0.3995	0.3995		0.3995	0.3995	0.0000	16,707.1388	16,707.1388	0.8557	0.2593	16,805.7921
Mobile	60.5504	345.5326	729.7960	1.4094	94.8543	6.3901	101.2443	25.5575	6.0900	31.6475	0.0000	128,666.9260	128,666.9260	8.8400	0.0000	128,887.9267
Waste						0.0000	0.0000		0.0000	0.0000	326.1310	0.0000	326.1310	19.2738	0.0000	807.9758
Water						0.0000	0.0000		0.0000	0.0000	297.5581	1,116.4749	1,414.0330	30.6379	0.7373	2,399.7032
Total	88.4028	350.9169	744.1540	1.4417	94.8543	6.8461	101.7004	25.5575	6.5461	32.1035	623.6891	146,553.2961	147,176.9852	59.6264	0.9974	148,964.8837

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	63.64	0.00	0.74	51.97	0.00	1.78

3.0 Construction Detail

Construction Phase

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/3/2011	1/2/2011	5	0	
2	Site Preparation	Site Preparation	10/8/2011	10/7/2011	5	0	
3	Grading	Grading	3/24/2012	3/23/2012	5	0	
4	Building Construction	Building Construction	6/1/2013	5/31/2013	5	0	
5	Paving	Paving	4/19/2025	4/18/2025	5	0	
6	Architectural Coating	Architectural Coating	2/21/2026	2/20/2026	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - Existing (2013) Operational Emissions - Alameda County, 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	60.5504	345.5326	729.7960	1.4094	94.8543	6.3901	101.2443	25.5575	6.0900	31.6475	0.0000	128,666.9260	128,666.9260	8.8400	0.0000	128,887.9267
Unmitigated	60.5504	345.5326	729.7960	1.4094	94.8543	6.3901	101.2443	25.5575	6.0900	31.6475	0.0000	128,666.9260	128,666.9260	8.8400	0.0000	128,887.9267

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	8,711.82	8,711.82	8711.82	29,237,565	29,237,565
Industrial Park	1,574.54	1,574.54	1574.54	5,284,282	5,284,282
Junior College (2Yr)	8,829.14	8,829.14	8829.14	29,631,300	29,631,300
Manufacturing	9,687.26	9,687.26	9687.26	32,511,233	32,511,233
Office Park	8,122.48	8,122.48	8122.48	27,259,676	27,259,676
Regional Shopping Center	38,376.65	38,376.65	38376.65	128,795,108	128,795,108
Total	75,301.89	75,301.89	75,301.89	252,719,164	252,719,164

4.3 Trip Type Information

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

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	9.22	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.22	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Industrial Park	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Junior College (2Yr)	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Manufacturing	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Office Park	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928
Regional Shopping Center	0.542522	0.050811	0.188180	0.116444	0.023901	0.005213	0.020538	0.039278	0.001869	0.004398	0.005686	0.000232	0.000928

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - Existing (2013) Operational Emissions - Alameda County, 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					
Electricity Mitigated							0.0000	0.0000		0.0000	0.0000	10,984.9267	10,984.9267	0.7461	0.1544	11,049.5757
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	10,984.9267	10,984.9267	0.7461	0.1544	11,049.5757
NaturalGas Mitigated	0.5782	5.2230	4.1705	0.0315			0.3995	0.3995		0.3995	0.3995	5,722.2121	5,722.2121	0.1097	0.1049	5,756.2163
NaturalGas Unmitigated	0.5782	5.2230	4.1705	0.0315			0.3995	0.3995		0.3995	0.3995	5,722.2121	5,722.2121	0.1097	0.1049	5,756.2163

Livermore INP - Existing (2013) Operational Emissions - Alameda County, 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	1.13522e+007	0.0612	0.5231	0.2226	3.3400e-003		0.0423	0.0423		0.0423	0.0423	0.0000	605.7986	605.7986	0.0116	0.0111	609.3986
Industrial Park	3.79042e+006	0.0204	0.1858	0.1561	1.1100e-003		0.0141	0.0141		0.0141	0.0141	0.0000	202.2715	202.2715	3.8800e-003	3.7100e-003	203.4735
Junior College (2Yr)	7.62294e+006	0.0411	0.3737	0.3139	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.7890	406.7890	7.8000e-003	7.4600e-003	409.2064
Manufacturing	6.72501e+007	0.3626	3.2966	2.7691	0.0198		0.2505	0.2505		0.2505	0.2505	0.0000	3,588.7221	3,588.7221	0.0688	0.0658	3,610.0481
Office Park	1.50744e+007	0.0813	0.7389	0.6207	4.4300e-003		0.0562	0.0562		0.0562	0.0562	0.0000	804.4296	804.4296	0.0154	0.0148	809.2100
Regional Shopping Center	2.14005e+006	0.0115	0.1049	0.0881	6.3000e-004		7.9700e-003	7.9700e-003		7.9700e-003	7.9700e-003	0.0000	114.2013	114.2013	2.1900e-003	2.0900e-003	114.8799
Total		0.5782	5.2230	4.1705	0.0315		0.3995	0.3995		0.3995	0.3995	0.0000	5,722.2121	5,722.2121	0.1097	0.1049	5,756.2163

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.13522e+007	0.0612	0.5231	0.2226	3.3400e-003		0.0423	0.0423		0.0423	0.0423	0.0000	605.7986	605.7986	0.0116	0.0111	609.3986
Industrial Park	3.79042e+006	0.0204	0.1858	0.1561	1.1100e-003		0.0141	0.0141		0.0141	0.0141	0.0000	202.2715	202.2715	3.8800e-003	3.7100e-003	203.4735
Junior College (2Yr)	7.62294e+006	0.0411	0.3737	0.3139	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.7890	406.7890	7.8000e-003	7.4600e-003	409.2064
Manufacturing	6.72501e+007	0.3626	3.2966	2.7691	0.0198		0.2505	0.2505		0.2505	0.2505	0.0000	3,588.7221	3,588.7221	0.0688	0.0658	3,610.0481
Office Park	1.50744e+007	0.0813	0.7389	0.6207	4.4300e-003		0.0562	0.0562		0.0562	0.0562	0.0000	804.4296	804.4296	0.0154	0.0148	809.2100
Regional Shopping Center	2.14005e+006	0.0115	0.1049	0.0881	6.3000e-004		7.9700e-003	7.9700e-003		7.9700e-003	7.9700e-003	0.0000	114.2013	114.2013	2.1900e-003	2.0900e-003	114.8799
Total		0.5782	5.2230	4.1705	0.0315		0.3995	0.3995		0.3995	0.3995	0.0000	5,722.2121	5,722.2121	0.1097	0.1049	5,756.2163

Livermore INP - Existing (2013) Operational Emissions - Alameda County, 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	5.42465e+006	1,050.6680	0.0714	0.0148	1,056.8514
Industrial Park	4.12848e+006	799.6209	0.0543	0.0112	804.3268
Junior College (2Yr)	2.49886e+006	483.9887	0.0329	6.8000e-003	486.8370
Manufacturing	2.10571e+007	4,078.4194	0.2770	0.0573	4,102.4219
Office Park	1.39539e+007	2,702.6370	0.1836	0.0380	2,718.5427
Regional Shopping Center	9.6528e+006	1,869.5929	0.1270	0.0263	1,880.5959
Total		10,984.9267	0.7461	0.1544	11,049.5757

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

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

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.42465e+006	1,050.6680	0.0714	0.0148	1,056.8514
Industrial Park	4.12848e+006	799.6209	0.0543	0.0112	804.3268
Junior College (2Yr)	2.49886e+006	483.9887	0.0329	6.8000e-003	486.8370
Manufacturing	2.10571e+007	4,078.4194	0.2770	0.0573	4,102.4219
Office Park	1.39539e+007	2,702.6370	0.1836	0.0380	2,718.5427
Regional Shopping Center	9.6528e+006	1,869.5929	0.1270	0.0263	1,880.5959
Total		10,984.9267	0.7461	0.1544	11,049.5757

6.0 Area Detail**6.1 Mitigation Measures Area**

Livermore INP - Existing (2013) Operational Emissions - Alameda County, 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	27.2743	0.1613	10.1875	7.8000e-004		0.0566	0.0566		0.0566	0.0566	0.0000	62.7564	62.7564	0.0190	8.5000e-004	63.4860
Unmitigated	27.2743	0.1613	10.1875	7.8000e-004		0.0566	0.0566		0.0566	0.0566	0.0000	62.7564	62.7564	0.0190	8.5000e-004	63.4860

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	3.3828					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	23.5403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.7100e-003	0.0403	0.0171	2.6000e-004		3.2500e-003	3.2500e-003		3.2500e-003	3.2500e-003	0.0000	46.6113	46.6113	8.9000e-004	8.5000e-004	46.8882
Landscaping	0.3465	0.1210	10.1703	5.2000e-004		0.0533	0.0533		0.0533	0.0533	0.0000	16.1451	16.1451	0.0181	0.0000	16.5978
Total	27.2743	0.1613	10.1875	7.8000e-004		0.0566	0.0566		0.0566	0.0566	0.0000	62.7564	62.7564	0.0190	8.5000e-004	63.4860

Livermore INP - Existing (2013) Operational Emissions - Alameda County, 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	3.3828					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	23.5403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.7100e-003	0.0403	0.0171	2.6000e-004		3.2500e-003	3.2500e-003		3.2500e-003	3.2500e-003	0.0000	46.6113	46.6113	8.9000e-004	8.5000e-004	46.8882
Landscaping	0.3465	0.1210	10.1703	5.2000e-004		0.0533	0.0533		0.0533	0.0533	0.0000	16.1451	16.1451	0.0181	0.0000	16.5978
Total	27.2743	0.1613	10.1875	7.8000e-004		0.0566	0.0566		0.0566	0.0566	0.0000	62.7564	62.7564	0.0190	8.5000e-004	63.4860

7.0 Water Detail**7.1 Mitigation Measures Water**

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1,414.033 0	30.6379	0.7373	2,399.703 2
Unmitigated	1,414.033 0	30.6379	0.7373	2,399.703 2

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	85.6124 / 53.973	153.4727	2.7983	0.0677	243.5875
Industrial Park	53.5459 / 0	73.1051	1.7486	0.0420	129.3323
Junior College (2Yr)	15.4951 / 24.236	37.5846	0.5071	0.0124	53.9524
Manufacturing	589.521 / 0	804.8599	19.2515	0.4623	1,423.9013
Office Park	126.857 / 77.7513	225.9028	4.1463	0.1002	359.4229
Regional Shopping Center	66.886 / 40.9946	119.1080	2.1861	0.0528	189.5069
Total		1,414.0330	30.6379	0.7373	2,399.7032

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	85.6124 / 53.973	153.4727	2.7983	0.0677	243.5875
Industrial Park	53.5459 / 0	73.1051	1.7486	0.0420	129.3323
Junior College (2Yr)	15.4951 / 24.236	37.5846	0.5071	0.0124	53.9524
Manufacturing	589.521 / 0	804.8599	19.2515	0.4623	1,423.9013
Office Park	126.857 / 77.7513	225.9028	4.1463	0.1002	359.4229
Regional Shopping Center	66.886 / 40.9946	119.1080	2.1861	0.0528	189.5069
Total		1,414.0330	30.6379	0.7373	2,399.7032

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	326.1310	19.2738	0.0000	807.9758
Unmitigated	1,417.9609	83.7991	0.0000	3,512.9381

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	604.44	122.6959	7.2511	0.0000	303.9738
Industrial Park	287.12	58.2828	3.4444	0.0000	144.3931
Junior College (2Yr)	1320.75	268.1003	15.8443	0.0000	664.2072
Manufacturing	3161.11	641.6768	37.9220	0.0000	1,589.7270
Office Park	663.79	134.7434	7.9631	0.0000	333.8210
Regional Shopping Center	948.13	192.4618	11.3742	0.0000	476.8160
Total		1,417.9609	83.7991	0.0000	3,512.9381

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	139.021	28.2201	1.6678	0.0000	69.9140
Industrial Park	66.0376	13.4050	0.7922	0.0000	33.2104
Junior College (2Yr)	303.772	61.6631	3.6442	0.0000	152.7677
Manufacturing	727.055	147.5857	8.7221	0.0000	365.6372
Office Park	152.672	30.9910	1.8315	0.0000	76.7788
Regional Shopping Center	218.07	44.2662	2.6161	0.0000	109.6677
Total		326.1310	19.2738	0.0000	807.9758

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

Livermore INP - Existing (2013) Operational Emissions - Alameda County, Annual

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

Equipment Type	Number
----------------	--------

11.0 Vegetation

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

Livermore INP - 2025 NP Operational Emissions
Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	305.50	1000sqft	7.01	305,500.00	0
Junior College (2Yr)	7,237.00	Student	7.25	315,911.24	0
Industrial Park	5,197.75	1000sqft	119.32	5,197,750.00	0
Manufacturing	1,737.00	1000sqft	39.88	1,737,000.00	0
Apartments Mid Rise	2,737.00	Dwelling Unit	72.03	2,737,000.00	7828
Regional Shopping Center	532.35	1000sqft	12.22	532,350.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	291	CH4 Intensity (lb/MWhr)	0.025	N2O Intensity (lb/MWhr)	0.003

1.3 User Entered Comments & Non-Default Data

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

Project Characteristics - Intensity factors include RPS benefit up to 2025

Land Use - 2025 NP LU's

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for 2025 NP LU's (slightly adjusted to match total daily trips from traffic study)

Woodstoves - No woodstoves or fireplaces

Energy Use -

Waste Mitigation - Based on the City's most recent solid waste diversion rate.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	4,044,256.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	12,132,767.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,847,475.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	5,542,425.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	180.00	0.00
tblConstructionPhase	NumDays	465.00	0.00
tblConstructionPhase	NumDays	4,650.00	0.00
tblConstructionPhase	NumDays	330.00	0.00

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

tblConstructionPhase	NumDays	330.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	410.55	777.88
tblFireplaces	NumberNoFireplace	109.48	207.44
tblFireplaces	NumberWood	465.29	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	291
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

tblTripsAndVMT	VendorTripNumber	1,618.00	0.00
tblTripsAndVMT	WorkerTripNumber	5,284.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,057.00	0.00
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.57
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	5.18
tblVehicleTrips	ST_TR	2.49	6.23
tblVehicleTrips	ST_TR	0.42	0.91
tblVehicleTrips	ST_TR	1.49	3.82
tblVehicleTrips	ST_TR	1.64	11.36
tblVehicleTrips	ST_TR	49.97	38.07
tblVehicleTrips	SU_TR	5.86	5.18
tblVehicleTrips	SU_TR	0.73	6.23
tblVehicleTrips	SU_TR	0.04	0.91
tblVehicleTrips	SU_TR	0.62	3.82
tblVehicleTrips	SU_TR	0.76	11.36
tblVehicleTrips	SU_TR	25.24	38.07
tblVehicleTrips	WD_TR	6.65	5.18
tblVehicleTrips	WD_TR	6.83	6.23
tblVehicleTrips	WD_TR	1.23	0.91
tblVehicleTrips	WD_TR	11.42	11.36
tblVehicleTrips	WD_TR	42.70	38.07
tblWoodstoves	NumberCatalytic	54.74	0.00
tblWoodstoves	NumberNoncatalytic	54.74	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

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	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60
Energy	5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.76 47	54,759.76 47	1.0496	1.0039	55,085.17 46
Mobile	133.2804	765.7141	1,572.793 8	7.2198	620.5577	5.4686	626.0263	166.2264	5.1174	171.3439		734,879.5 622	734,879.5 622	23.7559		735,473.4 594
Total	412.3093	828.6328	1,841.857 6	7.6017	620.5577	11.4111	631.9688	166.2264	11.0599	177.2863	0.0000	809,267.4 111	809,267.4 111	25.5717	1.3563	810,310.8 699

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60
Energy	5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.76 47	54,759.76 47	1.0496	1.0039	55,085.17 46
Mobile	133.2804	765.7141	1,572.793 8	7.2198	620.5577	5.4686	626.0263	166.2264	5.1174	171.3439		734,879.5 622	734,879.5 622	23.7559		735,473.4 594
Total	412.3093	828.6328	1,841.857 6	7.6017	620.5577	11.4111	631.9688	166.2264	11.0599	177.2863	0.0000	809,267.4 111	809,267.4 111	25.5717	1.3563	810,310.8 699

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/8/2017	11/7/2017	5	0	
2	Site Preparation	Site Preparation	1/2/2019	1/1/2019	5	0	
3	Grading	Grading	9/11/2019	9/10/2019	5	0	
4	Building Construction	Building Construction	6/23/2021	6/22/2021	5	0	
5	Paving	Paving	4/20/2039	4/19/2039	5	0	
6	Architectural Coating	Architectural Coating	7/25/2040	7/24/2040	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

3.7 Architectural Coating - 2040

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	133.2804	765.7141	1,572.7938	7.2198	620.5577	5.4686	626.0263	166.2264	5.1174	171.3439		734,879.5622	734,879.5622	23.7559		735,473.4594
Unmitigated	133.2804	765.7141	1,572.7938	7.2198	620.5577	5.4686	626.0263	166.2264	5.1174	171.3439		734,879.5622	734,879.5622	23.7559		735,473.4594

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	14,177.66	14,177.66	14177.66	49,387,595	49,387,595
Industrial Park	32,381.98	32,381.98	32381.98	112,801,988	112,801,988
Junior College (2Yr)	6,585.67	6,585.67	6585.67	22,941,050	22,941,050
Manufacturing	6,635.34	6,635.34	6635.34	23,114,074	23,114,074
Office Park	3,470.48	3,470.48	3470.48	12,089,348	12,089,348
Regional Shopping Center	20,266.56	20,266.56	20266.56	70,598,172	70,598,172
Total	83,517.70	83,517.70	83,517.70	290,932,227	290,932,227

4.3 Trip Type Information

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

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	9.57	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Industrial Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Junior College (2Yr)	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Manufacturing	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Office Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Regional Shopping Center	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.76 47	54,759.76 47	1.0496	1.0039	55,085.17 46
NaturalGas Unmitigated	5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.76 47	54,759.76 47	1.0496	1.0039	55,085.17 46

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

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 Mid Rise	64784	0.6987	5.9703	2.5406	0.0381		0.4827	0.4827		0.4827	0.4827		7,621.6518	7,621.6518	0.1461	0.1397	7,666.9435
Industrial Park	233116	2.5140	22.8545	19.1978	0.1371		1.7369	1.7369		1.7369	1.7369		27,425.3562	27,425.3562	0.5257	0.5028	27,588.3313
Junior College (2Yr)	20884.8	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	125540	1.3539	12.3078	10.3386	0.0739		0.9354	0.9354		0.9354	0.9354		14,769.3989	14,769.3989	0.2831	0.2708	14,857.1660
Office Park	17677.2	0.1906	1.7331	1.4558	0.0104		0.1317	0.1317		0.1317	0.1317		2,079.6648	2,079.6648	0.0399	0.0381	2,092.0232
Regional Shopping Center	3456.63	0.0373	0.3389	0.2847	2.0300e-003		0.0258	0.0258		0.0258	0.0258		406.6622	406.6622	7.7900e-003	7.4600e-003	409.0788
Total		5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.7647	54,759.7647	1.0496	1.0039	55,085.1746

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	64.784	0.6987	5.9703	2.5406	0.0381		0.4827	0.4827		0.4827	0.4827		7,621.6518	7,621.6518	0.1461	0.1397	7,666.9435
Industrial Park	233.116	2.5140	22.8545	19.1978	0.1371		1.7369	1.7369		1.7369	1.7369		27,425.3562	27,425.3562	0.5257	0.5028	27,588.3313
Junior College (2Yr)	20.8848	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	125.54	1.3539	12.3078	10.3386	0.0739		0.9354	0.9354		0.9354	0.9354		14,769.3989	14,769.3989	0.2831	0.2708	14,857.1660
Office Park	17.6772	0.1906	1.7331	1.4558	0.0104		0.1317	0.1317		0.1317	0.1317		2,079.6648	2,079.6648	0.0399	0.0381	2,092.0232
Regional Shopping Center	3.45663	0.0373	0.3389	0.2847	2.0300e-003		0.0258	0.0258		0.0258	0.0258		406.6622	406.6622	7.7900e-003	7.4600e-003	409.0788
Total		5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.7647	54,759.7647	1.0496	1.0039	55,085.1746

6.0 Area Detail

6.1 Mitigation Measures Area

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60
Unmitigated	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60

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	33.6676					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	231.6659					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7617	15.0543	6.4061	0.0961		1.2172	1.2172		1.2172	1.2172	0.0000	19,218.21 18	19,218.21 18	0.3684	0.3523	19,332.41 60
Landscaping	6.9140	2.6124	227.1205	0.0120		1.2572	1.2572		1.2572	1.2572		409.8725	409.8725	0.3979		419.8200
Total	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60

Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	33.6676					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	231.6659					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7617	15.0543	6.4061	0.0961		1.2172	1.2172		1.2172	1.2172	0.0000	19,218.21 18	19,218.21 18	0.3684	0.3523	19,332.41 60
Landscaping	6.9140	2.6124	227.1205	0.0120		1.2572	1.2572		1.2572	1.2572		409.8725	409.8725	0.3979		419.8200
Total	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Livermore INP - 2025 NP Operational Emissions - Alameda County, Summer

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

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

Livermore INP - 2025 NP Operational Emissions
Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	305.50	1000sqft	7.01	305,500.00	0
Junior College (2Yr)	7,237.00	Student	7.25	315,911.24	0
Industrial Park	5,197.75	1000sqft	119.32	5,197,750.00	0
Manufacturing	1,737.00	1000sqft	39.88	1,737,000.00	0
Apartments Mid Rise	2,737.00	Dwelling Unit	72.03	2,737,000.00	7828
Regional Shopping Center	532.35	1000sqft	12.22	532,350.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	291	CH4 Intensity (lb/MWhr)	0.025	N2O Intensity (lb/MWhr)	0.003

1.3 User Entered Comments & Non-Default Data

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

Project Characteristics - Intensity factors include RPS benefit up to 2025

Land Use - 2025 NP LU's

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for 2025 NP LU's (slightly adjusted to match total daily trips from traffic study)

Woodstoves - No woodstoves or fireplaces

Energy Use -

Waste Mitigation - Based on the City's most recent solid waste diversion rate.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	4,044,256.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	12,132,767.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,847,475.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	5,542,425.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	180.00	0.00
tblConstructionPhase	NumDays	465.00	0.00
tblConstructionPhase	NumDays	4,650.00	0.00
tblConstructionPhase	NumDays	330.00	0.00

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

tblConstructionPhase	NumDays	330.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	410.55	777.88
tblFireplaces	NumberNoFireplace	109.48	207.44
tblFireplaces	NumberWood	465.29	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	291
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

tblTripsAndVMT	VendorTripNumber	1,618.00	0.00
tblTripsAndVMT	WorkerTripNumber	5,284.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,057.00	0.00
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.57
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	5.18
tblVehicleTrips	ST_TR	2.49	6.23
tblVehicleTrips	ST_TR	0.42	0.91
tblVehicleTrips	ST_TR	1.49	3.82
tblVehicleTrips	ST_TR	1.64	11.36
tblVehicleTrips	ST_TR	49.97	38.07
tblVehicleTrips	SU_TR	5.86	5.18
tblVehicleTrips	SU_TR	0.73	6.23
tblVehicleTrips	SU_TR	0.04	0.91
tblVehicleTrips	SU_TR	0.62	3.82
tblVehicleTrips	SU_TR	0.76	11.36
tblVehicleTrips	SU_TR	25.24	38.07
tblVehicleTrips	WD_TR	6.65	5.18
tblVehicleTrips	WD_TR	6.83	6.23
tblVehicleTrips	WD_TR	1.23	0.91
tblVehicleTrips	WD_TR	11.42	11.36
tblVehicleTrips	WD_TR	42.70	38.07
tblWoodstoves	NumberCatalytic	54.74	0.00
tblWoodstoves	NumberNoncatalytic	54.74	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

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	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60
Energy	5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.76 47	54,759.76 47	1.0496	1.0039	55,085.17 46
Mobile	116.1974	797.9535	1,536.606 5	6.7917	620.5577	5.4861	626.0438	166.2264	5.1342	171.3606		691,763.4 717	691,763.4 717	24.3259		692,371.6 194
Total	395.2263	860.8722	1,805.670 3	7.1737	620.5577	11.4286	631.9863	166.2264	11.0766	177.3031	0.0000	766,151.3 207	766,151.3 207	26.1417	1.3563	767,209.0 299

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60
Energy	5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.76 47	54,759.76 47	1.0496	1.0039	55,085.17 46
Mobile	116.1974	797.9535	1,536.606 5	6.7917	620.5577	5.4861	626.0438	166.2264	5.1342	171.3606		691,763.4 717	691,763.4 717	24.3259		692,371.6 194
Total	395.2263	860.8722	1,805.670 3	7.1737	620.5577	11.4286	631.9863	166.2264	11.0766	177.3031	0.0000	766,151.3 207	766,151.3 207	26.1417	1.3563	767,209.0 299

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/8/2017	11/7/2017	5	0	
2	Site Preparation	Site Preparation	1/2/2019	1/1/2019	5	0	
3	Grading	Grading	9/11/2019	9/10/2019	5	0	
4	Building Construction	Building Construction	6/23/2021	6/22/2021	5	0	
5	Paving	Paving	4/20/2039	4/19/2039	5	0	
6	Architectural Coating	Architectural Coating	7/25/2040	7/24/2040	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

3.7 Architectural Coating - 2040

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	116.1974	797.9535	1,536.6065	6.7917	620.5577	5.4861	626.0438	166.2264	5.1342	171.3606		691,763.4717	691,763.4717	24.3259		692,371.6194
Unmitigated	116.1974	797.9535	1,536.6065	6.7917	620.5577	5.4861	626.0438	166.2264	5.1342	171.3606		691,763.4717	691,763.4717	24.3259		692,371.6194

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	14,177.66	14,177.66	14177.66	49,387,595	49,387,595
Industrial Park	32,381.98	32,381.98	32381.98	112,801,988	112,801,988
Junior College (2Yr)	6,585.67	6,585.67	6585.67	22,941,050	22,941,050
Manufacturing	6,635.34	6,635.34	6635.34	23,114,074	23,114,074
Office Park	3,470.48	3,470.48	3470.48	12,089,348	12,089,348
Regional Shopping Center	20,266.56	20,266.56	20266.56	70,598,172	70,598,172
Total	83,517.70	83,517.70	83,517.70	290,932,227	290,932,227

4.3 Trip Type Information

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

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	9.57	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Industrial Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Junior College (2Yr)	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Manufacturing	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Office Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Regional Shopping Center	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.76 47	54,759.76 47	1.0496	1.0039	55,085.17 46
NaturalGas Unmitigated	5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.76 47	54,759.76 47	1.0496	1.0039	55,085.17 46

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

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 Mid Rise	64784	0.6987	5.9703	2.5406	0.0381		0.4827	0.4827		0.4827	0.4827		7,621.6518	7,621.6518	0.1461	0.1397	7,666.9435
Industrial Park	233116	2.5140	22.8545	19.1978	0.1371		1.7369	1.7369		1.7369	1.7369		27,425.3562	27,425.3562	0.5257	0.5028	27,588.3313
Junior College (2Yr)	20884.8	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	125540	1.3539	12.3078	10.3386	0.0739		0.9354	0.9354		0.9354	0.9354		14,769.3989	14,769.3989	0.2831	0.2708	14,857.1660
Office Park	17677.2	0.1906	1.7331	1.4558	0.0104		0.1317	0.1317		0.1317	0.1317		2,079.6648	2,079.6648	0.0399	0.0381	2,092.0232
Regional Shopping Center	3456.63	0.0373	0.3389	0.2847	2.0300e-003		0.0258	0.0258		0.0258	0.0258		406.6622	406.6622	7.7900e-003	7.4600e-003	409.0788
Total		5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.7647	54,759.7647	1.0496	1.0039	55,085.1746

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	64.784	0.6987	5.9703	2.5406	0.0381		0.4827	0.4827		0.4827	0.4827		7,621.6518	7,621.6518	0.1461	0.1397	7,666.9435
Industrial Park	233.116	2.5140	22.8545	19.1978	0.1371		1.7369	1.7369		1.7369	1.7369		27,425.3562	27,425.3562	0.5257	0.5028	27,588.3313
Junior College (2Yr)	20.8848	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	125.54	1.3539	12.3078	10.3386	0.0739		0.9354	0.9354		0.9354	0.9354		14,769.3989	14,769.3989	0.2831	0.2708	14,857.1660
Office Park	17.6772	0.1906	1.7331	1.4558	0.0104		0.1317	0.1317		0.1317	0.1317		2,079.6648	2,079.6648	0.0399	0.0381	2,092.0232
Regional Shopping Center	3.45663	0.0373	0.3389	0.2847	2.0300e-003		0.0258	0.0258		0.0258	0.0258		406.6622	406.6622	7.7900e-003	7.4600e-003	409.0788
Total		5.0197	45.2521	35.5372	0.2738		3.4681	3.4681		3.4681	3.4681		54,759.7647	54,759.7647	1.0496	1.0039	55,085.1746

6.0 Area Detail

6.1 Mitigation Measures Area

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60
Unmitigated	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60

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	33.6676					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	231.6659					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7617	15.0543	6.4061	0.0961		1.2172	1.2172		1.2172	1.2172	0.0000	19,218.21 18	19,218.21 18	0.3684	0.3523	19,332.41 60
Landscaping	6.9140	2.6124	227.1205	0.0120		1.2572	1.2572		1.2572	1.2572		409.8725	409.8725	0.3979		419.8200
Total	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60

Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	33.6676					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	231.6659					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.7617	15.0543	6.4061	0.0961		1.2172	1.2172		1.2172	1.2172	0.0000	19,218.21 18	19,218.21 18	0.3684	0.3523	19,332.41 60
Landscaping	6.9140	2.6124	227.1205	0.0120		1.2572	1.2572		1.2572	1.2572		409.8725	409.8725	0.3979		419.8200
Total	274.0093	17.6667	233.5266	0.1081		2.4743	2.4743		2.4743	2.4743	0.0000	19,628.08 43	19,628.08 43	0.7663	0.3523	19,752.23 60

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Livermore INP - 2025 NP Operational Emissions - Alameda County, Winter

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

Livermore INP - 2025 NP Operational Emissions - Alameda County, Annual

Livermore INP - 2025 NP Operational Emissions
Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	305.50	1000sqft	7.01	305,500.00	0
Junior College (2Yr)	7,237.00	Student	7.25	315,911.24	0
Industrial Park	5,197.75	1000sqft	119.32	5,197,750.00	0
Manufacturing	1,737.00	1000sqft	39.88	1,737,000.00	0
Apartments Mid Rise	2,737.00	Dwelling Unit	72.03	2,737,000.00	7828
Regional Shopping Center	532.35	1000sqft	12.22	532,350.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	291	CH4 Intensity (lb/MW hr)	0.025	N2O Intensity (lb/MW hr)	0.003

1.3 User Entered Comments & Non-Default Data

Livermore INP - 2025 NP Operational Emissions - Alameda County, Annual

Project Characteristics - Intensity factors include RPS benefit up to 2025

Land Use - 2025 NP LU's

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for 2025 NP LU's (slightly adjusted to match total daily trips from traffic study)

Woodstoves - No woodstoves or fireplaces

Energy Use -

Waste Mitigation - Based on the City's most recent solid waste diversion rate.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	4,044,256.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	12,132,767.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,847,475.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	5,542,425.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	180.00	0.00
tblConstructionPhase	NumDays	465.00	0.00
tblConstructionPhase	NumDays	4,650.00	0.00
tblConstructionPhase	NumDays	330.00	0.00

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tblConstructionPhase	NumDays	330.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	410.55	777.88
tblFireplaces	NumberNoFireplace	109.48	207.44
tblFireplaces	NumberWood	465.29	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	291
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

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tblTripsAndVMT	VendorTripNumber	1,618.00	0.00
tblTripsAndVMT	WorkerTripNumber	5,284.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,057.00	0.00
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TL	7.30	9.57
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00

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tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.57
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00

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tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	5.18
tblVehicleTrips	ST_TR	2.49	6.23
tblVehicleTrips	ST_TR	0.42	0.91
tblVehicleTrips	ST_TR	1.49	3.82
tblVehicleTrips	ST_TR	1.64	11.36
tblVehicleTrips	ST_TR	49.97	38.07
tblVehicleTrips	SU_TR	5.86	5.18
tblVehicleTrips	SU_TR	0.73	6.23
tblVehicleTrips	SU_TR	0.04	0.91
tblVehicleTrips	SU_TR	0.62	3.82
tblVehicleTrips	SU_TR	0.76	11.36
tblVehicleTrips	SU_TR	25.24	38.07
tblVehicleTrips	WD_TR	6.65	5.18
tblVehicleTrips	WD_TR	6.83	6.23
tblVehicleTrips	WD_TR	1.23	0.91
tblVehicleTrips	WD_TR	11.42	11.36
tblVehicleTrips	WD_TR	42.70	38.07
tblWoodstoves	NumberCatalytic	54.74	0.00
tblWoodstoves	NumberNoncatalytic	54.74	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

Livermore INP - 2025 NP Operational Emissions - Alameda County, Annual

2.1 Overall Construction

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					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2040	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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)
		Highest		

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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	49.0555	0.3190	20.4765	1.6200e-003		0.1199	0.1199		0.1199	0.1199	0.0000	130.5747	130.5747	0.0344	1.7800e-003	131.9640
Energy	0.9161	8.2585	6.4855	0.0500		0.6329	0.6329		0.6329	0.6329	0.0000	26,553.5012	26,553.5012	1.6761	0.3465	26,698.6595
Mobile	21.3744	143.1170	269.6205	1.2464	108.7921	0.9954	109.7875	29.2347	0.9315	30.1663	0.0000	115,196.2059	115,196.2059	3.9098	0.0000	115,293.9517
Waste						0.0000	0.0000		0.0000	0.0000	2,440.3472	0.0000	2,440.3472	144.2204	0.0000	6,045.8569
Water						0.0000	0.0000		0.0000	0.0000	599.9946	1,440.4295	2,040.4240	61.7489	1.4700	4,022.1940
Total	71.3459	151.6945	296.5826	1.2979	108.7921	1.7483	110.5404	29.2347	1.6844	30.9191	3,040.3418	143,320.7112	146,361.0530	211.5896	1.8182	152,192.6261

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	49.0555	0.3190	20.4765	1.6200e-003		0.1199	0.1199		0.1199	0.1199	0.0000	130.5747	130.5747	0.0344	1.7800e-003	131.9640
Energy	0.9161	8.2585	6.4855	0.0500		0.6329	0.6329		0.6329	0.6329	0.0000	26,553.5012	26,553.5012	1.6761	0.3465	26,698.6595
Mobile	21.3744	143.1170	269.6205	1.2464	108.7921	0.9954	109.7875	29.2347	0.9315	30.1663	0.0000	115,196.2059	115,196.2059	3.9098	0.0000	115,293.9517
Waste						0.0000	0.0000		0.0000	0.0000	610.0868	0.0000	610.0868	36.0551	0.0000	1,511.4642
Water						0.0000	0.0000		0.0000	0.0000	599.9946	1,440.4295	2,040.4240	61.7489	1.4700	4,022.1940
Total	71.3459	151.6945	296.5826	1.2979	108.7921	1.7483	110.5404	29.2347	1.6844	30.9191	1,210.0814	143,320.7112	144,530.7926	103.4243	1.8182	147,658.2334

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.20	0.00	1.25	51.12	0.00	2.98

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/8/2017	11/7/2017	5	0	
2	Site Preparation	Site Preparation	1/2/2019	1/1/2019	5	0	
3	Grading	Grading	9/11/2019	9/10/2019	5	0	
4	Building Construction	Building Construction	6/23/2021	6/22/2021	5	0	
5	Paving	Paving	4/20/2039	4/19/2039	5	0	
6	Architectural Coating	Architectural Coating	7/25/2040	7/24/2040	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

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3.7 Architectural Coating - 2040

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	21.3744	143.1170	269.6205	1.2464	108.7921	0.9954	109.7875	29.2347	0.9315	30.1663	0.0000	115,196.2059	115,196.2059	3.9098	0.0000	115,293.9517
Unmitigated	21.3744	143.1170	269.6205	1.2464	108.7921	0.9954	109.7875	29.2347	0.9315	30.1663	0.0000	115,196.2059	115,196.2059	3.9098	0.0000	115,293.9517

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	14,177.66	14,177.66	14177.66	49,387,595	49,387,595
Industrial Park	32,381.98	32,381.98	32381.98	112,801,988	112,801,988
Junior College (2Yr)	6,585.67	6,585.67	6585.67	22,941,050	22,941,050
Manufacturing	6,635.34	6,635.34	6635.34	23,114,074	23,114,074
Office Park	3,470.48	3,470.48	3470.48	12,089,348	12,089,348
Regional Shopping Center	20,266.56	20,266.56	20266.56	70,598,172	70,598,172
Total	83,517.70	83,517.70	83,517.70	290,932,227	290,932,227

4.3 Trip Type Information

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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	9.57	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.57	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Industrial Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Junior College (2Yr)	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Manufacturing	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Office Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Regional Shopping Center	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated							0.0000	0.0000		0.0000	0.0000	17,487.4080	17,487.4080	1.5024	0.1803	17,578.6911
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	17,487.4080	17,487.4080	1.5024	0.1803	17,578.6911
NaturalGas Mitigated	0.9161	8.2585	6.4855	0.0500			0.6329	0.6329		0.6329	0.0000	9,066.0932	9,066.0932	0.1738	0.1662	9,119.9684
NaturalGas Unmitigated	0.9161	8.2585	6.4855	0.0500			0.6329	0.6329		0.6329	0.0000	9,066.0932	9,066.0932	0.1738	0.1662	9,119.9684

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.36462e+007	0.1275	1.0896	0.4637	6.9500e-003		0.0881	0.0881		0.0881	0.0881	0.0000	1,261.8499	1,261.8499	0.0242	0.0231	1,269.3485
Industrial Park	8.50872e+007	0.4588	4.1709	3.5036	0.0250		0.3170	0.3170		0.3170	0.3170	0.0000	4,540.5753	4,540.5753	0.0870	0.0832	4,567.5577
Junior College (2Yr)	7.62294e+006	0.0411	0.3737	0.3139	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.7890	406.7890	7.8000e-003	7.4600e-003	409.2064
Manufacturing	4.58221e+007	0.2471	2.2462	1.8868	0.0135		0.1707	0.1707		0.1707	0.1707	0.0000	2,445.2396	2,445.2396	0.0469	0.0448	2,459.7705
Office Park	6.45216e+006	0.0348	0.3163	0.2657	1.9000e-003		0.0240	0.0240		0.0240	0.0240	0.0000	344.3118	344.3118	6.6000e-003	6.3100e-003	346.3579
Regional Shopping Center	1.26167e+006	6.8000e-003	0.0619	0.0520	3.7000e-004		4.7000e-003	4.7000e-003		4.7000e-003	4.7000e-003	0.0000	67.3275	67.3275	1.2900e-003	1.2300e-003	67.7276
Total		0.9161	8.2585	6.4856	0.0500		0.6329	0.6329		0.6329	0.6329	0.0000	9,066.0932	9,066.0932	0.1738	0.1662	9,119.9684

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.36462e+007	0.1275	1.0896	0.4637	6.9500e-003		0.0881	0.0881		0.0881	0.0881	0.0000	1,261.8499	1,261.8499	0.0242	0.0231	1,269.3485
Industrial Park	8.50872e+007	0.4588	4.1709	3.5036	0.0250		0.3170	0.3170		0.3170	0.3170	0.0000	4,540.5753	4,540.5753	0.0870	0.0832	4,567.5577
Junior College (2Yr)	7.62294e+006	0.0411	0.3737	0.3139	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.7890	406.7890	7.8000e-003	7.4600e-003	409.2064
Manufacturing	4.58221e+007	0.2471	2.2462	1.8868	0.0135		0.1707	0.1707		0.1707	0.1707	0.0000	2,445.2396	2,445.2396	0.0469	0.0448	2,459.7705
Office Park	6.45216e+006	0.0348	0.3163	0.2657	1.9000e-003		0.0240	0.0240		0.0240	0.0240	0.0000	344.3118	344.3118	6.6000e-003	6.3100e-003	346.3579
Regional Shopping Center	1.26167e+006	6.8000e-003	0.0619	0.0520	3.7000e-004		4.7000e-003	4.7000e-003		4.7000e-003	4.7000e-003	0.0000	67.3275	67.3275	1.2900e-003	1.2300e-003	67.7276
Total		0.9161	8.2585	6.4856	0.0500		0.6329	0.6329		0.6329	0.6329	0.0000	9,066.0932	9,066.0932	0.1738	0.1662	9,119.9684

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.12993e+007	1,491.4546	0.1281	0.0154	1,499.2399
Industrial Park	9.26759e+007	12,232.7883	1.0509	0.1261	12,296.6426
Junior College (2Yr)	2.49886e+006	329.8377	0.0283	3.4000e-003	331.5594
Manufacturing	1.43476e+007	1,893.8196	0.1627	0.0195	1,903.7052
Office Park	5.97253e+006	788.3457	0.0677	8.1300e-003	792.4608
Regional Shopping Center	5.69082e+006	751.1621	0.0645	7.7400e-003	755.0832
Total		17,487.4080	1.5024	0.1803	17,578.6911

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.12993e+007	1,491.4546	0.1281	0.0154	1,499.2399
Industrial Park	9.26759e+007	12,232.7883	1.0509	0.1261	12,296.6426
Junior College (2Yr)	2.49886e+006	329.8377	0.0283	3.4000e-003	331.5594
Manufacturing	1.43476e+007	1,893.8196	0.1627	0.0195	1,903.7052
Office Park	5.97253e+006	788.3457	0.0677	8.1300e-003	792.4608
Regional Shopping Center	5.69082e+006	751.1621	0.0645	7.7400e-003	755.0832
Total		17,487.4080	1.5024	0.1803	17,578.6911

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	49.0555	0.3190	20.4765	1.6200e-003		0.1199	0.1199		0.1199	0.1199	0.0000	130.5747	130.5747	0.0344	1.7800e-003	131.9640
Unmitigated	49.0555	0.3190	20.4765	1.6200e-003		0.1199	0.1199		0.1199	0.1199	0.0000	130.5747	130.5747	0.0344	1.7800e-003	131.9640

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	6.1443					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	42.2790					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.8100e-003	0.0839	0.0357	5.4000e-004		6.7800e-003	6.7800e-003		6.7800e-003	6.7800e-003	0.0000	97.1100	97.1100	1.8600e-003	1.7800e-003	97.6871
Landscaping	0.6223	0.2351	20.4409	1.0800e-003		0.1132	0.1132		0.1132	0.1132	0.0000	33.4647	33.4647	0.0325	0.0000	34.2769
Total	49.0554	0.3190	20.4765	1.6200e-003		0.1199	0.1199		0.1199	0.1199	0.0000	130.5747	130.5747	0.0344	1.7800e-003	131.9640

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.1443					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	42.2790					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.8100e-003	0.0839	0.0357	5.4000e-004		6.7800e-003	6.7800e-003		6.7800e-003	6.7800e-003	0.0000	97.1100	97.1100	1.8600e-003	1.7800e-003	97.6871
Landscaping	0.6223	0.2351	20.4409	1.0800e-003		0.1132	0.1132		0.1132	0.1132	0.0000	33.4647	33.4647	0.0325	0.0000	34.2769
Total	49.0554	0.3190	20.4765	1.6200e-003		0.1199	0.1199		0.1199	0.1199	0.0000	130.5747	130.5747	0.0344	1.7800e-003	131.9640

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2,040.424 0	61.7489	1.4700	4,022.194 0
Unmitigated	2,040.424 0	61.7489	1.4700	4,022.194 0

Livermore INP - 2025 NP Operational Emissions - Alameda County, Annual

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	178.327 / 112.423	235.8782	5.8262	0.1391	422.9706
Industrial Park	1201.98 / 0	1,239.8191	39.2403	0.9337	2,499.0558
Junior College (2Yr)	15.4951 / 24.236	27.1796	0.5068	0.0122	43.4713
Manufacturing	401.681 / 0	414.3265	13.1134	0.3120	835.1421
Office Park	54.2977 / 33.2792	71.3815	1.7739	0.0423	128.3459
Regional Shopping Center	39.4325 / 24.1683	51.8392	1.2883	0.0307	93.2084
Total		2,040.4240	61.7490	1.4700	4,022.1940

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	178.327 / 112.423	235.8782	5.8262	0.1391	422.9706
Industrial Park	1201.98 / 0	1,239.8191	39.2403	0.9337	2,499.0558
Junior College (2Yr)	15.4951 / 24.236	27.1796	0.5068	0.0122	43.4713
Manufacturing	401.681 / 0	414.3265	13.1134	0.3120	835.1421
Office Park	54.2977 / 33.2792	71.3815	1.7739	0.0423	128.3459
Regional Shopping Center	39.4325 / 24.1683	51.8392	1.2883	0.0307	93.2084
Total		2,040.4240	61.7490	1.4700	4,022.1940

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Livermore INP - 2025 NP Operational Emissions - Alameda County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	610.0868	36.0551	0.0000	1,511.464 2
Unmitigated	2,440.347 2	144.2204	0.0000	6,045.856 9

Livermore INP - 2025 NP Operational Emissions - Alameda County, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	1259.02	255.5697	15.1037	0.0000	633.1631
Industrial Park	6445.21	1,308.3194	77.3195	0.0000	3,241.3059
Junior College (2Yr)	1320.75	268.1003	15.8443	0.0000	664.2072
Manufacturing	2153.88	437.2182	25.8389	0.0000	1,083.1895
Office Park	284.12	57.6738	3.4084	0.0000	142.8844
Regional Shopping Center	558.97	113.4659	6.7056	0.0000	281.1069
Total		2,440.3472	144.2204	0.0000	6,045.8569

Livermore INP - 2025 NP Operational Emissions - Alameda County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	314.755	63.8924	3.7759	0.0000	158.2908
Industrial Park	1611.3	327.0799	19.3299	0.0000	810.3265
Junior College (2Yr)	330.188	67.0251	3.9611	0.0000	166.0518
Manufacturing	538.47	109.3045	6.4597	0.0000	270.7974
Office Park	71.03	14.4185	0.8521	0.0000	35.7211
Regional Shopping Center	139.743	28.3665	1.6764	0.0000	70.2767
Total		610.0868	36.0551	0.0000	1,511.4642

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

Livermore INP - 2025 NP Operational Emissions - Alameda County, Annual

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

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

Livermore INP - 2025 WP Operational Emissions
Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	335.25	1000sqft	7.70	335,250.00	0
Junior College (2Yr)	7,237.00	Student	7.25	315,911.24	0
Industrial Park	5,248.75	1000sqft	120.49	5,248,750.00	0
Manufacturing	1,790.00	1000sqft	41.09	1,790,000.00	0
Apartments Mid Rise	2,914.00	Dwelling Unit	76.68	2,914,000.00	8334
Regional Shopping Center	549.50	1000sqft	12.61	549,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	291	CH4 Intensity (lb/MWhr)	0.025	N2O Intensity (lb/MWhr)	0.003

1.3 User Entered Comments & Non-Default Data

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

Project Characteristics - Intensity factors include RPS benefit up to 2025

Land Use - 2025 WP LU's

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for 2025 WP LU's (slightly adjusted to match total daily trips from traffic study)

Woodstoves - No woodstoves or fireplaces

Energy Use -

Waste Mitigation - Based on the City's most recent solid waste diversion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	4,119,706.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	12,359,117.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,966,950.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	5,900,850.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	180.00	0.00
tblConstructionPhase	NumDays	465.00	0.00
tblConstructionPhase	NumDays	4,650.00	0.00
tblConstructionPhase	NumDays	330.00	0.00

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

tblConstructionPhase	NumDays	330.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	437.10	828.19
tblFireplaces	NumberNoFireplace	116.56	220.85
tblFireplaces	NumberWood	495.38	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	291
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

tblTripsAndVMT	VendorTripNumber	1,662.00	0.00
tblTripsAndVMT	WorkerTripNumber	5,470.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,094.00	0.00
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.39
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	5.73
tblVehicleTrips	ST_TR	2.49	6.32
tblVehicleTrips	ST_TR	0.42	0.97
tblVehicleTrips	ST_TR	1.49	3.72
tblVehicleTrips	ST_TR	1.64	10.95
tblVehicleTrips	ST_TR	49.97	38.63
tblVehicleTrips	SU_TR	5.86	5.73
tblVehicleTrips	SU_TR	0.73	6.32
tblVehicleTrips	SU_TR	0.04	0.97
tblVehicleTrips	SU_TR	0.62	3.72
tblVehicleTrips	SU_TR	0.76	10.95
tblVehicleTrips	SU_TR	25.24	38.63
tblVehicleTrips	WD_TR	6.65	5.73
tblVehicleTrips	WD_TR	6.83	6.32
tblVehicleTrips	WD_TR	1.23	0.97
tblVehicleTrips	WD_TR	3.82	3.72
tblVehicleTrips	WD_TR	11.42	10.95
tblVehicleTrips	WD_TR	42.70	38.63
tblWoodstoves	NumberCatalytic	58.28	0.00
tblWoodstoves	NumberNoncatalytic	58.28	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

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	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.36 40	20,897.36 40	0.8153	0.3751	21,029.53 36
Energy	5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.01 87	56,188.01 87	1.0769	1.0301	56,521.91 60
Mobile	140.0384	803.3947	1,638.859 3	7.5124	644.8169	5.6911	650.5079	172.7247	5.3255	178.0501		764,693.0 865	764,693.0 865	24.8218		765,313.6 308
Total	427.8825	868.6208	1,923.760 8	7.9085	644.8169	11.8837	656.7006	172.7247	11.5181	184.2427	0.0000	841,778.4 693	841,778.4 693	26.7141	1.4052	842,865.0 805

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.36 40	20,897.36 40	0.8153	0.3751	21,029.53 36
Energy	5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.01 87	56,188.01 87	1.0769	1.0301	56,521.91 60
Mobile	140.0384	803.3947	1,638.859 3	7.5124	644.8169	5.6911	650.5079	172.7247	5.3255	178.0501		764,693.0 865	764,693.0 865	24.8218		765,313.6 308
Total	427.8825	868.6208	1,923.760 8	7.9085	644.8169	11.8837	656.7006	172.7247	11.5181	184.2427	0.0000	841,778.4 693	841,778.4 693	26.7141	1.4052	842,865.0 805

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/8/2017	11/7/2017	5	0	
2	Site Preparation	Site Preparation	1/2/2019	1/1/2019	5	0	
3	Grading	Grading	9/11/2019	9/10/2019	5	0	
4	Building Construction	Building Construction	6/23/2021	6/22/2021	5	0	
5	Paving	Paving	4/20/2039	4/19/2039	5	0	
6	Architectural Coating	Architectural Coating	7/25/2040	7/24/2040	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

3.7 Architectural Coating - 2040

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	140.0384	803.3947	1,638.8593	7.5124	644.8169	5.6911	650.5079	172.7247	5.3255	178.0501		764,693.0865	764,693.0865	24.8218		765,313.6308
Unmitigated	140.0384	803.3947	1,638.8593	7.5124	644.8169	5.6911	650.5079	172.7247	5.3255	178.0501		764,693.0865	764,693.0865	24.8218		765,313.6308

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	16,697.22	16,697.22	16697.22	57,070,430	57,070,430
Industrial Park	33,172.10	33,172.10	33172.10	113,380,911	113,380,911
Junior College (2Yr)	7,019.89	7,019.89	7019.89	23,993,703	23,993,703
Manufacturing	6,658.80	6,658.80	6658.80	22,759,512	22,759,512
Office Park	3,670.99	3,670.99	3670.99	12,547,288	12,547,288
Regional Shopping Center	21,227.19	21,227.19	21227.19	72,553,669	72,553,669
Total	88,446.18	88,446.18	88,446.18	302,305,514	302,305,514

4.3 Trip Type Information

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

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	9.39	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Industrial Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Junior College (2Yr)	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Manufacturing	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Office Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Regional Shopping Center	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.0187	56,188.0187	1.0769	1.0301	56,521.9160
NaturalGas Unmitigated	5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.0187	56,188.0187	1.0769	1.0301	56,521.9160

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

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 Mid Rise	68973.6	0.7438	6.3564	2.7049	0.0406		0.5139	0.5139		0.5139	0.5139		8,114.5390	8,114.5390	0.1555	0.1488	8,162.7597
Industrial Park	235403	2.5387	23.0787	19.3861	0.1385		1.7540	1.7540		1.7540	1.7540		27,694.4521	27,694.4521	0.5308	0.5077	27,859.0263
Junior College (2Yr)	20884.8	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	129370	1.3952	12.6834	10.6540	0.0761		0.9639	0.9639		0.9639	0.9639		15,220.0484	15,220.0484	0.2917	0.2790	15,310.4935
Office Park	19398.6	0.2092	1.9018	1.5975	0.0114		0.1445	0.1445		0.1445	0.1445		2,282.1853	2,282.1853	0.0437	0.0418	2,295.7472
Regional Shopping Center	3567.99	0.0385	0.3498	0.2938	2.1000e-003		0.0266	0.0266		0.0266	0.0266		419.7631	419.7631	8.0500e-003	7.7000e-003	422.2575
Total		5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.0187	56,188.0187	1.0769	1.0301	56,521.9160

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	68.9736	0.7438	6.3564	2.7049	0.0406		0.5139	0.5139		0.5139	0.5139		8,114.5390	8,114.5390	0.1555	0.1488	8,162.7597
Industrial Park	235.403	2.5387	23.0787	19.3861	0.1385		1.7540	1.7540		1.7540	1.7540		27,694.4521	27,694.4521	0.5308	0.5077	27,859.0263
Junior College (2Yr)	20.8848	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	129.37	1.3952	12.6834	10.6540	0.0761		0.9639	0.9639		0.9639	0.9639		15,220.0484	15,220.0484	0.2917	0.2790	15,310.4935
Office Park	19.3986	0.2092	1.9018	1.5975	0.0114		0.1445	0.1445		0.1445	0.1445		2,282.1853	2,282.1853	0.0437	0.0418	2,295.7472
Regional Shopping Center	3.56799	0.0385	0.3498	0.2938	2.1000e-003		0.0266	0.0266		0.0266	0.0266		419.7631	419.7631	8.0500e-003	7.7000e-003	422.2575
Total		5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.0187	56,188.0187	1.0769	1.0301	56,521.9160

6.0 Area Detail

6.1 Mitigation Measures Area

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.36 40	20,897.36 40	0.8153	0.3751	21,029.53 36
Unmitigated	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.36 40	20,897.36 40	0.8153	0.3751	21,029.53 36

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	34.7815					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	238.6830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.8756	16.0279	6.8204	0.1023		1.2959	1.2959		1.2959	1.2959	0.0000	20,461.16 47	20,461.16 47	0.3922	0.3751	20,582.75 52
Landscaping	7.3535	2.7806	241.7248	0.0128		1.3382	1.3382		1.3382	1.3382		436.1993	436.1993	0.4232		446.7784
Total	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.36 40	20,897.36 40	0.8153	0.3751	21,029.53 36

Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	34.7815					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	238.6830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.8756	16.0279	6.8204	0.1023		1.2959	1.2959		1.2959	1.2959	0.0000	20,461.1647	20,461.1647	0.3922	0.3751	20,582.7552
Landscaping	7.3535	2.7806	241.7248	0.0128		1.3382	1.3382		1.3382	1.3382		436.1993	436.1993	0.4232		446.7784
Total	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.3640	20,897.3640	0.8153	0.3751	21,029.5336

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Livermore INP - 2025 WP Operational Emissions - Alameda County, Summer

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

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

Livermore INP - 2025 WP Operational Emissions
Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	335.25	1000sqft	7.70	335,250.00	0
Junior College (2Yr)	7,237.00	Student	7.25	315,911.24	0
Industrial Park	5,248.75	1000sqft	120.49	5,248,750.00	0
Manufacturing	1,790.00	1000sqft	41.09	1,790,000.00	0
Apartments Mid Rise	2,914.00	Dwelling Unit	76.68	2,914,000.00	8334
Regional Shopping Center	549.50	1000sqft	12.61	549,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	291	CH4 Intensity (lb/MWhr)	0.025	N2O Intensity (lb/MWhr)	0.003

1.3 User Entered Comments & Non-Default Data

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

Project Characteristics - Intensity factors include RPS benefit up to 2025

Land Use - 2025 WP LU's

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for 2025 WP LU's (slightly adjusted to match total daily trips from traffic study)

Woodstoves - No woodstoves or fireplaces

Energy Use -

Waste Mitigation - Based on the City's most recent solid waste diversion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	4,119,706.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	12,359,117.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,966,950.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	5,900,850.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	180.00	0.00
tblConstructionPhase	NumDays	465.00	0.00
tblConstructionPhase	NumDays	4,650.00	0.00
tblConstructionPhase	NumDays	330.00	0.00

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

tblConstructionPhase	NumDays	330.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	437.10	828.19
tblFireplaces	NumberNoFireplace	116.56	220.85
tblFireplaces	NumberWood	495.38	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	291
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

tblTripsAndVMT	VendorTripNumber	1,662.00	0.00
tblTripsAndVMT	WorkerTripNumber	5,470.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,094.00	0.00
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.39
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	5.73
tblVehicleTrips	ST_TR	2.49	6.32
tblVehicleTrips	ST_TR	0.42	0.97
tblVehicleTrips	ST_TR	1.49	3.72
tblVehicleTrips	ST_TR	1.64	10.95
tblVehicleTrips	ST_TR	49.97	38.63
tblVehicleTrips	SU_TR	5.86	5.73
tblVehicleTrips	SU_TR	0.73	6.32
tblVehicleTrips	SU_TR	0.04	0.97
tblVehicleTrips	SU_TR	0.62	3.72
tblVehicleTrips	SU_TR	0.76	10.95
tblVehicleTrips	SU_TR	25.24	38.63
tblVehicleTrips	WD_TR	6.65	5.73
tblVehicleTrips	WD_TR	6.83	6.32
tblVehicleTrips	WD_TR	1.23	0.97
tblVehicleTrips	WD_TR	3.82	3.72
tblVehicleTrips	WD_TR	11.42	10.95
tblVehicleTrips	WD_TR	42.70	38.63
tblWoodstoves	NumberCatalytic	58.28	0.00
tblWoodstoves	NumberNoncatalytic	58.28	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

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	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.3640	20,897.3640	0.8153	0.3751	21,029.5336
Energy	5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.0187	56,188.0187	1.0769	1.0301	56,521.9160
Mobile	121.9594	836.7860	1,603.3861	7.0666	644.8169	5.7096	650.5265	172.7247	5.3432	178.0679		719,775.2667	719,775.2667	25.4382		720,411.2203
Total	409.8035	902.0121	1,888.2875	7.4626	644.8169	11.9022	656.7191	172.7247	11.5358	184.2605	0.0000	796,860.6494	796,860.6494	27.3304	1.4052	797,962.6700

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.3640	20,897.3640	0.8153	0.3751	21,029.5336
Energy	5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.0187	56,188.0187	1.0769	1.0301	56,521.9160
Mobile	121.9594	836.7860	1,603.3861	7.0666	644.8169	5.7096	650.5265	172.7247	5.3432	178.0679		719,775.2667	719,775.2667	25.4382		720,411.2203
Total	409.8035	902.0121	1,888.2875	7.4626	644.8169	11.9022	656.7191	172.7247	11.5358	184.2605	0.0000	796,860.6494	796,860.6494	27.3304	1.4052	797,962.6700

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/8/2017	11/7/2017	5	0	
2	Site Preparation	Site Preparation	1/2/2019	1/1/2019	5	0	
3	Grading	Grading	9/11/2019	9/10/2019	5	0	
4	Building Construction	Building Construction	6/23/2021	6/22/2021	5	0	
5	Paving	Paving	4/20/2039	4/19/2039	5	0	
6	Architectural Coating	Architectural Coating	7/25/2040	7/24/2040	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

3.7 Architectural Coating - 2040

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	121.9594	836.7860	1,603.3861	7.0666	644.8169	5.7096	650.5265	172.7247	5.3432	178.0679		719,775.2667	719,775.2667	25.4382		720,411.2203
Unmitigated	121.9594	836.7860	1,603.3861	7.0666	644.8169	5.7096	650.5265	172.7247	5.3432	178.0679		719,775.2667	719,775.2667	25.4382		720,411.2203

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	16,697.22	16,697.22	16697.22	57,070,430	57,070,430
Industrial Park	33,172.10	33,172.10	33172.10	113,380,911	113,380,911
Junior College (2Yr)	7,019.89	7,019.89	7019.89	23,993,703	23,993,703
Manufacturing	6,658.80	6,658.80	6658.80	22,759,512	22,759,512
Office Park	3,670.99	3,670.99	3670.99	12,547,288	12,547,288
Regional Shopping Center	21,227.19	21,227.19	21227.19	72,553,669	72,553,669
Total	88,446.18	88,446.18	88,446.18	302,305,514	302,305,514

4.3 Trip Type Information

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

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	9.39	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Industrial Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Junior College (2Yr)	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Manufacturing	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Office Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Regional Shopping Center	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.0187	56,188.0187	1.0769	1.0301	56,521.9160
NaturalGas Unmitigated	5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.0187	56,188.0187	1.0769	1.0301	56,521.9160

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

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 Mid Rise	68973.6	0.7438	6.3564	2.7049	0.0406		0.5139	0.5139		0.5139	0.5139		8,114.5390	8,114.5390	0.1555	0.1488	8,162.7597
Industrial Park	235403	2.5387	23.0787	19.3861	0.1385		1.7540	1.7540		1.7540	1.7540		27,694.4521	27,694.4521	0.5308	0.5077	27,859.0263
Junior College (2Yr)	20884.8	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	129370	1.3952	12.6834	10.6540	0.0761		0.9639	0.9639		0.9639	0.9639		15,220.0484	15,220.0484	0.2917	0.2790	15,310.4935
Office Park	19398.6	0.2092	1.9018	1.5975	0.0114		0.1445	0.1445		0.1445	0.1445		2,282.1853	2,282.1853	0.0437	0.0418	2,295.7472
Regional Shopping Center	3567.99	0.0385	0.3498	0.2938	2.1000e-003		0.0266	0.0266		0.0266	0.0266		419.7631	419.7631	8.0500e-003	7.7000e-003	422.2575
Total		5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.0187	56,188.0187	1.0769	1.0301	56,521.9160

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	68.9736	0.7438	6.3564	2.7049	0.0406		0.5139	0.5139		0.5139	0.5139		8,114.5390	8,114.5390	0.1555	0.1488	8,162.7597
Industrial Park	235.403	2.5387	23.0787	19.3861	0.1385		1.7540	1.7540		1.7540	1.7540		27,694.4521	27,694.4521	0.5308	0.5077	27,859.0263
Junior College (2Yr)	20.8848	0.2252	2.0475	1.7199	0.0123		0.1556	0.1556		0.1556	0.1556		2,457.0309	2,457.0309	0.0471	0.0451	2,471.6318
Manufacturing	129.37	1.3952	12.6834	10.6540	0.0761		0.9639	0.9639		0.9639	0.9639		15,220.0484	15,220.0484	0.2917	0.2790	15,310.4935
Office Park	19.3986	0.2092	1.9018	1.5975	0.0114		0.1445	0.1445		0.1445	0.1445		2,282.1853	2,282.1853	0.0437	0.0418	2,295.7472
Regional Shopping Center	3.56799	0.0385	0.3498	0.2938	2.1000e-003		0.0266	0.0266		0.0266	0.0266		419.7631	419.7631	8.0500e-003	7.7000e-003	422.2575
Total		5.1506	46.4176	36.3563	0.2809		3.5586	3.5586		3.5586	3.5586		56,188.0187	56,188.0187	1.0769	1.0301	56,521.9160

6.0 Area Detail

6.1 Mitigation Measures Area

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.3640	20,897.3640	0.8153	0.3751	21,029.5336
Unmitigated	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.3640	20,897.3640	0.8153	0.3751	21,029.5336

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	34.7815					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	238.6830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.8756	16.0279	6.8204	0.1023		1.2959	1.2959		1.2959	1.2959	0.0000	20,461.1647	20,461.1647	0.3922	0.3751	20,582.7552
Landscaping	7.3535	2.7806	241.7248	0.0128		1.3382	1.3382		1.3382	1.3382		436.1993	436.1993	0.4232		446.7784
Total	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.3640	20,897.3640	0.8153	0.3751	21,029.5336

Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	34.7815					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	238.6830					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.8756	16.0279	6.8204	0.1023		1.2959	1.2959		1.2959	1.2959	0.0000	20,461.1647	20,461.1647	0.3922	0.3751	20,582.7552
Landscaping	7.3535	2.7806	241.7248	0.0128		1.3382	1.3382		1.3382	1.3382		436.1993	436.1993	0.4232		446.7784
Total	282.6936	18.8085	248.5452	0.1151		2.6341	2.6341		2.6341	2.6341	0.0000	20,897.3640	20,897.3640	0.8153	0.3751	21,029.5336

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Livermore INP - 2025 WP Operational Emissions - Alameda County, Winter

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

Livermore INP - 2025 WP Operational Emissions - Alameda County, Annual

Livermore INP - 2025 WP Operational Emissions
Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	335.25	1000sqft	7.70	335,250.00	0
Junior College (2Yr)	7,237.00	Student	7.25	315,911.24	0
Industrial Park	5,248.75	1000sqft	120.49	5,248,750.00	0
Manufacturing	1,790.00	1000sqft	41.09	1,790,000.00	0
Apartments Mid Rise	2,914.00	Dwelling Unit	76.68	2,914,000.00	8334
Regional Shopping Center	549.50	1000sqft	12.61	549,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2025
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	291	CH4 Intensity (lb/MWhr)	0.025	N2O Intensity (lb/MWhr)	0.003

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - Intensity factors include RPS benefit up to 2025

Land Use - 2025 WP LU's

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for 2025 WP LU's (slightly adjusted to match total daily trips from traffic study)

Woodstoves - No woodstoves or fireplaces

Energy Use -

Waste Mitigation - Based on the City's most recent solid waste diversion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	4,119,706.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	12,359,117.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,966,950.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	5,900,850.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	180.00	0.00
tblConstructionPhase	NumDays	465.00	0.00
tblConstructionPhase	NumDays	4,650.00	0.00
tblConstructionPhase	NumDays	330.00	0.00

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tblConstructionPhase	NumDays	330.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	437.10	828.19
tblFireplaces	NumberNoFireplace	116.56	220.85
tblFireplaces	NumberWood	495.38	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	291
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003

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tblTripsAndVMT	VendorTripNumber	1,662.00	0.00
tblTripsAndVMT	WorkerTripNumber	5,470.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,094.00	0.00
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TL	7.30	9.39
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00

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tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.39
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00

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tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	5.73
tblVehicleTrips	ST_TR	2.49	6.32
tblVehicleTrips	ST_TR	0.42	0.97
tblVehicleTrips	ST_TR	1.49	3.72
tblVehicleTrips	ST_TR	1.64	10.95
tblVehicleTrips	ST_TR	49.97	38.63
tblVehicleTrips	SU_TR	5.86	5.73
tblVehicleTrips	SU_TR	0.73	6.32
tblVehicleTrips	SU_TR	0.04	0.97
tblVehicleTrips	SU_TR	0.62	3.72
tblVehicleTrips	SU_TR	0.76	10.95
tblVehicleTrips	SU_TR	25.24	38.63
tblVehicleTrips	WD_TR	6.65	5.73
tblVehicleTrips	WD_TR	6.83	6.32
tblVehicleTrips	WD_TR	1.23	0.97
tblVehicleTrips	WD_TR	3.82	3.72
tblVehicleTrips	WD_TR	11.42	10.95
tblVehicleTrips	WD_TR	42.70	38.63
tblWoodstoves	NumberCatalytic	58.28	0.00
tblWoodstoves	NumberNoncatalytic	58.28	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

Livermore INP - 2025 WP Operational Emissions - Alameda County, Annual

2.1 Overall Construction

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					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2040	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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)
		Highest		

Livermore INP - 2025 WP Operational Emissions - Alameda County, 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	50.5795	0.3395	21.7932	1.7200e-003		0.1277	0.1277		0.1277	0.1277	0.0000	139.0049	139.0049	0.0365	1.9000e-003	140.4830
Energy	0.9400	8.4712	6.6350	0.0513		0.6494	0.6494		0.6494	0.6494	0.0000	27,165.1977	27,165.1977	1.7129	0.3547	27,313.7199
Mobile	22.4379	150.1141	281.2099	1.2969	113.0450	1.0360	114.0810	30.3776	0.9694	31.3470	0.0000	119,870.4315	119,870.4315	4.0872	0.0000	119,972.6120
Waste						0.0000	0.0000		0.0000	0.0000	2,492.3230	0.0000	2,492.3230	147.2921	0.0000	6,174.6248
Water						0.0000	0.0000		0.0000	0.0000	613.3637	1,475.7428	2,089.1065	63.1251	1.5027	4,115.0512
Total	73.9574	158.9249	309.6381	1.3499	113.0450	1.8130	114.8581	30.3776	1.7465	32.1241	3,105.6868	148,650.3768	151,756.0635	216.2538	1.8593	157,716.4910

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	50.5795	0.3395	21.7932	1.7200e-003		0.1277	0.1277		0.1277	0.1277	0.0000	139.0049	139.0049	0.0365	1.9000e-003	140.4830
Energy	0.9400	8.4712	6.6350	0.0513		0.6494	0.6494		0.6494	0.6494	0.0000	27,165.1977	27,165.1977	1.7129	0.3547	27,313.7199
Mobile	22.4379	150.1141	281.2099	1.2969	113.0450	1.0360	114.0810	30.3776	0.9694	31.3470	0.0000	119,870.4315	119,870.4315	4.0872	0.0000	119,972.6120
Waste						0.0000	0.0000		0.0000	0.0000	623.0808	0.0000	623.0808	36.8230	0.0000	1,543.6562
Water						0.0000	0.0000		0.0000	0.0000	613.3637	1,475.7428	2,089.1065	63.1251	1.5027	4,115.0512
Total	73.9574	158.9249	309.6381	1.3499	113.0450	1.8130	114.8581	30.3776	1.7465	32.1241	1,236.4445	148,650.3768	149,886.8213	105.7848	1.8593	153,085.5223

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.19	0.00	1.23	51.08	0.00	2.94

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/8/2017	11/7/2017	5	0	
2	Site Preparation	Site Preparation	1/2/2019	1/1/2019	5	0	
3	Grading	Grading	9/11/2019	9/10/2019	5	0	
4	Building Construction	Building Construction	6/23/2021	6/22/2021	5	0	
5	Paving	Paving	4/20/2039	4/19/2039	5	0	
6	Architectural Coating	Architectural Coating	7/25/2040	7/24/2040	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - 2025 WP Operational Emissions - Alameda County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - 2025 WP Operational Emissions - Alameda County, Annual

3.7 Architectural Coating - 2040

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - 2025 WP Operational Emissions - Alameda County, 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	22.4379	150.1141	281.2099	1.2969	113.0450	1.0360	114.0810	30.3776	0.9694	31.3470	0.0000	119,870.4315	119,870.4315	4.0872	0.0000	119,972.6120
Unmitigated	22.4379	150.1141	281.2099	1.2969	113.0450	1.0360	114.0810	30.3776	0.9694	31.3470	0.0000	119,870.4315	119,870.4315	4.0872	0.0000	119,972.6120

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	16,697.22	16,697.22	16697.22	57,070,430	57,070,430
Industrial Park	33,172.10	33,172.10	33172.10	113,380,911	113,380,911
Junior College (2Yr)	7,019.89	7,019.89	7019.89	23,993,703	23,993,703
Manufacturing	6,658.80	6,658.80	6658.80	22,759,512	22,759,512
Office Park	3,670.99	3,670.99	3670.99	12,547,288	12,547,288
Regional Shopping Center	21,227.19	21,227.19	21227.19	72,553,669	72,553,669
Total	88,446.18	88,446.18	88,446.18	302,305,514	302,305,514

4.3 Trip Type Information

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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	9.39	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.39	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Industrial Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Junior College (2Yr)	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Manufacturing	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Office Park	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679
Regional Shopping Center	0.563555	0.037576	0.190339	0.105468	0.014285	0.005132	0.025195	0.047484	0.002230	0.002277	0.005427	0.000351	0.000679

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - 2025 WP Operational Emissions - Alameda County, 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						
Electricity Mitigated							0.0000	0.0000		0.0000	0.0000	0.0000	17,862.64 10	17,862.64 10	1.5346	0.1842	17,955.88 28
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	0.0000	17,862.64 10	17,862.64 10	1.5346	0.1842	17,955.88 28
NaturalGas Mitigated	0.9400	8.4712	6.6350	0.0513			0.6494	0.6494		0.6494	0.6494	0.0000	9,302.556 7	9,302.556 7	0.1783	0.1706	9,357.837 1
NaturalGas Unmitigated	0.9400	8.4712	6.6350	0.0513			0.6494	0.6494		0.6494	0.6494	0.0000	9,302.556 7	9,302.556 7	0.1783	0.1706	9,357.837 1

Livermore INP - 2025 WP Operational Emissions - Alameda County, 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	2.51754e+007	0.1358	1.1600	0.4936	7.4000e-003		0.0938	0.0938		0.0938	0.0938	0.0000	1,343.4529	1,343.4529	0.0258	0.0246	1,351.4364
Industrial Park	8.5922e+007	0.4633	4.2119	3.5380	0.0253		0.3201	0.3201		0.3201	0.3201	0.0000	4,585.1271	4,585.1271	0.0879	0.0841	4,612.3743
Junior College (2Yr)	7.62294e+006	0.0411	0.3737	0.3139	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.7890	406.7890	7.8000e-003	7.4600e-003	409.2064
Manufacturing	4.72202e+007	0.2546	2.3147	1.9444	0.0139		0.1759	0.1759		0.1759	0.1759	0.0000	2,519.8497	2,519.8497	0.0483	0.0462	2,534.8239
Office Park	7.08048e+006	0.0382	0.3471	0.2916	2.0800e-003		0.0264	0.0264		0.0264	0.0264	0.0000	377.8414	377.8414	7.2400e-003	6.9300e-003	380.0867
Regional Shopping Center	1.30232e+006	7.0200e-003	0.0638	0.0536	3.8000e-004		4.8500e-003	4.8500e-003		4.8500e-003	4.8500e-003	0.0000	69.4965	69.4965	1.3300e-003	1.2700e-003	69.9095
Total		0.9400	8.4712	6.6350	0.0513		0.6494	0.6494		0.6494	0.6494	0.0000	9,302.5567	9,302.5567	0.1783	0.1706	9,357.8371

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	2.51754e+007	0.1358	1.1600	0.4936	7.4000e-003		0.0938	0.0938		0.0938	0.0938	0.0000	1,343.4529	1,343.4529	0.0258	0.0246	1,351.4364
Industrial Park	8.5922e+007	0.4633	4.2119	3.5380	0.0253		0.3201	0.3201		0.3201	0.3201	0.0000	4,585.1271	4,585.1271	0.0879	0.0841	4,612.3743
Junior College (2Yr)	7.62294e+006	0.0411	0.3737	0.3139	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.7890	406.7890	7.8000e-003	7.4600e-003	409.2064
Manufacturing	4.72202e+007	0.2546	2.3147	1.9444	0.0139		0.1759	0.1759		0.1759	0.1759	0.0000	2,519.8497	2,519.8497	0.0483	0.0462	2,534.8239
Office Park	7.08048e+006	0.0382	0.3471	0.2916	2.0800e-003		0.0264	0.0264		0.0264	0.0264	0.0000	377.8414	377.8414	7.2400e-003	6.9300e-003	380.0867
Regional Shopping Center	1.30232e+006	7.0200e-003	0.0638	0.0536	3.8000e-004		4.8500e-003	4.8500e-003		4.8500e-003	4.8500e-003	0.0000	69.4965	69.4965	1.3300e-003	1.2700e-003	69.9095
Total		0.9400	8.4712	6.6350	0.0513		0.6494	0.6494		0.6494	0.6494	0.0000	9,302.5567	9,302.5567	0.1783	0.1706	9,357.8371

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.203e+007	1,587.9060	0.1364	0.0164	1,596.1948
Industrial Park	9.35852e+007	12,352.8157	1.0612	0.1274	12,417.2965
Junior College (2Yr)	2.49886e+006	329.8377	0.0283	3.4000e-003	331.5594
Manufacturing	1.47854e+007	1,951.6045	0.1677	0.0201	1,961.7917
Office Park	6.55414e+006	865.1159	0.0743	8.9200e-003	869.6317
Regional Shopping Center	5.87416e+006	775.3613	0.0666	7.9900e-003	779.4087
Total		17,862.6410	1.5346	0.1842	17,955.8828

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5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.203e+007	1,587.9060	0.1364	0.0164	1,596.1948
Industrial Park	9.35852e+007	12,352.8157	1.0612	0.1274	12,417.2965
Junior College (2Yr)	2.49886e+006	329.8377	0.0283	3.4000e-003	331.5594
Manufacturing	1.47854e+007	1,951.6045	0.1677	0.0201	1,961.7917
Office Park	6.55414e+006	865.1159	0.0743	8.9200e-003	869.6317
Regional Shopping Center	5.87416e+006	775.3613	0.0666	7.9900e-003	779.4087
Total		17,862.6410	1.5346	0.1842	17,955.8828

6.0 Area Detail

6.1 Mitigation Measures Area

Livermore INP - 2025 WP Operational Emissions - Alameda County, 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	50.5795	0.3395	21.7932	1.7200e-003		0.1277	0.1277		0.1277	0.1277	0.0000	139.0049	139.0049	0.0365	1.9000e-003	140.4830
Unmitigated	50.5795	0.3395	21.7932	1.7200e-003		0.1277	0.1277		0.1277	0.1277	0.0000	139.0049	139.0049	0.0365	1.9000e-003	140.4830

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	6.3476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	43.5597					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0105	0.0893	0.0380	5.7000e-004		7.2200e-003	7.2200e-003		7.2200e-003	7.2200e-003	0.0000	103.3907	103.3907	1.9800e-003	1.9000e-003	104.0051
Landscaping	0.6618	0.2503	21.7552	1.1500e-003		0.1204	0.1204		0.1204	0.1204	0.0000	35.6142	35.6142	0.0346	0.0000	36.4780
Total	50.5795	0.3395	21.7932	1.7200e-003		0.1277	0.1277		0.1277	0.1277	0.0000	139.0049	139.0049	0.0365	1.9000e-003	140.4830

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	6.3476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	43.5597					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0105	0.0893	0.0380	5.7000e-004		7.2200e-003	7.2200e-003		7.2200e-003	7.2200e-003	0.0000	103.3907	103.3907	1.9800e-003	1.9000e-003	104.0051
Landscaping	0.6618	0.2503	21.7552	1.1500e-003		0.1204	0.1204		0.1204	0.1204	0.0000	35.6142	35.6142	0.0346	0.0000	36.4780
Total	50.5795	0.3395	21.7932	1.7200e-003		0.1277	0.1277		0.1277	0.1277	0.0000	139.0049	139.0049	0.0365	1.9000e-003	140.4830

7.0 Water Detail

7.1 Mitigation Measures Water

Livermore INP - 2025 WP Operational Emissions - Alameda County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2,089.1065	63.1251	1.5027	4,115.0512
Unmitigated	2,089.1065	63.1251	1.5027	4,115.0512

Livermore INP - 2025 WP Operational Emissions - Alameda County, Annual

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	189.859 / 119.694	251.1323	6.2030	0.1481	450.3238
Industrial Park	1213.77 / 0	1,251.9841	39.6253	0.9428	2,523.5764
Junior College (2Yr)	15.4951 / 24.236	27.1796	0.5068	0.0122	43.4713
Manufacturing	413.938 / 0	426.9686	13.5136	0.3215	860.6243
Office Park	59.5852 / 36.52	78.3327	1.9467	0.0465	140.8444
Regional Shopping Center	40.7029 / 24.9469	53.5093	1.3298	0.0317	96.2112
Total		2,089.1065	63.1251	1.5028	4,115.0512

Livermore INP - 2025 WP Operational Emissions - Alameda County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	189.859 / 119.694	251.1323	6.2030	0.1481	450.3238
Industrial Park	1213.77 / 0	1,251.9841	39.6253	0.9428	2,523.5764
Junior College (2Yr)	15.4951 / 24.236	27.1796	0.5068	0.0122	43.4713
Manufacturing	413.938 / 0	426.9686	13.5136	0.3215	860.6243
Office Park	59.5852 / 36.52	78.3327	1.9467	0.0465	140.8444
Regional Shopping Center	40.7029 / 24.9469	53.5093	1.3298	0.0317	96.2112
Total		2,089.1065	63.1251	1.5028	4,115.0512

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Livermore INP - 2025 WP Operational Emissions - Alameda County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	623.0808	36.8230	0.0000	1,543.6562
Unmitigated	2,492.3230	147.2921	0.0000	6,174.6248

Livermore INP - 2025 WP Operational Emissions - Alameda County, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	1340.44	272.0972	16.0805	0.0000	674.1093
Industrial Park	6508.45	1,321.1565	78.0781	0.0000	3,273.1094
Junior College (2Yr)	1320.75	268.1003	15.8443	0.0000	664.2072
Manufacturing	2219.6	450.5587	26.6273	0.0000	1,116.2402
Office Park	311.78	63.2885	3.7402	0.0000	156.7946
Regional Shopping Center	576.98	117.1217	6.9217	0.0000	290.1641
Total		2,492.3230	147.2921	0.0000	6,174.6249

Livermore INP - 2025 WP Operational Emissions - Alameda County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	335.11	68.0243	4.0201	0.0000	168.5273
Industrial Park	1627.11	330.2891	19.5195	0.0000	818.2774
Junior College (2Yr)	330.188	67.0251	3.9611	0.0000	166.0518
Manufacturing	554.9	112.6397	6.6568	0.0000	279.0601
Office Park	77.945	15.8221	0.9351	0.0000	39.1987
Regional Shopping Center	144.245	29.2804	1.7304	0.0000	72.5410
Total		623.0808	36.8230	0.0000	1,543.6562

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

Livermore INP - 2025 WP Operational Emissions - Alameda County, Annual

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

Equipment Type	Number
----------------	--------

11.0 Vegetation

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

Livermore INP - Future (2040) NP Operational Emissions
Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	592.25	1000sqft	13.60	592,246.00	0
Junior College (2Yr)	8,110.00	Student	8.13	354,019.64	0
Industrial Park	6,541.53	1000sqft	150.17	6,541,532.00	0
Manufacturing	2,341.23	1000sqft	53.75	2,341,232.00	0
Apartments Mid Rise	2,178.00	Dwelling Unit	57.32	2,178,000.00	6229
Regional Shopping Center	869.49	1000sqft	19.96	869,493.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	207	CH4 Intensity (lb/MWhr)	0.02	N2O Intensity (lb/MWhr)	0.002

1.3 User Entered Comments & Non-Default Data

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

Project Characteristics - Intensity factors include RPS benefit up to 2030

Land Use - Future (2040) NP LU

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for future (2040) NP scenario; adjusted slightly to match traffic VMT data

Woodstoves - No woodstoves

Energy Use -

Waste Mitigation - Based on City's most recent solid waste dispersion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	5,349,261.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	16,047,784.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,470,150.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	4,410,450.00	0.00
tblConstructionPhase	NumDays	440.00	0.00
tblConstructionPhase	NumDays	6,200.00	0.00
tblConstructionPhase	NumDays	400.00	0.00
tblConstructionPhase	NumDays	620.00	0.00
tblConstructionPhase	NumDays	440.00	0.00

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

tblConstructionPhase	NumDays	240.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	326.70	619.01
tblFireplaces	NumberNoFireplace	87.12	165.07
tblFireplaces	NumberWood	370.26	0.00
tblLandUse	LandUseSquareFeet	592,250.00	592,246.00
tblLandUse	LandUseSquareFeet	6,541,530.00	6,541,532.00
tblLandUse	LandUseSquareFeet	2,341,230.00	2,341,232.00
tblLandUse	LandUseSquareFeet	869,490.00	869,493.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	641.35	207
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.002
tblTripsAndVMT	VendorTripNumber	1,986.00	0.00
tblTripsAndVMT	WorkerTripNumber	5,915.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,183.00	0.00
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.44
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	6.20
tblVehicleTrips	ST_TR	2.49	6.44
tblVehicleTrips	ST_TR	0.42	0.92
tblVehicleTrips	ST_TR	1.49	3.73
tblVehicleTrips	ST_TR	1.64	10.51
tblVehicleTrips	ST_TR	49.97	37.94
tblVehicleTrips	SU_TR	5.86	6.20
tblVehicleTrips	SU_TR	0.73	6.44
tblVehicleTrips	SU_TR	0.04	0.92
tblVehicleTrips	SU_TR	0.62	3.73
tblVehicleTrips	SU_TR	0.76	10.51
tblVehicleTrips	SU_TR	25.24	37.94
tblVehicleTrips	WD_TR	6.65	6.20
tblVehicleTrips	WD_TR	6.83	6.44
tblVehicleTrips	WD_TR	1.23	0.92
tblVehicleTrips	WD_TR	3.82	3.73
tblVehicleTrips	WD_TR	11.42	10.51
tblVehicleTrips	WD_TR	42.70	37.94
tblWoodstoves	NumberCatalytic	43.56	0.00
tblWoodstoves	NumberNoncatalytic	43.56	0.00

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

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	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.7740	15,620.7740	0.6115	0.2804	15,719.6130
Energy	6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761
Mobile	102.7169	899.0223	1,217.2458	8.0528	814.0390	3.1609	817.1998	217.9857	2.9576	220.9433		826,071.0434	826,071.0434	24.9031		826,693.6203
Total	430.3946	969.3947	1,448.4462	8.4786	814.0390	9.4352	823.4742	217.9857	9.2319	227.2176	0.0000	909,628.8774	909,628.8774	26.8167	1.5259	910,754.0093

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.7740	15,620.7740	0.6115	0.2804	15,719.6130
Energy	6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761
Mobile	102.7169	899.0223	1,217.2458	8.0528	814.0390	3.1609	817.1998	217.9857	2.9576	220.9433		826,071.0434	826,071.0434	24.9031		826,693.6203
Total	430.3946	969.3947	1,448.4462	8.4786	814.0390	9.4352	823.4742	217.9857	9.2319	227.2176	0.0000	909,628.8774	909,628.8774	26.8167	1.5259	910,754.0093

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/6/2017	11/5/2017	5	0	
2	Site Preparation	Site Preparation	5/18/2019	5/17/2019	5	0	
3	Grading	Grading	4/18/2020	4/17/2020	5	0	
4	Building Construction	Building Construction	9/3/2022	9/2/2022	5	0	
5	Paving	Paving	6/9/2046	6/8/2046	5	0	
6	Architectural Coating	Architectural Coating	2/15/2048	2/14/2048	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

3.7 Architectural Coating - 2048

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	102.7169	899.0223	1,217.2458	8.0528	814.0390	3.1609	817.1998	217.9857	2.9576	220.9433		826,071.0434	826,071.0434	24.9031		826,693.6203
Unmitigated	102.7169	899.0223	1,217.2458	8.0528	814.0390	3.1609	817.1998	217.9857	2.9576	220.9433		826,071.0434	826,071.0434	24.9031		826,693.6203

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	13,503.60	13,503.60	13503.60	46,400,530	46,400,530
Industrial Park	42,127.45	42,127.45	42127.45	144,756,670	144,756,670
Junior College (2Yr)	7,461.20	7,461.20	7461.20	25,637,877	25,637,877
Manufacturing	8,732.79	8,732.79	8732.79	30,007,256	30,007,256
Office Park	6,224.55	6,224.55	6224.55	21,388,541	21,388,541
Regional Shopping Center	32,988.45	32,988.45	32988.45	113,353,594	113,353,594
Total	111,038.04	111,038.04	111,038.04	381,544,469	381,544,469

4.3 Trip Type Information

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

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	9.44	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Industrial Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Junior College (2Yr)	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Manufacturing	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Office Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Regional Shopping Center	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761
NaturalGas Unmitigated	6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

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 Mid Rise	51552.7	0.5560	4.7509	2.0217	0.0303		0.3841	0.3841		0.3841	0.3841		6,065.0192	6,065.0192	0.1163	0.1112	6,101.0606
Industrial Park	293383	3.1639	28.7631	24.1610	0.1726		2.1860	2.1860		2.1860	2.1860		34,515.6741	34,515.6741	0.6616	0.6328	34,720.7835
Junior College (2Yr)	23404.1	0.2524	2.2945	1.9274	0.0138		0.1744	0.1744		0.1744	0.1744		2,753.4227	2,753.4227	0.0528	0.0505	2,769.7849
Manufacturing	169210	1.8248	16.5892	13.9350	0.0995		1.2608	1.2608		1.2608	1.2608		19,907.0750	19,907.0750	0.3816	0.3650	20,025.3728
Office Park	34269.1	0.3696	3.3597	2.8222	0.0202		0.2553	0.2553		0.2553	0.2553		4,031.6633	4,031.6633	0.0773	0.0739	4,055.6215
Regional Shopping Center	5645.75	0.0609	0.5535	0.4649	3.3200e-003		0.0421	0.0421		0.0421	0.0421		664.2058	664.2058	0.0127	0.0122	668.1528
Total		6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	51.5527	0.5560	4.7509	2.0217	0.0303		0.3841	0.3841		0.3841	0.3841		6,065.0192	6,065.0192	0.1163	0.1112	6,101.0606
Industrial Park	293.383	3.1639	28.7631	24.1610	0.1726		2.1860	2.1860		2.1860	2.1860		34,515.6741	34,515.6741	0.6616	0.6328	34,720.7835
Junior College (2Yr)	23.4041	0.2524	2.2945	1.9274	0.0138		0.1744	0.1744		0.1744	0.1744		2,753.4227	2,753.4227	0.0528	0.0505	2,769.7849
Manufacturing	169.21	1.8248	16.5892	13.9350	0.0995		1.2608	1.2608		1.2608	1.2608		19,907.0750	19,907.0750	0.3816	0.3650	20,025.3728
Office Park	34.2691	0.3696	3.3597	2.8222	0.0202		0.2553	0.2553		0.2553	0.2553		4,031.6633	4,031.6633	0.0773	0.0739	4,055.6215
Regional Shopping Center	5.64575	0.0609	0.5535	0.4649	3.3200e-003		0.0421	0.0421		0.0421	0.0421		664.2058	664.2058	0.0127	0.0122	668.1528
Total		6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761

6.0 Area Detail

6.1 Mitigation Measures Area

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.77 40	15,620.77 40	0.6115	0.2804	15,719.61 30
Unmitigated	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.77 40	15,620.77 40	0.6115	0.2804	15,719.61 30

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	38.9687					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	275.5576					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.4019	11.9797	5.0977	0.0765		0.9686	0.9686		0.9686	0.9686	0.0000	15,293.18 82	15,293.18 82	0.2931	0.2804	15,384.06 80
Landscaping	5.5220	2.0818	180.7706	9.6300e-003		1.0031	1.0031		1.0031	1.0031		327.5857	327.5857	0.3184		335.5450
Total	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.77 40	15,620.77 40	0.6115	0.2804	15,719.61 30

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	38.9687					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	275.5576					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.4019	11.9797	5.0977	0.0765		0.9686	0.9686		0.9686	0.9686	0.0000	15,293.1882	15,293.1882	0.2931	0.2804	15,384.0680
Landscaping	5.5220	2.0818	180.7706	9.6300e-003		1.0031	1.0031		1.0031	1.0031		327.5857	327.5857	0.3184		335.5450
Total	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.7740	15,620.7740	0.6115	0.2804	15,719.6130

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Summer

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

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

Livermore INP - Future (2040) NP Operational Emissions
Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	592.25	1000sqft	13.60	592,246.00	0
Junior College (2Yr)	8,110.00	Student	8.13	354,019.64	0
Industrial Park	6,541.53	1000sqft	150.17	6,541,532.00	0
Manufacturing	2,341.23	1000sqft	53.75	2,341,232.00	0
Apartments Mid Rise	2,178.00	Dwelling Unit	57.32	2,178,000.00	6229
Regional Shopping Center	869.49	1000sqft	19.96	869,493.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	207	CH4 Intensity (lb/MWhr)	0.02	N2O Intensity (lb/MWhr)	0.002

1.3 User Entered Comments & Non-Default Data

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

Project Characteristics - Intensity factors include RPS benefit up to 2030

Land Use - Future (2040) NP LU

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for future (2040) NP scenario; adjusted slightly to match traffic VMT data

Woodstoves - No woodstoves

Energy Use -

Waste Mitigation - Based on City's most recent solid waste dispersion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	5,349,261.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	16,047,784.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,470,150.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	4,410,450.00	0.00
tblConstructionPhase	NumDays	440.00	0.00
tblConstructionPhase	NumDays	6,200.00	0.00
tblConstructionPhase	NumDays	400.00	0.00
tblConstructionPhase	NumDays	620.00	0.00
tblConstructionPhase	NumDays	440.00	0.00

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

tblConstructionPhase	NumDays	240.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	326.70	619.01
tblFireplaces	NumberNoFireplace	87.12	165.07
tblFireplaces	NumberWood	370.26	0.00
tblLandUse	LandUseSquareFeet	592,250.00	592,246.00
tblLandUse	LandUseSquareFeet	6,541,530.00	6,541,532.00
tblLandUse	LandUseSquareFeet	2,341,230.00	2,341,232.00
tblLandUse	LandUseSquareFeet	869,490.00	869,493.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	641.35	207
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.002
tblTripsAndVMT	VendorTripNumber	1,986.00	0.00
tblTripsAndVMT	WorkerTripNumber	5,915.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,183.00	0.00
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.44
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	6.20
tblVehicleTrips	ST_TR	2.49	6.44
tblVehicleTrips	ST_TR	0.42	0.92
tblVehicleTrips	ST_TR	1.49	3.73
tblVehicleTrips	ST_TR	1.64	10.51
tblVehicleTrips	ST_TR	49.97	37.94
tblVehicleTrips	SU_TR	5.86	6.20
tblVehicleTrips	SU_TR	0.73	6.44
tblVehicleTrips	SU_TR	0.04	0.92
tblVehicleTrips	SU_TR	0.62	3.73
tblVehicleTrips	SU_TR	0.76	10.51
tblVehicleTrips	SU_TR	25.24	37.94
tblVehicleTrips	WD_TR	6.65	6.20
tblVehicleTrips	WD_TR	6.83	6.44
tblVehicleTrips	WD_TR	1.23	0.92
tblVehicleTrips	WD_TR	3.82	3.73
tblVehicleTrips	WD_TR	11.42	10.51
tblVehicleTrips	WD_TR	42.70	37.94
tblWoodstoves	NumberCatalytic	43.56	0.00
tblWoodstoves	NumberNoncatalytic	43.56	0.00

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

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	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.7740	15,620.7740	0.6115	0.2804	15,719.6130
Energy	6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761
Mobile	91.7720	916.3869	1,188.9190	7.6103	814.0390	3.1695	817.2085	217.9857	2.9658	220.9515		781,245.6591	781,245.6591	26.1213		781,898.6916
Total	419.4497	986.7593	1,420.1194	8.0361	814.0390	9.4438	823.4828	217.9857	9.2402	227.2259	0.0000	864,803.4932	864,803.4932	28.0349	1.5259	865,959.0806

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.7740	15,620.7740	0.6115	0.2804	15,719.6130
Energy	6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761
Mobile	91.7720	916.3869	1,188.9190	7.6103	814.0390	3.1695	817.2085	217.9857	2.9658	220.9515		781,245.6591	781,245.6591	26.1213		781,898.6916
Total	419.4497	986.7593	1,420.1194	8.0361	814.0390	9.4438	823.4828	217.9857	9.2402	227.2259	0.0000	864,803.4932	864,803.4932	28.0349	1.5259	865,959.0806

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/6/2017	11/5/2017	5	0	
2	Site Preparation	Site Preparation	5/18/2019	5/17/2019	5	0	
3	Grading	Grading	4/18/2020	4/17/2020	5	0	
4	Building Construction	Building Construction	9/3/2022	9/2/2022	5	0	
5	Paving	Paving	6/9/2046	6/8/2046	5	0	
6	Architectural Coating	Architectural Coating	2/15/2048	2/14/2048	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

3.7 Architectural Coating - 2048

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	91.7720	916.3869	1,188.9190	7.6103	814.0390	3.1695	817.2085	217.9857	2.9658	220.9515		781,245.6591	781,245.6591	26.1213		781,898.6916
Unmitigated	91.7720	916.3869	1,188.9190	7.6103	814.0390	3.1695	817.2085	217.9857	2.9658	220.9515		781,245.6591	781,245.6591	26.1213		781,898.6916

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	13,503.60	13,503.60	13503.60	46,400,530	46,400,530
Industrial Park	42,127.45	42,127.45	42127.45	144,756,670	144,756,670
Junior College (2Yr)	7,461.20	7,461.20	7461.20	25,637,877	25,637,877
Manufacturing	8,732.79	8,732.79	8732.79	30,007,256	30,007,256
Office Park	6,224.55	6,224.55	6224.55	21,388,541	21,388,541
Regional Shopping Center	32,988.45	32,988.45	32988.45	113,353,594	113,353,594
Total	111,038.04	111,038.04	111,038.04	381,544,469	381,544,469

4.3 Trip Type Information

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

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	9.44	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Industrial Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Junior College (2Yr)	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Manufacturing	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Office Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Regional Shopping Center	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761
NaturalGas Unmitigated	6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

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 Mid Rise	51552.7	0.5560	4.7509	2.0217	0.0303		0.3841	0.3841		0.3841	0.3841		6,065.0192	6,065.0192	0.1163	0.1112	6,101.0606
Industrial Park	293383	3.1639	28.7631	24.1610	0.1726		2.1860	2.1860		2.1860	2.1860		34,515.6741	34,515.6741	0.6616	0.6328	34,720.7835
Junior College (2Yr)	23404.1	0.2524	2.2945	1.9274	0.0138		0.1744	0.1744		0.1744	0.1744		2,753.4227	2,753.4227	0.0528	0.0505	2,769.7849
Manufacturing	169210	1.8248	16.5892	13.9350	0.0995		1.2608	1.2608		1.2608	1.2608		19,907.0750	19,907.0750	0.3816	0.3650	20,025.3728
Office Park	34269.1	0.3696	3.3597	2.8222	0.0202		0.2553	0.2553		0.2553	0.2553		4,031.6633	4,031.6633	0.0773	0.0739	4,055.6215
Regional Shopping Center	5645.75	0.0609	0.5535	0.4649	3.3200e-003		0.0421	0.0421		0.0421	0.0421		664.2058	664.2058	0.0127	0.0122	668.1528
Total		6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	51.5527	0.5560	4.7509	2.0217	0.0303		0.3841	0.3841		0.3841	0.3841		6,065.0192	6,065.0192	0.1163	0.1112	6,101.0606
Industrial Park	293.383	3.1639	28.7631	24.1610	0.1726		2.1860	2.1860		2.1860	2.1860		34,515.6741	34,515.6741	0.6616	0.6328	34,720.7835
Junior College (2Yr)	23.4041	0.2524	2.2945	1.9274	0.0138		0.1744	0.1744		0.1744	0.1744		2,753.4227	2,753.4227	0.0528	0.0505	2,769.7849
Manufacturing	169.21	1.8248	16.5892	13.9350	0.0995		1.2608	1.2608		1.2608	1.2608		19,907.0750	19,907.0750	0.3816	0.3650	20,025.3728
Office Park	34.2691	0.3696	3.3597	2.8222	0.0202		0.2553	0.2553		0.2553	0.2553		4,031.6633	4,031.6633	0.0773	0.0739	4,055.6215
Regional Shopping Center	5.64575	0.0609	0.5535	0.4649	3.3200e-003		0.0421	0.0421		0.0421	0.0421		664.2058	664.2058	0.0127	0.0122	668.1528
Total		6.2276	56.3110	45.3321	0.3397		4.3027	4.3027		4.3027	4.3027		67,937.0601	67,937.0601	1.3021	1.2455	68,340.7761

6.0 Area Detail

6.1 Mitigation Measures Area

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.77 40	15,620.77 40	0.6115	0.2804	15,719.61 30
Unmitigated	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.77 40	15,620.77 40	0.6115	0.2804	15,719.61 30

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	38.9687					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	275.5576					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.4019	11.9797	5.0977	0.0765		0.9686	0.9686		0.9686	0.9686	0.0000	15,293.18 82	15,293.18 82	0.2931	0.2804	15,384.06 80
Landscaping	5.5220	2.0818	180.7706	9.6300e-003		1.0031	1.0031		1.0031	1.0031		327.5857	327.5857	0.3184		335.5450
Total	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.77 40	15,620.77 40	0.6115	0.2804	15,719.61 30

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	38.9687					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	275.5576					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.4019	11.9797	5.0977	0.0765		0.9686	0.9686		0.9686	0.9686	0.0000	15,293.1882	15,293.1882	0.2931	0.2804	15,384.0680
Landscaping	5.5220	2.0818	180.7706	9.6300e-003		1.0031	1.0031		1.0031	1.0031		327.5857	327.5857	0.3184		335.5450
Total	321.4502	14.0614	185.8683	0.0861		1.9717	1.9717		1.9717	1.9717	0.0000	15,620.7740	15,620.7740	0.6115	0.2804	15,719.6130

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Winter

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

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

Livermore INP - Future (2040) NP Operational Emissions
Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	592.25	1000sqft	13.60	592,246.00	0
Junior College (2Yr)	8,110.00	Student	8.13	354,019.64	0
Industrial Park	6,541.53	1000sqft	150.17	6,541,532.00	0
Manufacturing	2,341.23	1000sqft	53.75	2,341,232.00	0
Apartments Mid Rise	2,178.00	Dwelling Unit	57.32	2,178,000.00	6229
Regional Shopping Center	869.49	1000sqft	19.96	869,493.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	207	CH4 Intensity (lb/MW hr)	0.02	N2O Intensity (lb/MW hr)	0.002

1.3 User Entered Comments & Non-Default Data

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

Project Characteristics - Intensity factors include RPS benefit up to 2030

Land Use - Future (2040) NP LU

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for future (2040) NP scenario; adjusted slightly to match traffic VMT data

Woodstoves - No woodstoves

Energy Use -

Waste Mitigation - Based on City's most recent solid waste dispersion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	5,349,261.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	16,047,784.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	1,470,150.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	4,410,450.00	0.00
tblConstructionPhase	NumDays	440.00	0.00
tblConstructionPhase	NumDays	6,200.00	0.00
tblConstructionPhase	NumDays	400.00	0.00
tblConstructionPhase	NumDays	620.00	0.00
tblConstructionPhase	NumDays	440.00	0.00

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tblConstructionPhase	NumDays	240.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	326.70	619.01
tblFireplaces	NumberNoFireplace	87.12	165.07
tblFireplaces	NumberWood	370.26	0.00
tblLandUse	LandUseSquareFeet	592,250.00	592,246.00
tblLandUse	LandUseSquareFeet	6,541,530.00	6,541,532.00
tblLandUse	LandUseSquareFeet	2,341,230.00	2,341,232.00
tblLandUse	LandUseSquareFeet	869,490.00	869,493.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00

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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	641.35	207
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.002
tblTripsAndVMT	VendorTripNumber	1,986.00	0.00
tblTripsAndVMT	WorkerTripNumber	5,915.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,183.00	0.00
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TL	7.30	9.44
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.44
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00

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tblVehicleTrips	PB_TP	11.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	6.20
tblVehicleTrips	ST_TR	2.49	6.44
tblVehicleTrips	ST_TR	0.42	0.92
tblVehicleTrips	ST_TR	1.49	3.73
tblVehicleTrips	ST_TR	1.64	10.51
tblVehicleTrips	ST_TR	49.97	37.94
tblVehicleTrips	SU_TR	5.86	6.20
tblVehicleTrips	SU_TR	0.73	6.44
tblVehicleTrips	SU_TR	0.04	0.92
tblVehicleTrips	SU_TR	0.62	3.73
tblVehicleTrips	SU_TR	0.76	10.51
tblVehicleTrips	SU_TR	25.24	37.94
tblVehicleTrips	WD_TR	6.65	6.20
tblVehicleTrips	WD_TR	6.83	6.44
tblVehicleTrips	WD_TR	1.23	0.92
tblVehicleTrips	WD_TR	3.82	3.73
tblVehicleTrips	WD_TR	11.42	10.51
tblVehicleTrips	WD_TR	42.70	37.94
tblWoodstoves	NumberCatalytic	43.56	0.00
tblWoodstoves	NumberNoncatalytic	43.56	0.00

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2.1 Overall Construction

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					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2046	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2048	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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)
		Highest		

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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	57.9058	0.2541	16.2977	1.2900e-003		0.0957	0.0957		0.0957	0.0957	0.0000	104.0230	104.0230	0.0275	1.4200e-003	105.1321
Energy	1.1365	10.2768	8.2731	0.0620		0.7852	0.7852		0.7852	0.7852	0.0000	27,081.8894	27,081.8894	1.7455	0.3592	27,232.5660
Mobile	16.8180	165.9248	208.9390	1.3978	142.7133	0.5753	143.2886	38.3377	0.5383	38.8760	0.0000	130,210.7748	130,210.7748	4.1691	0.0000	130,315.0021
Waste						0.0000	0.0000		0.0000	0.0000	3,036.8138	0.0000	3,036.8138	179.4706	0.0000	7,523.5777
Water						0.0000	0.0000		0.0000	0.0000	756.0401	1,283.2410	2,039.2811	77.7766	1.8459	4,533.7863
Total	75.8603	176.4557	233.5098	1.4611	142.7133	1.4562	144.1695	38.3377	1.4192	39.7569	3,792.8540	158,679.9282	162,472.7822	263.1891	2.2066	169,710.0642

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	57.9058	0.2541	16.2977	1.2900e-003		0.0957	0.0957		0.0957	0.0957	0.0000	104.0230	104.0230	0.0275	1.4200e-003	105.1321
Energy	1.1365	10.2768	8.2731	0.0620		0.7852	0.7852		0.7852	0.7852	0.0000	27,081.8894	27,081.8894	1.7455	0.3592	27,232.5660
Mobile	16.8180	165.9248	208.9390	1.3978	142.7133	0.5753	143.2886	38.3377	0.5383	38.8760	0.0000	130,210.7748	130,210.7748	4.1691	0.0000	130,315.0021
Waste						0.0000	0.0000		0.0000	0.0000	759.2035	0.0000	759.2035	44.8676	0.0000	1,880.8944
Water						0.0000	0.0000		0.0000	0.0000	756.0401	1,283.2410	2,039.2811	77.7766	1.8459	4,533.7863
Total	75.8603	176.4557	233.5098	1.4611	142.7133	1.4562	144.1695	38.3377	1.4192	39.7569	1,515.2436	158,679.9282	160,195.1718	128.5862	2.2066	164,067.3809

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.05	0.00	1.40	51.14	0.00	3.32

3.0 Construction Detail

Construction Phase

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/6/2017	11/5/2017	5	0	
2	Site Preparation	Site Preparation	5/18/2019	5/17/2019	5	0	
3	Grading	Grading	4/18/2020	4/17/2020	5	0	
4	Building Construction	Building Construction	9/3/2022	9/2/2022	5	0	
5	Paving	Paving	6/9/2046	6/8/2046	5	0	
6	Architectural Coating	Architectural Coating	2/15/2048	2/14/2048	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

3.7 Architectural Coating - 2048

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, 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	16.8180	165.9248	208.9390	1.3978	142.7133	0.5753	143.2886	38.3377	0.5383	38.8760	0.0000	130,210.7748	130,210.7748	4.1691	0.0000	130,315.0021
Unmitigated	16.8180	165.9248	208.9390	1.3978	142.7133	0.5753	143.2886	38.3377	0.5383	38.8760	0.0000	130,210.7748	130,210.7748	4.1691	0.0000	130,315.0021

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	13,503.60	13,503.60	13503.60	46,400,530	46,400,530
Industrial Park	42,127.45	42,127.45	42127.45	144,756,670	144,756,670
Junior College (2Yr)	7,461.20	7,461.20	7461.20	25,637,877	25,637,877
Manufacturing	8,732.79	8,732.79	8732.79	30,007,256	30,007,256
Office Park	6,224.55	6,224.55	6224.55	21,388,541	21,388,541
Regional Shopping Center	32,988.45	32,988.45	32988.45	113,353,594	113,353,594
Total	111,038.04	111,038.04	111,038.04	381,544,469	381,544,469

4.3 Trip Type Information

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

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	9.44	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.44	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Industrial Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Junior College (2Yr)	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Manufacturing	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Office Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Regional Shopping Center	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated							0.0000	0.0000		0.0000	0.0000	15,834.1472	15,834.1472	1.5299	0.1530	15,917.9841
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	15,834.1472	15,834.1472	1.5299	0.1530	15,917.9841
NaturalGas Mitigated	1.1365	10.2768	8.2731	0.0620			0.7852	0.7852		0.7852	0.0000	11,247.7422	11,247.7422	0.2156	0.2062	11,314.5819
NaturalGas Unmitigated	1.1365	10.2768	8.2731	0.0620			0.7852	0.7852		0.7852	0.0000	11,247.7422	11,247.7422	0.2156	0.2062	11,314.5819

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, 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	1.88167e+007	0.1015	0.8671	0.3690	5.5300e-003		0.0701	0.0701		0.0701	0.0701	0.0000	1,004.1320	1,004.1320	0.0193	0.0184	1,010.0990
Industrial Park	1.07085e+008	0.5774	5.2493	4.4094	0.0315		0.3989	0.3989		0.3989	0.3989	0.0000	5,714.4569	5,714.4569	0.1095	0.1048	5,748.4151
Junior College (2Yr)	8.54249e+006	0.0461	0.4188	0.3518	2.5100e-003		0.0318	0.0318		0.0318	0.0318	0.0000	455.8600	455.8600	8.7400e-003	8.3600e-003	458.5690
Manufacturing	6.17617e+007	0.3330	3.0275	2.5431	0.0182		0.2301	0.2301		0.2301	0.2301	0.0000	3,295.8395	3,295.8395	0.0632	0.0604	3,315.4251
Office Park	1.25082e+007	0.0675	0.6132	0.5150	3.6800e-003		0.0466	0.0466		0.0466	0.0466	0.0000	667.4871	667.4871	0.0128	0.0122	671.4536
Regional Shopping Center	2.0607e+006	0.0111	0.1010	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003	0.0000	109.9667	109.9667	2.1100e-003	2.0200e-003	110.6202
Total		1.1365	10.2768	8.2731	0.0620		0.7852	0.7852		0.7852	0.7852	0.0000	11,247.7422	11,247.7422	0.2156	0.2062	11,314.5819

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.88167e+007	0.1015	0.8671	0.3690	5.5300e-003		0.0701	0.0701		0.0701	0.0701	0.0000	1,004.1320	1,004.1320	0.0193	0.0184	1,010.0990
Industrial Park	1.07085e+008	0.5774	5.2493	4.4094	0.0315		0.3989	0.3989		0.3989	0.3989	0.0000	5,714.4569	5,714.4569	0.1095	0.1048	5,748.4151
Junior College (2Yr)	8.54249e+006	0.0461	0.4188	0.3518	2.5100e-003		0.0318	0.0318		0.0318	0.0318	0.0000	455.8600	455.8600	8.7400e-003	8.3600e-003	458.5690
Manufacturing	6.17617e+007	0.3330	3.0275	2.5431	0.0182		0.2301	0.2301		0.2301	0.2301	0.0000	3,295.8395	3,295.8395	0.0632	0.0604	3,315.4251
Office Park	1.25082e+007	0.0675	0.6132	0.5150	3.6800e-003		0.0466	0.0466		0.0466	0.0466	0.0000	667.4871	667.4871	0.0128	0.0122	671.4536
Regional Shopping Center	2.0607e+006	0.0111	0.1010	0.0849	6.1000e-004		7.6800e-003	7.6800e-003		7.6800e-003	7.6800e-003	0.0000	109.9667	109.9667	2.1100e-003	2.0200e-003	110.6202
Total		1.1365	10.2768	8.2731	0.0620		0.7852	0.7852		0.7852	0.7852	0.0000	11,247.7422	11,247.7422	0.2156	0.2062	11,314.5819

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

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	8.99155e+006	844.2488	0.0816	8.1600e-003	848.7189
Industrial Park	1.16636e+008	10,951.3309	1.0581	0.1058	11,009.3147
Junior College (2Yr)	2.8003e+006	262.9299	0.0254	2.5400e-003	264.3220
Manufacturing	1.93386e+007	1,815.7690	0.1754	0.0175	1,825.3829
Office Park	1.15784e+007	1,087.1388	0.1050	0.0105	1,092.8948
Regional Shopping Center	9.29488e+006	872.7300	0.0843	8.4300e-003	877.3508
Total		15,834.1472	1.5299	0.1530	15,917.9841

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

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	8.99155e+006	844.2488	0.0816	8.1600e-003	848.7189
Industrial Park	1.16636e+008	10,951.3309	1.0581	0.1058	11,009.3147
Junior College (2Yr)	2.8003e+006	262.9299	0.0254	2.5400e-003	264.3220
Manufacturing	1.93386e+007	1,815.7690	0.1754	0.0175	1,825.3829
Office Park	1.15784e+007	1,087.1388	0.1050	0.0105	1,092.8948
Regional Shopping Center	9.29488e+006	872.7300	0.0843	8.4300e-003	877.3508
Total		15,834.1472	1.5299	0.1530	15,917.9841

6.0 Area Detail**6.1 Mitigation Measures Area**

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, 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	57.9058	0.2541	16.2977	1.2900e-003		0.0957	0.0957		0.0957	0.0957	0.0000	104.0230	104.0230	0.0275	1.4200e-003	105.1321
Unmitigated	57.9058	0.2541	16.2977	1.2900e-003		0.0957	0.0957		0.0957	0.0957	0.0000	104.0230	104.0230	0.0275	1.4200e-003	105.1321

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	7.1118					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	50.2893					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.8100e-003	0.0667	0.0284	4.3000e-004		5.3900e-003	5.3900e-003		5.3900e-003	5.3900e-003	0.0000	77.2768	77.2768	1.4800e-003	1.4200e-003	77.7360
Landscaping	0.4970	0.1874	16.2694	8.7000e-004		0.0903	0.0903		0.0903	0.0903	0.0000	26.7463	26.7463	0.0260	0.0000	27.3961
Total	57.9058	0.2541	16.2977	1.3000e-003		0.0957	0.0957		0.0957	0.0957	0.0000	104.0230	104.0230	0.0275	1.4200e-003	105.1321

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6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	7.1118					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	50.2893					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.8100e-003	0.0667	0.0284	4.3000e-004		5.3900e-003	5.3900e-003		5.3900e-003	5.3900e-003	0.0000	77.2768	77.2768	1.4800e-003	1.4200e-003	77.7360
Landscaping	0.4970	0.1874	16.2694	8.7000e-004		0.0903	0.0903		0.0903	0.0903	0.0000	26.7463	26.7463	0.0260	0.0000	27.3961
Total	57.9058	0.2541	16.2977	1.3000e-003		0.0957	0.0957		0.0957	0.0957	0.0000	104.0230	104.0230	0.0275	1.4200e-003	105.1321

7.0 Water Detail**7.1 Mitigation Measures Water**

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2,039.281 1	77.7766	1.8459	4,533.786 3
Unmitigated	2,039.281 1	77.7766	1.8459	4,533.786 3

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	141.905 / 89.4621	146.5161	4.6338	0.1102	295.1896
Industrial Park	1512.73 / 0	1,248.4736	49.3666	1.1713	2,831.6917
Junior College (2Yr)	17.3643 / 27.1596	23.2564	0.5675	0.0135	41.4771
Manufacturing	541.409 / 0	446.8318	17.6684	0.4192	1,013.4696
Office Park	105.263 / 64.5159	108.0764	3.4372	0.0817	218.3565
Regional Shopping Center	64.4053 / 39.4742	66.1268	2.1031	0.0500	133.6019
Total		2,039.2811	77.7766	1.8459	4,533.7863

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	141.905 / 89.4621	146.5161	4.6338	0.1102	295.1896
Industrial Park	1512.73 / 0	1,248.4736	49.3666	1.1713	2,831.6917
Junior College (2Yr)	17.3643 / 27.1596	23.2564	0.5675	0.0135	41.4771
Manufacturing	541.409 / 0	446.8318	17.6684	0.4192	1,013.4696
Office Park	105.263 / 64.5159	108.0764	3.4372	0.0817	218.3565
Regional Shopping Center	64.4053 / 39.4742	66.1268	2.1031	0.0500	133.6019
Total		2,039.2811	77.7766	1.8459	4,533.7863

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	759.2035	44.8676	0.0000	1,880.894 4
Unmitigated	3,036.813 8	179.4706	0.0000	7,523.577 7

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	1001.88	203.3726	12.0190	0.0000	503.8470
Industrial Park	8111.5	1,646.5612	97.3090	0.0000	4,079.2857
Junior College (2Yr)	1480.08	300.4429	17.7557	0.0000	744.3345
Manufacturing	2903.13	589.3092	34.8272	0.0000	1,459.9885
Office Park	550.79	111.8054	6.6075	0.0000	276.9931
Regional Shopping Center	912.96	185.3226	10.9523	0.0000	459.1290
Total		3,036.8138	179.4706	0.0000	7,523.5777

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	250.47	50.8432	3.0047	0.0000	125.9617
Industrial Park	2027.88	411.6403	24.3272	0.0000	1,019.8214
Junior College (2Yr)	370.02	75.1107	4.4389	0.0000	186.0836
Manufacturing	725.783	147.3273	8.7068	0.0000	364.9971
Office Park	137.697	27.9514	1.6519	0.0000	69.2483
Regional Shopping Center	228.24	46.3307	2.7381	0.0000	114.7822
Total		759.2035	44.8676	0.0000	1,880.8944

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

Livermore INP - Future (2040) NP Operational Emissions - Alameda County, Annual

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

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

Livermore INP - Future (2040) WP Operational Emissions
Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	601.75	1000sqft	13.81	601,750.00	0
Junior College (2Yr)	8,110.00	Student	8.13	354,019.64	0
Industrial Park	7,089.30	1000sqft	162.75	7,089,295.00	0
Manufacturing	2,540.58	1000sqft	58.32	2,540,578.00	0
Apartments Mid Rise	5,204.00	Dwelling Unit	136.95	5,204,000.00	14883
Regional Shopping Center	867.52	1000sqft	19.92	867,519.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	207	CH4 Intensity (lb/MWhr)	0.02	N2O Intensity (lb/MWhr)	0.002

1.3 User Entered Comments & Non-Default Data

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

Project Characteristics - Intensity factors include RPS benefit up to 2030

Land Use - Future (2040) WP LU

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for future (2040) WP scenario

Woodstoves - No woodstoves

Energy Use -

Waste Mitigation - Based on City's most recent solid waste diversion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	5,726,581.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	17,179,742.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	3,512,700.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	10,538,100.00	0.00
tblConstructionPhase	NumDays	440.00	0.00
tblConstructionPhase	NumDays	6,200.00	0.00
tblConstructionPhase	NumDays	400.00	0.00
tblConstructionPhase	NumDays	620.00	0.00
tblConstructionPhase	NumDays	440.00	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

tblConstructionPhase	NumDays	240.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	780.60	1,479.03
tblFireplaces	NumberNoFireplace	208.16	394.41
tblFireplaces	NumberWood	884.68	0.00
tblLandUse	LandUseSquareFeet	7,089,300.00	7,089,295.00
tblLandUse	LandUseSquareFeet	2,540,580.00	2,540,578.00
tblLandUse	LandUseSquareFeet	867,520.00	867,519.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	641.35	207
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.002
tblTripsAndVMT	VendorTripNumber	2,433.00	0.00
tblTripsAndVMT	WorkerTripNumber	8,410.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,682.00	0.00
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.38
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	6.18
tblVehicleTrips	ST_TR	2.49	6.49
tblVehicleTrips	ST_TR	0.42	0.90
tblVehicleTrips	ST_TR	1.49	3.95
tblVehicleTrips	ST_TR	1.64	9.26
tblVehicleTrips	ST_TR	49.97	33.28
tblVehicleTrips	SU_TR	5.86	6.18
tblVehicleTrips	SU_TR	0.73	6.49
tblVehicleTrips	SU_TR	0.04	0.90
tblVehicleTrips	SU_TR	0.62	3.95
tblVehicleTrips	SU_TR	0.76	9.26
tblVehicleTrips	SU_TR	25.24	33.28
tblVehicleTrips	WD_TR	6.65	6.18
tblVehicleTrips	WD_TR	6.83	6.49
tblVehicleTrips	WD_TR	1.23	0.90
tblVehicleTrips	WD_TR	3.82	3.95
tblVehicleTrips	WD_TR	11.42	9.26
tblVehicleTrips	WD_TR	42.70	33.28
tblWoodstoves	NumberCatalytic	104.08	0.00
tblWoodstoves	NumberNoncatalytic	104.08	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

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	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13
Energy	7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.88 67	81,011.88 67	1.5527	1.4852	81,493.29 99
Mobile	119.8200	1,049.639 5	1,416.664 7	9.3697	946.6149	3.6777	950.2925	253.4872	3.4412	256.9284		961,167.8 042	961,167.8 042	29.0246		961,893.4 186
Total	552.8187	1,149.999 8	1,909.639 0	9.9802	946.6149	13.5105	960.1253	253.4872	13.2740	266.7612	0.0000	1,079,497. 7022	1,079,497. 7022	32.0243	2.1551	1,080,940. 5397

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13
Energy	7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.88 67	81,011.88 67	1.5527	1.4852	81,493.29 99
Mobile	119.8200	1,049.639 5	1,416.664 7	9.3697	946.6149	3.6777	950.2925	253.4872	3.4412	256.9284		961,167.8 042	961,167.8 042	29.0246		961,893.4 186
Total	552.8187	1,149.999 8	1,909.639 0	9.9802	946.6149	13.5105	960.1253	253.4872	13.2740	266.7612	0.0000	1,079,497. 7022	1,079,497. 7022	32.0243	2.1551	1,080,940. 5397

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/6/2017	11/5/2017	5	0	
2	Site Preparation	Site Preparation	5/18/2019	5/17/2019	5	0	
3	Grading	Grading	4/18/2020	4/17/2020	5	0	
4	Building Construction	Building Construction	9/3/2022	9/2/2022	5	0	
5	Paving	Paving	6/9/2046	6/8/2046	5	0	
6	Architectural Coating	Architectural Coating	2/15/2048	2/14/2048	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

3.7 Architectural Coating - 2048

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	119.8200	1,049.6395	1,416.6647	9.3697	946.6149	3.6777	950.2925	253.4872	3.4412	256.9284		961,167.8042	961,167.8042	29.0246		961,893.4186
Unmitigated	119.8200	1,049.6395	1,416.6647	9.3697	946.6149	3.6777	950.2925	253.4872	3.4412	256.9284		961,167.8042	961,167.8042	29.0246		961,893.4186

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	32,160.72	32,160.72	32160.72	109,806,990	109,806,990
Industrial Park	46,009.56	46,009.56	46009.56	157,091,351	157,091,351
Junior College (2Yr)	7,299.00	7,299.00	7299.00	24,921,122	24,921,122
Manufacturing	10,035.29	10,035.29	10035.29	34,263,695	34,263,695
Office Park	5,572.21	5,572.21	5572.21	19,025,291	19,025,291
Regional Shopping Center	28,871.07	28,871.07	28871.07	98,575,057	98,575,057
Total	129,947.84	129,947.84	129,947.84	443,683,504	443,683,504

4.3 Trip Type Information

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

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	9.38	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Industrial Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Junior College (2Yr)	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Manufacturing	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Office Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Regional Shopping Center	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.8867	81,011.8867	1.5527	1.4852	81,493.2999
NaturalGas Unmitigated	7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.8867	81,011.8867	1.5527	1.4852	81,493.2999

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

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 Mid Rise	123177	1.3284	11.3516	4.8305	0.0725		0.9178	0.9178		0.9178	0.9178		14,491.4417	14,491.4417	0.2778	0.2657	14,577.5571
Industrial Park	317950	3.4289	31.1716	26.1841	0.1870		2.3690	2.3690		2.3690	2.3690		37,405.8853	37,405.8853	0.7170	0.6858	37,628.1698
Junior College (2Yr)	23404.1	0.2524	2.2945	1.9274	0.0138		0.1744	0.1744		0.1744	0.1744		2,753.4227	2,753.4227	0.0528	0.0505	2,769.7849
Manufacturing	183618	1.9802	18.0017	15.1215	0.1080		1.3681	1.3681		1.3681	1.3681		21,602.0782	21,602.0782	0.4140	0.3960	21,730.4486
Office Park	34819.1	0.3755	3.4136	2.8675	0.0205		0.2594	0.2594		0.2594	0.2594		4,096.3610	4,096.3610	0.0785	0.0751	4,120.7036
Regional Shopping Center	5632.93	0.0608	0.5523	0.4639	3.3100e-003		0.0420	0.0420		0.0420	0.0420		662.6978	662.6978	0.0127	0.0122	666.6359
Total		7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.8867	81,011.8867	1.5527	1.4852	81,493.2999

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	123.177	1.3284	11.3516	4.8305	0.0725		0.9178	0.9178		0.9178	0.9178		14,491.44 17	14,491.44 17	0.2778	0.2657	14,577.55 71
Industrial Park	317.95	3.4289	31.1716	26.1841	0.1870		2.3690	2.3690		2.3690	2.3690		37,405.88 53	37,405.88 53	0.7170	0.6858	37,628.16 98
Junior College (2Yr)	23.4041	0.2524	2.2945	1.9274	0.0138		0.1744	0.1744		0.1744	0.1744		2,753.422 7	2,753.422 7	0.0528	0.0505	2,769.784 9
Manufacturing	183.618	1.9802	18.0017	15.1215	0.1080		1.3681	1.3681		1.3681	1.3681		21,602.07 82	21,602.07 82	0.4140	0.3960	21,730.44 86
Office Park	34.8191	0.3755	3.4136	2.8675	0.0205		0.2594	0.2594		0.2594	0.2594		4,096.361 0	4,096.361 0	0.0785	0.0751	4,120.703 6
Regional Shopping Center	5.63293	0.0608	0.5523	0.4639	3.3100e-003		0.0420	0.0420		0.0420	0.0420		662.6978	662.6978	0.0127	0.0122	666.6359
Total		7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.88 67	81,011.88 67	1.5527	1.4852	81,493.29 99

6.0 Area Detail

6.1 Mitigation Measures Area

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13
Unmitigated	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13

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	52.7968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	356.4633					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	3.3496	28.6236	12.1803	0.1827		2.3143	2.3143		2.3143	2.3143	0.0000	36,540.74 12	36,540.74 12	0.7004	0.6699	36,757.88 45
Landscaping	12.9630	4.9514	429.3993	0.0228		2.3878	2.3878		2.3878	2.3878		777.2701	777.2701	0.7467		795.9367
Total	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	52.7968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	356.4633					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	3.3496	28.6236	12.1803	0.1827		2.3143	2.3143		2.3143	2.3143	0.0000	36,540.74 12	36,540.74 12	0.7004	0.6699	36,757.88 45
Landscaping	12.9630	4.9514	429.3993	0.0228		2.3878	2.3878		2.3878	2.3878		777.2701	777.2701	0.7467		795.9367
Total	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Summer

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

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

Livermore INP - Future (2040) WP Operational Emissions
Alameda County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	601.75	1000sqft	13.81	601,750.00	0
Junior College (2Yr)	8,110.00	Student	8.13	354,019.64	0
Industrial Park	7,089.30	1000sqft	162.75	7,089,295.00	0
Manufacturing	2,540.58	1000sqft	58.32	2,540,578.00	0
Apartments Mid Rise	5,204.00	Dwelling Unit	136.95	5,204,000.00	14883
Regional Shopping Center	867.52	1000sqft	19.92	867,519.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	207	CH4 Intensity (lb/MWhr)	0.02	N2O Intensity (lb/MWhr)	0.002

1.3 User Entered Comments & Non-Default Data

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

Project Characteristics - Intensity factors include RPS benefit up to 2030

Land Use - Future (2040) WP LU

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for future (2040) WP scenario

Woodstoves - No woodstoves

Energy Use -

Waste Mitigation - Based on City's most recent solid waste diversion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	5,726,581.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	17,179,742.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	3,512,700.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	10,538,100.00	0.00
tblConstructionPhase	NumDays	440.00	0.00
tblConstructionPhase	NumDays	6,200.00	0.00
tblConstructionPhase	NumDays	400.00	0.00
tblConstructionPhase	NumDays	620.00	0.00
tblConstructionPhase	NumDays	440.00	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

tblConstructionPhase	NumDays	240.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	780.60	1,479.03
tblFireplaces	NumberNoFireplace	208.16	394.41
tblFireplaces	NumberWood	884.68	0.00
tblLandUse	LandUseSquareFeet	7,089,300.00	7,089,295.00
tblLandUse	LandUseSquareFeet	2,540,580.00	2,540,578.00
tblLandUse	LandUseSquareFeet	867,520.00	867,519.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	641.35	207
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.002
tblTripsAndVMT	VendorTripNumber	2,433.00	0.00
tblTripsAndVMT	WorkerTripNumber	8,410.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,682.00	0.00
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.38
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	6.18
tblVehicleTrips	ST_TR	2.49	6.49
tblVehicleTrips	ST_TR	0.42	0.90
tblVehicleTrips	ST_TR	1.49	3.95
tblVehicleTrips	ST_TR	1.64	9.26
tblVehicleTrips	ST_TR	49.97	33.28
tblVehicleTrips	SU_TR	5.86	6.18
tblVehicleTrips	SU_TR	0.73	6.49
tblVehicleTrips	SU_TR	0.04	0.90
tblVehicleTrips	SU_TR	0.62	3.95
tblVehicleTrips	SU_TR	0.76	9.26
tblVehicleTrips	SU_TR	25.24	33.28
tblVehicleTrips	WD_TR	6.65	6.18
tblVehicleTrips	WD_TR	6.83	6.49
tblVehicleTrips	WD_TR	1.23	0.90
tblVehicleTrips	WD_TR	3.82	3.95
tblVehicleTrips	WD_TR	11.42	9.26
tblVehicleTrips	WD_TR	42.70	33.28
tblWoodstoves	NumberCatalytic	104.08	0.00
tblWoodstoves	NumberNoncatalytic	104.08	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

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	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13
Energy	7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.88 67	81,011.88 67	1.5527	1.4852	81,493.29 99
Mobile	107.0074	1,069.745 7	1,384.202 5	8.8544	946.6149	3.6878	950.3026	253.4872	3.4508	256.9381		908,977.2 504	908,977.2 504	30.4512		909,738.5 299
Total	540.0062	1,170.106 0	1,877.176 8	9.4650	946.6149	13.5206	960.1354	253.4872	13.2836	266.7709	0.0000	1,027,307. 1484	1,027,307. 1484	33.4509	2.1551	1,028,785. 6510

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13
Energy	7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.88 67	81,011.88 67	1.5527	1.4852	81,493.29 99
Mobile	107.0074	1,069.745 7	1,384.202 5	8.8544	946.6149	3.6878	950.3026	253.4872	3.4508	256.9381		908,977.2 504	908,977.2 504	30.4512		909,738.5 299
Total	540.0062	1,170.106 0	1,877.176 8	9.4650	946.6149	13.5206	960.1354	253.4872	13.2836	266.7709	0.0000	1,027,307. 1484	1,027,307. 1484	33.4509	2.1551	1,028,785. 6510

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/6/2017	11/5/2017	5	0	
2	Site Preparation	Site Preparation	5/18/2019	5/17/2019	5	0	
3	Grading	Grading	4/18/2020	4/17/2020	5	0	
4	Building Construction	Building Construction	9/3/2022	9/2/2022	5	0	
5	Paving	Paving	6/9/2046	6/8/2046	5	0	
6	Architectural Coating	Architectural Coating	2/15/2048	2/14/2048	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

3.7 Architectural Coating - 2048

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	107.0074	1,069.7457	1,384.2025	8.8544	946.6149	3.6878	950.3026	253.4872	3.4508	256.9381		908,977.2504	908,977.2504	30.4512		909,738.5299
Unmitigated	107.0074	1,069.7457	1,384.2025	8.8544	946.6149	3.6878	950.3026	253.4872	3.4508	256.9381		908,977.2504	908,977.2504	30.4512		909,738.5299

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	32,160.72	32,160.72	32160.72	109,806,990	109,806,990
Industrial Park	46,009.56	46,009.56	46009.56	157,091,351	157,091,351
Junior College (2Yr)	7,299.00	7,299.00	7299.00	24,921,122	24,921,122
Manufacturing	10,035.29	10,035.29	10035.29	34,263,695	34,263,695
Office Park	5,572.21	5,572.21	5572.21	19,025,291	19,025,291
Regional Shopping Center	28,871.07	28,871.07	28871.07	98,575,057	98,575,057
Total	129,947.84	129,947.84	129,947.84	443,683,504	443,683,504

4.3 Trip Type Information

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

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	9.38	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Industrial Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Junior College (2Yr)	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Manufacturing	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Office Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Regional Shopping Center	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.8867	81,011.8867	1.5527	1.4852	81,493.2999
NaturalGas Unmitigated	7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.8867	81,011.8867	1.5527	1.4852	81,493.2999

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

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 Mid Rise	123177	1.3284	11.3516	4.8305	0.0725		0.9178	0.9178		0.9178	0.9178		14,491.44 17	14,491.44 17	0.2778	0.2657	14,577.55 71
Industrial Park	317950	3.4289	31.1716	26.1841	0.1870		2.3690	2.3690		2.3690	2.3690		37,405.88 53	37,405.88 53	0.7170	0.6858	37,628.16 98
Junior College (2Yr)	23404.1	0.2524	2.2945	1.9274	0.0138		0.1744	0.1744		0.1744	0.1744		2,753.422 7	2,753.422 7	0.0528	0.0505	2,769.784 9
Manufacturing	183618	1.9802	18.0017	15.1215	0.1080		1.3681	1.3681		1.3681	1.3681		21,602.07 82	21,602.07 82	0.4140	0.3960	21,730.44 86
Office Park	34819.1	0.3755	3.4136	2.8675	0.0205		0.2594	0.2594		0.2594	0.2594		4,096.361 0	4,096.361 0	0.0785	0.0751	4,120.703 6
Regional Shopping Center	5632.93	0.0608	0.5523	0.4639	3.3100e-003		0.0420	0.0420		0.0420	0.0420		662.6978	662.6978	0.0127	0.0122	666.6359
Total		7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.88 67	81,011.88 67	1.5527	1.4852	81,493.29 99

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	123.177	1.3284	11.3516	4.8305	0.0725		0.9178	0.9178		0.9178	0.9178		14,491.44 17	14,491.44 17	0.2778	0.2657	14,577.55 71
Industrial Park	317.95	3.4289	31.1716	26.1841	0.1870		2.3690	2.3690		2.3690	2.3690		37,405.88 53	37,405.88 53	0.7170	0.6858	37,628.16 98
Junior College (2Yr)	23.4041	0.2524	2.2945	1.9274	0.0138		0.1744	0.1744		0.1744	0.1744		2,753.422 7	2,753.422 7	0.0528	0.0505	2,769.784 9
Manufacturing	183.618	1.9802	18.0017	15.1215	0.1080		1.3681	1.3681		1.3681	1.3681		21,602.07 82	21,602.07 82	0.4140	0.3960	21,730.44 86
Office Park	34.8191	0.3755	3.4136	2.8675	0.0205		0.2594	0.2594		0.2594	0.2594		4,096.361 0	4,096.361 0	0.0785	0.0751	4,120.703 6
Regional Shopping Center	5.63293	0.0608	0.5523	0.4639	3.3100e-003		0.0420	0.0420		0.0420	0.0420		662.6978	662.6978	0.0127	0.0122	666.6359
Total		7.4261	66.7853	51.3948	0.4051		5.1308	5.1308		5.1308	5.1308		81,011.88 67	81,011.88 67	1.5527	1.4852	81,493.29 99

6.0 Area Detail

6.1 Mitigation Measures Area

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13
Unmitigated	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13

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	52.7968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	356.4633					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	3.3496	28.6236	12.1803	0.1827		2.3143	2.3143		2.3143	2.3143	0.0000	36,540.74 12	36,540.74 12	0.7004	0.6699	36,757.88 45
Landscaping	12.9630	4.9514	429.3993	0.0228		2.3878	2.3878		2.3878	2.3878		777.2701	777.2701	0.7467		795.9367
Total	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	52.7968					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	356.4633					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	3.3496	28.6236	12.1803	0.1827		2.3143	2.3143		2.3143	2.3143	0.0000	36,540.74 12	36,540.74 12	0.7004	0.6699	36,757.88 45
Landscaping	12.9630	4.9514	429.3993	0.0228		2.3878	2.3878		2.3878	2.3878		777.2701	777.2701	0.7467		795.9367
Total	425.5727	33.5750	441.5795	0.2055		4.7021	4.7021		4.7021	4.7021	0.0000	37,318.01 13	37,318.01 13	1.4470	0.6699	37,553.82 13

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Winter

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

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

Livermore INP - Future (2040) WP Operational Emissions
Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	601.75	1000sqft	13.81	601,750.00	0
Junior College (2Yr)	8,110.00	Student	8.13	354,019.64	0
Industrial Park	7,089.30	1000sqft	162.75	7,089,295.00	0
Manufacturing	2,540.58	1000sqft	58.32	2,540,578.00	0
Apartments Mid Rise	5,204.00	Dwelling Unit	136.95	5,204,000.00	14883
Regional Shopping Center	867.52	1000sqft	19.92	867,519.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	207	CH4 Intensity (lb/MW hr)	0.02	N2O Intensity (lb/MW hr)	0.002

1.3 User Entered Comments & Non-Default Data

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

Project Characteristics - Intensity factors include RPS benefit up to 2030

Land Use - Future (2040) WP LU

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for future (2040) WP scenario

Woodstoves - No woodstoves

Energy Use -

Waste Mitigation - Based on City's most recent solid waste diversion rate

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	5,726,581.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	17,179,742.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	3,512,700.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	10,538,100.00	0.00
tblConstructionPhase	NumDays	440.00	0.00
tblConstructionPhase	NumDays	6,200.00	0.00
tblConstructionPhase	NumDays	400.00	0.00
tblConstructionPhase	NumDays	620.00	0.00
tblConstructionPhase	NumDays	440.00	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

tblConstructionPhase	NumDays	240.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	780.60	1,479.03
tblFireplaces	NumberNoFireplace	208.16	394.41
tblFireplaces	NumberWood	884.68	0.00
tblLandUse	LandUseSquareFeet	7,089,300.00	7,089,295.00
tblLandUse	LandUseSquareFeet	2,540,580.00	2,540,578.00
tblLandUse	LandUseSquareFeet	867,520.00	867,519.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	641.35	207
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.002
tblTripsAndVMT	VendorTripNumber	2,433.00	0.00
tblTripsAndVMT	WorkerTripNumber	8,410.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,682.00	0.00
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	5.00	0.00
tblVehicleTrips	CNW_TTP	13.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TL	9.50	0.00

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tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TL	9.50	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	6.40	0.00
tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
tblVehicleTrips	CW_TTP	16.30	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	DV_TP	7.00	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	DV_TP	15.00	0.00
tblVehicleTrips	DV_TP	35.00	0.00
tblVehicleTrips	HO_TL	5.70	0.00
tblVehicleTrips	HO_TTP	54.00	0.00
tblVehicleTrips	HS_TL	4.80	0.00
tblVehicleTrips	HS_TTP	15.00	0.00
tblVehicleTrips	HW_TL	10.80	9.38
tblVehicleTrips	HW_TTP	31.00	100.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	2.00	0.00
tblVehicleTrips	PB_TP	1.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	11.00	0.00

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tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	PR_TP	79.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	6.18
tblVehicleTrips	ST_TR	2.49	6.49
tblVehicleTrips	ST_TR	0.42	0.90
tblVehicleTrips	ST_TR	1.49	3.95
tblVehicleTrips	ST_TR	1.64	9.26
tblVehicleTrips	ST_TR	49.97	33.28
tblVehicleTrips	SU_TR	5.86	6.18
tblVehicleTrips	SU_TR	0.73	6.49
tblVehicleTrips	SU_TR	0.04	0.90
tblVehicleTrips	SU_TR	0.62	3.95
tblVehicleTrips	SU_TR	0.76	9.26
tblVehicleTrips	SU_TR	25.24	33.28
tblVehicleTrips	WD_TR	6.65	6.18
tblVehicleTrips	WD_TR	6.83	6.49
tblVehicleTrips	WD_TR	1.23	0.90
tblVehicleTrips	WD_TR	3.82	3.95
tblVehicleTrips	WD_TR	11.42	9.26
tblVehicleTrips	WD_TR	42.70	33.28
tblWoodstoves	NumberCatalytic	104.08	0.00
tblWoodstoves	NumberNoncatalytic	104.08	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00

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2.1 Overall Construction

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					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2046	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2048	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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)
		Highest		

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, 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	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238
Energy	1.3553	12.1883	9.3796	0.0739		0.9364	0.9364		0.9364	0.9364	0.0000	31,506.6213	31,506.6213	2.0053	0.4207	31,682.1277
Mobile	19.6113	193.7051	243.2274	1.6264	165.9559	0.6693	166.6252	44.5814	0.6263	45.2077	0.0000	151,505.2168	151,505.2168	4.8597	0.0000	151,626.7083
Waste						0.0000	0.0000		0.0000	0.0000	3,508.8003	0.0000	3,508.8003	207.3642	0.0000	8,692.9042
Water						0.0000	0.0000		0.0000	0.0000	873.8905	1,513.1267	2,387.0171	89.9031	2.1340	5,270.5199
Total	96.8419	206.4984	291.3207	1.7034	165.9559	1.8335	167.7893	44.5814	1.7904	46.3719	4,382.6908	184,773.0672	189,155.7580	304.1967	2.5581	197,522.9839

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238
Energy	1.3553	12.1883	9.3796	0.0739		0.9364	0.9364		0.9364	0.9364	0.0000	31,506.6213	31,506.6213	2.0053	0.4207	31,682.1277
Mobile	19.6113	193.7051	243.2274	1.6264	165.9559	0.6693	166.6252	44.5814	0.6263	45.2077	0.0000	151,505.2168	151,505.2168	4.8597	0.0000	151,626.7083
Waste						0.0000	0.0000		0.0000	0.0000	877.2001	0.0000	877.2001	51.8410	0.0000	2,173.2261
Water						0.0000	0.0000		0.0000	0.0000	873.8905	1,513.1267	2,387.0171	89.9031	2.1340	5,270.5199
Total	96.8419	206.4984	291.3207	1.7034	165.9559	1.8335	167.7893	44.5814	1.7904	46.3719	1,751.0905	184,773.0672	186,524.1578	148.6736	2.5581	191,003.3058

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	60.05	0.00	1.39	51.13	0.00	3.30

3.0 Construction Detail

Construction Phase

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/6/2017	11/5/2017	5	0	
2	Site Preparation	Site Preparation	5/18/2019	5/17/2019	5	0	
3	Grading	Grading	4/18/2020	4/17/2020	5	0	
4	Building Construction	Building Construction	9/3/2022	9/2/2022	5	0	
5	Paving	Paving	6/9/2046	6/8/2046	5	0	
6	Architectural Coating	Architectural Coating	2/15/2048	2/14/2048	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

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3.7 Architectural Coating - 2048

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	19.6113	193.7051	243.2274	1.6264	165.9559	0.6693	166.6252	44.5814	0.6263	45.2077	0.0000	151,505.2168	151,505.2168	4.8597	0.0000	151,626.7083
Unmitigated	19.6113	193.7051	243.2274	1.6264	165.9559	0.6693	166.6252	44.5814	0.6263	45.2077	0.0000	151,505.2168	151,505.2168	4.8597	0.0000	151,626.7083

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	32,160.72	32,160.72	32160.72	109,806,990	109,806,990
Industrial Park	46,009.56	46,009.56	46009.56	157,091,351	157,091,351
Junior College (2Yr)	7,299.00	7,299.00	7299.00	24,921,122	24,921,122
Manufacturing	10,035.29	10,035.29	10035.29	34,263,695	34,263,695
Office Park	5,572.21	5,572.21	5572.21	19,025,291	19,025,291
Regional Shopping Center	28,871.07	28,871.07	28871.07	98,575,057	98,575,057
Total	129,947.84	129,947.84	129,947.84	443,683,504	443,683,504

4.3 Trip Type Information

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

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	9.38	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Industrial Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Junior College (2Yr)	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Manufacturing	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Office Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Regional Shopping Center	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated							0.0000	0.0000		0.0000	0.0000	18,094.1949	18,094.1949	1.7482	0.1748	18,189.9980
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	18,094.1949	18,094.1949	1.7482	0.1748	18,189.9980
NaturalGas Mitigated	1.3553	12.1883	9.3796	0.0739		0.9364	0.9364		0.9364	0.9364	0.0000	13,412.4264	13,412.4264	0.2571	0.2459	13,492.1297
NaturalGas Unmitigated	1.3553	12.1883	9.3796	0.0739		0.9364	0.9364		0.9364	0.9364	0.0000	13,412.4264	13,412.4264	0.2571	0.2459	13,492.1297

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	4.49597e+007	0.2424	2.0717	0.8816	0.0132		0.1675	0.1675		0.1675	0.1675	0.0000	2,399.2207	2,399.2207	0.0460	0.0440	2,413.4781
Industrial Park	1.16052e+008	0.6258	5.6888	4.7786	0.0341		0.4324	0.4324		0.4324	0.4324	0.0000	6,192.9638	6,192.9638	0.1187	0.1135	6,229.7655
Junior College (2Yr)	8.54249e+006	0.0461	0.4188	0.3518	2.5100e-003		0.0318	0.0318		0.0318	0.0318	0.0000	455.8600	455.8600	8.7400e-003	8.3600e-003	458.5690
Manufacturing	6.70204e+007	0.3614	3.2853	2.7597	0.0197		0.2497	0.2497		0.2497	0.2497	0.0000	3,576.4663	3,576.4663	0.0686	0.0656	3,597.7195
Office Park	1.2709e+007	0.0685	0.6230	0.5233	3.7400e-003		0.0474	0.0474		0.0474	0.0474	0.0000	678.1985	678.1985	0.0130	0.0124	682.2287
Regional Shopping Center	2.05602e+006	0.0111	0.1008	0.0847	6.0000e-004		7.6600e-003	7.6600e-003		7.6600e-003	7.6600e-003	0.0000	109.7171	109.7171	2.1000e-003	2.0100e-003	110.3691
Total		1.3553	12.1883	9.3796	0.0739		0.9364	0.9364		0.9364	0.9364	0.0000	13,412.4264	13,412.4264	0.2571	0.2459	13,492.1298

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	4.49597e+007	0.2424	2.0717	0.8816	0.0132		0.1675	0.1675		0.1675	0.1675	0.0000	2,399.2207	2,399.2207	0.0460	0.0440	2,413.4781
Industrial Park	1.16052e+008	0.6258	5.6888	4.7786	0.0341		0.4324	0.4324		0.4324	0.4324	0.0000	6,192.9638	6,192.9638	0.1187	0.1135	6,229.7655
Junior College (2Yr)	8.54249e+006	0.0461	0.4188	0.3518	2.5100e-003		0.0318	0.0318		0.0318	0.0318	0.0000	455.8600	455.8600	8.7400e-003	8.3600e-003	458.5690
Manufacturing	6.70204e+007	0.3614	3.2853	2.7597	0.0197		0.2497	0.2497		0.2497	0.2497	0.0000	3,576.4663	3,576.4663	0.0686	0.0656	3,597.7195
Office Park	1.2709e+007	0.0685	0.6230	0.5233	3.7400e-003		0.0474	0.0474		0.0474	0.0474	0.0000	678.1985	678.1985	0.0130	0.0124	682.2287
Regional Shopping Center	2.05602e+006	0.0111	0.1008	0.0847	6.0000e-004		7.6600e-003	7.6600e-003		7.6600e-003	7.6600e-003	0.0000	109.7171	109.7171	2.1000e-003	2.0100e-003	110.3691
Total		1.3553	12.1883	9.3796	0.0739		0.9364	0.9364		0.9364	0.9364	0.0000	13,412.4264	13,412.4264	0.2571	0.2459	13,492.1298

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, 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	2.14839e+007	2,017.2043	0.1949	0.0195	2,027.8848
Industrial Park	1.26402e+008	11,868.3536	1.1467	0.1147	11,931.1928
Junior College (2Yr)	2.8003e+006	262.9299	0.0254	2.5400e-003	264.3220
Manufacturing	2.09852e+007	1,970.3740	0.1904	0.0190	1,980.8065
Office Park	1.17642e+007	1,104.5845	0.1067	0.0107	1,110.4329
Regional Shopping Center	9.27378e+006	870.7486	0.0841	8.4100e-003	875.3589
Total		18,094.1949	1.7482	0.1748	18,189.9980

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

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

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	2.14839e+007	2,017.2043	0.1949	0.0195	2,027.8848
Industrial Park	1.26402e+008	11,868.3536	1.1467	0.1147	11,931.1928
Junior College (2Yr)	2.8003e+006	262.9299	0.0254	2.5400e-003	264.3220
Manufacturing	2.09852e+007	1,970.3740	0.1904	0.0190	1,980.8065
Office Park	1.17642e+007	1,104.5845	0.1067	0.0107	1,110.4329
Regional Shopping Center	9.27378e+006	870.7486	0.0841	8.4100e-003	875.3589
Total		18,094.1949	1.7482	0.1748	18,189.9980

6.0 Area Detail**6.1 Mitigation Measures Area**

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, 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	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238
Unmitigated	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238

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	9.6354					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	65.0545					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0187	0.1594	0.0678	1.0200e-003		0.0129	0.0129		0.0129	0.0129	0.0000	184.6411	184.6411	3.5400e-003	3.3900e-003	185.7383
Landscaping	1.1667	0.4456	38.6459	2.0500e-003		0.2149	0.2149		0.2149	0.2149	0.0000	63.4615	63.4615	0.0610	0.0000	64.9856
Total	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, 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	9.6354					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	65.0545					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0187	0.1594	0.0678	1.0200e-003		0.0129	0.0129		0.0129	0.0129	0.0000	184.6411	184.6411	3.5400e-003	3.3900e-003	185.7383
Landscaping	1.1667	0.4456	38.6459	2.0500e-003		0.2149	0.2149		0.2149	0.2149	0.0000	63.4615	63.4615	0.0610	0.0000	64.9856
Total	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238

7.0 Water Detail

7.1 Mitigation Measures Water

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2,387.017 1	89.9031	2.1340	5,270.519 9
Unmitigated	2,387.017 1	89.9031	2.1340	5,270.519 9

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	339.062 / 213.756	350.0779	11.0718	0.2632	705.3107
Industrial Park	1639.4 / 0	1,353.0174	53.5004	1.2694	3,068.8098
Junior College (2Yr)	17.3643 / 27.1596	23.2564	0.5675	0.0135	41.4771
Manufacturing	587.509 / 0	484.8785	19.1728	0.4549	1,099.7640
Office Park	106.951 / 65.5508	109.8100	3.4923	0.0830	221.8590
Regional Shopping Center	64.2594 / 39.3848	65.9770	2.0983	0.0499	133.2992
Total		2,387.0171	89.9031	2.1340	5,270.5199

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	339.062 / 213.756	350.0779	11.0718	0.2632	705.3107
Industrial Park	1639.4 / 0	1,353.0174	53.5004	1.2694	3,068.8098
Junior College (2Yr)	17.3643 / 27.1596	23.2564	0.5675	0.0135	41.4771
Manufacturing	587.509 / 0	484.8785	19.1728	0.4549	1,099.7640
Office Park	106.951 / 65.5508	109.8100	3.4923	0.0830	221.8590
Regional Shopping Center	64.2594 / 39.3848	65.9770	2.0983	0.0499	133.2992
Total		2,387.0171	89.9031	2.1340	5,270.5199

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	877.2001	51.8410	0.0000	2,173.226 1
Unmitigated	3,508.800 3	207.3642	0.0000	8,692.904 2

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	2393.84	485.9279	28.7175	0.0000	1,203.8658
Industrial Park	8790.73	1,784.4388	105.4573	0.0000	4,420.8715
Junior College (2Yr)	1480.08	300.4429	17.7557	0.0000	744.3345
Manufacturing	3150.32	639.4865	37.7926	0.0000	1,584.3007
Office Park	559.63	113.5998	6.7136	0.0000	281.4388
Regional Shopping Center	910.9	184.9045	10.9275	0.0000	458.0930
Total		3,508.8003	207.3642	0.0000	8,692.9042

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	598.46	121.4820	7.1794	0.0000	300.9664
Industrial Park	2197.68	446.1097	26.3643	0.0000	1,105.2179
Junior College (2Yr)	370.02	75.1107	4.4389	0.0000	186.0836
Manufacturing	787.58	159.8716	9.4481	0.0000	396.0752
Office Park	139.908	28.4000	1.6784	0.0000	70.3597
Regional Shopping Center	227.725	46.2261	2.7319	0.0000	114.5233
Total		877.2001	51.8411	0.0000	2,173.2261

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

Livermore INP - Future (2040) WP Operational Emissions - Alameda County, Annual

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

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced)
Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Office Park	601.75	1000sqft	13.81	601,750.00	0
Junior College (2Yr)	8,110.00	Student	8.13	354,019.64	0
Industrial Park	7,089.30	1000sqft	162.75	7,089,295.00	0
Manufacturing	2,540.58	1000sqft	58.32	2,540,578.00	0
Apartments Mid Rise	5,204.00	Dwelling Unit	136.95	5,204,000.00	14883
Regional Shopping Center	867.52	1000sqft	19.92	867,519.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	207	CH4 Intensity (lb/MWhr)	0.02	N2O Intensity (lb/MWhr)	0.002

1.3 User Entered Comments & Non-Default Data

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

Project Characteristics - Intensity factors include RPS benefit up to 2030

Land Use - Future (2040) WP LU

Construction Phase - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Off-road Equipment - No const.

Trips and VMT - No const.

Grading - No const.

Architectural Coating - No const.

Vehicle Trips - Trip rates for future (2040) WP scenario

Woodstoves - No woodstoves

Energy Use -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Energy Mitigation - No appliance mitigation

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	5,726,581.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	17,179,742.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Exterior	3,512,700.00	0.00
tblArchitecturalCoating	ConstArea_Residential_Interior	10,538,100.00	0.00
tblConstructionPhase	NumDays	400.00	0.00

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tblConstructionPhase	NumDays	240.00	0.00
tblConstructionPhase	NumDays	620.00	0.00
tblConstructionPhase	NumDays	6,200.00	0.00
tblConstructionPhase	NumDays	440.00	0.00
tblConstructionPhase	NumDays	440.00	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	780.60	1,479.03
tblFireplaces	NumberNoFireplace	208.16	394.41
tblFireplaces	NumberWood	884.68	0.00
tblLandUse	LandUseSquareFeet	7,089,300.00	7,089,295.00
tblLandUse	LandUseSquareFeet	2,540,580.00	2,540,578.00
tblLandUse	LandUseSquareFeet	867,520.00	867,519.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	641.35	207
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.002
tblTripsAndVMT	VendorTripNumber	2,433.00	0.00
tblTripsAndVMT	WorkerTripNumber	8,410.00	0.00
tblTripsAndVMT	WorkerTripNumber	1,682.00	0.00
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TL	7.30	9.38
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	88.60	100.00
tblVehicleTrips	CC_TTP	28.00	100.00
tblVehicleTrips	CC_TTP	48.00	100.00
tblVehicleTrips	CC_TTP	64.70	100.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
tblVehicleTrips	CNW_TL	7.30	0.00
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Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

tblVehicleTrips	CNW_TTP	13.00	0.00
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tblVehicleTrips	CW_TTP	59.00	0.00
tblVehicleTrips	CW_TTP	33.00	0.00
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tblVehicleTrips	DV_TP	11.00	0.00
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tblVehicleTrips	HO_TL	5.70	0.00
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tblVehicleTrips	PB_TP	3.00	0.00
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tblVehicleTrips	PB_TP	1.00	0.00
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tblVehicleTrips	PR_TP	82.00	100.00
tblVehicleTrips	PR_TP	54.00	100.00
tblVehicleTrips	ST_TR	6.39	6.18
tblVehicleTrips	ST_TR	2.49	6.49
tblVehicleTrips	ST_TR	0.42	0.90
tblVehicleTrips	ST_TR	1.49	3.95
tblVehicleTrips	ST_TR	1.64	9.26
tblVehicleTrips	ST_TR	49.97	33.28
tblVehicleTrips	SU_TR	5.86	6.18
tblVehicleTrips	SU_TR	0.73	6.49
tblVehicleTrips	SU_TR	0.04	0.90
tblVehicleTrips	SU_TR	0.62	3.95
tblVehicleTrips	SU_TR	0.76	9.26
tblVehicleTrips	SU_TR	25.24	33.28
tblVehicleTrips	WD_TR	6.65	6.18
tblVehicleTrips	WD_TR	6.83	6.49
tblVehicleTrips	WD_TR	1.23	0.90
tblVehicleTrips	WD_TR	3.82	3.95
tblVehicleTrips	WD_TR	11.42	9.26

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

2.1 Overall Construction

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					
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2046	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2048	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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)
		Highest		

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, 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	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238
Energy	1.3553	12.1883	9.3796	0.0739		0.9364	0.9364		0.9364	0.9364	0.0000	31,506.6213	31,506.6213	2.0053	0.4207	31,682.1277
Mobile	19.6113	193.7051	243.2274	1.6264	165.9559	0.6693	166.6252	44.5814	0.6263	45.2077	0.0000	151,505.2168	151,505.2168	4.8597	0.0000	151,626.7083
Waste						0.0000	0.0000		0.0000	0.0000	3,508.8003	0.0000	3,508.8003	207.3642	0.0000	8,692.9042
Water						0.0000	0.0000		0.0000	0.0000	873.8905	1,513.1267	2,387.0171	89.9031	2.1340	5,270.5199
Total	96.8419	206.4984	291.3207	1.7034	165.9559	1.8335	167.7893	44.5814	1.7904	46.3719	4,382.6908	184,773.0672	189,155.7580	304.1967	2.5581	197,522.9839

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, 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	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238
Energy	1.3553	12.1883	9.3796	0.0739		0.9364	0.9364		0.9364	0.9364	0.0000	31,506.6213	31,506.6213	2.0053	0.4207	31,682.1277
Mobile	18.9240	189.0726	230.6563	1.5343	155.6424	0.6314	156.2738	41.8109	0.5908	42.4016	0.0000	142,950.9220	142,950.9220	4.6709	0.0000	143,067.6943
Waste						0.0000	0.0000		0.0000	0.0000	526.3200	0.0000	526.3200	31.1046	0.0000	1,303.9356
Water						0.0000	0.0000		0.0000	0.0000	742.8069	1,291.8405	2,034.6474	76.4182	1.8139	4,485.6548
Total	96.1546	201.8660	278.7496	1.6113	155.6424	1.7956	157.4379	41.8109	1.7549	43.5658	1,269.1269	175,997.4863	177,266.6132	114.2635	2.2380	180,790.1362

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.71	2.24	4.32	5.40	6.21	2.07	6.17	6.21	1.98	6.05	71.04	4.75	6.29	62.44	12.51	8.47

3.0 Construction Detail

Construction Phase

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/6/2017	11/5/2017	5	0	
2	Site Preparation	Site Preparation	5/18/2019	5/17/2019	5	0	
3	Grading	Grading	4/18/2020	4/17/2020	5	0	
4	Building Construction	Building Construction	9/3/2022	9/2/2022	5	0	
5	Paving	Paving	6/9/2046	6/8/2046	5	0	
6	Architectural Coating	Architectural Coating	2/15/2048	2/14/2048	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	0	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	0	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Grading	Excavators	0	8.00	158	0.38
Grading	Graders	0	8.00	187	0.41
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Scrapers	0	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	0	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	0	7.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	0	8.00	132	0.36
Paving	Rollers	0	8.00	80	0.38
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

3.7 Architectural Coating - 2048

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Integrate Below Market Rate Housing

Provide Traffic Calming Measures

Expand Transit Network

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, 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	18.9240	189.0726	230.6563	1.5343	155.6424	0.6314	156.2738	41.8109	0.5908	42.4016	0.0000	142,950.9220	142,950.9220	4.6709	0.0000	143,067.6943
Unmitigated	19.6113	193.7051	243.2274	1.6264	165.9559	0.6693	166.6252	44.5814	0.6263	45.2077	0.0000	151,505.2168	151,505.2168	4.8597	0.0000	151,626.7083

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	32,160.72	32,160.72	32160.72	109,806,990	102,982,909
Industrial Park	46,009.56	46,009.56	46009.56	157,091,351	147,328,730
Junior College (2Yr)	7,299.00	7,299.00	7299.00	24,921,122	23,372,370
Manufacturing	10,035.29	10,035.29	10035.29	34,263,695	32,134,338
Office Park	5,572.21	5,572.21	5572.21	19,025,291	17,842,943
Regional Shopping Center	28,871.07	28,871.07	28871.07	98,575,057	92,448,998
Total	129,947.84	129,947.84	129,947.84	443,683,504	416,110,288

4.3 Trip Type Information

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

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	9.38	0.00	0.00	100.00	0.00	0.00	100	0	0
Industrial Park	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Junior College (2Yr)	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Manufacturing	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Office Park	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0
Regional Shopping Center	0.00	9.38	0.00	0.00	100.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Industrial Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Junior College (2Yr)	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Manufacturing	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Office Park	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633
Regional Shopping Center	0.564354	0.034948	0.188156	0.101714	0.011079	0.005040	0.028641	0.055840	0.002376	0.001564	0.005216	0.000439	0.000633

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, 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					
Electricity Mitigated							0.0000	0.0000		0.0000	0.0000	18,094.1949	18,094.1949	1.7482	0.1748	18,189.9980
Electricity Unmitigated							0.0000	0.0000		0.0000	0.0000	18,094.1949	18,094.1949	1.7482	0.1748	18,189.9980
NaturalGas Mitigated	1.3553	12.1883	9.3796	0.0739			0.9364	0.9364		0.9364	0.9364	13,412.4264	13,412.4264	0.2571	0.2459	13,492.1297
NaturalGas Unmitigated	1.3553	12.1883	9.3796	0.0739			0.9364	0.9364		0.9364	0.9364	13,412.4264	13,412.4264	0.2571	0.2459	13,492.1297

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, 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	4.49597e+007	0.2424	2.0717	0.8816	0.0132		0.1675	0.1675		0.1675	0.1675	0.0000	2,399.2207	2,399.2207	0.0460	0.0440	2,413.4781
Industrial Park	1.16052e+008	0.6258	5.6888	4.7786	0.0341		0.4324	0.4324		0.4324	0.4324	0.0000	6,192.9638	6,192.9638	0.1187	0.1135	6,229.7655
Junior College (2Yr)	8.54249e+006	0.0461	0.4188	0.3518	2.5100e-003		0.0318	0.0318		0.0318	0.0318	0.0000	455.8600	455.8600	8.7400e-003	8.3600e-003	458.5690
Manufacturing	6.70204e+007	0.3614	3.2853	2.7597	0.0197		0.2497	0.2497		0.2497	0.2497	0.0000	3,576.4663	3,576.4663	0.0686	0.0656	3,597.7195
Office Park	1.2709e+007	0.0685	0.6230	0.5233	3.7400e-003		0.0474	0.0474		0.0474	0.0474	0.0000	678.1985	678.1985	0.0130	0.0124	682.2287
Regional Shopping Center	2.05602e+006	0.0111	0.1008	0.0847	6.0000e-004		7.6600e-003	7.6600e-003		7.6600e-003	7.6600e-003	0.0000	109.7171	109.7171	2.1000e-003	2.0100e-003	110.3691
Total		1.3553	12.1883	9.3796	0.0739		0.9364	0.9364		0.9364	0.9364	0.0000	13,412.4264	13,412.4264	0.2571	0.2459	13,492.1298

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	4.49597e+007	0.2424	2.0717	0.8816	0.0132		0.1675	0.1675		0.1675	0.1675	0.0000	2,399.2207	2,399.2207	0.0460	0.0440	2,413.4781
Industrial Park	1.16052e+008	0.6258	5.6888	4.7786	0.0341		0.4324	0.4324		0.4324	0.4324	0.0000	6,192.9638	6,192.9638	0.1187	0.1135	6,229.7655
Junior College (2Yr)	8.54249e+006	0.0461	0.4188	0.3518	2.5100e-003		0.0318	0.0318		0.0318	0.0318	0.0000	455.8600	455.8600	8.7400e-003	8.3600e-003	458.5690
Manufacturing	6.70204e+007	0.3614	3.2853	2.7597	0.0197		0.2497	0.2497		0.2497	0.2497	0.0000	3,576.4663	3,576.4663	0.0686	0.0656	3,597.7195
Office Park	1.2709e+007	0.0685	0.6230	0.5233	3.7400e-003		0.0474	0.0474		0.0474	0.0474	0.0000	678.1985	678.1985	0.0130	0.0124	682.2287
Regional Shopping Center	2.05602e+006	0.0111	0.1008	0.0847	6.0000e-004		7.6600e-003	7.6600e-003		7.6600e-003	7.6600e-003	0.0000	109.7171	109.7171	2.1000e-003	2.0100e-003	110.3691
Total		1.3553	12.1883	9.3796	0.0739		0.9364	0.9364		0.9364	0.9364	0.0000	13,412.4264	13,412.4264	0.2571	0.2459	13,492.1298

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, 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	2.14839e+007	2,017.2043	0.1949	0.0195	2,027.8848
Industrial Park	1.26402e+008	11,868.3536	1.1467	0.1147	11,931.1928
Junior College (2Yr)	2.8003e+006	262.9299	0.0254	2.5400e-003	264.3220
Manufacturing	2.09852e+007	1,970.3740	0.1904	0.0190	1,980.8065
Office Park	1.17642e+007	1,104.5845	0.1067	0.0107	1,110.4329
Regional Shopping Center	9.27378e+006	870.7486	0.0841	8.4100e-003	875.3589
Total		18,094.1949	1.7482	0.1748	18,189.9980

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

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

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	2.14839e+007	2,017.2043	0.1949	0.0195	2,027.8848
Industrial Park	1.26402e+008	11,868.3536	1.1467	0.1147	11,931.1928
Junior College (2Yr)	2.8003e+006	262.9299	0.0254	2.5400e-003	264.3220
Manufacturing	2.09852e+007	1,970.3740	0.1904	0.0190	1,980.8065
Office Park	1.17642e+007	1,104.5845	0.1067	0.0107	1,110.4329
Regional Shopping Center	9.27378e+006	870.7486	0.0841	8.4100e-003	875.3589
Total		18,094.1949	1.7482	0.1748	18,189.9980

6.0 Area Detail**6.1 Mitigation Measures Area**

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, 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	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238
Unmitigated	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238

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	9.6354					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	65.0545					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0187	0.1594	0.0678	1.0200e-003		0.0129	0.0129		0.0129	0.0129	0.0000	184.6411	184.6411	3.5400e-003	3.3900e-003	185.7383
Landscaping	1.1667	0.4456	38.6459	2.0500e-003		0.2149	0.2149		0.2149	0.2149	0.0000	63.4615	63.4615	0.0610	0.0000	64.9856
Total	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238

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6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	9.6354					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	65.0545					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0187	0.1594	0.0678	1.0200e-003		0.0129	0.0129		0.0129	0.0129	0.0000	184.6411	184.6411	3.5400e-003	3.3900e-003	185.7383
Landscaping	1.1667	0.4456	38.6459	2.0500e-003		0.2149	0.2149		0.2149	0.2149	0.0000	63.4615	63.4615	0.0610	0.0000	64.9856
Total	75.8753	0.6051	38.7138	3.0700e-003		0.2278	0.2278		0.2278	0.2278	0.0000	248.1025	248.1025	0.0645	3.3900e-003	250.7238

7.0 Water Detail**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2,034.647 4	76.4182	1.8139	4,485.654 8
Unmitigated	2,387.017 1	89.9031	2.1340	5,270.519 9

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	339.062 / 213.756	350.0779	11.0718	0.2632	705.3107
Industrial Park	1639.4 / 0	1,353.0174	53.5004	1.2694	3,068.8098
Junior College (2Yr)	17.3643 / 27.1596	23.2564	0.5675	0.0135	41.4771
Manufacturing	587.509 / 0	484.8785	19.1728	0.4549	1,099.7640
Office Park	106.951 / 65.5508	109.8100	3.4923	0.0830	221.8590
Regional Shopping Center	64.2594 / 39.3848	65.9770	2.0983	0.0499	133.2992
Total		2,387.0171	89.9031	2.1340	5,270.5199

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	288.202 / 192.381	301.0785	9.4113	0.2238	603.0450
Industrial Park	1393.49 / 0	1,150.0648	45.4753	1.0790	2,608.4884
Junior College (2Yr)	14.7597 / 24.4436	20.2142	0.4824	0.0115	35.7042
Manufacturing	499.383 / 0	412.1467	16.2969	0.3867	934.7994
Office Park	90.9086 / 58.9957	94.4156	2.9686	0.0706	189.6629
Regional Shopping Center	54.6205 / 35.4463	56.7276	1.7836	0.0424	113.9549
Total		2,034.6474	76.4182	1.8140	4,485.6548

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	526.3200	31.1046	0.0000	1,303.9356
Unmitigated	3,508.8003	207.3642	0.0000	8,692.9042

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	2393.84	485.9279	28.7175	0.0000	1,203.8658
Industrial Park	8790.73	1,784.4388	105.4573	0.0000	4,420.8715
Junior College (2Yr)	1480.08	300.4429	17.7557	0.0000	744.3345
Manufacturing	3150.32	639.4865	37.7926	0.0000	1,584.3007
Office Park	559.63	113.5998	6.7136	0.0000	281.4388
Regional Shopping Center	910.9	184.9045	10.9275	0.0000	458.0930
Total		3,508.8003	207.3642	0.0000	8,692.9042

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	359.076	72.8892	4.3076	0.0000	180.5799
Industrial Park	1318.61	267.6658	15.8186	0.0000	663.1307
Junior College (2Yr)	222.012	45.0664	2.6634	0.0000	111.6502
Manufacturing	472.548	95.9230	5.6689	0.0000	237.6451
Office Park	83.9445	17.0400	1.0070	0.0000	42.2158
Regional Shopping Center	136.635	27.7357	1.6391	0.0000	68.7140
Total		526.3200	31.1046	0.0000	1,303.9356

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

Livermore INP - Future (2040) WP Operational Emissions with Mitigation (Reduced) - Alameda County, Annual

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

**Derivation of GHG Service Population Thresholds for Plans for 2020-2050
For BAAQMD**

Derivation of GHG Service Population Thresholds for Plans for 2020 - 2050 for BAAQMD

	GHGs - All (1)	GHGs Land Use Sector (2)	Population (3)	Employment (3)	SP	GHG/SP Plans	GHG/SP Projects	Notes
2020	67,100,000	48,400,000	5,776,082	4,297,245	10,073,327	6.66	4.80	GHG = 1990 Emissions/2020 Target
2025	53,680,000	38,720,000	6,021,278	4,421,408	10,442,686	5.14	3.71	GHG = 20% below 1990 Target per SB 32
2030	40,260,000	29,040,000	6,277,390	4,550,048	10,827,438	3.72	2.68	GHG = 40% below 1990 Target per SB 32
2040	26,840,000	19,360,000	6,847,160	4,898,060	11,745,220	2.29	1.65	GHG = 60% below 1990 Target/interpolated between 2030 and 2050
2050	13,420,000	9,680,000	7,416,930	5,246,072	12,663,002	1.06	0.76	GHG = 80% below 1990 Target per S-03-05

1. 2020 GHG emissions target = 1990 emissions estimate in BAAQMD 2011, Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011

2. 2020 GHG emissions target = 1990 emissions estimate for Land Use Sector in BAAQMD 2017. CEQA Air Quality Guidelines. May

3. ABAG 2013 Projections, 2020 - 2040 (extrapolated to 2050). BAAQMD includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara and portions of Solano and Sonoma counties. Solano and Sonoma cities within District included. Unincorporated population and jobs in Solano and Sonoma counties apportioned based on portion of incorporated population or jobs within District compared to all incorporated areas.

Calculation of 1990 Land Use Sector GHG Emissions

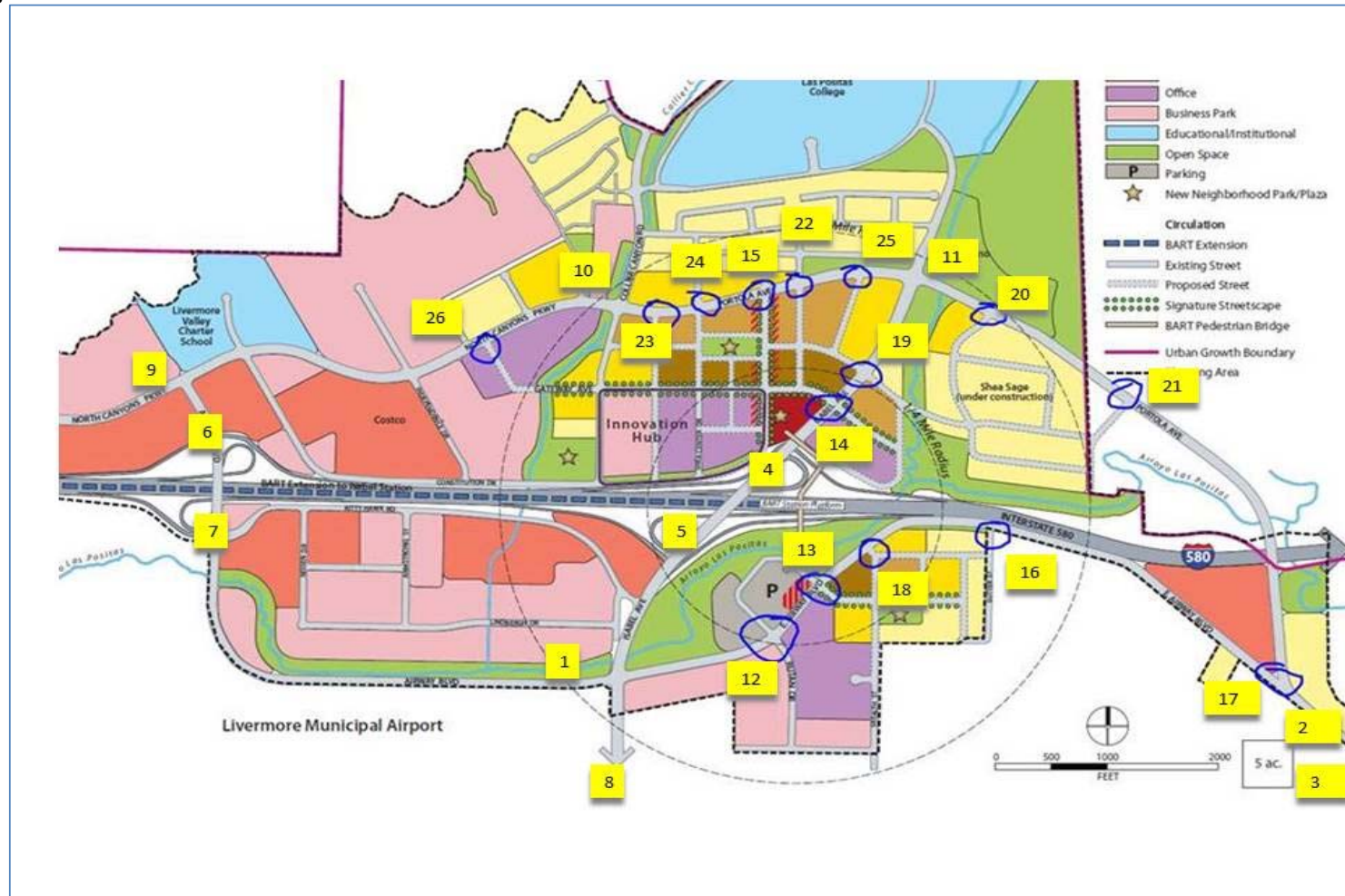
Source	Total	Subtractions	LU Sector	Notes
Industrial/Commercial	21.0	13.8	7.2	Removed refineries and cement manufacture
Residential Fuel Usage	7.0	0.0	7.0	
Electricity/Co-Gen	8.4	0.0	8.4	Industrial electricity not removed.
Off-Road	0.9	0.3	0.6	Removed industrial equipment.
Transportation	28.6	3.4	25.2	Removed ships, boats, aircraft, and locomotives.
Agriculture/Farming	1.2	1.2	0.0	Removed agriculture and farming.
TOTAL	67.1	18.7	48.4	

Source: BAAQMD 2011, Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011

Peak Hour Turning Movement Volumes

Data from Kittleson

Intersection Figure



Turning Movement Volumes

Isabel INP

Existing AM

#	Name	INTID	Existing or Future?	Northbound			Southbound			Eastbound			Westbound			sum
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Isabel Avenue & Airway Boulevard	1	E	318	1075	22	231	1142	15	0	56	174	128	210	100	3471
2	Murrieta Boulevard & Portola Avenue	2	E	192	6	144	1	3	0	0	332	86	272	1208	1	2245
3	Livermore Avenue & Portola Avenue	3	E	214	396	72	120	549	320	225	254	79	31	704	85	3049
4	I-580 WB Ramps & Isabel Avenue	4	E	0	494	0	0	373	288	0	0	0	652	0	302	2109
5	I-580 EB Ramps & Isabel Avenue	5	E	0	726	447	0	928	116	200	0	385	0	0	0	2802
6	I-580 WB Ramps & Airway Boulevard	6	E	0	905	343	0	267	571	0	0	0	34	25	50	2195
7	I-580 EB Ramps & Airway Boulevard	7	E	24	506	160	78	108	132	643	194	161	22	32	103	2163
8	Isabel Avenue & Jack London Boulevard	8	E	259	785	69	166	906	309	30	47	35	135	677	340	3758
9	Airway Boulevard & North Canyons Parkway	9	E	49	0	836	0	0	0	0	4	12	721	11	0	1633
10	Collier Canyon Road & North Canyons Parkway	10	E	7	1	31	61	6	65	151	255	54	184	793	73	1681
11	Isabel Avenue & Portola Avenue	11	E	491	302	47	33	103	2	2	194	227	288	568	138	2395
12	Rutan Drive & E. Airway Boulevard	12	E	80	0	10	0	0	0	0	145	20	10	348	0	613
13	BART Access & E. Airway Boulevard		Future													0
14	Isabel Avenue & BART Parking (North)		Future													0
15	Portola Avenue & Main Street		Future													0
16	Sutter Street & E. Airway Boulevard	16	E	65	0	14	0	0	0	0	81	18	8	273	0	459
17	Portola Avenue & E. Airway Boulevard	17	E	288	1112	0	0	291	5	7	0	127	0	0	0	1830
18	Stealth Street & E. Airway Boulevard		Future													0
19	Isabel Avenue & INP Road		Future													0
20	Portola Avenue & Tranquility Circle	20	E	139	0	62	0	0	0	0	92	76	34	696	0	1099
21	Portola Avenue & Sandalwood Drive	21	E	0	0	10	0	0	0	0	144	10	0	730	0	894
22	Portola Avenue & Montage Drive/Road 3		Future													0
23	Portola Avenue & Road 1		Future													0
24	Portola Avenue & Road 2		Future													0
25	Portola Avenue & Road 4		Future													0
26	Gateway Drive & North Canyons Parkway		Future													0
			Sum	2126	6308	2267	690	4676	1823	1258	1798	1464	2519	6275	1192	32396

Turning Movement Volumes
 Isabel INP
 Existing PM

#	Name	INTID	Existing or Future?	Northbound			Southbound			Eastbound			Westbound			sum
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Isabel Avenue & Airway Boulevard	1	E	201	1023	69	265	1352	15	8	110	345	27	33	201	3649
2	Murrieta Boulevard & Portola Avenue	2	E	125	2	305	7	1	3	2	884	107	242	441	2	2121
3	Livermore Avenue & Portola Avenue	3	E	110	549	43	207	761	403	411	510	113	25	304	61	3497
4	I-580 WB Ramps & Isabel Avenue	4	E	0	364	0	0	494	264	0	0	0	680	0	159	1961
5	I-580 EB Ramps & Isabel Avenue	5	E	0	697	618	0	885	262	182	0	344	0	0	0	2988
6	I-580 WB Ramps & Airway Boulevard	6	E	0	667	236	0	287	667	0	0	0	64	1	167	2089
7	I-580 EB Ramps & Airway Boulevard	7	E	37	199	126	122	115	106	535	219	349	14	86	182	2090
8	Isabel Avenue & Jack London Boulevard	8	E	45	874	134	377	1170	44	154	647	253	119	129	300	4246
9	Airway Boulevard & North Canyons Parkway	9	E	49	0	700	0	0	0	0	17	82	810	11	0	1669
10	Collier Canyon Road & North Canyons Parkway	10	E	22	7	145	87	4	133	181	496	7	18	178	60	1338
11	Isabel Avenue & Portola Avenue	11	E	182	267	103	97	194	6	6	307	442	176	125	88	1993
12	Rutan Drive & E. Airway Boulevard	12	E	40	0	10	0	0	0	0	470	404	10	141	0	1075
13	BART Access & E. Airway Boulevard		Future													0
14	Isabel Avenue & BART Parking (North)		Future													0
15	Portola Avenue & Main Street		Future													0
16	Sutter Street & E. Airway Boulevard	16	E	22	0	18	0	0	0	0	350	63	19	74	0	546
17	Portola Avenue & E. Airway Boulevard	17	E	119	450	0	0	586	8	8	0	407	0	0	0	1578
18	Stealth Street & E. Airway Boulevard		Future													0
19	Isabel Avenue & INP Road		Future													0
20	Portola Avenue & Tranquility Circle	20	E	196	0	87	13	0	29	29	435	242	108	166	13	1318
21	Portola Avenue & Sandalwood Drive	21	E	0	0	10	0	0	0	0	525	10	0	287	0	832
22	Portola Avenue & Montage Drive/Road 3		Future													0
23	Portola Avenue & Road 1		Future													0
24	Portola Avenue & Road 2		Future													0
25	Portola Avenue & Road 4		Future													0
26	Gateway Drive & North Canyons Parkway		Future													0
Sum				1148	5099	2604	1175	5849	1940	1516	4970	3168	2312	1976	1233	32990

Turning Movement Volumes
 Isabel INP
 2025 NOP AM REV

new results for ICF

#	Name	INTID	Existing or Future?	Northbound			Southbound			Eastbound			Westbound			sum
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Isabel Avenue & Airway Boulevard	1	E	318	1075	23	241	1298	31	0	56	186	129	210	100	3667
2	Murrieta Boulevard & Portola Avenue	2	E	190	6	146	1	3	0	0	355	90	270	1210	1	2272
3	Livermore Avenue & Portola Avenue	3	E	321	430	84	102	546	347	214	260	95	29	728	64	3220
4	I-580 WB Ramps & Isabel Avenue	4	E	0	494	0	0	459	577	0	0	0	652	0	387	2569
5	I-580 EB Ramps & Isabel Avenue	5	E	0	722	530	0	932	238	204	0	456	0	0	0	3082
6	I-580 WB Ramps & Airway Boulevard	6	E	0	1280	343	0	282	554	0	0	0	63	42	762	3326
7	I-580 EB Ramps & Airway Boulevard	7	E	26	507	158	83	117	152	644	191	163	22	34	101	2198
8	Isabel Avenue & Jack London Boulevard	8	E	353	862	97	156	1128	280	26	53	53	208	760	307	4283
9	Airway Boulevard & North Canyons Parkway	9	E	1082	0	868	0	0	0	0	54	78	689	462	0	3233
10	Collier Canyon Road & North Canyons Parkway	10	E	10	1	30	87	12	140	184	240	71	175	819	64	1833
11	Isabel Avenue & Portola Avenue	11	E	478	296	84	45	169	1	1	179	252	662	591	145	2903
12	Rutan Drive & E. Airway Boulevard	12	E	82	0	10	10	0	10	0	145	20	10	627	0	914
13	BART Access & E. Airway Boulevard		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Isabel Avenue & BART Parking (North)		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Portola Avenue & Main Street		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Sutter Street & E. Airway Boulevard	16	E	65	0	14	0	0	0	0	81	18	39	564	0	781
17	Portola Avenue & E. Airway Boulevard	17	E	612	788	0	0	321	5	7	0	127	0	0	0	1860
18	Stealth Street & E. Airway Boulevard		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Isabel Avenue & INP Road		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Portola Avenue & Tranquility Circle	20	E	233	0	79	0	0	0	0	101	87	45	696	0	1241
21	Portola Avenue & Sandalwood Drive	21	E	0	0	10	0	0	0	0	144	10	0	730	0	894
22	Portola Avenue & Montage Drive/Road 3		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Portola Avenue & Road 1		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Portola Avenue & Road 2		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Portola Avenue & Road 4		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Gateway Drive & North Canyons Parkway		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum				3770	6461	2476	725	5267	2335	1280	1859	1706	2993	7473	1931	38276

Turning Movement Volumes
 Isabel INP
 2025 NOP PM

#	Name	INTID	Existing or Future?	Northbound			Southbound			Eastbound			Westbound			sum
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Isabel Avenue & Airway Boulevard	1	E	321	1030	98	267	1352	15	8	110	527	34	51	201	4014
2	Murrieta Boulevard & Portola Avenue	2	E	121	5	317	4	7	0	0	875	121	222	528	1	2201
3	Livermore Avenue & Portola Avenue	3	E	160	495	77	215	858	399	495	480	130	17	310	63	3699
4	I-580 WB Ramps & Isabel Avenue	4	E	0	363	0	0	536	378	0	0	0	679	0	217	2173
5	I-580 EB Ramps & Isabel Avenue	5	E	0	693	713	0	889	579	186	0	347	0	0	0	3407
6	I-580 WB Ramps & Airway Boulevard	6	E	0	696	336	0	540	640	0	0	0	68	28	155	2463
7	I-580 EB Ramps & Airway Boulevard	7	E	26	331	137	105	235	224	573	226	304	65	74	143	2443
8	Isabel Avenue & Jack London Boulevard	8	E	88	1081	331	461	1250	61	125	679	251	203	145	295	4970
9	Airway Boulevard & North Canyons Parkway	9	E	47	0	744	0	0	0	0	522	293	782	68	0	2456
10	Collier Canyon Road & North Canyons Parkway	10	E	24	4	166	134	2	91	327	753	26	15	246	26	1814
11	Isabel Avenue & Portola Avenue	11	E	192	348	86	122	260	2	4	597	478	243	149	107	2588
12	Rutan Drive & E. Airway Boulevard	12	E	41	0	17	0	0	0	0	470	42	10	141	0	721
13	BART Access & E. Airway Boulevard		Future													0
14	Isabel Avenue & BART Parking (North)		Future													0
15	Portola Avenue & Main Street		Future													0
16	Sutter Street & E. Airway Boulevard	16	E	22	0	37	0	0	0	0	350	63	19	74	0	565
17	Portola Avenue & E. Airway Boulevard	17	E	119	533	0	0	663	8	13	0	407	0	0	0	1743
18	Stealth Street & E. Airway Boulevard		Future													0
19	Isabel Avenue & INP Road		Future													0
20	Portola Avenue & Tranquility Circle	20	E	233	0	116	13	0	29	29	444	336	160	198	13	1571
21	Portola Avenue & Sandalwood Drive	21	E	0	0	10	0	0	0	0	525	10	0	287	0	832
22	Portola Avenue & Montage Drive/Road 3		Future													0
23	Portola Avenue & Road 1		Future													0
24	Portola Avenue & Road 2		Future													0
25	Portola Avenue & Road 4		Future													0
26	Gateway Drive & North Canyons Parkway		Future													0
			Sum	1394	5579	3185	1321	6592	2426	1760	6031	3335	2517	2299	1221	37660

Turning Movement Volumes
 Isabel INP
 2025 + Proj AM REV

new results for ICF

#	Name	INTID	Existing or Future?	Northbound			Southbound			Eastbound			Westbound			sum
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Isabel Avenue & Airway Boulevard	1	E	318	1162	257	1001	1142	15	0	120	328	180	230	220	4973
2	Murrieta Boulevard & Portola Avenue	2	E	190	6	146	1	3	0	0	542	98	269	1671	1	2927
3	Livermore Avenue & Portola Avenue	3	E	335	433	63	106	568	504	323	293	106	23	794	67	3615
4	I-580 WB Ramps & Isabel Avenue	4	E	0	493	0	0	505	579	0	0	0	1278	0	405	3260
5	I-580 EB Ramps & Isabel Avenue	5	E	0	730	639	0	1609	268	196	0	388	0	0	0	3830
6	I-580 WB Ramps & Airway Boulevard	6	E	0	1188	343	0	306	551	0	0	0	73	45	543	3049
7	I-580 EB Ramps & Airway Boulevard	7	E	31	504	161	69	173	151	660	201	301	34	36	87	2408
8	Isabel Avenue & Jack London Boulevard	8	E	352	929	98	160	1254	286	28	51	55	219	736	322	4490
9	Airway Boulevard & North Canyons Parkway	9	E	746	0	883	0	0	0	0	64	77	695	384	0	2849
10	Collier Canyon Road & North Canyons Parkway	10	E	12	1	29	99	16	192	201	237	81	170	832	60	1930
11	Isabel Avenue & Portola Avenue	11	E	480	296	80	62	221	2	1	188	251	601	594	145	2921
12	Rutan Drive & E. Airway Boulevard	12	E	84	2	11	56	1	127	380	336	20	7	540	105	1669
13	BART Access & E. Airway Boulevard		Future	0	0	0	111	0	64	190	213	0	0	588	211	1377
14	Isabel Avenue & BART Parking (North)		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Portola Avenue & Main Street		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Sutter Street & E. Airway Boulevard	16	E	67	0	37	0	0	0	0	249	19	30	724	0	1126
17	Portola Avenue & E. Airway Boulevard	17	E	758	788	0	0	347	10	28	0	296	0	0	0	2227
18	Stealth Street & E. Airway Boulevard		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Isabel Avenue & INP Road		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Portola Avenue & Tranquility Circle	20	E	166	0	65	0	0	0	0	130	80	36	613	0	1090
21	Portola Avenue & Sandalwood Drive	21	E	0	0	10	0	0	0	0	144	10	0	730	0	894
22	Portola Avenue & Montage Drive/Road 3		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Portola Avenue & Road 1		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Portola Avenue & Road 2		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Portola Avenue & Road 4		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Gateway Drive & North Canyons Parkway		Future	0	0	0	0	0	0	0	0	0	0	0	0	0
Sum				3539	6532	2822	1665	6145	2749	2007	2768	2110	3615	8517	2166	44635

Turning Movement Volumes
 Isabel INP
 2025 + Proj PM

#	Name	INTID	Existing or Future?	Northbound			Southbound			Eastbound			Westbound			sum
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Isabel Avenue & Airway Boulevard	1	E	395	1152	148	387	1352	15	8	110	543	203	141	818	5272
2	Murrieta Boulevard & Portola Avenue	2	E	135	5	335	5	6	0	0	1622	143	209	827	1	3288
3	Livermore Avenue & Portola Avenue	3	E	199	582	76	230	873	543	881	711	183	15	359	68	4720
4	I-580 WB Ramps & Isabel Avenue	4	E	0	364	0	0	580	443	0	0	0	688	0	251	2326
5	I-580 EB Ramps & Isabel Avenue	5	E	0	652	1258	0	47	602	227	0	300	0	0	0	3086
6	I-580 WB Ramps & Airway Boulevard	6	E	0	698	401	0	586	640	0	0	0	73	28	151	2577
7	I-580 EB Ramps & Airway Boulevard	7	E	49	442	168	92	238	302	572	208	323	61	93	128	2676
8	Isabel Avenue & Jack London Boulevard	8	E	88	1085	354	526	1286	65	121	704	235	199	148	301	5112
9	Airway Boulevard & North Canyons Parkway	9	E	55	0	744	0	0	0	0	393	281	825	66	0	2364
10	Collier Canyon Road & North Canyons Parkway	10	E	30	6	178	127	3	100	396	618	32	19	249	34	1792
11	Isabel Avenue & Portola Avenue	11	E	179	423	72	145	340	2	5	501	440	279	176	164	2726
12	Rutan Drive & E. Airway Boulevard	12	E	34	1	6	439	2	447	177	460	41	11	142	182	1942
13	BART Access & E. Airway Boulevard		Future													0
14	Isabel Avenue & BART Parking (North)		Future													0
15	Portola Avenue & Main Street		Future													0
16	Sutter Street & E. Airway Boulevard	16	E	23	0	25	0	0	0	0	767	64	38	256	0	1173
17	Portola Avenue & E. Airway Boulevard	17	E	307	659	0	0	628	22	27	0	798	0	0	0	2441
18	Stealth Street & E. Airway Boulevard		Future													0
19	Isabel Avenue & INP Road		Future													0
20	Portola Avenue & Tranquility Circle	20	E	212	0	91	13	0	29	29	415	270	123	337	13	1532
21	Portola Avenue & Sandalwood Drive	21	E	0	0	10	0	0	0	0	525	10	0	287	0	832
22	Portola Avenue & Montage Drive/Road 3		Future													0
23	Portola Avenue & Road 1		Future													0
24	Portola Avenue & Road 2		Future													0
25	Portola Avenue & Road 4		Future													0
26	Gateway Drive & North Canyons Parkway		Future													0
Sum				1706	6069	3866	1964	5941	3210	2443	7034	3663	2743	3109	2111	43859

Turning Movement Volumes
 Isabel INP
 2040 NOP AM

#	Name	INTID	Existing or Future?	Northbound			Southbound			Eastbound			Westbound			sum
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Isabel Avenue & Airway Boulevard	1	E	318	1088	22	237	1409	25	0	67	275	170	248	100	3959
2	Murrieta Boulevard & Portola Avenue	2	E	192	6	149	1	3	0	0	375	93	272	1216	1	2308
3	Livermore Avenue & Portola Avenue	3	E	251	517	75	148	747	441	255	231	80	33	762	102	3642
4	I-580 WB Ramps & Isabel Avenue	4	E	0	653	0	0	508	399	0	0	0	653	0	569	2782
5	I-580 EB Ramps & Isabel Avenue	5	E	0	744	483	0	973	275	338	0	498	0	0	0	3311
6	I-580 WB Ramps & Airway Boulevard	6	E	0	1275	343	0	296	551	0	0	0	71	45	857	3438
7	I-580 EB Ramps & Airway Boulevard	7	E	40	530	166	65	139	179	672	201	255	28	43	86	2404
8	Isabel Avenue & Jack London Boulevard	8	E	422	919	121	165	1349	284	23	55	62	320	993	358	5071
9	Airway Boulevard & North Canyons Parkway	9	E	943	0	1080	0	0	0	0	103	58	712	853	0	3749
10	Collier Canyon Road & North Canyons Parkway	10	E	20	3	46	73	12	154	265	229	84	164	813	74	1937
11	Isabel Avenue & Portola Avenue	11	E	489	339	99	54	189	2	1	182	240	693	571	156	3015
12	Rutan Drive & E. Airway Boulevard	12	E	85	0	10	0	0	0	0	145	20	10	348	0	618
13	BART Access & E. Airway Boulevard		Future													0
14	Isabel Avenue & BART Parking (North)		Future													0
15	Portola Avenue & Main Street		Future													0
16	Sutter Street & E. Airway Boulevard	16	E	65	0	14	0	0	0	0	84	18	8	310	0	499
17	Portola Avenue & E. Airway Boulevard	17	E	294	1144	0	0	343	14	7	0	127	0	0	0	1929
18	Stealth Street & E. Airway Boulevard		Future													0
19	Isabel Avenue & INP Road		Future													0
20	Portola Avenue & Tranquility Circle	20	E	238	0	90	0	0	0	0	121	94	42	712	0	1297
21	Portola Avenue & Sandalwood Drive	21	E	0	0	10	0	0	0	0	144	10	0	730	0	894
22	Portola Avenue & Montage Drive/Road 3		Future													0
23	Portola Avenue & Road 1		Future													0
24	Portola Avenue & Road 2		Future													0
25	Portola Avenue & Road 4		Future													0
26	Gateway Drive & North Canyons Parkway		Future													0
Sum				3357	7218	2708	743	5968	2324	1561	1937	1914	3176	7644	2303	40853

Turning Movement Volumes
 Isabel INP
 2040 NOP PM

#	Name	INTID	Existing or Future?	Northbound			Southbound			Eastbound			Westbound			sum
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Isabel Avenue & Airway Boulevard	1	E	450	1059	159	268	1352	17	8	110	494	39	80	201	4237
2	Murrieta Boulevard & Portola Avenue	2	E	184	6	423	4	7	0	0	1154	203	269	571	0	2821
3	Livermore Avenue & Portola Avenue	3	E	186	637	97	259	1063	446	718	680	189	19	304	68	4666
4	I-580 WB Ramps & Isabel Avenue	4	E	0	364	0	0	732	582	0	0	0	680	0	383	2741
5	I-580 EB Ramps & Isabel Avenue	5	E	0	689	701	0	928	680	190	0	374	0	0	0	3562
6	I-580 WB Ramps & Airway Boulevard	6	E	0	684	397	0	876	746	0	0	0	143	42	181	3069
7	I-580 EB Ramps & Airway Boulevard	7	E	54	464	160	123	401	467	558	184	361	67	93	122	3054
8	Isabel Avenue & Jack London Boulevard	8	E	137	1332	571	480	1292	57	113	862	316	281	183	294	5918
9	Airway Boulevard & North Canyons Parkway	9	E	54	0	750	0	0	0	0	726	426	1094	105	0	3155
10	Collier Canyon Road & North Canyons Parkway	10	E	67	5	193	133	9	217	404	847	127	24	223	11	2260
11	Isabel Avenue & Portola Avenue	11	E	183	419	238	174	252	1	2	781	423	412	129	117	3131
12	Rutan Drive & E. Airway Boulevard	12	E	54	0	10	0	0	0	0	470	70	10	141	0	755
13	BART Access & E. Airway Boulevard		Future													0
14	Isabel Avenue & BART Parking (North)		Future													0
15	Portola Avenue & Main Street		Future													0
16	Sutter Street & E. Airway Boulevard	16	E	22	0	18	0	0	0	0	350	63	19	75	0	547
17	Portola Avenue & E. Airway Boulevard	17	E	119	739	0	0	1199	8	46	0	407	0	0	0	2518
18	Stealth Street & E. Airway Boulevard		Future													0
19	Isabel Avenue & INP Road		Future													0
20	Portola Avenue & Tranquility Circle	20	E	259	0	104	13	0	29	29	1009	348	178	418	13	2400
21	Portola Avenue & Sandalwood Drive	21	E	0	0	10	0	0	0	0	525	10	0	287	0	832
22	Portola Avenue & Montage Drive/Road 3		Future													0
23	Portola Avenue & Road 1		Future													0
24	Portola Avenue & Road 2		Future													0
25	Portola Avenue & Road 4		Future													0
26	Gateway Drive & North Canyons Parkway		Future													0
Sum				1769	6398	3831	1454	8111	3250	2068	7698	3811	3235	2651	1390	45666

Turning Movement Volumes
 Isabel INP
 2040 + Proj AM

#	Name	INTID	Existing or Future?	Northbound			Southbound			Eastbound			Westbound			sum
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Isabel Avenue & Airway Boulevard	1	E	318	1075	179	697	1292	15	1	147	579	315	383	187	5188
2	Murrieta Boulevard & Portola Avenue	2	E	204	6	181	1	3	0	0	712	147	268	1251	1	2774
3	Livermore Avenue & Portola Avenue	3	E	250	571	62	128	786	465	450	302	126	33	767	114	4054
4	I-580 WB Ramps & Isabel Avenue	4	E	0	826	0	0	819	429	0	0	0	1157	0	658	3889
5	I-580 EB Ramps & Isabel Avenue	5	E	0	812	447	0	1597	460	459	0	401	0	0	0	4176
6	I-580 WB Ramps & Airway Boulevard	6	E	0	1344	343	0	352	546	0	0	0	94	50	739	3468
7	I-580 EB Ramps & Airway Boulevard	7	E	59	532	167	49	205	196	721	216	535	42	48	67	2837
8	Isabel Avenue & Jack London Boulevard	8	E	449	960	117	174	1519	331	26	56	67	301	966	342	5308
9	Airway Boulevard & North Canyons Parkway	9	E	849	0	1137	0	0	0	0	111	54	720	871	0	3742
10	Collier Canyon Road & North Canyons Parkway	10	E	269	18	166	35	17	268	308	158	161	137	876	37	2450
11	Isabel Avenue & Portola Avenue	11	E	501	311	124	74	212	2	1	207	224	676	559	137	3028
12	Rutan Drive & E. Airway Boulevard	12	E	88	4	12	103	1	65	400	607	16	10	683	214	2203
13	BART Access & E. Airway Boulevard	13	Future	280	139	16	205	19	32	200	433	89	6	595	428	2442
14	Isabel Avenue & BART Parking (North)	14	Future	607	839	38	20	1200	59	5	5	349	82	16	20	3240
15	Portola Avenue & Main Street	15	Future	0	0	11	0	0	0	0	359	20	0	945	0	1335
16	Sutter Street & E. Airway Boulevard	16	E	56	0	75	0	0	0	0	641	17	29	772	0	1590
17	Portola Avenue & E. Airway Boulevard	17	E	752	725	0	0	384	49	81	0	511	0	0	0	2502
18	Stealth Street & E. Airway Boulevard	18	Future	224	0	75	0	0	0	0	583	71	23	805	0	1781
19	Isabel Avenue & INP Road	19	Future	303	549	12	6	1077	29	3	12	175	27	14	6	2213
20	Portola Avenue & Tranquility Circle	20	E	211	0	37	0	0	0	0	314	91	40	1161	0	1854
21	Portola Avenue & Sandalwood Drive	21	E	0	0	57	0	0	0	0	341	10	0	1201	0	1609
22	Portola Avenue & Montage Drive/Road 3	22	Future	210	9	22	23	79	113	11	330	29	128	622	27	1603
23	Portola Avenue & Road 1	23	Future	0	0	7	0	0	0	0	351	8	0	1050	0	1416
24	Portola Avenue & Road 2	24	Future	210	9	30	22	79	112	10	327	21	191	728	26	1765
25	Portola Avenue & Road 4	25	Future	0	0	4	0	0	0	0	371	4	0	777	0	1156
26	Gateway Drive & North Canyons Parkway	26	Future	44	4	0	0	5	117	178	223	177	0	1034	0	1782
Sum				5884	8733	3319	1537	9646	3288	2854	6806	3882	4279	16174	3003	69405

Turning Movement Volumes
 Isabel INP
 2040 + Proj PM

#	Name	INTID	Existing or Future?	Northbound			Southbound			Eastbound			Westbound			sum
				NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	
1	Isabel Avenue & Airway Boulevard	1	E	455	1523	308	448	1526	22	8	110	447	214	58	694	5813
2	Murrieta Boulevard & Portola Avenue	2	E	268	5	462	4	7	0	0	1219	216	394	1116	1	3692
3	Livermore Avenue & Portola Avenue	3	E	347	838	158	290	1107	570	679	793	206	27	545	86	5646
4	I-580 WB Ramps & Isabel Avenue	4	E	0	715	0	0	997	997	0	0	0	682	0	472	3863
5	I-580 EB Ramps & Isabel Avenue	5	E	0	1033	1520	0	1103	765	207	0	623	0	0	0	5251
6	I-580 WB Ramps & Airway Boulevard	6	E	0	742	254	0	840	728	0	0	0	267	80	286	3197
7	I-580 EB Ramps & Airway Boulevard	7	E	45	386	150	127	449	432	511	190	402	78	89	116	2975
8	Isabel Avenue & Jack London Boulevard	8	E	185	1820	388	450	1657	106	232	880	442	247	233	380	7020
9	Airway Boulevard & North Canyons Parkway	9	E	52	0	900	0	0	0	0	778	328	1146	124	0	3328
10	Collier Canyon Road & North Canyons Parkway	10	E	163	9	252	75	27	228	472	694	548	70	230	9	2777
11	Isabel Avenue & Portola Avenue	11	E	240	417	530	129	198	0	1	684	395	919	159	109	3781
12	Rutan Drive & E. Airway Boulevard	12	E	32	3	0	192	7	411	76	694	96	42	578	96	2227
13	BART Access & E. Airway Boulevard	13	Future	143	19	13	385	184	205	38	450	398	27	368	192	2422
14	Isabel Avenue & BART Parking (North)	14	Future	565	542	80	63	1677	40	94	24	577	61	20	53	3796
15	Portola Avenue & Main Street	15	Future	0	0	109	0	0	0	0	1025	108	0	535	0	1777
16	Sutter Street & E. Airway Boulevard	16	E	28	0	57	0	0	0	0	507	80	135	553	0	1360
17	Portola Avenue & E. Airway Boulevard	17	E	398	986	0	0	951	290	191	0	727	0	0	0	3543
18	Stealth Street & E. Airway Boulevard	18	Future	114	0	57	0	0	0	0	530	318	108	473	0	1600
19	Isabel Avenue & INP Road	19	Future	282	380	27	21	1471	20	47	43	289	20	27	18	2645
20	Portola Avenue & Tranquility Circle	20	E	237	0	62	13	0	29	29	977	337	145	921	13	2763
21	Portola Avenue & Sandalwood Drive	21	E	0	0	54	0	0	0	0	1042	10	0	1079	0	2185
22	Portola Avenue & Montage Drive/Road 3	22	Future	92	40	216	34	66	34	131	852	151	154	409	121	2300
23	Portola Avenue & Road 1	23	Future	0	0	72	0	0	0	0	978	43	0	309	0	1402
24	Portola Avenue & Road 2	24	Future	92	40	288	34	66	34	131	811	108	232	183	120	2139
25	Portola Avenue & Road 4	25	Future	0	0	36	0	0	0	0	1080	22	0	684	0	1822
26	Gateway Drive & North Canyons Parkway	26	Future	234	15	0	0	14	270	196	950	114	0	279	0	2072
Sum				3972	9513	5993	2265	12347	5181	3043	15311	6985	4968	9052	2766	81396

PG&E Emission Factor Calculation

PG&E Emission Factor Calculation

Utility	EF	Units	% Eligible Renewable	% Hydropower	% Nuclear	Other	Total	Year
PG&E	405	lbs CO2e/MWh	30.0%	6.0%	23.0%	41%	100%	2015

Sources
[http://www.energy.ca.gov/pcl/labels/2015_labels/Pacific_Gas_and_Electric_\(PGandE\).pdf](http://www.energy.ca.gov/pcl/labels/2015_labels/Pacific_Gas_and_Electric_(PGandE).pdf)

http://www.pgecorp.com/corp_responsibility/reports/2017/en02_climate_change.html

https://www.pge.com/includes/docs/pdfs/shared/environment/calculator/pge_ghg_emission_factor_info_sheet.pdf

2015 (actual)	%	EF (lbs CO2/MWh)
Hydro	6%	0
Nuclear	23%	0
Renewable	30%	0
Non-renewable	41%	988
Total	100%	405

2020 Min RPS (33%)	%	EF (lbs CO2/MWh)
Hydro	6%	0
Nuclear	23%	0
Renewable	33%	0
Non-renewable	38%	988
Total	100%	375

2030 Min RPS (50%)	%	EF (lbs CO2/MWh)
Hydro	6%	0
Nuclear	23%	0
Renewable	50%	0
Non-renewable	21%	988
Total	100%	207

Year	2020 Projection	2020 Min RPS
2015	405	405
2016	382	399
2017	359	393
2018	336	387
2019	313	381
2020	290	375
2021		359
2022		342
2023		325
2024		308
2025		291
2026		275
2027		258
2028		241
2029		224
2030		207

Egrid Emission Factor Calculation

eGrid2014 Emission Factors

620 lb CO2/MWh
 0.037 lb CH4/MWh
 0.004 lb N2O/MWh

2014 CA	%	CO2	EF (lb/MWh)			Year	EF (lb/MWh)		
			CH4	N2O	CO2		CH4	N2O	
Hydro	5.40%	0	0	0	2014	620	0.037	0.004	
Nuclear	8.49%	0	0	0	2015	600	0.036	0.004	
Renewable	20.29%	0	0	0	2016	580	0.034	0.004	
Non-renewable	65.82%	942	0.056	0.007	2017	560	0.033	0.004	
Total	100.00%	620	0.037	0.004	2018	540	0.032	0.004	
					2019	520	0.031	0.004	
					2020	500	0.030	0.004	
					2021	484	0.029	0.004	
					2022	468	0.028	0.003	
					2023	452	0.027	0.003	
					2024	436	0.026	0.003	
					2025	420	0.025	0.003	
					2026	404	0.024	0.003	
					2027	388	0.023	0.003	
					2028	372	0.022	0.003	
					2029	356	0.021	0.003	
					2030	340	0.020	0.002	

2020 (RPS = 33%)	%	CO2	EF (lb/MWh)		
			CH4	N2O	
Hydro	5.40%	0	0	0	
Nuclear	8.49%	0	0	0	
Renewable	33.00%	0	0	0	
Non-renewable	53.11%	942	0.056	0.007	
Total	100.00%	500	0.030	0.004	

2030 (RPS = 50%)	%	CO2	EF (lb/MWh)		
			CH4	N2O	
Hydro	5.40%	0	0	0	
Nuclear	8.49%	0	0	0	
Renewable	50.00%	0	0	0	
Non-renewable	36.11%	942	0.056	0.007	
Total	100.00%	340	0.020	0.002	

Project Energy Analysis

Project Energy Calculations

Construction Energy

	fuel	MT	LBS	Gallons	Million BTU
CO2 from diesel - equipment	diesel		0	0	0
CO2 from diesel - trucks	diesel		0	0	0
CO2 from gasoline - commute	gas		0	0	0
Total		0.0	0	0	0

Operational Outputs from CalEEMod

	kbtu of NG/yr	kwh of elec/yr	Annual VMT	Vehicle CO2 (MT/yr)	Gallons/yr.
Existing (2013) Conditions	107,230,110	56,715,790	252,719,164	128666.93	14654547.38
2040 NP Conditions	210,774,790	168,639,730	381,544,469	130210.77	14830384.37
2040 WP Conditions	251,339,610	192,709,380	443,683,504	151505.22	17255719.45

Operational Energy

Existing (2013)

			BTU	million BTU
Electricity	56,715,790	kwh	1.93628E+11	193628
Natural Gas	107,230,110	kbtu	1.0723E+11	107230
VMT	14654547.38	gallons	1.79319E+12	1793189
				2094047

2040 NP

Electricity	168,639,730	kwh	5.75736E+11	575736
Natural Gas	210,774,790	kbtu	2.10775E+11	210775
VMT	14830384.37	gallons	1.81471E+12	1814705
				2601216

2040 WP

Electricity	192,709,380	kwh	6.5791E+11	657910
Natural Gas	251,339,610	kbtu	2.5134E+11	251340
VMT	17255719.45	gallons	2.11148E+12	2111479
				3020728

net	
2040 NP - existing	507169
2040 WP - existing	926681

BTU per kWh

3,414

LBs CO2 per gal diesel

22.5

CR 2017, Transport Fuels, Table 13.1

LBs CO2 per gal gasoline

19.4

CR 2017, Transport Fuels, Table 13.1

LBs per MT

2204.62

Energy Unit

BTU/gal

Gasoline

122,364

USDOE 2014

Diesel

138,490

USDOE 2014

Million

1000000

CO Modeling Output Files

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	X1	Y1	X2	Y2	* TYPE	VPH	(G/MI) (M) (M)
A. EBA	* -1000	-5	0	-5	* AG	463	2.5 0.0 17.0
B. EBD	* 0	-4	1000	-4	* AG	444	2.5 0.0 13.3
C. WBA	* 1000	5	0	5	* AG	261	2.5 0.0 17.0
D. WBD	* 0	2	-1000	2	* AG	249	2.5 0.0 10.0
E. SBA	* -9	1000	-9	0	* AG	1632	2.5 0.0 24.3
F. SBD	* -5	0	-5	-1000	* AG	1724	2.5 0.0 17.0
G. NBA	* 9	-1000	9	0	* AG	1293	2.5 0.0 24.3
H. NBD	* 5	0	5	1000	* AG	1232	2.5 0.0 17.0

III. RECEPTOR LOCATIONS

* COORDINATES (M)			
RECEPTOR	* X	Y	Z
1. R_001	* -21	7	1.8
2. R_002	* 14	14	1.8
3. R_003	* -14	-14	1.8
4. R_004	* 21	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
-----*-----*										
1. R_001	* 169. *	0.6 *	0.1	0.0	0.0	0.0	0.0	0.3	0.2	0.0
2. R_002	* 187. *	0.8 *	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.1
3. R_003	* 5. *	0.8 *	0.1	0.0	0.0	0.0	0.4	0.1	0.0	0.2
4. R_004	* 349. *	0.6 *	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.2

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EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	* X1	Y1	X2	Y2 * TYPE	VPH	(G/MI)	(M) (M)
A. EBA	* -1000	-5	0	-5 * AG	645	2.5	0.0 17.0
B. EBD	* 0	-4	1000	-4 * AG	475	2.5	0.0 13.3
C. WBA	* 1000	5	0	5 * AG	286	2.5	0.0 17.0
D. WBD	* 0	2	-1000	2 * AG	387	2.5	0.0 10.0
E. SBA	* -9	1000	-9	0 * AG	1634	2.5	0.0 24.3
F. SBD	* -5	0	-5	-1000 * AG	1913	2.5	0.0 17.0
G. NBA	* 9	-1000	9	0 * AG	1449	2.5	0.0 24.3
H. NBD	* 5	0	5	1000 * AG	1239	2.5	0.0 17.0

III. RECEPTOR LOCATIONS

* COORDINATES (M)			
RECEPTOR	* X	Y	Z
1. R_001	* -21	7	1.8
2. R_002	* 14	14	1.8
3. R_003	* -14	-14	1.8
4. R_004	* 21	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
-----*										
1. R_001	* 169. *	0.7 *	0.1	0.0	0.0	0.1	0.0	0.4	0.2	0.0
2. R_002	* 187. *	0.8 *	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.1
3. R_003	* 5. *	0.9 *	0.1	0.0	0.0	0.0	0.4	0.1	0.0	0.2
4. R_004	* 276. *	0.7 *	0.2	0.1	0.0	0.1	0.0	0.1	0.2	0.0

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EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	* X1	Y1	X2	Y2 * TYPE	VPH	(G/MI)	(M) (M)
A. EBA	* -1000	-5	0	-5 * AG	661	2.5	0.0 17.0
B. EBD	* 0	-4	1000	-4 * AG	645	2.5	0.0 13.3
C. WBA	* 1000	5	0	5 * AG	1162	2.5	0.0 17.0
D. WBD	* 0	2	-1000	2 * AG	551	2.5	0.0 10.0
E. SBA	* -9	1000	-9	0 * AG	1754	2.5	0.0 24.3
F. SBD	* -5	0	-5	-1000 * AG	2098	2.5	0.0 17.0
G. NBA	* 9	-1000	9	0 * AG	1695	2.5	0.0 24.3
H. NBD	* 5	0	5	1000 * AG	1978	2.5	0.0 17.0

III. RECEPTOR LOCATIONS

* COORDINATES (M)			
RECEPTOR	* X	Y	Z
1. R_001	* -21	7	1.8
2. R_002	* 14	14	1.8
3. R_003	* -14	-14	1.8
4. R_004	* 21	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
-----*-----*										
1. R_001	* 94. *	0.9 *	0.0	0.2	0.3	0.1	0.2	0.0	0.0	0.1
2. R_002	* 187. *	1.1 *	0.0	0.1	0.2	0.0	0.0	0.3	0.4	0.1
3. R_003	* 7. *	1.0 *	0.1	0.0	0.0	0.1	0.4	0.1	0.0	0.3
4. R_004	* 349. *	0.9 *	0.0	0.1	0.1	0.0	0.2	0.0	0.1	0.4

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EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	* X1	Y1	X2	Y2 * TYPE	VPH	(G/MI)	(M) (M)
A. EBA	* -1000	-5	0	-5 * AG	612	2.5	0.0 17.0
B. EBD	* 0	-4	1000	-4 * AG	537	2.5	0.0 13.3
C. WBA	* 1000	5	0	5 * AG	320	2.5	0.0 17.0
D. WBD	* 0	2	-1000	2 * AG	547	2.5	0.0 10.0
E. SBA	* -9	1000	-9	0 * AG	1637	2.5	0.0 24.3
F. SBD	* -5	0	-5	-1000 * AG	1885	2.5	0.0 17.0
G. NBA	* 9	-1000	9	0 * AG	1668	2.5	0.0 24.3
H. NBD	* 5	0	5	1000 * AG	1268	2.5	0.0 17.0

III. RECEPTOR LOCATIONS

* COORDINATES (M)			
RECEPTOR	* X	Y	Z
1. R_001	* -21	7	1.8
2. R_002	* 14	14	1.8
3. R_003	* -14	-14	1.8
4. R_004	* 21	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
1. R_001	* 169. *	0.8 *	0.1	0.0	0.0	0.1	0.0	0.4	0.2	0.0
2. R_002	* 187. *	0.9 *	0.0	0.1	0.0	0.0	0.0	0.3	0.4	0.1
3. R_003	* 5. *	0.9 *	0.1	0.0	0.0	0.1	0.4	0.1	0.0	0.2
4. R_004	* 276. *	0.7 *	0.2	0.1	0.0	0.1	0.0	0.1	0.2	0.0

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EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	* X1	Y1	X2	Y2 * TYPE	VPH	(G/MI)	(M) (M)
A. EBA	* -1000	-5	0	-5 * AG	565	2.5	0.0 17.0
B. EBD	* 0	-4	1000	-4 * AG	866	2.5	0.0 13.3
C. WBA	* 1000	5	0	5 * AG	966	2.5	0.0 17.0
D. WBD	* 0	2	-1000	2 * AG	535	2.5	0.0 10.0
E. SBA	* -9	1000	-9	0 * AG	1996	2.5	0.0 24.3
F. SBD	* -5	0	-5	-1000 * AG	2187	2.5	0.0 17.0
G. NBA	* 9	-1000	9	0 * AG	2286	2.5	0.0 24.3
H. NBD	* 5	0	5	1000 * AG	2225	2.5	0.0 17.0

III. RECEPTOR LOCATIONS

* COORDINATES (M)			
RECEPTOR	* X	Y	Z
1. R_001	* -21	7	1.8
2. R_002	* 14	14	1.8
3. R_003	* -14	-14	1.8
4. R_004	* 21	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
-----*										
1. R_001	* 95. *	1.0 *	0.0	0.2	0.2	0.1	0.2	0.0	0.0	0.1
2. R_002	* 186. *	1.2 *	0.0	0.1	0.1	0.0	0.0	0.3	0.5	0.2
3. R_003	* 7. *	1.1 *	0.1	0.0	0.0	0.1	0.5	0.2	0.0	0.3
4. R_004	* 349. *	1.0 *	0.0	0.1	0.1	0.0	0.2	0.0	0.1	0.4

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EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	* X1	Y1	X2	Y2 * TYPE	VPH	(G/MI)	(M) (M)
A. EBA	* -1000	-7	0	-7 * AG	1034	2.5	0.0 20.6
B. EBD	* 0	-4	1000	-4 * AG	760	2.5	0.0 13.3
C. WBA	* 1000	5	0	5 * AG	390	2.5	0.0 17.0
D. WBD	* 0	4	-1000	4 * AG	817	2.5	0.0 13.3
E. SBA	* -7	1000	-7	0 * AG	1371	2.5	0.0 20.6
F. SBD	* -4	0	-4	-1000 * AG	899	2.5	0.0 13.3
G. NBA	* 5	-1000	5	0 * AG	702	2.5	0.0 17.0
H. NBD	* 4	0	4	1000 * AG	1021	2.5	0.0 13.3

III. RECEPTOR LOCATIONS

RECEPTOR	* COORDINATES (M)		
* X	Y	Z	
1. R_001	* -18	10	1.8
2. R_002	* 10	14	1.8
3. R_003	* -10	-18	1.8
4. R_004	* 14	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
1. R_001	* 98. *	0.7 *	0.0	0.2	0.1	0.1	0.2	0.0	0.0	0.1
2. R_002	* 261. *	0.7 *	0.2	0.0	0.0	0.2	0.1	0.0	0.0	0.2
3. R_003	* 5. *	0.9 *	0.1	0.0	0.0	0.1	0.3	0.1	0.0	0.2
4. R_004	* 275. *	0.7 *	0.3	0.1	0.0	0.2	0.0	0.1	0.1	0.0

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EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	* X1	Y1	X2	Y2 * TYPE	VPH	(G/MI)	(M) (M)
A. EBA	* -1000	-7	0	-7 * AG	1105	2.5	0.0 20.6
B. EBD	* 0	-4	1000	-4 * AG	772	2.5	0.0 13.3
C. WBA	* 1000	5	0	5 * AG	390	2.5	0.0 17.0
D. WBD	* 0	4	-1000	4 * AG	869	2.5	0.0 13.3
E. SBA	* -7	1000	-7	0 * AG	1472	2.5	0.0 20.6
F. SBD	* -4	0	-4	-1000 * AG	1005	2.5	0.0 13.3
G. NBA	* 5	-1000	5	0 * AG	732	2.5	0.0 17.0
H. NBD	* 4	0	4	1000 * AG	1053	2.5	0.0 13.3

III. RECEPTOR LOCATIONS

* COORDINATES (M)			
RECEPTOR	* X	Y	Z
1. R_001	* -18	10	1.8
2. R_002	* 10	14	1.8
3. R_003	* -10	-18	1.8
4. R_004	* 14	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
1. R_001	* 99. *	0.7 *	0.0	0.2	0.1	0.1	0.2	0.0	0.0	0.1
2. R_002	* 260. *	0.7 *	0.2	0.0	0.0	0.2	0.1	0.0	0.0	0.2
3. R_003	* 5. *	0.9 *	0.2	0.0	0.0	0.1	0.4	0.1	0.0	0.2
4. R_004	* 275. *	0.8 *	0.3	0.1	0.0	0.2	0.0	0.1	0.1	0.0

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EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	* X1	Y1	X2	Y2 * TYPE	VPH	(G/MI)	(M) (M)
A. EBA	* -1000	-7	0	-7 * AG	1775	2.5	0.0 20.6
B. EBD	* 0	-4	1000	-4 * AG	1017	2.5	0.0 13.3
C. WBA	* 1000	5	0	5 * AG	442	2.5	0.0 17.0
D. WBD	* 0	4	-1000	4 * AG	1101	2.5	0.0 13.3
E. SBA	* -7	1000	-7	0 * AG	1646	2.5	0.0 20.6
F. SBD	* -4	0	-4	-1000 * AG	1071	2.5	0.0 13.3
G. NBA	* 5	-1000	5	0 * AG	857	2.5	0.0 17.0
H. NBD	* 4	0	4	1000 * AG	1531	2.5	0.0 13.3

III. RECEPTOR LOCATIONS

* COORDINATES (M)			
RECEPTOR	* X	Y	Z
1. R_001	* -18	10	1.8
2. R_002	* 10	14	1.8
3. R_003	* -10	-18	1.8
4. R_004	* 14	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
1. R_001	* 99. *	0.8 *	0.0	0.2	0.1	0.1	0.2	0.0	0.0	0.1
2. R_002	* 260. *	1.0 *	0.3	0.0	0.0	0.3	0.2	0.0	0.0	0.2
3. R_003	* 5. *	1.1 *	0.2	0.0	0.0	0.1	0.4	0.1	0.0	0.3
4. R_004	* 274. *	1.0 *	0.5	0.1	0.0	0.2	0.0	0.1	0.1	0.0

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EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	* X1	Y1	X2	Y2 * TYPE	VPH	(G/MI)	(M) (M)
A. EBA	* -1000	-7	0	-7 * AG	1587	2.5	0.0 20.6
B. EBD	* 0	-4	1000	-4 * AG	1036	2.5	0.0 13.3
C. WBA	* 1000	5	0	5 * AG	391	2.5	0.0 17.0
D. WBD	* 0	4	-1000	4 * AG	936	2.5	0.0 13.3
E. SBA	* -7	1000	-7	0 * AG	1768	2.5	0.0 20.6
F. SBD	* -4	0	-4	-1000 * AG	1271	2.5	0.0 13.3
G. NBA	* 5	-1000	5	0 * AG	920	2.5	0.0 17.0
H. NBD	* 4	0	4	1000 * AG	1423	2.5	0.0 13.3

III. RECEPTOR LOCATIONS

* COORDINATES (M)			
RECEPTOR	* X	Y	Z
1. R_001	* -18	10	1.8
2. R_002	* 10	14	1.8
3. R_003	* -10	-18	1.8
4. R_004	* 14	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
1. R_001	* 99. *	0.8 *	0.0	0.2	0.1	0.1	0.2	0.0	0.0	0.1
2. R_002	* 260. *	0.9 *	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.2
3. R_003	* 5. *	1.1 *	0.2	0.0	0.0	0.1	0.4	0.1	0.0	0.3
4. R_004	* 274. *	1.0 *	0.4	0.1	0.0	0.2	0.0	0.1	0.1	0.0

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EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	* X1	Y1	X2	Y2 * TYPE	VPH	(G/MI)	(M) (M)
A. EBA	* -1000	-7	0	-7 * AG	1678	2.5	0.0 20.6
B. EBD	* 0	-4	1000	-4 * AG	1241	2.5	0.0 13.3
C. WBA	* 1000	5	0	5 * AG	658	2.5	0.0 17.0
D. WBD	* 0	4	-1000	4 * AG	1462	2.5	0.0 13.3
E. SBA	* -7	1000	-7	0 * AG	1967	2.5	0.0 20.6
F. SBD	* -4	0	-4	-1000 * AG	1340	2.5	0.0 13.3
G. NBA	* 5	-1000	5	0 * AG	1343	2.5	0.0 17.0
H. NBD	* 4	0	4	1000 * AG	2432	2.5	0.0 13.3

III. RECEPTOR LOCATIONS

* COORDINATES (M)			
RECEPTOR	* X	Y	Z
1. R_001	* -18	10	1.8
2. R_002	* 10	14	1.8
3. R_003	* -10	-18	1.8
4. R_004	* 14	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
-----*										
1. R_001	* 99. *	1.1 *	0.0	0.2	0.2	0.2	0.3	0.0	0.0	0.2
2. R_002	* 260. *	1.2 *	0.3	0.0	0.0	0.3	0.2	0.0	0.0	0.4
3. R_003	* 6. *	1.4 *	0.2	0.0	0.0	0.1	0.5	0.2	0.0	0.4
4. R_004	* 350. *	1.2 *	0.0	0.2	0.1	0.0	0.3	0.0	0.1	0.5

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)	(M) (M)
A. EBA	* -1000	-9	0	-9	* AG	1054 2.5	0.0 24.3
B. EBD	* 0	-4	1000	-4	* AG	1158 2.5	0.0 13.3
C. WBA	* 1000	7	0	7	* AG	548 2.5	0.0 20.6
D. WBD	* 0	4	-1000	4	* AG	218 2.5	0.0 13.3
E. SBA	* -11	1000	-11	0	* AG	1591 2.5	0.0 27.9
F. SBD	* -5	0	-5	-1000	* AG	1542 2.5	0.0 17.0
G. NBA	* 11	-1000	11	0	* AG	1053 2.5	0.0 27.9
H. NBD	* 5	0	5	1000	* AG	1328 2.5	0.0 17.0

III. RECEPTOR LOCATIONS

RECEPTOR	* COORDINATES (M)		
	X	Y	Z
1. R_001	* -25	10	1.8
2. R_002	* 14	18	1.8
3. R_003	* -14	-21	1.8
4. R_004	* 25	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
-----*										
1. R_001	* 97. *	0.7 *	0.0	0.2	0.1	0.0	0.2	0.0	0.0	0.1
2. R_002	* 188. *	0.8 *	0.0	0.1	0.1	0.0	0.0	0.2	0.2	0.1
3. R_003	* 7. *	0.8 *	0.1	0.0	0.0	0.0	0.3	0.2	0.0	0.2
4. R_004	* 348. *	0.7 *	0.0	0.2	0.1	0.0	0.2	0.0	0.0	0.2

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EXIT

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)	(M) (M)
A. EBA	* -1000	-9	0	-9	* AG	1055 2.5	0.0 24.3
B. EBD	* 0	-4	1000	-4	* AG	1471 2.5	0.0 13.3
C. WBA	* 1000	7	0	7	* AG	643 2.5	0.0 20.6
D. WBD	* 0	4	-1000	4	* AG	294 2.5	0.0 13.3
E. SBA	* -11	1000	-11	0	* AG	1772 2.5	0.0 27.9
F. SBD	* -5	0	-5	-1000	* AG	1704 2.5	0.0 17.0
G. NBA	* 11	-1000	11	0	* AG	1500 2.5	0.0 27.9
H. NBD	* 5	0	5	1000	* AG	1501 2.5	0.0 17.0

III. RECEPTOR LOCATIONS

* COORDINATES (M)			
RECEPTOR	* X	Y	Z
1. R_001	* -25	10	1.8
2. R_002	* 14	18	1.8
3. R_003	* -14	-21	1.8
4. R_004	* 25	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
1. R_001	* 98. *	0.8 *	0.0	0.3	0.1	0.0	0.2	0.0	0.0	0.1
2. R_002	* 187. *	0.9 *	0.0	0.1	0.1	0.0	0.0	0.3	0.3	0.1
3. R_003	* 7. *	0.9 *	0.1	0.0	0.0	0.0	0.3	0.2	0.0	0.2
4. R_004	* 276. *	0.8 *	0.2	0.2	0.0	0.1	0.0	0.1	0.2	0.0

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	* X1	Y1	X2	Y2 * TYPE	VPH	(G/MI)	(M) (M)
A. EBA	* -1000	-9	0	-9 * AG	1060	2.5	0.0 24.3
B. EBD	* 0	-4	1000	-4 * AG	1584	2.5	0.0 13.3
C. WBA	* 1000	7	0	7 * AG	648	2.5	0.0 20.6
D. WBD	* 0	4	-1000	4 * AG	301	2.5	0.0 13.3
E. SBA	* -11	1000	-11	0 * AG	1877	2.5	0.0 27.9
F. SBD	* -5	0	-5	-1000 * AG	1720	2.5	0.0 17.0
G. NBA	* 11	-1000	11	0 * AG	1527	2.5	0.0 27.9
H. NBD	* 5	0	5	1000 * AG	1507	2.5	0.0 17.0

III. RECEPTOR LOCATIONS

RECEPTOR	* COORDINATES (M)		
* X	Y	Z	
1. R_001	* -25	10	1.8
2. R_002	* 14	18	1.8
3. R_003	* -14	-21	1.8
4. R_004	* 25	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
-----*-----*										
1. R_001	* 98. *	0.8 *	0.0	0.3	0.1	0.0	0.2	0.0	0.0	0.1
2. R_002	* 187. *	0.9 *	0.0	0.1	0.1	0.0	0.0	0.3	0.3	0.1
3. R_003	* 7. *	0.9 *	0.1	0.0	0.0	0.0	0.4	0.2	0.0	0.2
4. R_004	* 348. *	0.8 *	0.0	0.3	0.1	0.0	0.2	0.0	0.0	0.2

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	X1	Y1	X2	Y2	* TYPE	VPH (G/MI)	(M) (M)
A. EBA	* -1000	-9	0	-9	* AG	1291 2.5	0.0 24.3
B. EBD	* 0	-4	1000	-4	* AG	1913 2.5	0.0 13.3
C. WBA	* 1000	7	0	7	* AG	758 2.5	0.0 20.6
D. WBD	* 0	4	-1000	4	* AG	377 2.5	0.0 13.3
E. SBA	* -11	1000	-11	0	* AG	1829 2.5	0.0 27.9
F. SBD	* -5	0	-5	-1000	* AG	1889 2.5	0.0 17.0
G. NBA	* 11	-1000	11	0	* AG	2040 2.5	0.0 27.9
H. NBD	* 5	0	5	1000	* AG	1739 2.5	0.0 17.0

III. RECEPTOR LOCATIONS

RECEPTOR	* COORDINATES (M)		
	X	Y	Z
1. R_001	* -25	10	1.8
2. R_002	* 14	18	1.8
3. R_003	* -14	-21	1.8
4. R_004	* 25	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
1. R_001	* 98. *	0.9 *	0.0	0.3	0.2	0.1	0.2	0.0	0.0	0.1
2. R_002	* 187. *	1.1 *	0.0	0.2	0.1	0.0	0.0	0.3	0.4	0.2
3. R_003	* 7. *	1.0 *	0.2	0.0	0.0	0.0	0.4	0.2	0.0	0.3
4. R_004	* 276. *	1.0 *	0.3	0.3	0.0	0.1	0.0	0.1	0.2	0.0

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
 JUNE 1989 VERSION
 PAGE 1

JOB: Livermore
 RUN: CALINE4 RUN (WORST CASE ANGLE)
 POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U= 0.5 M/S Z0= 100. CM ALT= 0. (M)
 BRG= WORST CASE VD= 0.0 CM/S
 CLAS= 7 (G) VS= 0.0 CM/S
 MIXH= 1000. M AMB= 0.0 PPM
 SIGTH= 15. DEGREES TEMP= 3.9 DEGREE (C)

II. LINK VARIABLES

LINK	* LINK COORDINATES (M) *				EF	H	W
DESCRIPTION	* X1	Y1	X2	Y2 * TYPE	VPH	(G/MI)	(M) (M)
A. EBA	* -1000	-9	0	-9 * AG	1554	2.5	0.0 24.3
B. EBD	* 0	-4	1000	-4 * AG	1718	2.5	0.0 13.3
C. WBA	* 1000	7	0	7 * AG	860	2.5	0.0 20.6
D. WBD	* 0	4	-1000	4 * AG	524	2.5	0.0 13.3
E. SBA	* -11	1000	-11	0 * AG	2213	2.5	0.0 27.9
F. SBD	* -5	0	-5	-1000 * AG	2346	2.5	0.0 17.0
G. NBA	* 11	-1000	11	0 * AG	2393	2.5	0.0 27.9
H. NBD	* 5	0	5	1000 * AG	2432	2.5	0.0 17.0

III. RECEPTOR LOCATIONS

* COORDINATES (M)			
RECEPTOR	* X	Y	Z
1. R_001	* -25	10	1.8
2. R_002	* 14	18	1.8
3. R_003	* -14	-21	1.8
4. R_004	* 25	-10	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Livermore
RUN: CALINE4 RUN (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

	* PRED *		CONC/LINK							
	* BRG *	* CONC *	(PPM)							
RECEPTOR	* (DEG) *	* (PPM) *	A	B	C	D	E	F	G	H
-----*-----*										
1. R_001	* 98. *	1.0 *	0.0	0.3	0.2	0.1	0.3	0.0	0.0	0.1
2. R_002	* 187. *	1.3 *	0.0	0.1	0.1	0.0	0.0	0.3	0.5	0.2
3. R_003	* 7. *	1.3 *	0.2	0.0	0.0	0.0	0.4	0.2	0.0	0.3
4. R_004	* 275. *	1.1 *	0.3	0.2	0.0	0.1	0.0	0.1	0.3	0.0

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