

Appendix A

Air Quality Mass Emissions Calculations & Health Risk Assessment

1. CalEEMod
2. Emissions Calculations
3. AERMOD Input
4. HRA Calculations
5. BAAQMD Roadway Screening Tool Outputs



#-1 CalEEMod Output

488 St. John Street - Santa Clara County, Annual

488 St. John Street
Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	44.00	Dwelling Unit	0.24	27,039.00	126
Enclosed Parking with Elevator	34.00	Space	0.12	13,850.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	58
Climate Zone	4			Operational Year	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	210	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics - PG&E GHG emission factor based on <http://www.pgecorp.com/corp_responsibility/reports/2019/assets/PGE_CRSR_2019.pdf>

Land Use - Provided by client

Construction Phase - Default schedule scaled based on demolition schedule provided by client

Grading -

Demolition -

Vehicle Trips - Net trip rate from traffic report

Woodstoves - No woodstoves or fireplaces per client information

Energy Use - Adjusted to 2019 Title24 standards

Construction Off-road Equipment Mitigation - Mitigated scenario; mitigation based on BAAQMD Best Management Practices during construction

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	9
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

488 St. John Street - Santa Clara County, Annual

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	5.00	11.00
tblConstructionPhase	NumDays	100.00	220.00
tblConstructionPhase	NumDays	10.00	22.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	5.00	11.00
tblConstructionPhase	NumDays	1.00	3.00
tblConstructionPhase	PhaseEndDate	12/20/2021	7/15/2022
tblConstructionPhase	PhaseEndDate	12/6/2021	6/15/2022
tblConstructionPhase	PhaseEndDate	7/14/2021	8/1/2021
tblConstructionPhase	PhaseEndDate	7/19/2021	8/11/2021
tblConstructionPhase	PhaseEndDate	12/13/2021	6/30/2022
tblConstructionPhase	PhaseEndDate	7/15/2021	8/4/2021
tblConstructionPhase	PhaseStartDate	12/14/2021	7/1/2022
tblConstructionPhase	PhaseStartDate	7/20/2021	8/12/2021
tblConstructionPhase	PhaseStartDate	7/16/2021	8/5/2021
tblConstructionPhase	PhaseStartDate	12/7/2021	6/16/2022
tblConstructionPhase	PhaseStartDate	7/15/2021	8/2/2021
tblEnergyUse	T24E	332.81	326.15
tblEnergyUse	T24E	3.92	3.50
tblEnergyUse	T24NG	5,484.45	5,210.23
tblFireplaces	FireplaceDayYear	11.14	0.00

488 St. John Street - Santa Clara County, Annual

tblFireplaces	FireplaceHourDay	3.50	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	6.60	0.00
tblFireplaces	NumberNoFireplace	1.76	0.00
tblFireplaces	NumberWood	7.48	0.00
tblGrading	MaterialExported	0.00	6,155.00
tblLandUse	LandUseSquareFeet	44,000.00	27,039.00
tblLandUse	LandUseSquareFeet	13,600.00	13,850.00
tblLandUse	LotAcreage	1.16	0.24
tblLandUse	LotAcreage	0.31	0.12
tblProjectCharacteristics	CO2IntensityFactor	641.35	210
tblVehicleTrips	ST_TR	6.39	4.02
tblVehicleTrips	SU_TR	5.86	4.02
tblVehicleTrips	WD_TR	6.65	4.02
tblWoodstoves	NumberCatalytic	0.88	0.00
tblWoodstoves	NumberNoncatalytic	0.88	0.00
tblWoodstoves	WoodstoveDayYear	14.12	0.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

488 St. John Street - Santa Clara County, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-1-2021	9-30-2021	0.3718	0.1180
2	10-1-2021	12-31-2021	0.3194	0.0560
3	1-1-2022	3-31-2022	0.2769	0.0529
4	4-1-2022	6-30-2022	0.2686	0.0476
5	7-1-2022	9-30-2022	0.1971	0.1893
		Highest	0.3718	0.1893

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1357	3.7700e-003	0.3271	2.0000e-005		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	0.5343	0.5343	5.1000e-004	0.0000	0.5471
Energy	1.9800e-003	0.0170	7.2200e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	44.0933	44.0933	3.7500e-003	1.0600e-003	44.5026
Mobile	0.0377	0.1418	0.4425	1.5900e-003	0.1519	1.2400e-003	0.1531	0.0407	1.1500e-003	0.0418	0.0000	145.6441	145.6441	4.6400e-003	0.0000	145.7602
Waste						0.0000	0.0000		0.0000	0.0000	4.1085	0.0000	4.1085	0.2428	0.0000	10.1787
Water						0.0000	0.0000		0.0000	0.0000	0.9095	2.0801	2.9896	0.0937	2.2700e-003	6.0072
Total	0.1753	0.1625	0.7768	1.7200e-003	0.1519	4.4200e-003	0.1563	0.0407	4.3300e-003	0.0450	5.0180	192.3518	197.3699	0.3454	3.3300e-003	206.9959

488 St. John Street - Santa Clara 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	0.1357	3.7700e-003	0.3271	2.0000e-005		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	0.5343	0.5343	5.1000e-004	0.0000	0.5471
Energy	1.9800e-003	0.0170	7.2200e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	44.0933	44.0933	3.7500e-003	1.0600e-003	44.5026
Mobile	0.0377	0.1418	0.4425	1.5900e-003	0.1519	1.2400e-003	0.1531	0.0407	1.1500e-003	0.0418	0.0000	145.6441	145.6441	4.6400e-003	0.0000	145.7602
Waste						0.0000	0.0000		0.0000	0.0000	4.1085	0.0000	4.1085	0.2428	0.0000	10.1787
Water						0.0000	0.0000		0.0000	0.0000	0.9095	2.0801	2.9896	0.0937	2.2700e-003	6.0072
Total	0.1753	0.1625	0.7768	1.7200e-003	0.1519	4.4200e-003	0.1563	0.0407	4.3300e-003	0.0450	5.0180	192.3518	197.3699	0.3454	3.3300e-003	206.9959

	ROG	NOx	CO	SO2	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

488 St. John Street - Santa Clara County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2021	8/1/2021	5	22	
2	Site Preparation	Site Preparation	8/2/2021	8/4/2021	5	3	
3	Grading	Grading	8/5/2021	8/11/2021	5	5	
4	Building Construction	Building Construction	8/12/2021	6/15/2022	5	220	
5	Paving	Paving	6/16/2022	6/30/2022	5	11	
6	Architectural Coating	Architectural Coating	7/1/2022	7/15/2022	5	11	

Acres of Grading (Site Preparation Phase): 1.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.124

Residential Indoor: 54,754; Residential Outdoor: 18,251; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 831 (Architectural Coating – sqft)

OffRoad Equipment

488 St. John Street - Santa Clara County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	19.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	769.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	38.00	7.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

488 St. John Street - Santa Clara County, Annual

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.0700e-003	0.0000	2.0700e-003	3.1000e-004	0.0000	3.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7600e-003	0.0798	0.0833	1.3000e-004		4.4800e-003	4.4800e-003		4.2700e-003	4.2700e-003	0.0000	11.4503	11.4503	2.1300e-003	0.0000	11.5036
Total	8.7600e-003	0.0798	0.0833	1.3000e-004	2.0700e-003	4.4800e-003	6.5500e-003	3.1000e-004	4.2700e-003	4.5800e-003	0.0000	11.4503	11.4503	2.1300e-003	0.0000	11.5036

488 St. John Street - Santa Clara County, Annual

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.5400e-003	5.5000e-004	1.0000e-005	1.6000e-004	1.0000e-005	1.7000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.7154	0.7154	3.0000e-005	0.0000	0.7162
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.3000e-004	2.5200e-003	1.0000e-005	8.7000e-004	1.0000e-005	8.8000e-004	2.3000e-004	1.0000e-005	2.4000e-004	0.0000	0.7222	0.7222	2.0000e-005	0.0000	0.7226
Total	4.1000e-004	2.7700e-003	3.0700e-003	2.0000e-005	1.0300e-003	2.0000e-005	1.0500e-003	2.7000e-004	2.0000e-005	2.9000e-004	0.0000	1.4376	1.4376	5.0000e-005	0.0000	1.4388

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.3000e-004	0.0000	9.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4600e-003	6.3200e-003	0.0864	1.3000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	11.4503	11.4503	2.1300e-003	0.0000	11.5036
Total	1.4600e-003	6.3200e-003	0.0864	1.3000e-004	9.3000e-004	1.9000e-004	1.1200e-003	1.4000e-004	1.9000e-004	3.3000e-004	0.0000	11.4503	11.4503	2.1300e-003	0.0000	11.5036

488 St. John Street - Santa Clara County, Annual

3.2 Demolition - 2021

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	7.0000e-005	2.5400e-003	5.5000e-004	1.0000e-005	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.7154	0.7154	3.0000e-005	0.0000	0.7162
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.4000e-004	2.3000e-004	2.5200e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.1000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7222	0.7222	2.0000e-005	0.0000	0.7226
Total	4.1000e-004	2.7700e-003	3.0700e-003	2.0000e-005	9.5000e-004	2.0000e-005	9.7000e-004	2.6000e-004	2.0000e-005	2.7000e-004	0.0000	1.4376	1.4376	5.0000e-005	0.0000	1.4388

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.1400e-003	0.0000	1.1400e-003	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6000e-004	0.0117	6.0400e-003	1.0000e-005		4.5000e-004	4.5000e-004		4.1000e-004	4.1000e-004	0.0000	1.2827	1.2827	4.1000e-004	0.0000	1.2930
Total	9.6000e-004	0.0117	6.0400e-003	1.0000e-005	1.1400e-003	4.5000e-004	1.5900e-003	1.4000e-004	4.1000e-004	5.5000e-004	0.0000	1.2827	1.2827	4.1000e-004	0.0000	1.2930

488 St. John Street - Santa Clara County, Annual

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0200e-003	0.1028	0.0224	3.0000e-004	6.5200e-003	3.2000e-004	6.8400e-003	1.7900e-003	3.1000e-004	2.1000e-003	0.0000	28.9541	28.9541	1.3100e-003	0.0000	28.9870
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.7000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0492	0.0492	0.0000	0.0000	0.0493
Total	3.0400e-003	0.1029	0.0226	3.0000e-004	6.5800e-003	3.2000e-004	6.9000e-003	1.8100e-003	3.1000e-004	2.1200e-003	0.0000	29.0034	29.0034	1.3100e-003	0.0000	29.0362

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.1000e-004	0.0000	5.1000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8000e-004	7.7000e-004	7.9800e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2827	1.2827	4.1000e-004	0.0000	1.2930
Total	1.8000e-004	7.7000e-004	7.9800e-003	1.0000e-005	5.1000e-004	2.0000e-005	5.3000e-004	6.0000e-005	2.0000e-005	8.0000e-005	0.0000	1.2827	1.2827	4.1000e-004	0.0000	1.2930

488 St. John Street - Santa Clara County, Annual

3.3 Site Preparation - 2021

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	3.0200e-003	0.1028	0.0224	3.0000e-004	6.0800e-003	3.2000e-004	6.4000e-003	1.6800e-003	3.1000e-004	1.9900e-003	0.0000	28.9541	28.9541	1.3100e-003	0.0000	28.9870
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.7000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0492	0.0492	0.0000	0.0000	0.0493
Total	3.0400e-003	0.1029	0.0226	3.0000e-004	6.1300e-003	3.2000e-004	6.4600e-003	1.6900e-003	3.1000e-004	2.0100e-003	0.0000	29.0034	29.0034	1.3100e-003	0.0000	29.0362

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8800e-003	0.0000	1.8800e-003	1.0300e-003	0.0000	1.0300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9900e-003	0.0181	0.0189	3.0000e-005		1.0200e-003	1.0200e-003		9.7000e-004	9.7000e-004	0.0000	2.6023	2.6023	4.8000e-004	0.0000	2.6145
Total	1.9900e-003	0.0181	0.0189	3.0000e-005	1.8800e-003	1.0200e-003	2.9000e-003	1.0300e-003	9.7000e-004	2.0000e-003	0.0000	2.6023	2.6023	4.8000e-004	0.0000	2.6145

488 St. John Street - Santa Clara County, Annual

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	5.7000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1641	0.1641	0.0000	0.0000	0.1642
Total	8.0000e-005	5.0000e-005	5.7000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1641	0.1641	0.0000	0.0000	0.1642

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.5000e-004	0.0000	8.5000e-004	4.7000e-004	0.0000	4.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3000e-004	1.4400e-003	0.0196	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.6023	2.6023	4.8000e-004	0.0000	2.6145
Total	3.3000e-004	1.4400e-003	0.0196	3.0000e-005	8.5000e-004	4.0000e-005	8.9000e-004	4.7000e-004	4.0000e-005	5.1000e-004	0.0000	2.6023	2.6023	4.8000e-004	0.0000	2.6145

488 St. John Street - Santa Clara County, Annual

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	5.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1641	0.1641	0.0000	0.0000	0.1642
Total	8.0000e-005	5.0000e-005	5.7000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1641	0.1641	0.0000	0.0000	0.1642

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0395	0.4072	0.3705	5.8000e-004		0.0228	0.0228		0.0210	0.0210	0.0000	51.0419	51.0419	0.0165	0.0000	51.4546
Total	0.0395	0.4072	0.3705	5.8000e-004		0.0228	0.0228		0.0210	0.0210	0.0000	51.0419	51.0419	0.0165	0.0000	51.4546

488 St. John Street - Santa Clara County, Annual

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1600e-003	0.0367	9.7700e-003	1.0000e-004	2.3500e-003	8.0000e-005	2.4300e-003	6.8000e-004	8.0000e-005	7.6000e-004	0.0000	9.2474	9.2474	4.0000e-004	0.0000	9.2574
Worker	5.9700e-003	4.1300e-003	0.0443	1.4000e-004	0.0154	1.0000e-004	0.0155	4.0900e-003	9.0000e-005	4.1800e-003	0.0000	12.7238	12.7238	2.9000e-004	0.0000	12.7310
Total	7.1300e-003	0.0408	0.0541	2.4000e-004	0.0177	1.8000e-004	0.0179	4.7700e-003	1.7000e-004	4.9400e-003	0.0000	21.9711	21.9711	6.9000e-004	0.0000	21.9884

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.1200e-003	0.0309	0.3940	5.8000e-004	9.5000e-004		9.5000e-004		9.5000e-004	9.5000e-004	0.0000	51.0418	51.0418	0.0165	0.0000	51.4545
Total	7.1200e-003	0.0309	0.3940	5.8000e-004	9.5000e-004		9.5000e-004		9.5000e-004	9.5000e-004	0.0000	51.0418	51.0418	0.0165	0.0000	51.4545

488 St. John Street - Santa Clara County, Annual

3.5 Building Construction - 2021

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	1.1600e-003	0.0367	9.7700e-003	1.0000e-004	2.2000e-003	8.0000e-005	2.2800e-003	6.4000e-004	8.0000e-005	7.2000e-004	0.0000	9.2474	9.2474	4.0000e-004	0.0000	9.2574
Worker	5.9700e-003	4.1300e-003	0.0443	1.4000e-004	0.0142	1.0000e-004	0.0143	3.7900e-003	9.0000e-005	3.8800e-003	0.0000	12.7238	12.7238	2.9000e-004	0.0000	12.7310
Total	7.1300e-003	0.0408	0.0541	2.4000e-004	0.0164	1.8000e-004	0.0166	4.4300e-003	1.7000e-004	4.6000e-003	0.0000	21.9711	21.9711	6.9000e-004	0.0000	21.9884

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0405	0.4145	0.4220	6.7000e-004		0.0219	0.0219		0.0202	0.0202	0.0000	59.0871	59.0871	0.0191	0.0000	59.5649
Total	0.0405	0.4145	0.4220	6.7000e-004		0.0219	0.0219		0.0202	0.0202	0.0000	59.0871	59.0871	0.0191	0.0000	59.5649

488 St. John Street - Santa Clara County, Annual

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.2600e-003	0.0401	0.0106	1.1000e-004	2.7200e-003	8.0000e-005	2.8000e-003	7.9000e-004	8.0000e-005	8.6000e-004	0.0000	10.5956	10.5956	4.5000e-004	0.0000	10.6067
Worker	6.4500e-003	4.2900e-003	0.0471	1.6000e-004	0.0178	1.1000e-004	0.0179	4.7300e-003	1.0000e-004	4.8300e-003	0.0000	14.1850	14.1850	3.0000e-004	0.0000	14.1925
Total	7.7100e-003	0.0444	0.0578	2.7000e-004	0.0205	1.9000e-004	0.0207	5.5200e-003	1.8000e-004	5.6900e-003	0.0000	24.7806	24.7806	7.5000e-004	0.0000	24.7992

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2400e-003	0.0357	0.4558	6.7000e-004		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	59.0871	59.0871	0.0191	0.0000	59.5648
Total	8.2400e-003	0.0357	0.4558	6.7000e-004		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	59.0871	59.0871	0.0191	0.0000	59.5648

488 St. John Street - Santa Clara County, Annual

3.5 Building Construction - 2022

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	1.2600e-003	0.0401	0.0106	1.1000e-004	2.5500e-003	8.0000e-005	2.6300e-003	7.4000e-004	8.0000e-005	8.2000e-004	0.0000	10.5956	10.5956	4.5000e-004	0.0000	10.6067
Worker	6.4500e-003	4.2900e-003	0.0471	1.6000e-004	0.0164	1.1000e-004	0.0165	4.3900e-003	1.0000e-004	4.4900e-003	0.0000	14.1850	14.1850	3.0000e-004	0.0000	14.1925
Total	7.7100e-003	0.0444	0.0578	2.7000e-004	0.0190	1.9000e-004	0.0191	5.1300e-003	1.8000e-004	5.3100e-003	0.0000	24.7806	24.7806	7.5000e-004	0.0000	24.7992

3.6 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5600e-003	0.0326	0.0387	6.0000e-005		1.6300e-003	1.6300e-003		1.5200e-003	1.5200e-003	0.0000	5.1683	5.1683	1.5100e-003	0.0000	5.2059
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.5600e-003	0.0326	0.0387	6.0000e-005		1.6300e-003	1.6300e-003		1.5200e-003	1.5200e-003	0.0000	5.1683	5.1683	1.5100e-003	0.0000	5.2059

488 St. John Street - Santa Clara County, Annual

3.6 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	2.0800e-003	1.0000e-005	7.9000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6264	0.6264	1.0000e-005	0.0000	0.6267
Total	2.8000e-004	1.9000e-004	2.0800e-003	1.0000e-005	7.9000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6264	0.6264	1.0000e-005	0.0000	0.6267

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.2000e-004	2.6700e-003	0.0380	6.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	5.1683	5.1683	1.5100e-003	0.0000	5.2059
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	6.2000e-004	2.6700e-003	0.0380	6.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	5.1683	5.1683	1.5100e-003	0.0000	5.2059

488 St. John Street - Santa Clara County, Annual

3.6 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	1.9000e-004	2.0800e-003	1.0000e-005	7.2000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6264	0.6264	1.0000e-005	0.0000	0.6267
Total	2.8000e-004	1.9000e-004	2.0800e-003	1.0000e-005	7.2000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.6264	0.6264	1.0000e-005	0.0000	0.6267

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1932					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1200e-003	7.7500e-003	9.9700e-003	2.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	1.4043	1.4043	9.0000e-005	0.0000	1.4066
Total	0.1944	7.7500e-003	9.9700e-003	2.0000e-005		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	1.4043	1.4043	9.0000e-005	0.0000	1.4066

488 St. John Street - Santa Clara County, Annual

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	8.0000e-005	9.3000e-004	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2784	0.2784	1.0000e-005	0.0000	0.2785
Total	1.3000e-004	8.0000e-005	9.3000e-004	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2784	0.2784	1.0000e-005	0.0000	0.2785

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1932					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6000e-004	7.1000e-004	0.0101	2.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.4043	1.4043	9.0000e-005	0.0000	1.4066
Total	0.1934	7.1000e-004	0.0101	2.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.4043	1.4043	9.0000e-005	0.0000	1.4066

488 St. John Street - Santa Clara County, Annual

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	8.0000e-005	9.3000e-004	0.0000	3.2000e-004	0.0000	3.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2784	0.2784	1.0000e-005	0.0000	0.2785
Total	1.3000e-004	8.0000e-005	9.3000e-004	0.0000	3.2000e-004	0.0000	3.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2784	0.2784	1.0000e-005	0.0000	0.2785

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

488 St. John Street - Santa Clara 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	0.0377	0.1418	0.4425	1.5900e-003	0.1519	1.2400e-003	0.1531	0.0407	1.1500e-003	0.0418	0.0000	145.6441	145.6441	4.6400e-003	0.0000	145.7602
Unmitigated	0.0377	0.1418	0.4425	1.5900e-003	0.1519	1.2400e-003	0.1531	0.0407	1.1500e-003	0.0418	0.0000	145.6441	145.6441	4.6400e-003	0.0000	145.7602

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	176.88	176.88	176.88	408,523	408,523
Enclosed Parking with Elevator	0.00	0.00	0.00		
Total	176.88	176.88	176.88	408,523	408,523

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720
Enclosed Parking with Elevator	0.612822	0.036208	0.182365	0.105071	0.013933	0.005011	0.012748	0.021514	0.002168	0.001529	0.005280	0.000629	0.000720

488 St. John Street - Santa Clara County, Annual

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	24.4517	24.4517	3.3800e-003	7.0000e-004	24.7443
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	24.4517	24.4517	3.3800e-003	7.0000e-004	24.7443
NaturalGas Mitigated	1.9800e-003	0.0170	7.2200e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.6416	19.6416	3.8000e-004	3.6000e-004	19.7583
NaturalGas Unmitigated	1.9800e-003	0.0170	7.2200e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.6416	19.6416	3.8000e-004	3.6000e-004	19.7583

488 St. John Street - Santa Clara County, Annual

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas 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	368070	1.9800e-003	0.0170	7.2200e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.6416	19.6416	3.8000e-004	3.6000e-004	19.7583
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.9800e-003	0.0170	7.2200e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.6416	19.6416	3.8000e-004	3.6000e-004	19.7583

Mitigated

	Natural Gas 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	368070	1.9800e-003	0.0170	7.2200e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.6416	19.6416	3.8000e-004	3.6000e-004	19.7583
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.9800e-003	0.0170	7.2200e-003	1.1000e-004		1.3700e-003	1.3700e-003		1.3700e-003	1.3700e-003	0.0000	19.6416	19.6416	3.8000e-004	3.6000e-004	19.7583

488 St. John Street - Santa Clara 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	181354	17.2748	2.3900e-003	4.9000e-004	17.4815
Enclosed Parking with Elevator	75344	7.1769	9.9000e-004	2.1000e-004	7.2627
Total		24.4517	3.3800e-003	7.0000e-004	24.7443

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	181354	17.2748	2.3900e-003	4.9000e-004	17.4815
Enclosed Parking with Elevator	75344	7.1769	9.9000e-004	2.1000e-004	7.2627
Total		24.4517	3.3800e-003	7.0000e-004	24.7443

6.0 Area Detail

6.1 Mitigation Measures Area

488 St. John Street - Santa Clara 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	0.1357	3.7700e-003	0.3271	2.0000e-005		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	0.5343	0.5343	5.1000e-004	0.0000	0.5471
Unmitigated	0.1357	3.7700e-003	0.3271	2.0000e-005		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	0.5343	0.5343	5.1000e-004	0.0000	0.5471

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0193					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1065					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.8700e-003	3.7700e-003	0.3271	2.0000e-005		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	0.5343	0.5343	5.1000e-004	0.0000	0.5471
Total	0.1357	3.7700e-003	0.3271	2.0000e-005		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	0.5343	0.5343	5.1000e-004	0.0000	0.5471

488 St. John Street - Santa Clara 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	0.0193					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1065					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.8700e-003	3.7700e-003	0.3271	2.0000e-005		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	0.5343	0.5343	5.1000e-004	0.0000	0.5471
Total	0.1357	3.7700e-003	0.3271	2.0000e-005		1.8100e-003	1.8100e-003		1.8100e-003	1.8100e-003	0.0000	0.5343	0.5343	5.1000e-004	0.0000	0.5471

7.0 Water Detail

7.1 Mitigation Measures Water

488 St. John Street - Santa Clara County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.9896	0.0937	2.2700e-003	6.0072
Unmitigated	2.9896	0.0937	2.2700e-003	6.0072

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	2.86678 / 1.80732	2.9896	0.0937	2.2700e-003	6.0072
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		2.9896	0.0937	2.2700e-003	6.0072

488 St. John Street - Santa Clara 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	2.86678 / 1.80732	2.9896	0.0937	2.2700e-003	6.0072
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		2.9896	0.0937	2.2700e-003	6.0072

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	4.1085	0.2428	0.0000	10.1787
Unmitigated	4.1085	0.2428	0.0000	10.1787

488 St. John Street - Santa Clara County, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	20.24	4.1085	0.2428	0.0000	10.1787
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		4.1085	0.2428	0.0000	10.1787

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	20.24	4.1085	0.2428	0.0000	10.1787
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Total		4.1085	0.2428	0.0000	10.1787

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
----------------	--------	----------------	-----------------	---------------	-----------

User Defined Equipment

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

11.0 Vegetation

#-2 Emissions Calculations

488 St. John Street - Mass Emissions Calculations

PROJECT DETAILS

Conversions

Year	Days
1	365

Tons	Pounds
1	2000

Construction Work Days

Year	Work Days
2021	132
2022	140

Construction Schedule

Phase	Start Date	End Date	Work Days
Demo	7/1/2021	8/1/2021	22
Site Prep	8/2/2021	8/4/2021	3
Grading	8/5/2021	8/11/2021	5
Bldg Cons	8/12/2021	12/31/2021	102
Bldg Cons	1/1/2022	6/15/2022	118
Paving	6/16/2022	6/30/2022	11
Arch Coating	7/1/2022	7/15/2022	11

CONSTRUCTION EMISSIONS

UNMitigated

Criteria Pollutant Emissions (tpy)				
	ROG	NOx	PM10 (exhaust)	PM2.5 (exhaust)
2021	0.0619	0.6634	0.0293	0.0272
2022	0.2465	0.4995	0.0242	0.0223

GHG Emissions (MT/yr)	
	CO2e
2021	119.4934
2022	91.8818

Criteria Pollutant Emissions (ppd)				
	ROG	NOx	PM10 (exhaust)	PM2.5 (exhaust)
2021	0.94	10.05	0.44	0.41
2022	3.52	7.14	0.35	0.32

Mitigated

Criteria Pollutant Emissions (tpy)				
	ROG	NOx	PM10 (exhaust)	PM2.5 (exhaust)
2021	0.0198	0.1859	1.73E-03	1.70E-03
2022	0.2104	0.0838	1.40E-03	1.39E-03

GHG Emissions (MT/yr)	
	CO2e
2021	119.4933
2022	91.8817

3

Criteria Pollutant Emissions (ppd)				
	ROG	NOx	PM10 (exhaust)	PM2.5 (exhaust)
2021	0.30	2.82	0.03	0.03
2022	3.01	1.20	0.02	0.02

OPERATIONAL EMISSIONS

UNMitigated

Criteria Pollutant Emissions (tpy)				
	ROG	NOx	PM10 Total	PM2.5 Total
Area	0.14	0.00	0.00	0.00
Energy	0.00	0.02	0.00	0.00
Mobile	0.04	0.14	0.15	0.04
Waste	0.00	0.00	0.00	0.00
Water	0.00	0.00	0.00	0.00
Total	0.18	0.16	0.16	0.04

GHG Emissions (MT/yr)	
	CO2e
Area	0.5471
Energy	44.5026
Mobile	145.7602
Waste	10.1787
Water	6.0072
Total	206.9958

Criteria Pollutant Emissions (ppd)				
	ROG	NOx	PM10 Total	PM2.5 Total
Area	0.74	0.02	0.01	0.01
Energy	0.01	0.09	0.01	0.01
Mobile	0.21	0.78	0.84	0.23
Waste	0.00	0.00	0.00	0.00
Water	0.00	0.00	0.00	0.00
Total	0.96	0.89	0.86	0.25

Mitigated

Criteria Pollutant Emissions (tpy)				
	ROG	NOx	PM10 Total	PM2.5 Total
Area	0.1357	3.77E-03	1.81E-03	1.81E-03
Energy	1.98E-03	0.017	1.37E-03	1.37E-03
Mobile	0.0377	0.1418	0.1531	0.0418
Waste	0	0	0	0
Water	0	0	0	0
Total	0.17538	0.16257	0.15628	0.04498

GHG Emissions (MT/yr)	
	CO2e
Area	0.5471
Energy	44.5026
Mobile	145.7602
Waste	10.1787
Water	6.0072
Total	206.9958

Criteria Pollutant Emissions (ppd)				
	ROG	NOx	PM10 Total	PM2.5 Total
Area	0.7436	0.0207	0.0099	0.0099
Energy	0.0108	0.0932	0.0075	0.0075
Mobile	0.2066	0.7770	0.8389	0.2290
Waste	0.0000	0.0000	0.0000	0.0000
Water	0.0000	0.0000	0.0000	0.0000
Total	0.9610	0.8908	0.8563	0.2465

488 St. John Street - Mass Exhaust Emissions Calculations (for HRA)

PROJECT DETAILS

Conversions

Year	Days
1	365
Tons	Pounds
1	2000

Construction Work Days

Year	Work Days
2021	132
2022	140

Construction Schedule

Phase	Start Date	End Date	Work Days
Demo	7/1/2021	8/1/2021	22
Site Prep	8/2/2021	8/4/2021	3
Grading	8/5/2021	8/11/2021	5
Bldg Cons	8/12/2021	12/31/2021	102
Bldg Cons	1/1/2022	6/15/2022	118
Paving	6/16/2022	6/30/2022	11
Arch Coat	7/1/2022	7/15/2022	11

OFFROAD EQUIPMENT CONSTRUCTION EMISSIONS

UNMitigated

Criteria Pollutant Emissions (tpy) from OffRoad Construction Equipment

	PM10 (exhaust)	PM2.5 (exhaust)
2021		
Demo	4.48E-03	4.27E-03
Site Prep	4.50E-04	4.10E-04
Grading	1.02E-03	9.70E-04
Bldg Cons	0.0228	0.021
Total	2.88E-02	2.67E-02
2022		
Bldg Cons	0.0219	0.0202
Paving	1.63E-03	1.52E-03
Arch Coat	4.50E-04	4.50E-04
Total	0.02398	0.02217

Mitigated

Criteria Pollutant Emissions (tpy) from OffRoad Construction Equipment

	PM10 (exhaust)	PM2.5 (exhaust)
2021		
Demo	1.90E-04	1.90E-04
Site Prep	2.00E-05	2.00E-05
Grading	4.00E-05	4.00E-05
Bldg Cons	9.50E-04	9.50E-04
Total	1.20E-03	1.20E-03
2022		
Bldg Cons	1.10E-03	1.10E-03
Paving	8.00E-05	8.00E-05
Arch Coat	2.00E-05	2.00E-05
Total	1.20E-03	1.20E-03

#-3 AERMOD Input

488StJohn_Construction

**

**

** AERMOD Input Produced by:

** AERMOD View Ver. 9.8.3

** Lakes Environmental Software Inc.

** Date: 9/23/2020

** File: C:\Model\488 St John\488StJohn_Construction\488StJohn_Construction.ADI

**

**

**

** AERMOD Control Pathway

**

**

CO STARTING

TITLEONE C:\Model\488 St John\488StJohn_Construction\488StJohn_Construction.i

MODELOPT DFAULT CONC

AVERTIME PERIOD

URBANOPT 1836911 San_Jose-Sunnyvale-Santa_Clara,_CA_MSA

POLLUTID PM_10

FLAGPOLE 1.80

RUNORNOT RUN

ERRORFIL 488StJohn_Construction.err

CO FINISHED

**

** AERMOD Source Pathway

**

**

SO STARTING

** Source Location **

** Source ID - Type - X Coord. - Y Coord. **

LOCATION CONST	AREAPOLY	599065.810	4133441.420	23.400
----------------	----------	------------	-------------	--------

** Source Parameters **

SRCPARAM CONST	0.0006695634	5.000	6	1.400
AREAVERT CONST	599065.810	4133441.420	599101.480	4133463.710
AREAVERT CONST	599116.820	4133439.150	599098.990	4133428.000
AREAVERT CONST	599105.930	4133416.890	599088.100	4133405.750

**

** No Building Downwash **

**

URBANSRC ALL

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"

488StJohn_Construction

** Variable Emission Scenario: "Scenario 1"
EMISFACT CONST HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
EMISFACT CONST HROFDY 0.0 2.0 2.0 2.0 2.0 2.0
EMISFACT CONST HROFDY 2.0 2.0 2.0 2.0 2.0 2.0
EMISFACT CONST HROFDY 2.0 0.0 0.0 0.0 0.0 0.0
SRCGROUP CONST CONST
SRCGROUP ALL

SO FINISHED

**

** AERMOD Receptor Pathway

**

**

RE STARTING

INCLUDED 488StJohn_Construction.rou

RE FINISHED

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** AERMOD Meteorology Pathway

**

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ME STARTING

SURFFILE ..\MET\MET2015796_2014_2018.SFC

PROFFILE ..\MET\MET2015796_2014_2018.PFL

SURFDATA 23293 2014

UAIRDATA 23230 2014 OAKLAND/WSO_AP

PROFBASE 15.5 METERS

ME FINISHED

**

** AERMOD Output Pathway

**

**

OU STARTING

** Auto-Generated Plotfiles

PLOTFILE PERIOD ALL 488StJohn_Construction.AD\PE00GALL.PLT 31

PLOTFILE PERIOD CONST 488StJohn_Construction.AD\PE00G001.PLT 32

SUMMFILE 488StJohn_Construction.sum

OU FINISHED

**

** Project Parameters

** PROJCTN CoordinateSystemUTM

** DESCPTN UTM: Universal Transverse Mercator

488StJohn_Construction

```
** DATUM      World Geodetic System 1984
** DTMGRN     Global Definition
** UNITS      m
** ZONE       10
** ZONEINX    0
**
```

#-4 HRA Calculations

HRA 488 St. John St.

For Nearby Resident

MEIR

	AERMOD OUT [$\mu\text{g}/\text{m}^3$]/[g/s]		
	annual	UTM X	UTM Y
Resident	402.9	599110	4133430

Construction Year	PM ₁₀ Exhaust (tons)		Start Date	End Date	Duration
	Unmitigated	Mitigated			Days
2021	0.0288	0.0012	7/1/2021	12/31/2021	183
2022	0.0240	0.0012	1/1/2022	7/15/2022	195

Construction Year	DPM Exhaust (g/s)	
	Unmitigated	Mitigated
2021	0.0016	0.0001
2022	0.0013	0.0001

$$\text{Cancer Risk} = \text{Dose inhalation} \times \text{Inhalation CPF} \times \text{ASF} \times \text{ED/AT} \times \text{FAH} \quad (\text{Equation 8.2.4 A})$$

Where:

Cancer Risk = residential inhalation cancer risk

$$\text{Dose inhalation (mg/kg-day)} = C_{\text{AIR}} \times \text{DBR} \times \text{A} \times \text{EF} \times 10^{-6} \quad (\text{Equation 5.4.1.1})$$

Inhalation CPF = inhalation cancer potency factor ($[\text{mg}/\text{kg}/\text{day}]^{-1}$)

ASF = age sensitivity factor for a specified age group (unitless)

ED = exposure duration for a specified age group (years)

AT = averaging time period over which exposure is averaged in days (years)

FAH = fraction of time at home (unitless)

Where:

C_{AIR} = concentration of compound in air in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

DBR = daily breathing rate in liter per kilogram of body weight per day (L/kg-body weight/day)

A = inhalation absorption factor (1 for DPM, unitless)

EF = exposure frequency in days per year (unitless, days/365 days)

10^{-6} = micrograms to milligrams conversion, liters to cubic meters conversion

$$\text{Hazard Quotient} = C_{\text{AIR}} / \text{REL} \quad (\text{Section 8.3.1})$$

Where:

Hazard Quotient = chronic non-cancer hazard

C_{AIR} = concentration of compound in air in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

REL = Chronic non-cancer Reference Exposure Level for substance ($\mu\text{g}/\text{m}^3$)

Dose Inhalation Inputs

Receptor Type	Exposure Scenario	Receptor Group Age	Year	C _{AIR} ($\mu\text{g}/\text{m}^3$)		DBR (L/kg-day)	A (unitless)	EF (days/year)
				Unmitigated	Mitigated			
Off-Site Child Resident	Construction	3rd Trimester	2021	6.65E-01	2.77E-02	361	1	0.96
		Age 0<2	2021	6.65E-01	2.77E-02	1090	1	0.96
			2022	5.20E-01	2.60E-02	1090	1	0.96

Dose Inhalation Outputs

Receptor Type	Exposure Scenario	Receptor Group Age	Year	Dose inhalation (mg/kg-day)	
				Unmitigated	Mitigated
Off-Site Child Resident	Construction	3rd Trimester	2021	2.30E-04	9.60E-06
		Age 0<2	2021	6.95E-04	2.90E-05
			2022	5.44E-04	2.72E-05

Risk Inputs

Receptor Type	Exposure Scenario	Receptor Group Age	Year	CPF ($\text{mg}/\text{kg}\cdot\text{day}^{-1}$)	ASF (unitless)	ED (years)	AT (years)	FAH (unitless)	MAF (unitless)
Off-Site Child Resident	Construction	3rd Trimester	2021	1.1	10	0.25	70.00	0.85	1
		Age 0<2	2021	1.1	10	0.25	70.00	0.85	1
			2022	1.1	10	0.53	70.00	0.85	1

Risk Outputs

Risk Outputs				Unmitigated	Mitigated	Unmitigated	Mitigated
Receptor Type	Exposure Scenario	Receptor Group Age	Year	Cancer Risk		Hazard Risk	
Off-Site Child Resident	Construction	3rd Trimester	2021	7.68E-06	3.21E-07	0.13	0.01
		Age 0<2	2021	2.32E-05	9.69E-07	0.13	0.01
			2022	3.88E-05	1.94E-06	0.10	0.01
Total Cancer Risk (per million)				69.8	3.23	0.13	0.01

SOURCE: Office of Environmental Health Hazard Assessment, 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments* . February. Daily breathing rate for school receptor is based on the OEHHA 95th percentile 8-hour moderate intensity breathing rates (Table 5.8). Fraction of time at home is set to 0.85 for residential since the nearest school unmitigated cancer risk is <1 per million, per OEHHA Table 8.4. Inhalation cancer potency factor from Table 7.1

HRA 488 St. John St.

For Nearby School

MEISR

AERMOD OUT	
[ug/m ³]/[g/s]	
annual	Location
School	0.95 St Patrick Parochial School

Construction Year	PM ₁₀ Exhaust (tons)		Start Date	End Date	Duration
	Unmitigated	Mitigated			Days
2021	0.02875	0.0012	7/1/2021	12/31/2021	183
2022	0.02398	0.0012	1/1/2022	7/15/2022	195

Construction Year	DPM Exhaust (g/s)	
	Unmitigated	Mitigated
2021	0.0016	0.0001
2022	0.0013	0.0001

Cancer Risk = Dose inhalation × Inhalation CPF × ASF × ED/AT × FAH (Equation 8.2.4 A)

Where:

Cancer Risk = residential inhalation cancer risk

Dose inhalation (mg/kg-day) = C_{AIR} × DBR × A × EF × 10⁻⁶ (Equation 5.4.1.1)

Inhalation CPF = inhalation cancer potency factor ([mg/kg/day]⁻¹)

ASF = age sensitivity factor for a specified age group (unitless)

ED = exposure duration for a specified age group (years)

AT = averaging time period over which exposure is averaged in days (years)

FAH = fraction of time at home (unitless)

Where:

C_{AIR} = concentration of compound in air in micrograms per cubic meter (µg/m³)

DBR = daily breathing rate in liter per kilogram of body weight per day (L/kg-body weight/day)

A = inhalation absorption factor (1 for DPM, unitless)

EF = exposure frequency in days per year (unitless, days/365 days)

10⁻⁶ = micrograms to milligrams conversion, liters to cubic meters conversion

Hazard Quotient = C_{AIR} / REL (Section 8.3.1)

Where:

Hazard Quotient = chronic non-cancer hazard

C_{AIR} = concentration of compound in air in micrograms per cubic meter (µg/m³)

REL = Chronic non-cancer Reference Exposure Level for substance (µg/m³)

Dose Inhalation Inputs

Receptor Type	Exposure Scenario	Receptor Group Age	Year	C _{AIR} (µg/m ³)		8 HR DBR (L/kg-day)	A (unitless)	EF (days/year)
				Unmitigated	Mitigated			
School	Construction	Age 2<16	2021	1.57E-03	6.55E-05	520	1	0.49
			2022	1.23E-03	6.15E-05			

Dose Inhalation Outputs

Receptor Type	Exposure Scenario	Receptor Group Age	Year	Dose inhalation (mg/kg-day)	
				Unmitigated	Mitigated
School	Construction	Age 2<16	2021	4.00E-07	1.67E-08
			2022	3.13E-07	1.57E-08

Risk Inputs

Receptor Type	Exposure Scenario	Receptor Group Age	Year	CPF (mg/kg-day ⁻¹)	ASF (unitless)	ED (years)	AT (years)	FAH (unitless)	MAF (unitless)
School	Construction	Age 2<16	2021	1.1	3	0.50	70.00	1	1.4
			2022	1.1	3	0.53	70.00	1	1.4

Risk Outputs

				Unmitigated	Mitigated	Unmitigated	Mitigated
Receptor Type	Exposure Scenario	Receptor Group Age	Year	Cancer Risk		Hazard Risk	
School	Construction	Age 2<16	2021	1.32E-08	5.52E-10	0.00	0.00
			2022	1.10E-08	5.52E-10	0.00	0.00
Total Cancer Risk (per million)				0.02	0.00	0.00	0.00

SOURCE: Office of Environmental Health Hazard Assessment, 2015. *Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments* . February.
 Daily breathing rate for school receptor is based on the OEHHA 95th percentile 8-hour moderate intensity breathing rates (Table 5.8).
 Fraction of time at home is set to 1 for residential since the nearest school unmitigated cancer risk is >1 per million, per OEHHA Table 8.4.
 Inhalation cancer potency factor from Table 7.1

Annual Average PM_{2.5} Concentration 488 St. John St.

For Nearby Resident and School

MEISR

	AERMOD OUT [ug/m ³]/[g/s]		
	annual	UTM X	UTM Y
Resident	402.9	599110	4133430
School	1.0	<i>St Patrick Parochial School</i>	

Construction Year	PM _{2.5} Exhaust (tons)		Start Date	End Date	Duration
	Unmitigated	Mitigated			Days
2021	0.0267	0.0012	7/1/2021	12/31/2021	183
2022	0.0222	0.0012	1/1/2022	7/15/2022	195

Construction Year	PM _{2.5} Exhaust (g/s)	
	Unmitigated	Mitigated
2021	0.0008	0.0000
2022	0.0006	0.0000

PM_{2.5} Annual Average Concentration

Receptor Type	Exposure Scenario	Year	Unmitigated	Mitigated
			C _{AIR} (µg/m ³)	
Off-Site Child Resident	Construction	2021	3.09E-01	1.39E-02
		2022	2.57E-01	1.39E-02
		Max	0.31	0.01
School	Construction	2021	7.29E-04	3.28E-05
		2022	6.07E-04	3.28E-05
		Max	0.00	0.00

Cumulative HRA 488 St. John St.

For Nearby Resident

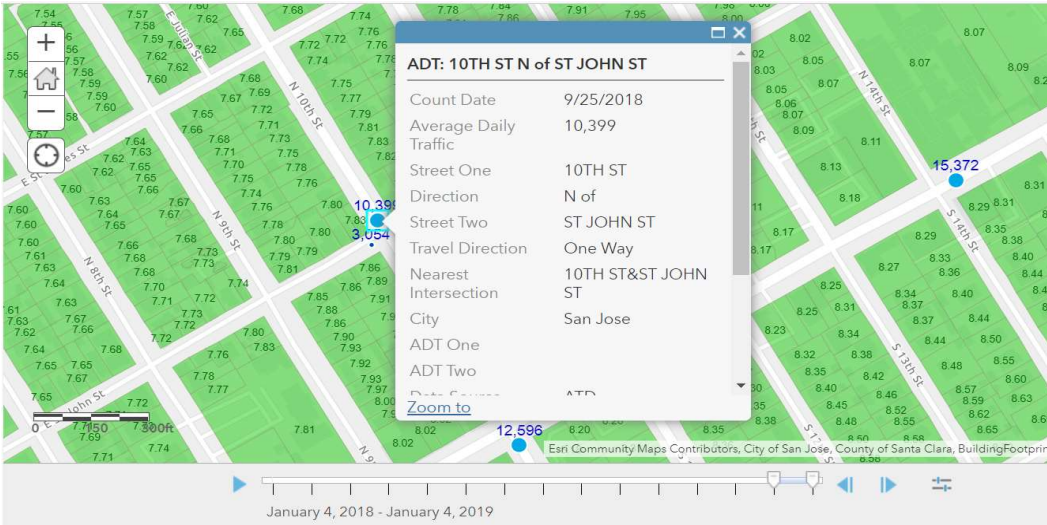
MEIR

	HRA Results				
	Unmitigated	Mitigated	UOM	UTM X	UTM Y
Cancer Risk	69.75	3.23	per million	599110.0	4133430.0
HI	0.13	0.01	unitless	599110.0	4133430.0
PM _{2.5}	0.31	0.01	µg/m ³	599110.0	4133430.0

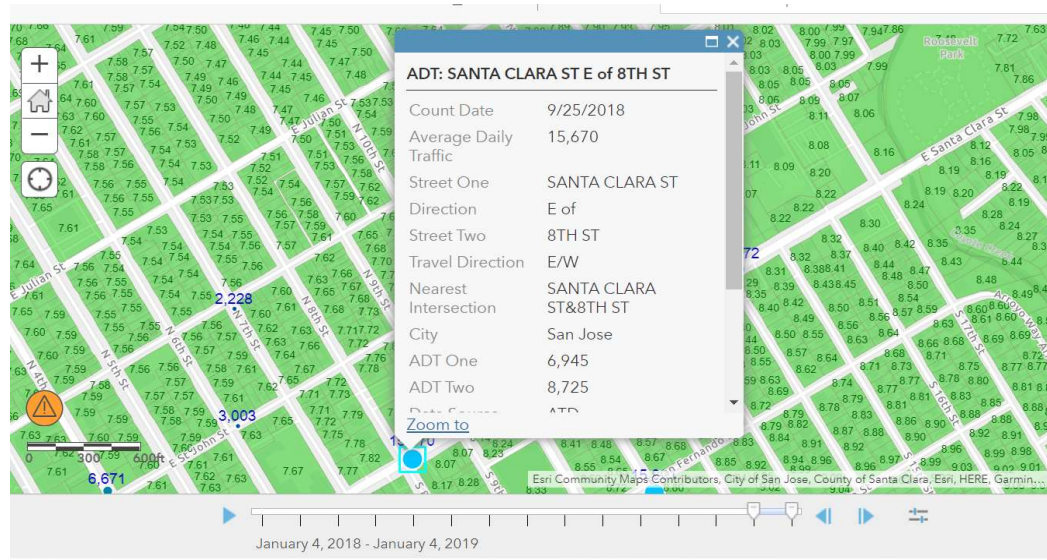
Risk from Roadways

<https://www.arcgis.com/home/webmap/viewer.html?webmap=723f618a25944d2b91bb382b61a84d2c>

10th Street



Santa Clara Street



Roadway Risk

Street	AADT	Distance to MEIR (ft)	Risk at MEIR			
			Cancer Risk ¹	Adjusted ²	UOM	PM _{2.5} UOM
10th Street	10399	270	2.24	3.08	per million	0.052 µg/m ³
Santa Clara St	15670	425	2.16	2.97	per million	0.04 µg/m ³

1. From BAAQMD's Roadway Screening Analysis Calculator
2. Adjusted with a 37.44% increase to account for OEHHA 2012 breathing rates

Stationary Source Risk

<https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65>

Sources within 1000 feet from MEIR

FID	FACID	Name	Address	Cancer	Hazard	PM_25	Type	UTM X	UTM Y
	6746	100402 City Gas	510 E Santa Clara St	6.72	0.03	0	Gas Dispensing Facility	599208.1	4133290
	8165	111650 7-Eleven #17496	452 E Santa Clara St	2.29	0.01	0	Gas Dispensing Facility	599119.5	4133289

Stationary Source Risk

FACID	Name	Distance to MEIR (ft)	Risk at MEIR					
			Cancer Risk ¹	UOM	Hazard	UOM	PM _{2.5}	UOM
100402	City Gas	561	0.27	per million	0.00	unitless	0	µg/m ³
111650	7-Eleven #17496	464	0.12	per million	0.00	unitless	0	µg/m ³

1. BAAQMD Health Risk Calculator (Beta 4.0)

Total Background + Project at MEIR

Unmitigated

	Cumulative HRA Results		
	Cancer Risk per million	HI unitless	PM _{2.5} µg/m ³
Project	69.8	0.13	0.31
City Gas	0.3	<0.01	0.00
7-Eleven #17496	0.1	<0.01	0.00
10th Street	3.1	0.00	0.05
Santa Clara St	3.0	0.00	0.04
Total	76.19	0.13	0.40
Significant?	No	No	No

Mitigated

	Cumulative HRA Results		
	Cancer Risk per million	HI unitless	PM _{2.5} µg/m ³
Project	3.23	0.01	0.01
City Gas	0.27	<0.01	0.00
7-Eleven #17496	0.12	<0.01	0.00
10th Street	3.08	0.00	0.05
Santa Clara St	2.97	0.00	0.04
Total	9.67	0.01	0.11
Significant?	No	No	No

Cumulative HRA 488 St. John St.

For New Project Resident

Background impacts of siting a new receptor

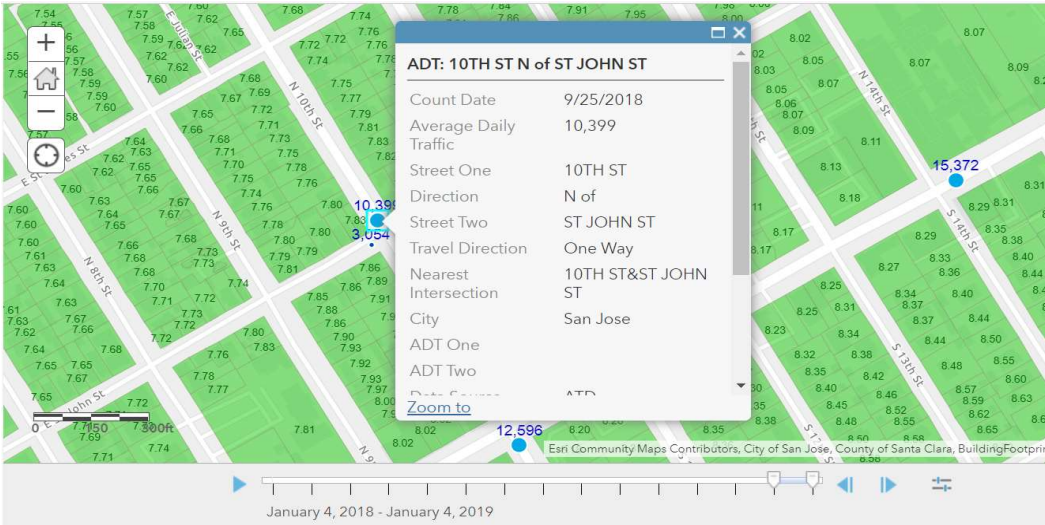
MEIR

	488 St. John Street Resident	
	UTM X	UTM Y
New Resident	599095.0	4133433.0

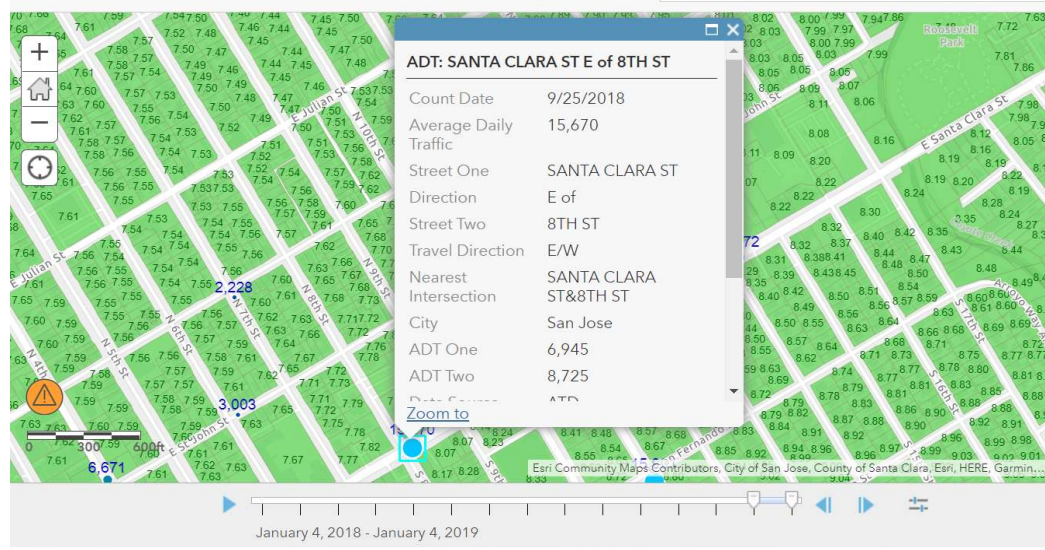
Risk from Roadways

<https://www.arcgis.com/home/webmap/viewer.html?webmap=723f618a25944d2b91bb382b61a84d2c>

10th Street



Santa Clara Street



Roadway Risk

Street	AADT	Distance to MEIR (ft)	Risk at MEIR			
			Cancer Risk ¹	Adjusted ²	UOM	PM _{2.5} UOM
10th Street	10399	215	2.77	3.81	per million	0.07 µg/m ³
Santa Clara St	15670	430	2.16	2.97	per million	0.04 µg/m ³

1. From BAAQMD's Roadway Screening Analysis Calculator
2. Adjusted with a 37.44% increase to account for OEHHA 2012 breathing rates

Stationary Source Risk

<https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65>

Sources within 1000 feet from MEIR

FID	FACID	Name	Address	Cancer	Hazard	PM_25	Type	UTM X	UTM Y
	6746	100402 City Gas	510 E Santa Clara St	6.72	0.03	0	Gas Dispensing Facility	599208.1	4133290
	8165	111650 7-Eleven #17496	452 E Santa Clara St	2.29	0.01	0	Gas Dispensing Facility	599119.5	4133289

Stationary Source Risk

FACID	Name	Distance to MEIR (ft)	Risk at MEIR					
			Cancer Risk ¹	UOM	Hazard	UOM	PM _{2.5}	UOM
100402	City Gas	598	0.24	per million	0.00	unitless	0	µg/m ³
111650	7-Eleven #17496	480	0.12	per million	0.00	unitless	0	µg/m ³

1. BAAQMD Health Risk Calculator (Beta 4.0)

Total Background at the Project

New Resident, Background only

	Cumulative HRA Results		
	Cancer Risk	HI	PM _{2.5}
	per million	unitless	µg/m ³
City Gas	0.2	<0.01	0.00
7-Eleven #17496	0.1	<0.01	0.00
10th Street	3.8	0.00	0.07
Santa Clara St	3.0	0.00	0.04
Total	7.13	0.00	0.11
Significant?	No	No	No

#-5 BAAQMD Roadway Screening Tool Outputs

MEIR - Offsite Receptor

Bay Area Air Quality Management District

Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

- County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.
- Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.
- Side of the Roadway: Identify on which side of the roadway the project is located.
- Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.
- Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>.

Notes and References listed below the Search Boxes

Search Parameters	Results
County	Santa Clara County
Roadway Direction	NORTH-SOUTH DIRECTIONAL ROADWAY
Side of the Roadway	PM2.5 annual average
Distance from Roadway	0.052 ($\mu\text{g}/\text{m}^3$)
Annual Average Daily Traffic (ADT)	Cancer Risk
	2.24 (per million)
	Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

MEIR - Offsite Receptor

Bay Area Air Quality Management District

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Notes and References listed below the Search Boxes

Search Parameters	Results
County	Santa Clara County
Roadway Direction	EAST-WEST DIRECTIONAL ROADWAY
Side of the Roadway	PM2.5 annual average
Distance from Roadway	0.040 ($\mu\text{g}/\text{m}^3$)
Annual Average Daily Traffic (ADT)	Cancer Risk
	2.16 (per million)
	Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
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New Project - Onsite Receptor

Bay Area Air Quality Management District

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Notes and References listed below the Search Boxes

Search Parameters	Results
County	Santa Clara County
Roadway Direction	NORTH-SOUTH DIRECTIONAL ROADWAY
Side of the Roadway	PM2.5 annual average
Distance from Roadway	0.065 ($\mu\text{g}/\text{m}^3$)
Annual Average Daily Traffic (ADT)	Cancer Risk
	2.77 (per million)
	Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

New Project - Onsite Receptor

Bay Area Air Quality Management District

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- **County:** Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.
- **Roadway Direction:** Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.
- **Side of the Roadway:** Identify on which side of the roadway the project is located.
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- **Annual Average Daily Traffic (ADT):** Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx>.

Notes and References listed below the Search Boxes

Search Parameters	Results
County	Santa Clara County
Roadway Direction	EAST-WEST DIRECTIONAL ROADWAY
Side of the Roadway	PM2.5 annual average
Distance from Roadway	0.040 ($\mu\text{g}/\text{m}^3$)
Annual Average Daily Traffic (ADT)	Cancer Risk
	2.16 (per million)
	Data for Santa Clara County based on meteorological data collected from San Jose Airport in 1997

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using CALINE4 air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.