Appendix A

TAC Assessment

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
1 Willowbrook Court, Suite 120
Petaluma, California 94954
Tel: 707-794-0400 *Fax: 707-794-0405*
www.illingworthrodkin.com *illro@illingworthrodkin.com*

M E M O

Date: December 5, 2017
To: Leianne Humble
Denise Duffy & Associates, Inc.

From: Joshua Carman
RE: **2829 Monterey Road Mini-Storage Construction TAC Assessment**
SUBJECT: **Project Revisions** Job# 15-264

Illingworth & Rodkin, Inc. prepared the construction community risk assessment for this project in 2017.[1] This study addressed construction toxic air contaminant (TAC) impacts that would be attributable to implementation of the proposed project. Since then, the project has been modified slightly to include the following uses: 150,297 sf of storage, 2,216 sf of office and on-site residence, and 32 parking lot spaces. The anticipated construction schedule and equipment list would not change.

Community Risk Impacts

The CalEEMod model was rerun with the updated project information, as described above. *Attachment A* includes the revised CalEEMod input and output values for construction emissions.

Results of the July 2017 study found the incremental residential child cancer risk at the maximally exposed individual (MEI) to be 54.7 in one million, which exceeds the BAAQMD significance threshold of 10 in one million. The updated community risk assessment focused on modeling on-site construction activity using the updated project description. The CalEEMod model provided total annual $PM_{2.5}$ exhaust emissions (assumed to be DPM) and fugitive $PM_{2.5}$ dust. Results of remodeling indicate that the total DPM would not change under the revised project. Therefore, predicted incremental cancer risk would remain at 54.7 in one million.

During the first year of construction, predicted annual $PM_{2.5}$ concentration would remain the same and during the second year of construction would increase by about nine percent. However, because the maximum annual $PM_{2.5}$ concentration is based on the highest construction year which, for this project, would be the first year, predicted annual $PM_{2.5}$ concentration would remain at 0.6 $\mu g/m^3$. Therefore, annual $PM_{2.5}$ concentration would exceed the BAAQMD significance threshold of 0.3 $\mu g/m^3$.

Mitigation Measures AQ-1 and AQ-2 would still be recommended to require Tier 4 construction equipment and would still reduce the impact to a level of less than significant.

[1] Illingworth & Rodkin, Inc. 2017. *2829 Monterey Road Mini-Storage Warehouse Construction TAC Assessment – San Jose, California*. July 29.

Attachment A: CalEEMod Input and Output Worksheets

Revised (2017) Monterey Road Self Storage (Dec 2017)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2.22	1000sqft	0.00	2,216.00	0
Unrefrigerated Warehouse-No Rail	150.30	1000sqft	2.57	150,297.00	0
Parking Lot	32.00	Space	0.00	12,800.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	435	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2014 certified rate

Land Use - Based on 11/15/17 Plans

Construction Phase - Phase 1 schedule

Off-road Equipment -

Off-road Equipment - from Phase 1 equipment list

Off-road Equipment - from Phase 1 equipment list, no generators (temp line power)

Off-road Equipment - from Phase 1 equipment list

Off-road Equipment - from Phase 1 equipment list

Off-road Equipment - from Phase 1 equipment list

Trips and VMT - 1mi trip lengths for on- and near-site travel. Paving: asphalt (10,628 cy @16cy truck = 1,330 trips). Bldg: cement (979 trucks) 1,958 trips

Grading - Net 6,100 cy to be off-hauled.

Construction Off-road Equipment Mitigation - Tier 4 equipment and BMPs

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	10.00	115.00
tblConstructionPhase	NumDays	220.00	130.00
tblConstructionPhase	NumDays	6.00	20.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	3.00	40.00
tblGrading	MaterialExported	0.00	6,100.00

tblLandUse	LotAcreage	0.05	0.00
tblLandUse	LotAcreage	3.45	2.57
tblLandUse	LotAcreage	0.29	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.30
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	435
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripLength	20.00	1.00
tblTripsAndVMT	HaulingTripNumber	763.00	762.00

tblTripsAndVMT	HaulingTripNumber	0.00	1,958.00
tblTripsAndVMT	HaulingTripNumber	0.00	1,330.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.1204	1.3907	0.5824	1.1500e-003	0.3295	0.0651	0.3946	0.1688	0.0599	0.2287	0.0000	107.1284	107.1284	0.0316	0.0000	107.9192
2018	0.9305	1.3096	1.0033	1.6800e-003	6.8100e-003	0.0728	0.0796	1.8700e-003	0.0689	0.0707	0.0000	152.4483	152.4483	0.0313	0.0000	153.2304
Maximum	**0.9305**	**1.3907**	**1.0033**	**1.6800e-003**	**0.3295**	**0.0728**	**0.3946**	**0.1688**	**0.0689**	**0.2287**	**0.0000**	**152.4483**	**152.4483**	**0.0316**	**0.0000**	**153.2304**

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	0.0211	0.3956	0.6633	1.1500e-003	0.0753	1.8900e-003	0.0772	0.0383	1.8800e-003	0.0402	0.0000	107.1283	107.1283	0.0316	0.0000	107.9191
2018	0.8391	0.8213	1.0105	1.6800e-003	6.8100e-003	2.5800e-003	9.3900e-003	1.8700e-003	2.5500e-003	4.4200e-003	0.0000	152.4482	152.4482	0.0313	0.0000	153.2303
Maximum	**0.8391**	**0.8213**	**1.0105**	**1.6800e-003**	**0.0753**	**2.5800e-003**	**0.0772**	**0.0383**	**2.5500e-003**	**0.0402**	**0.0000**	**152.4482**	**152.4482**	**0.0316**	**0.0000**	**153.2303**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**18.15**	**54.94**	**-5.55**	**0.00**	**75.58**	**96.76**	**81.74**	**76.47**	**96.56**	**85.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-2017**	**11-30-2017**	1.1450	0.2677
2	**12-1-2017**	**2-28-2018**	0.6750	0.3386
3	**3-1-2018**	**5-31-2018**	0.6925	0.4779
4	**6-1-2018**	**8-31-2018**	0.7665	0.6213
5	**9-1-2018**	**9-30-2018**	0.4013	0.3128
		Highest	1.1450	0.6213

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	0.6764	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5200e-003
Energy	3.0200e-003	0.0275	0.0231	1.6000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	146.8855	146.8855	8.3700e-003	2.1600e-003	147.7390

Mobile	0.0879	0.3845	1.1144	3.4000e-003	0.2907	3.8600e-003	0.2945	0.0778	3.6300e-003	0.0815	0.0000	310.2992	310.2992	0.0114	0.0000	310.5838
Waste						0.0000	0.0000		0.0000	0.0000	29.0967	0.0000	29.0967	1.7196	0.0000	72.0859
Water						0.0000	0.0000		0.0000	0.0000	11.1519	37.6968	48.8487	1.1479	0.0276	85.7613
Total	**0.7673**	**0.4120**	**1.1392**	**3.5600e-003**	**0.2907**	**5.9600e-003**	**0.2966**	**0.0778**	**5.7300e-003**	**0.0836**	**40.2487**	**494.8848**	**535.1334**	**2.8873**	**0.0297**	**616.1735**

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	0.6764	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5200e-003
Energy	3.0200e-003	0.0275	0.0231	1.6000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	146.8855	146.8855	8.3700e-003	2.1600e-003	147.7390
Mobile	0.0879	0.3845	1.1144	3.4000e-003	0.2907	3.8600e-003	0.2945	0.0778	3.6300e-003	0.0815	0.0000	310.2992	310.2992	0.0114	0.0000	310.5838
Waste						0.0000	0.0000		0.0000	0.0000	29.0967	0.0000	29.0967	1.7196	0.0000	72.0859
Water						0.0000	0.0000		0.0000	0.0000	11.1519	37.6968	48.8487	1.1479	0.0276	85.7613
Total	**0.7673**	**0.4120**	**1.1392**	**3.5600e-003**	**0.2907**	**5.9600e-003**	**0.2966**	**0.0778**	**5.7300e-003**	**0.0836**	**40.2487**	**494.8848**	**535.1334**	**2.8873**	**0.0297**	**616.1735**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	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	Site Preparation	Site Preparation	9/29/2017	11/23/2017	5	40	
2	Grading	Grading	11/24/2017	12/21/2017	5	20	
3	Building Construction	Building Construction	12/22/2017	6/21/2018	5	130	
4	Architectural Coating	Architectural Coating	5/1/2018	10/8/2018	5	115	
5	Paving	Paving	9/5/2018	10/2/2018	5	20	

Acres of Grading (Site Preparation Phase): 40

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 228,770; Non-Residential Outdoor: 76,257; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Scrapers	0	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	0	0.30	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Architectural Coating	Air Compressors	2	8.00	78	0.48
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36

Paving	Rollers	1	8.00	80	0.38
Paving	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
Site Preparation	6	15.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	762.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	69.00	27.00	1,958.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	14.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Paving	4	10.00	0.00	1,330.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2621	0.0000	0.2621	0.1347	0.0000	0.1347	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0833	0.9553	0.3592	7.3000e-004		0.0451	0.0451		0.0415	0.0415	0.0000	67.9838	67.9838	0.0208	0.0000	68.5046

Total	**0.0833**	**0.9553**	**0.3592**	**7.3000e-004**	**0.2621**	**0.0451**	**0.3072**	**0.1347**	**0.0415**	**0.1762**	**0.0000**	**67.9838**	**67.9838**	**0.0208**	**0.0000**	**68.5046**

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	4.6000e-004	2.3000e-004	2.8600e-003	0.0000	2.2000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2663	0.2663	2.0000e-005	0.0000	0.2667
Total	**4.6000e-004**	**2.3000e-004**	**2.8600e-003**	**0.0000**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2663**	**0.2663**	**2.0000e-005**	**0.0000**	**0.2667**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0590	0.0000	0.0590	0.0303	0.0000	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0127	0.2139	0.4155	7.3000e-004		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	67.9838	67.9838	0.0208	0.0000	68.5045
Total	**0.0127**	**0.2139**	**0.4155**	**7.3000e-004**	**0.0590**	**1.1900e-003**	**0.0602**	**0.0303**	**1.1900e-003**	**0.0315**	**0.0000**	**67.9838**	**67.9838**	**0.0208**	**0.0000**	**68.5045**

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	4.6000e-004	2.3000e-004	2.8600e-003	0.0000	2.2000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2663	0.2663	2.0000e-005	0.0000	0.2667
Total	**4.6000e-004**	**2.3000e-004**	**2.8600e-003**	**0.0000**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2663**	**0.2663**	**2.0000e-005**	**0.0000**	**0.2667**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0659	0.0000	0.0659	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0311	0.3476	0.1805	3.2000e-004		0.0174	0.0174		0.0160	0.0160	0.0000	29.4612	29.4612	9.0300e-003	0.0000	29.6869
Total	**0.0311**	**0.3476**	**0.1805**	**3.2000e-004**	**0.0659**	**0.0174**	**0.0833**	**0.0337**	**0.0160**	**0.0498**	**0.0000**	**29.4612**	**29.4612**	**9.0300e-003**	**0.0000**	**29.6869**

Unmitigated Construction Off-Site

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

Hauling	1.1300e-003	0.0433	8.2200e-003	5.0000e-005	3.3000e-004	8.0000e-005	4.1000e-004	9.0000e-005	8.0000e-005	1.7000e-004	0.0000	4.8579	4.8579	6.6000e-004	0.0000	4.8743
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	2.3000e-004	1.2000e-004	1.4300e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1332	0.1332	1.0000e-005	0.0000	0.1334
Total	**1.3600e-003**	**0.0434**	**9.6500e-003**	**5.0000e-005**	**4.4000e-004**	**8.0000e-005**	**5.2000e-004**	**1.2000e-004**	**8.0000e-005**	**2.0000e-004**	**0.0000**	**4.9910**	**4.9910**	**6.7000e-004**	**0.0000**	**5.0076**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0148	0.0000	0.0148	7.5900e-003	0.0000	7.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1400e-003	0.1126	0.2057	3.2000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	29.4612	29.4612	9.0300e-003	0.0000	29.6869
Total	**5.1400e-003**	**0.1126**	**0.2057**	**3.2000e-004**	**0.0148**	**5.2000e-004**	**0.0153**	**7.5900e-003**	**5.2000e-004**	**8.1100e-003**	**0.0000**	**29.4612**	**29.4612**	**9.0300e-003**	**0.0000**	**29.6869**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1300e-003	0.0433	8.2200e-003	5.0000e-005	3.3000e-004	8.0000e-005	4.1000e-004	9.0000e-005	8.0000e-005	1.7000e-004	0.0000	4.8579	4.8579	6.6000e-004	0.0000	4.8743
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	2.3000e-004	1.2000e-004	1.4300e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1332	0.1332	1.0000e-005	0.0000	0.1334

Total	**1.3600e-003**	**0.0434**	**9.6500e-003**	**5.0000e-005**	**4.4000e-004**	**8.0000e-005**	**5.2000e-004**	**1.2000e-004**	**8.0000e-005**	**2.0000e-004**	**0.0000**	**4.9910**	**4.9910**	**6.7000e-004**	**0.0000**	**5.0076**

3.4 Building Construction - 2017

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	3.4800e-003	0.0329	0.0253	3.0000e-005		2.5100e-003	2.5100e-003		2.3100e-003	2.3100e-003	0.0000	3.0238	3.0238	9.3000e-004	0.0000	3.0469
Total	**3.4800e-003**	**0.0329**	**0.0253**	**3.0000e-005**		**2.5100e-003**	**2.5100e-003**		**2.3100e-003**	**2.3100e-003**	**0.0000**	**3.0238**	**3.0238**	**9.3000e-004**	**0.0000**	**3.0469**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	5.1300e-003	9.8000e-004	1.0000e-005	6.3000e-004	1.0000e-005	6.4000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.5761	0.5761	8.0000e-005	0.0000	0.5781
Vendor	2.2000e-004	6.0800e-003	2.0200e-003	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.6423	0.6423	8.0000e-005	0.0000	0.6443
Worker	3.2000e-004	1.6000e-004	1.9700e-003	0.0000	1.5000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1838	0.1838	1.0000e-005	0.0000	0.1841
Total	**6.7000e-004**	**0.0114**	**4.9700e-003**	**2.0000e-005**	**8.5000e-004**	**3.0000e-005**	**9.0000e-004**	**2.2000e-004**	**3.0000e-005**	**2.5000e-004**	**0.0000**	**1.4022**	**1.4022**	**1.7000e-004**	**0.0000**	**1.4065**

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	7.3000e-004	0.0142	0.0246	3.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	3.0238	3.0238	9.3000e-004	0.0000	3.0469
Total	**7.3000e-004**	**0.0142**	**0.0246**	**3.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**3.0238**	**3.0238**	**9.3000e-004**	**0.0000**	**3.0469**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	5.1300e-003	9.8000e-004	1.0000e-005	6.3000e-004	1.0000e-005	6.4000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.5761	0.5761	8.0000e-005	0.0000	0.5781
Vendor	2.2000e-004	6.0800e-003	2.0200e-003	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-004	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.6423	0.6423	8.0000e-005	0.0000	0.6443
Worker	3.2000e-004	1.6000e-004	1.9700e-003	0.0000	1.5000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1838	0.1838	1.0000e-005	0.0000	0.1841
Total	**6.7000e-004**	**0.0114**	**4.9700e-003**	**2.0000e-005**	**8.5000e-004**	**3.0000e-005**	**9.0000e-004**	**2.2000e-004**	**3.0000e-005**	**2.5000e-004**	**0.0000**	**1.4022**	**1.4022**	**1.7000e-004**	**0.0000**	**1.4065**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

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

Off-Road	0.0605	0.5868	0.5097	6.7000e-004		0.0424	0.0424		0.0391	0.0391	0.0000	61.4265	61.4265	0.0191	0.0000	61.9046
Total	**0.0605**	**0.5868**	**0.5097**	**6.7000e-004**		**0.0424**	**0.0424**		**0.0391**	**0.0391**	**0.0000**	**61.4265**	**61.4265**	**0.0191**	**0.0000**	**61.9046**

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	2.4500e-003	0.1029	0.0182	1.3000e-004	8.4000e-004	1.4000e-004	9.8000e-004	2.3000e-004	1.3000e-004	3.7000e-004	0.0000	12.0982	12.0982	1.4900e-003	0.0000	12.1354
Vendor	4.0300e-003	0.1218	0.0375	1.4000e-004	1.5500e-003	3.4000e-004	1.8800e-003	4.5000e-004	3.2000e-004	7.7000e-004	0.0000	13.4373	13.4373	1.5300e-003	0.0000	13.4755
Worker	5.8600e-003	2.8600e-003	0.0358	4.0000e-005	3.1800e-003	5.0000e-005	3.2300e-003	8.5000e-004	4.0000e-005	8.9000e-004	0.0000	3.6958	3.6958	2.0000e-004	0.0000	3.7007
Total	**0.0123**	**0.2275**	**0.0914**	**3.1000e-004**	**5.5700e-003**	**5.3000e-004**	**6.0900e-003**	**1.5300e-003**	**4.9000e-004**	**2.0300e-003**	**0.0000**	**29.2312**	**29.2312**	**3.2200e-003**	**0.0000**	**29.3117**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0151	0.2936	0.5076	6.7000e-004		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	61.4265	61.4265	0.0191	0.0000	61.9045
Total	**0.0151**	**0.2936**	**0.5076**	**6.7000e-004**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**	**0.0000**	**61.4265**	**61.4265**	**0.0191**	**0.0000**	**61.9045**

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	2.4500e-003	0.1029	0.0182	1.3000e-004	8.4000e-004	1.4000e-004	9.8000e-004	2.3000e-004	1.3000e-004	3.7000e-004	0.0000	12.0982	12.0982	1.4900e-003	0.0000	12.1354
Vendor	4.0300e-003	0.1218	0.0375	1.4000e-004	1.5500e-003	3.4000e-004	1.8800e-003	4.5000e-004	3.2000e-004	7.7000e-004	0.0000	13.4373	13.4373	1.5300e-003	0.0000	13.4755
Worker	5.8600e-003	2.8600e-003	0.0358	4.0000e-005	3.1800e-003	5.0000e-005	3.2300e-003	8.5000e-004	4.0000e-005	8.9000e-004	0.0000	3.6958	3.6958	2.0000e-004	0.0000	3.7007
Total	**0.0123**	**0.2275**	**0.0914**	**3.1000e-004**	**5.5700e-003**	**5.3000e-004**	**6.0900e-003**	**1.5300e-003**	**4.9000e-004**	**2.0300e-003**	**0.0000**	**29.2312**	**29.2312**	**3.2200e-003**	**0.0000**	**29.3117**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7979					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0458	0.3076	0.2843	4.6000e-004		0.0231	0.0231		0.0231	0.0231	0.0000	39.1500	39.1500	3.7200e-003	0.0000	39.2430
Total	**0.8437**	**0.3076**	**0.2843**	**4.6000e-004**		**0.0231**	**0.0231**		**0.0231**	**0.0231**	**0.0000**	**39.1500**	**39.1500**	**3.7200e-003**	**0.0000**	**39.2430**

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	1.1000e-003	5.4000e-004	6.7300e-003	1.0000e-005	6.0000e-004	1.0000e-005	6.1000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.6954	0.6954	4.0000e-005	0.0000	0.6964
Total	**1.1000e-003**	**5.4000e-004**	**6.7300e-003**	**1.0000e-005**	**6.0000e-004**	**1.0000e-005**	**6.1000e-004**	**1.6000e-004**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**0.6954**	**0.6954**	**4.0000e-005**	**0.0000**	**0.6964**

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	0.7979					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3500e-003	0.1625	0.2810	4.6000e-004		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	39.1499	39.1499	3.7200e-003	0.0000	39.2429
Total	**0.8063**	**0.1625**	**0.2810**	**4.6000e-004**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**39.1499**	**39.1499**	**3.7200e-003**	**0.0000**	**39.2429**

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	1.1000e-003	5.4000e-004	6.7300e-003	1.0000e-005	6.0000e-004	1.0000e-005	6.1000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.6954	0.6954	4.0000e-005	0.0000	0.6964
Total	**1.1000e-003**	**5.4000e-004**	**6.7300e-003**	**1.0000e-005**	**6.0000e-004**	**1.0000e-005**	**6.1000e-004**	**1.6000e-004**	**1.0000e-005**	**1.7000e-004**	**0.0000**	**0.6954**	**0.6954**	**4.0000e-005**	**0.0000**	**0.6964**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0109	0.1139	0.0974	1.5000e-004		6.6400e-003	6.6400e-003		6.1100e-003	6.1100e-003	0.0000	13.2433	13.2433	4.1200e-003	0.0000	13.3463
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0109**	**0.1139**	**0.0974**	**1.5000e-004**		**6.6400e-003**	**6.6400e-003**		**6.1100e-003**	**6.1100e-003**	**0.0000**	**13.2433**	**13.2433**	**4.1200e-003**	**0.0000**	**13.3463**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7500e-003	0.0733	0.0130	9.0000e-005	5.8000e-004	1.0000e-004	6.8000e-004	1.6000e-004	1.0000e-004	2.6000e-004	0.0000	8.6155	8.6155	1.0600e-003	0.0000	8.6420
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	1.4000e-004	7.0000e-005	8.4000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0864	0.0864	0.0000	0.0000	0.0865
Total	**1.8900e-003**	**0.0734**	**0.0138**	**9.0000e-005**	**6.5000e-004**	**1.0000e-004**	**7.6000e-004**	**1.8000e-004**	**1.0000e-004**	**2.8000e-004**	**0.0000**	**8.7019**	**8.7019**	**1.0600e-003**	**0.0000**	**8.7285**

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	2.3700e-003	0.0637	0.1099	1.5000e-004		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	13.2433	13.2433	4.1200e-003	0.0000	13.3463
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.3700e-003**	**0.0637**	**0.1099**	**1.5000e-004**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**13.2433**	**13.2433**	**4.1200e-003**	**0.0000**	**13.3463**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7500e-003	0.0733	0.0130	9.0000e-005	5.8000e-004	1.0000e-004	6.8000e-004	1.6000e-004	1.0000e-004	2.6000e-004	0.0000	8.6155	8.6155	1.0600e-003	0.0000	8.6420
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	1.4000e-004	7.0000e-005	8.4000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0864	0.0864	0.0000	0.0000	0.0865
Total	**1.8900e-003**	**0.0734**	**0.0138**	**9.0000e-005**	**6.5000e-004**	**1.0000e-004**	**7.6000e-004**	**1.8000e-004**	**1.0000e-004**	**2.8000e-004**	**0.0000**	**8.7019**	**8.7019**	**1.0600e-003**	**0.0000**	**8.7285**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	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	0.0879	0.3845	1.1144	3.4000e-003	0.2907	3.8600e-003	0.2945	0.0778	3.6300e-003	0.0815	0.0000	310.2992	310.2992	0.0114	0.0000	310.5838
Unmitigated	0.0879	0.3845	1.1144	3.4000e-003	0.2907	3.8600e-003	0.2945	0.0778	3.6300e-003	0.0815	0.0000	310.2992	310.2992	0.0114	0.0000	310.5838

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	24.44	5.45	2.33	44,378	44,378
Unrefrigerated Warehouse-No Rail	252.50	252.50	252.50	737,174	737,174
Parking Lot	0.00	0.00	0.00		
Total	276.94	257.95	254.83	781,551	781,551

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3
Parking Lot	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
General Office Building	0.601004	0.039123	0.186461	0.109772	0.016124	0.004965	0.012251	0.019838	0.002045	0.001602	0.005388	0.000616	0.000812
Unrefrigerated Warehouse-No Rail	0.601004	0.039123	0.186461	0.109772	0.016124	0.004965	0.012251	0.019838	0.002045	0.001602	0.005388	0.000616	0.000812
Parking Lot	0.601004	0.039123	0.186461	0.109772	0.016124	0.004965	0.012251	0.019838	0.002045	0.001602	0.005388	0.000616	0.000812

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	116.9490	116.9490	7.8000e-003	1.6100e-003	117.6246
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	116.9490	116.9490	7.8000e-003	1.6100e-003	117.6246
NaturalGas Mitigated	3.0200e-003	0.0275	0.0231	1.6000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9366	29.9366	5.7000e-004	5.5000e-004	30.1145
NaturalGas Unmitigated	3.0200e-003	0.0275	0.0231	1.6000e-004		2.0900e-003	2.0900e-003		2.0900e-003	2.0900e-003	0.0000	29.9366	29.9366	5.7000e-004	5.5000e-004	30.1145

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					
General Office Building	36453.2	2.0000e-004	1.7900e-003	1.5000e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9453	1.9453	4.0000e-005	4.0000e-005	1.9568
Parking Lot	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
Unrefrigerated Warehouse-No Rail	524537	2.8300e-003	0.0257	0.0216	1.5000e-004		1.9500e-003	1.9500e-003		1.9500e-003	1.9500e-003	0.0000	27.9913	27.9913	5.4000e-004	5.1000e-004	28.1576
Total		**3.0300e-003**	**0.0275**	**0.0231**	**1.6000e-004**		**2.0900e-003**	**2.0900e-003**		**2.0900e-003**	**2.0900e-003**	**0.0000**	**29.9366**	**29.9366**	**5.8000e-004**	**5.5000e-004**	**30.1144**

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					
General Office Building	36453.2	2.0000e-004	1.7900e-003	1.5000e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9453	1.9453	4.0000e-005	4.0000e-005	1.9568
Parking Lot	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
Unrefrigerated Warehouse-No Rail	524537	2.8300e-003	0.0257	0.0216	1.5000e-004		1.9500e-003	1.9500e-003		1.9500e-003	1.9500e-003	0.0000	27.9913	27.9913	5.4000e-004	5.1000e-004	28.1576
Total		**3.0300e-003**	**0.0275**	**0.0231**	**1.6000e-004**		**2.0900e-003**	**2.0900e-003**		**2.0900e-003**	**2.0900e-003**	**0.0000**	**29.9366**	**29.9366**	**5.8000e-004**	**5.5000e-004**	**30.1144**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	40375.5	7.9666	5.3000e-004	1.1000e-004	8.0126
Parking Lot	11264	2.2225	1.5000e-004	3.0000e-005	2.2354
Unrefrigerated Warehouse-No Rail	541069	106.7598	7.1200e-003	1.4700e-003	107.3766
Total		**116.9489**	**7.8000e-003**	**1.6100e-003**	**117.6246**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	40375.5	7.9666	5.3000e-004	1.1000e-004	8.0126
Parking Lot	11264	2.2225	1.5000e-004	3.0000e-005	2.2354
Unrefrigerated Warehouse-No Rail	541069	106.7598	7.1200e-003	1.4700e-003	107.3766
Total		**116.9489**	**7.8000e-003**	**1.6100e-003**	**117.6246**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	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	0.6764	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5200e-003
Unmitigated	0.6764	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5200e-003

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	0.0798					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5200e-003
Total	**0.6764**	**2.0000e-005**	**1.7100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.3000e-003**	**3.3000e-003**	**1.0000e-005**	**0.0000**	**3.5200e-003**

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	0.0798					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.6000e-004	2.0000e-005	1.7100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.3000e-003	3.3000e-003	1.0000e-005	0.0000	3.5200e-003
Total	**0.6764**	**2.0000e-005**	**1.7100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.3000e-003**	**3.3000e-003**	**1.0000e-005**	**0.0000**	**3.5200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	48.8487	1.1479	0.0276	85.7613
Unmitigated	48.8487	1.1479	0.0276	85.7613

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.394569 / 0.241833	0.7135	0.0129	3.1000e-004	1.1287
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	34.7569 / 0	48.1352	1.1350	0.0273	84.6326
Total		**48.8487**	**1.1479**	**0.0276**	**85.7613**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.394569 / 0.241833	0.7135	0.0129	3.1000e-004	1.1287

Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	34.7569 / 0	48.1352	1.1350	0.0273	84.6326
Total		**48.8487**	**1.1479**	**0.0276**	**85.7613**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	29.0967	1.7196	0.0000	72.0859
Unmitigated	29.0967	1.7196	0.0000	72.0859

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	2.06	0.4182	0.0247	0.0000	1.0360
Parking Lot	0	0.0000	0.0000	0.0000	0.0000

Unrefrigerated Warehouse-No Rail	141.28	28.6786	1.6949	0.0000	71.0499
Total		**29.0967**	**1.7196**	**0.0000**	**72.0859**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	2.06	0.4182	0.0247	0.0000	1.0360
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	141.28	28.6786	1.6949	0.0000	71.0499
Total		**29.0967**	**1.7196**	**0.0000**	**72.0859**

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

2829Monterey Road Mini Storage Warehouse Construction TAC Assessment

San Jose, California

February 3, 2016
Revised July 29, 2017

Prepared for:

Leianne Humble
Senior Planner
Denise Duffy & Associates, Inc.
947 Cass St. Suite 5
Monterey, CA. 93940
Email: ***lhumble@ddaplanning.com***

Prepared by:

James Reyff and
Joshua Carman

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
1 Willowbrook Court, Suite 120
Petaluma, CA 94954
(707) 794-0400

Project: 15-264

Introduction

The purpose of this report is to address toxic air contaminant (TAC) emissions and their impact to nearby sensitive receptors from construction of a mini-storage facility at 2829 Monterey Road in San Jose, California. The project proposes to construct a warehouse-type project in two buildings totaling 146,750 square feet (sf) and 1,500 sf of office. The project site is 2.57 acres in size. The project site is located on the south side of Monterey Road between Montecito Vista Drive and Pullman Way.

The site is has apartments immediately adjacent to the northwest, industrial and/or commercial areas to the north and east, CalTrain tracks to the south-southwest and the future Communications development to the south and southwest across the CalTrain tracks.

This analysis addresses community risk impacts associated with construction emissions. These impacts were predicted at sensitive receptors near the site. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).

Setting

The project is located in Santa Clara County, which is in the San Francisco Bay Area Air Basin. Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy duty diesel trucks that represent the bulk of DPM emissions from California highways. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.[1] The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010

[1] Available online: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed: June 9, 2015.

model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has recently published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.[2]

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. There are residences adjacent to the northwest site boundary and to the north across Monterey Road

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on BAAQMD's website and included in the Air District's updated CEQA Guidelines (updated May 2017). The significance thresholds identified by BAAQMD and used in this analysis are summarized in Table 1.

[2] Bay Area Air Quality Management District, 2017. *BAAQMD CEQA Air Quality Guidelines*. May.

Table 1. Community Risk Significance Thresholds

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
Health Risks and Hazards for New Sources			
Excess Cancer Risk	>10 per one million		
Chronic or Acute Hazard Index	>1.0		
Incremental annual average $PM_{2.5}$	>0.3 µg/m^3		
Health Risks and Hazards for Sensitive Receptors (Cumulative from all sources within 1,000 foot zone of influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	>100 per one million		
Chronic Hazard Index	>10.0		
Annual Average $PM_{2.5}$	>0.8 µg/m^3		

The BAAQMD's adoption of significance thresholds contained in the 2011 *CEQA Air Quality Guidelines* was called into question by an order issued March 5, 2012, in California Building Industry Association (CBIA) v. BAAQMD (Alameda Superior Court Case No. RGI0548693). The order requires the BAAQMD to set aside its approval of the thresholds until it has conducted environmental review under CEQA. The ruling made in the case concerned the environmental impacts of adopting the thresholds and how the thresholds would indirectly affect land use development patterns. In August 2013, the Appellate Court struck down the lower court's order to set aside the thresholds (Cal. Court of Appeal, First Appellate District, Case Nos. A135335 & A136212). CBIA sought review by the California Supreme Court on three issues, including the appellate court's decision to uphold the BAAQMD's adoption of the thresholds, and the Court granted review on just one: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users of a proposed project? In December 2015, the Supreme Court determined that an analysis of the impacts of the environment on a project – known as "CEQA-in-reverse" – is only required under two limited circumstances: (1) when a statute provides an express legislative directive to consider such impacts; and (2) when a proposed project risks exacerbating environmental hazards or conditions that already exist (Cal. Supreme Court Case No. S213478). The Supreme Court reversed the Court of Appeal's decision and remanded the matter back to the appellate court to reconsider the case in light of the Supreme Court's ruling. Because the Supreme Court's holding concerns the effects of the environment on a project (as contrasted to the effects of a proposed project on the environment), and not the science behind the thresholds, the significance thresholds contained in the BAAQMD CEQA Air Quality Guidelines are applied to this project.

Fugitive Dust - $PM_{10}/PM_{2.5}$

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. Project construction impacts are considered significant since they can generate dust that could pose health and nuisance impacts if uncontrolled.

Mitigation Measure AQ-1: **Include basic measures to control dust and exhaust during construction.**

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less than significant level. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Mitigation: The measures listed above are consistent with those recommended in the BAAQMD CEQA Air Quality Guidelines and would reduce localized health and nuisance impacts caused by project construction.

Construction TAC Emissions from Diesel Exhaust

Construction equipment and associated heavy-duty truck traffic generate diesel exhaust, which is a known TAC. Diesel exhaust poses both potential health and nuisance impacts to nearby receptors. A community risk assessment of the project construction activities was conducted that evaluated potential health effects to sensitive receptors at nearby residences from construction emissions of DPM and $PM_{2.5}$.[3] A dispersion model was used to predict the off-site DPM concentrations resulting from project construction so that lifetime cancer risks could be predicted. Figure 1 shows the project site and sensitive receptor locations used in the air quality dispersion modeling analysis where potential community risk impacts were evaluated.

Construction Emissions

The California Emissions Estimator Model (CalEEMod) Version 2016.3.1 provided annual emissions for construction. CalEEMod provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker and vendor traffic. A construction build-out scenario, including equipment list and phasing schedule, was developed based on model defaults for a project of this type and size and input from the project applicant. The proposed project land uses were input into CalEEMod, including "Unrefrigerated Warehouse-No Rail" at 146,750 sf and 1,500 sf of "General Office Building" on a 2.57 acre site

Attachment 1 includes the CalEEMod output for construction emissions. A construction worksheet was provided and used to develop the construction schedule, equipment usage assumptions and amount of truck traffic generated to export fill material, and import cement and asphalt. The CalEEMod model defaults were used to generate forecasts of worker and vendor trips.

The CalEEMod model provided total annual PM_{10} exhaust emissions (assumed to be diesel particulate matter) for the off-road construction equipment and for exhaust emissions from on-road vehicles. The on-road emissions are a result of worker travel and vendor deliveries during construction activities. A trip length of one mile was used to represent vehicle travel while at or near the construction site. For modeling purposes, it was assumed that these emissions from on-road vehicles would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were also calculated by CalEEMod. In modeling the project construction emissions, construction was

[3] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

assumed to take place in one area that encompassed much of the site. This area is shown in Figure 1.

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[4] The AERMOD modeling utilized two area sources to represent the on-site construction emissions, one for exhaust emissions and one for fugitive dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 6 meters (19.7 feet) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 2 meters (6.6 feet) was used for the area source. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 6 a.m. to 5 p.m., when the majority of construction activity would occur. Figure 1 shows the project site and nearby sensitive receptor (residences) locations where health impacts were evaluated.

The modeling used a 5-year meteorological data set (2006-2010) from the San Jose Airport prepared for use with the AERMOD model by the BAAQMD. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2017 – 2018 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptor locations. Receptor heights of 1.5 meters (4.9 feet) and 4.5 meters (14.8 feet) were used to represent the breathing heights of residents on first and second floor levels of nearby residences and apartments.

Predicted Cancer Risk

A community risk assessment for exposure to TACs requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and CARB develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[5] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by state law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[6] This health risk assessment used the recent 2015 OEHHA risk

[4] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.
[5] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[6] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

assessment guidelines and CARB guidance. While the OEHHA guidelines use substantially more conservative assumptions than the current BAAQMD guidelines, BAAQMD has not formally adopted recommended procedures for applying the newest OEHHA guidelines. However, BAAQMD is in the process of developing new guidance and has provided initial information on exposure parameter values they are proposing for use.[7] The OEHHA guidelines and newly recommended BAAQMD exposure parameters are used in this evaluation.

Potential increased cancer risk from inhalation of TACs are calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer-causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the BAAQMD, 95^{th} percentile breathing rates are used for the third trimester and infant exposures, and 80^{th} percentile breathing rates for child and adult exposures. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways).

Functionally, cancer risk is calculated using the following parameters and formulas:

$$\text{Cancer Risk (per million)} = \text{CPF} \times \text{Inhalation Dose} \times \text{ASF} \times \text{ED/AT} \times \text{FAH} \times 10^{6}$$

Where:

CPF = Cancer potency factor $(\text{mg/kg-day})^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

$$\text{Inhalation Dose} = C_{air} \times \text{DBR} \times \text{A} \times (\text{EF}/365) \times 10^{-6}$$

Where:

C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized in Table 2.

[7] Email correspondence from Virginia Lau, BAAQMD to Bill Popenuck of Illingworth & Rodkin, Inc, November 15, 2015.

Table 2. Health Risk Parameters Used for Cancer Risk Calculations

Parameter	*Exposure Type*	Infant		Child	Adult
	Age Range	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor (mg/kg-day)$^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day)*		361	1,090	572	261
Inhalation Absorption Factor		1	1	1	1
Exposure Duration (years)		0.25	2	14	14
Exposure Frequency (days/year)		350	350	350	350
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home		1.0	1.0	1.0	0.73

* 95th percentile breathing rates for 3rd trimester and infants and 80th percentile for children and adults

The maximum-modeled DPM and $PM_{2.5}$ concentrations occurred in the residential area northwest of the project site, as shown in Figure 1 for the maximally exposed individual (MEI). Using the maximum annual modeled DPM concentrations for each type of sensitive receptor, the maximum increased cancer risks were calculated. Due to the short anticipated duration of project construction activities (about 1.5 years), infant exposures were assumed in calculating cancer risks for residential exposures. Because an infant (0 to 2 years of age) breathing rate is greater than the breathing rate for the 3rd trimester the contribution to total cancer risk from an infant exposure is greater than if the initial exposure assumed for the 3rd trimester is assumed.

Results of this assessment indicate that the maximum increased residential cancer risks would be 54.7 in one million for a child exposure and 1.0 in one million for an adult exposure. The locations of the receptors with the maximum increased cancer risk are shown in Figure 1. The maximum residential excess cancer risk would be greater than the BAAQMD significance threshold of 10 in one million.

Predicted Annual $PM_{2.5}$ Concentration

The maximum-modeled annual $PM_{2.5}$ concentration, which is based on combined exhaust and fugitive dust emissions, was 0.6 $\mu g/m^3$, occurring at the residential MEI. Therefore, annual $PM_{2.5}$ concentration would exceed the BAAQMD significance threshold of 0.3 $\mu g/m^3$.

Non-Cancer Hazards

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur. Typically, for projects involving construction with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is DPM. For DPM, the chronic inhalation REL is 5 $\mu g/m^3$.

The maximum modeled annual residential DPM concentration (i.e., from construction exhaust) was 0.1758 μg/m^3. The maximum computed HI based on this DPM concentration is 0.04, which is much lower than the BAAQMD significance criterion of a HI greater than 1.0.

The project would have a *significant impact* with respect to community risk caused by construction activities at nearby residential receptors. Cancer risks would be less-than-significant at the nearby school. Implementation of *Mitigation Measures AQ-1 and AQ-2* would reduce this impact to a level of less than significant.

> ***Mitigation Measure AQ-2:*** **Selection of equipment during construction to minimize emissions. Such equipment selection would include the following.**
>
> All diesel-powered off-road equipment larger than 50 horsepower and operating on the site for more than two days continuously shall, at a minimum, meet U.S. EPA particulate matter emissions standards for Tier 4 engines.
>
> Note that the construction contractor could use other measures to minimize construction period DPM emissions to reduce the predicted cancer risk below the thresholds. Such measures may be the use of alternative powered equipment (e.g., LPG-powered lifts), alternative fuels (e.g., biofuels), added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant.

Effectiveness of Mitigation: Implementation of recommended best management practices (i.e., *Mitigation Measure AQ-1*) is considered to reduce exhaust emissions by 5 percent and fugitive dust emissions by over 50 percent. Implementation of *Mitigation Measure AQ-2* would further reduce on-site diesel exhaust emissions. With this mitigation, the computed maximum increased lifetime residential cancer risk from construction, assuming infant/child exposure, would be 1.8 in one million. This cancer risk would be below the BAAQMD threshold of 10 per one million for cancer risk. With mitigation, the annual $PM_{2.5}$ concentration would be reduced to 0.1 μg/m^3. This is below the BAAQMD threshold of 0.3 μg/m^3. *After implementation of these recommended measures, the project would have a less-than-significant impact with respect to community risk caused by construction activities.*

Combined Construction Risk Assessment

The combined risk was computed by adding the effects of construction activities with nearby TAC sources. Only sources within 1,000 feet of the sensitive receptor most affected by construction were included. While there are stationary sources identified by BAAQMD within 1,000 feet, some sources are no longer operational (e.g., Plant 18519) or have risk and $PM_{2.5}$ levels that are negligible (e.g., Plants 14945, 12735 and 9912). Construction risks from the project are based on those impacts described above. Table 3 shows the community risk impacts associated with each source. The maximum combined cancer risk from unmitigated construction and nearby TAC sources would be less than 53.0 in one million. The maximum annual $PM_{2.5}$ concentration would be 0.8 μg/m^3. For non-cancer health effects due to chronic exposure to DPM, the HI would be less than 0.07. These combined risk levels were found to be below or at

the significance levels and would be considered a *less than significant impact*. Note that implementation of Mitigation Measures AQ-1 and AQ-2 would reduce combined construction and community risk levels further.

Table 3. Combined Construction Source Cancer Risks, $PM_{2.5}$ Concentrations, and Hazard Index

Source	Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Acute or Chronic Hazard Index
Unmitigated Project Construction	54.7	0.6	0.04
Monterey Road – SR 82 (Link 508, 6ft elevation at >500 feet)[1]	5.8	0.1	<0.01
CalTrain & UPRR at 650 feet[2]	<5.0	0.0	<0.01
Total	<65.5	0.7	<0.06
BAAQMD Cumulative Source Threshold	*100.0*	*0.8*	*10.0*
Significant?	***No***	***No***	***No***

[1] Based on BAAQMD *Highway Screening Analysis Tool* and adjusted to 2015 OEHHA
[2] Based on Communications Hill DEIR and adjusted to OEHHA

Figure 1. Project Construction Site, Locations of Sensitive Receptors, and Maximum Cancer Risk

Attachment 1: CalEEMod Input and Output Worksheets, and Risk Calculations

Project Name: 2829 Monterey Rd PHASE I

Complete ALL Portions in Yellow

See Equipment Type TAB for type, horsepower and load factor

Project Size 188,400 sf warehouse 7.5 total project acres disturbed

Construction Hours 6 am to 5 pm

Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Annual Hours	Comments
	Demolition	**Start Date:**	**e.g., 6/1/2016**	**Total phase:**	**0.01**			**Overall Import/Export Volumes**
		End Date:						
0	Concrete/Industrial Saws	81	0.73	0	0	0	0	**Demolition Volume**
0	Excavators	162	0.38	0	0	0	0	Square footage of buildings to be demolished
0	Rubber-Tired Dozers	255	0.4	0	0	0	0	(*or* total tons to be hauled)
0	Tractors/Loaders/Backhoes	97	0.37	0	0	0	0	**Site has been cleared**
								No off haul required
	Site Preperation	**Start Date:**	**11/1/2016**	**Total phase:**	**40**			**Pavment on site has been ground and will be used on site**
		End Date:	**12/31/2016**					
2	Graders	174	0.41	8	40	8	640	
2	Rubber Tired Dozers	255	0.4	8	40	8	640	
2	Tractors/Loaders/Backhoes	97	0.37	8	40	8	640	
	Grading / Excavation	**Start Date:**	**10/1/2016**	**Total phase:**	**20**			
		End Date:	**10/31/2016**					**Soil Hauling Volume**
2	Excavators	162	0.38	8	20	8	320	**No export required**
1	Graders	174	0.41	8	20	8	160	**No Import required**
1	Rubber Tired Dozers	255	0.4	8	20	8	160	
2	Tractors/Loaders/Backhoes	97	0.37	8	20	8	320	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**1/1/2017**	**Total phase:**	**130**			**979 cement trucks**
		End Date:	**6/30/2017**					
0	Cranes	226	0.29	8	130	8	0	Electric? (Y/N) ___ Otherwise assumed diesel
1	Forklifts	89	0.2	8	130	8	1040	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	130	8	1040	**Temporary power off of adjacent poles**
3	Tractors/Loaders/Backhoes	97	0.37	8	130	8	3120	
0	Welders	46	0.45	8	130	8	0	
	Other Equipment?							
Building - Interior/Architectural Coating		**Start Date:**	**5/1/2017**	**Total phase:**	**115**			
		End Date:	**9/30/2017**					
2	Air Compressors	78	0.48	8	115	8	1840	
0	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**8/1/2017**	**Total phase:**	**20**			
		Start Date:	**9/30/2017**					
0	Cement and Mortar Mixers	9	0.56	8	20	8	0	
1	Pavers	125	0.42	8	20	8	160	**Asphalt cubic yards 10,628 or ____ round trips?**
1	Paving Equipment	130	0.36	8	20	8	160	
1	Rollers	80	0.38	8	20	8	160	
1	Tractors/Loaders/Backhoes	97	0.37	8	20	8	160	
	Other Equipment?							

Revised (2017) Monterey Road Self Storage (July 2017)

Santa Clara County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.50	1000sqft	0.00	1,500.00	0
Unrefrigerated Warehouse-No Rail	146.75	1000sqft	2.57	146,750.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	4			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	435	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2014 certified rate

Land Use - Based on July 20 2017 Plans

Construction Phase - Phase 1 schedule

Off-road Equipment -

Off-road Equipment - from Phase 1 equipment list, no generators (temp line power)

Off-road Equipment - from Phase 1 equipment list

Trips and VMT - 1mi trip lengths for on- and near-site travel. Paving: asphalt (10,628 cy @16cy truck = 1,330 trips). Bldg: cement (979 trucks) 1,958 trips.

Grading - Net 6,100 cy to be off-hauled.

Construction Off-road Equipment Mitigation - Tier 4 equipment and BMPs

Off-road Equipment - from Phase 1 equipment list

Off-road Equipment - from Phase 1 equipment list

Off-road Equipment - from Phase 1 equipment list

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	10.00	115.00
tblConstructionPhase	NumDays	220.00	130.00
tblConstructionPhase	NumDays	6.00	20.00
tblConstructionPhase	NumDays	10.00	20.00
tblConstructionPhase	NumDays	3.00	40.00
tblGrading	MaterialExported	0.00	6,100.00
tblLandUse	LotAcreage	0.03	0.00

tblLandUse	LotAcreage	3.37	2.57
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	0.30
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	435
tblProjectCharacteristics	OperationalYear	2018	2019
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tblTripsAndVMT	HaulingTripLength	20.00	1.00
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tblTripsAndVMT	HaulingTripNumber	0.00	1,330.00

tblTripsAndVMT	VendorTripLength	7.30	1.00
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tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	VendorTripLength	7.30	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
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tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00
tblTripsAndVMT	WorkerTripLength	10.80	1.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.1203	1.3900	0.5820	1.1500e-003	0.3295	0.0651	0.3946	0.1688	0.0599	0.2287	0.0000	107.0384	107.0384	0.0316	0.0000	107.8290
2018	0.9044	1.2957	0.9946	1.6600e-003	6.2300e-003	0.0728	0.0790	1.7100e-003	0.0688	0.0705	0.0000	150.4810	150.4810	0.0311	0.0000	151.2582
Maximum	**0.9044**	**1.3900**	**0.9946**	**1.6600e-003**	**0.3295**	**0.0728**	**0.3946**	**0.1688**	**0.0688**	**0.2287**	**0.0000**	**150.4810**	**150.4810**	**0.0316**	**0.0000**	**151.2582**

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	0.0188	0.3128	0.6628	1.1500e-003	0.0753	1.8800e-003	0.0772	0.0383	1.8800e-003	0.0402	0.0000	107.0383	107.0383	0.0316	0.0000	107.8288
2018	0.8068	0.5741	1.0017	1.6600e-003	6.2300e-003	2.5300e-003	8.7700e-003	1.7100e-003	2.5100e-003	4.2200e-003	0.0000	150.4809	150.4809	0.0311	0.0000	151.2581
Maximum	**0.8068**	**0.5741**	**1.0017**	**1.6600e-003**	**0.0753**	**2.5300e-003**	**0.0772**	**0.0383**	**2.5100e-003**	**0.0402**	**0.0000**	**150.4809**	**150.4809**	**0.0316**	**0.0000**	**151.2581**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**19.43**	**66.98**	**-5.58**	**0.00**	**75.72**	**96.80**	**81.85**	**76.54**	**96.59**	**85.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-2017**	**11-30-2017**	1.1450	0.2127
2	**12-1-2017**	**2-28-2018**	0.6691	0.2241
3	**3-1-2018**	**5-31-2018**	0.6797	0.3448
4	**6-1-2018**	**8-31-2018**	0.7503	0.5776
5	**9-1-2018**	**9-30-2018**	0.3966	0.2968
		Highest	1.1450	0.5776

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	9/29/2017	11/23/2017	5	40	
2	Grading	Grading	11/24/2017	12/21/2017	5	20	
3	Building Construction	Building Construction	12/22/2017	6/21/2018	5	130	
4	Architectural Coating	Architectural Coating	5/1/2018	10/8/2018	5	115	
5	Paving	Paving	9/5/2018	10/2/2018	5	20	

Acres of Grading (Site Preparation Phase): 40

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 222,375; Non-Residential Outdoor: 74,125; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	0	7.00	231	0.29
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Generator Sets	0	0.30	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	2	8.00	78	0.48
Site Preparation	Graders	2	8.00	187	0.41
Site Preparation	Scrapers	0	8.00	367	0.48

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
Site Preparation	6	15.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	762.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	62.00	24.00	1,958.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

Paving	4	10.00	0.00	1,330.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	2	12.00	0.00	0.00	1.00	1.00	1.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2621	0.0000	0.2621	0.1347	0.0000	0.1347	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0833	0.9553	0.3592	7.3000e-004		0.0451	0.0451		0.0415	0.0415	0.0000	67.9838	67.9838	0.0208	0.0000	68.5046
Total	**0.0833**	**0.9553**	**0.3592**	**7.3000e-004**	**0.2621**	**0.0451**	**0.3072**	**0.1347**	**0.0415**	**0.1762**	**0.0000**	**67.9838**	**67.9838**	**0.0208**	**0.0000**	**68.5046**

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	4.6000e-004	2.3000e-004	2.8600e-003	0.0000	2.2000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2663	0.2663	2.0000e-005	0.0000	0.2667
Total	**4.6000e-004**	**2.3000e-004**	**2.8600e-003**	**0.0000**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2663**	**0.2663**	**2.0000e-005**	**0.0000**	**0.2667**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0590	0.0000	0.0590	0.0303	0.0000	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.1663	0.4155	7.3000e-004		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	67.9838	67.9838	0.0208	0.0000	68.5045
Total	**0.0114**	**0.1663**	**0.4155**	**7.3000e-004**	**0.0590**	**1.1900e-003**	**0.0602**	**0.0303**	**1.1900e-003**	**0.0315**	**0.0000**	**67.9838**	**67.9838**	**0.0208**	**0.0000**	**68.5045**

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	4.6000e-004	2.3000e-004	2.8600e-003	0.0000	2.2000e-004	0.0000	2.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2663	0.2663	2.0000e-005	0.0000	0.2667
Total	**4.6000e-004**	**2.3000e-004**	**2.8600e-003**	**0.0000**	**2.2000e-004**	**0.0000**	**2.3000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2663**	**0.2663**	**2.0000e-005**	**0.0000**	**0.2667**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0659	0.0000	0.0659	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0311	0.3476	0.1805	3.2000e-004		0.0174	0.0174		0.0160	0.0160	0.0000	29.4612	29.4612	9.0300e-003	0.0000	29.6869
Total	**0.0311**	**0.3476**	**0.1805**	**3.2000e-004**	**0.0659**	**0.0174**	**0.0833**	**0.0337**	**0.0160**	**0.0498**	**0.0000**	**29.4612**	**29.4612**	**9.0300e-003**	**0.0000**	**29.6869**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1300e-003	0.0433	8.2200e-003	5.0000e-005	3.3000e-004	8.0000e-005	4.1000e-004	9.0000e-005	8.0000e-005	1.7000e-004	0.0000	4.8579	4.8579	6.6000e-004	0.0000	4.8743
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	2.3000e-004	1.2000e-004	1.4300e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1332	0.1332	1.0000e-005	0.0000	0.1334
Total	**1.3600e-003**	**0.0434**	**9.6500e-003**	**5.0000e-005**	**4.4000e-004**	**8.0000e-005**	**5.2000e-004**	**1.2000e-004**	**8.0000e-005**	**2.0000e-004**	**0.0000**	**4.9910**	**4.9910**	**6.7000e-004**	**0.0000**	**5.0076**

Mitigated Construction On-Site

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

Category	tons/yr										MT/yr					
Fugitive Dust					0.0148	0.0000	0.0148	7.5900e-003	0.0000	7.5900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5100e-003	0.0888	0.2057	3.2000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	29.4612	29.4612	9.0300e-003	0.0000	29.6869
Total	**4.5100e-003**	**0.0888**	**0.2057**	**3.2000e-004**	**0.0148**	**5.2000e-004**	**0.0153**	**7.5900e-003**	**5.2000e-004**	**8.1100e-003**	**0.0000**	**29.4612**	**29.4612**	**9.0300e-003**	**0.0000**	**29.6869**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.1300e-003	0.0433	8.2200e-003	5.0000e-005	3.3000e-004	8.0000e-005	4.1000e-004	9.0000e-005	8.0000e-005	1.7000e-004	0.0000	4.8579	4.8579	6.6000e-004	0.0000	4.8743
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	2.3000e-004	1.2000e-004	1.4300e-003	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1332	0.1332	1.0000e-005	0.0000	0.1334
Total	**1.3600e-003**	**0.0434**	**9.6500e-003**	**5.0000e-005**	**4.4000e-004**	**8.0000e-005**	**5.2000e-004**	**1.2000e-004**	**8.0000e-005**	**2.0000e-004**	**0.0000**	**4.9910**	**4.9910**	**6.7000e-004**	**0.0000**	**5.0076**

3.4 Building Construction - 2017

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	3.4800e-003	0.0329	0.0253	3.0000e-005		2.5100e-003	2.5100e-003		2.3100e-003	2.3100e-003	0.0000	3.0238	3.0238	9.3000e-004	0.0000	3.0469
Total	**3.4800e-003**	**0.0329**	**0.0253**	**3.0000e-005**		**2.5100e-003**	**2.5100e-003**		**2.3100e-003**	**2.3100e-003**	**0.0000**	**3.0238**	**3.0238**	**9.3000e-004**	**0.0000**	**3.0469**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	5.1300e-003	9.8000e-004	1.0000e-005	6.3000e-004	1.0000e-005	6.4000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.5761	0.5761	8.0000e-005	0.0000	0.5781
Vendor	2.0000e-004	5.4100e-003	1.8000e-003	1.0000e-005	7.0000e-005	2.0000e-005	9.0000e-005	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.5710	0.5710	7.0000e-005	0.0000	0.5728
Worker	2.9000e-004	1.4000e-004	1.7700e-003	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1651	0.1651	1.0000e-005	0.0000	0.1654
Total	**6.2000e-004**	**0.0107**	**4.5500e-003**	**2.0000e-005**	**8.4000e-004**	**3.0000e-005**	**8.7000e-004**	**2.2000e-004**	**3.0000e-005**	**2.5000e-004**	**0.0000**	**1.3122**	**1.3122**	**1.6000e-004**	**0.0000**	**1.3162**

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	4.5000e-004	3.5000e-003	0.0246	3.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	3.0238	3.0238	9.3000e-004	0.0000	3.0469
Total	**4.5000e-004**	**3.5000e-003**	**0.0246**	**3.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**3.0238**	**3.0238**	**9.3000e-004**	**0.0000**	**3.0469**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	5.1300e-003	9.8000e-004	1.0000e-005	6.3000e-004	1.0000e-005	6.4000e-004	1.6000e-004	1.0000e-005	1.7000e-004	0.0000	0.5761	0.5761	8.0000e-005	0.0000	0.5781
Vendor	2.0000e-004	5.4100e-003	1.8000e-003	1.0000e-005	7.0000e-005	2.0000e-005	9.0000e-005	2.0000e-005	2.0000e-005	4.0000e-005	0.0000	0.5710	0.5710	7.0000e-005	0.0000	0.5728
Worker	2.9000e-004	1.4000e-004	1.7700e-003	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1651	0.1651	1.0000e-005	0.0000	0.1654
Total	**6.2000e-004**	**0.0107**	**4.5500e-003**	**2.0000e-005**	**8.4000e-004**	**3.0000e-005**	**8.7000e-004**	**2.2000e-004**	**3.0000e-005**	**2.5000e-004**	**0.0000**	**1.3122**	**1.3122**	**1.6000e-004**	**0.0000**	**1.3162**

3.4 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0605	0.5868	0.5097	6.7000e-004		0.0424	0.0424		0.0391	0.0391	0.0000	61.4265	61.4265	0.0191	0.0000	61.9046
Total	**0.0605**	**0.5868**	**0.5097**	**6.7000e-004**		**0.0424**	**0.0424**		**0.0391**	**0.0391**	**0.0000**	**61.4265**	**61.4265**	**0.0191**	**0.0000**	**61.9046**

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	2.4500e-003	0.1029	0.0182	1.3000e-004	8.4000e-004	1.4000e-004	9.8000e-004	2.3000e-004	1.3000e-004	3.7000e-004	0.0000	12.0982	12.0982	1.4900e-003	0.0000	12.1354
Vendor	3.5900e-003	0.1082	0.0333	1.2000e-004	1.3700e-003	3.0000e-004	1.6800e-003	4.0000e-004	2.9000e-004	6.9000e-004	0.0000	11.9443	11.9443	1.3600e-003	0.0000	11.9783
Worker	5.2600e-003	2.5700e-003	0.0321	4.0000e-005	2.8600e-003	4.0000e-005	2.9000e-003	7.6000e-004	4.0000e-005	8.0000e-004	0.0000	3.3208	3.3208	1.8000e-004	0.0000	3.3253
Total	**0.0113**	**0.2137**	**0.0836**	**2.9000e-004**	**5.0700e-003**	**4.8000e-004**	**5.5600e-003**	**1.3900e-003**	**4.6000e-004**	**1.8600e-003**	**0.0000**	**27.3633**	**27.3633**	**3.0300e-003**	**0.0000**	**27.4389**

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	9.2100e-003	0.0723	0.5076	6.7000e-004		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003	0.0000	61.4265	61.4265	0.0191	0.0000	61.9045
Total	**9.2100e-003**	**0.0723**	**0.5076**	**6.7000e-004**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**	**0.0000**	**61.4265**	**61.4265**	**0.0191**	**0.0000**	**61.9045**

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	2.4500e-003	0.1029	0.0182	1.3000e-004	8.4000e-004	1.4000e-004	9.8000e-004	2.3000e-004	1.3000e-004	3.7000e-004	0.0000	12.0982	12.0982	1.4900e-003	0.0000	12.1354
Vendor	3.5900e-003	0.1082	0.0333	1.2000e-004	1.3700e-003	3.0000e-004	1.6800e-003	4.0000e-004	2.9000e-004	6.9000e-004	0.0000	11.9443	11.9443	1.3600e-003	0.0000	11.9783
Worker	5.2600e-003	2.5700e-003	0.0321	4.0000e-005	2.8600e-003	4.0000e-005	2.9000e-003	7.6000e-004	4.0000e-005	8.0000e-004	0.0000	3.3208	3.3208	1.8000e-004	0.0000	3.3253
Total	**0.0113**	**0.2137**	**0.0836**	**2.9000e-004**	**5.0700e-003**	**4.8000e-004**	**5.5600e-003**	**1.3900e-003**	**4.6000e-004**	**1.8600e-003**	**0.0000**	**27.3633**	**27.3633**	**3.0300e-003**	**0.0000**	**27.4389**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7730					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0458	0.3076	0.2843	4.6000e-004		0.0231	0.0231		0.0231	0.0231	0.0000	39.1500	39.1500	3.7200e-003	0.0000	39.2430
Total	**0.8188**	**0.3076**	**0.2843**	**4.6000e-004**		**0.0231**	**0.0231**		**0.0231**	**0.0231**	**0.0000**	**39.1500**	**39.1500**	**3.7200e-003**	**0.0000**	**39.2430**

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	9.4000e-004	4.6000e-004	5.7700e-003	1.0000e-005	5.1000e-004	1.0000e-005	5.2000e-004	1.4000e-004	1.0000e-005	1.4000e-004	0.0000	0.5961	0.5961	3.0000e-005	0.0000	0.5969
Total	**9.4000e-004**	**4.6000e-004**	**5.7700e-003**	**1.0000e-005**	**5.1000e-004**	**1.0000e-005**	**5.2000e-004**	**1.4000e-004**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**0.5961**	**0.5961**	**3.0000e-005**	**0.0000**	**0.5969**

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	0.7730					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3500e-003	0.1625	0.2810	4.6000e-004		6.1000e-004	6.1000e-004		6.1000e-004	6.1000e-004	0.0000	39.1499	39.1499	3.7200e-003	0.0000	39.2429
Total	**0.7814**	**0.1625**	**0.2810**	**4.6000e-004**		**6.1000e-004**	**6.1000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**39.1499**	**39.1499**	**3.7200e-003**	**0.0000**	**39.2429**

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	9.4000e-004	4.6000e-004	5.7700e-003	1.0000e-005	5.1000e-004	1.0000e-005	5.2000e-004	1.4000e-004	1.0000e-005	1.4000e-004	0.0000	0.5961	0.5961	3.0000e-005	0.0000	0.5969
Total	**9.4000e-004**	**4.6000e-004**	**5.7700e-003**	**1.0000e-005**	**5.1000e-004**	**1.0000e-005**	**5.2000e-004**	**1.4000e-004**	**1.0000e-005**	**1.4000e-004**	**0.0000**	**0.5961**	**0.5961**	**3.0000e-005**	**0.0000**	**0.5969**

3.6 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0109	0.1139	0.0974	1.5000e-004		6.6400e-003	6.6400e-003		6.1100e-003	6.1100e-003	0.0000	13.2433	13.2433	4.1200e-003	0.0000	13.3463

Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0109**	**0.1139**	**0.0974**	**1.5000e-004**		**6.6400e-003**	**6.6400e-003**		**6.1100e-003**	**6.1100e-003**	**0.0000**	**13.2433**	**13.2433**	**4.1200e-003**	**0.0000**	**13.3463**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7500e-003	0.0733	0.0130	9.0000e-005	5.8000e-004	1.0000e-004	6.8000e-004	1.6000e-004	1.0000e-004	2.6000e-004	0.0000	8.6155	8.6155	1.0600e-003	0.0000	8.6420
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	1.4000e-004	7.0000e-005	8.4000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0864	0.0864	0.0000	0.0000	0.0865
Total	**1.8900e-003**	**0.0734**	**0.0138**	**9.0000e-005**	**6.5000e-004**	**1.0000e-004**	**7.6000e-004**	**1.8000e-004**	**1.0000e-004**	**2.8000e-004**	**0.0000**	**8.7019**	**8.7019**	**1.0600e-003**	**0.0000**	**8.7285**

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	2.0500e-003	0.0518	0.1099	1.5000e-004		2.4000e-004	2.4000e-004		2.4000e-004	2.4000e-004	0.0000	13.2433	13.2433	4.1200e-003	0.0000	13.3463
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.0500e-003**	**0.0518**	**0.1099**	**1.5000e-004**		**2.4000e-004**	**2.4000e-004**		**2.4000e-004**	**2.4000e-004**	**0.0000**	**13.2433**	**13.2433**	**4.1200e-003**	**0.0000**	**13.3463**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.7500e-003	0.0733	0.0130	9.0000e-005	5.8000e-004	1.0000e-004	6.8000e-004	1.6000e-004	1.0000e-004	2.6000e-004	0.0000	8.6155	8.6155	1.0600e-003	0.0000	8.6420
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	1.4000e-004	7.0000e-005	8.4000e-004	0.0000	7.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0864	0.0864	0.0000	0.0000	0.0865
Total	**1.8900e-003**	**0.0734**	**0.0138**	**9.0000e-005**	**6.5000e-004**	**1.0000e-004**	**7.6000e-004**	**1.8000e-004**	**1.0000e-004**	**2.8000e-004**	**0.0000**	**8.7019**	**8.7019**	**1.0600e-003**	**0.0000**	**8.7285**

Monterey Rd Ministorage, San Jose, CA

DPM Construction Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions (lb/yr)	DPM Emissions (lb/hr)	DPM Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate ($g/s/m^2$)
2017	Const-Area 1	0.0651	CON1_DPM	130.2	0.03243	4.09E-03	10,297	3.97E-07
2018	Const-Area 1	0.0728	CON1_DPM	145.6	0.03626	4.57E-03	10,297	4.44E-07
	Const-Area 1		CON1_DPM	0.0	0.00000	0.00E+00	28,933	0.00E+00
Total		***0.1379***		***276***	***0.0687***	***0.0087***		

Construction Hours

hr/day =	11	(6am - 5pm)
days/yr =	365	
hours/year =	4015	

Monterey Rd Ministorage, San Jose, CA

PM2.5 Fugitive Dust Construction Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	PM2.5 Emission Rate $g/s/m^2$
2017	Const-Area 1	CON1_FUG	0.1688	337.6	0.08408	1.06E-02	10,297	1.03E-06
2018	Const-Area 1	CON1_FUG	0.0017	3.4	0.00085	1.07E-04	10,297	1.04E-08
	Const-Area 1	CON1_FUG		0.0	0.00000	0.00E+00	28,933	0.00E+00
Total			***0.1705***	***341.0***	***0.0849***	***0.0107***		

Construction Hours

hr/day =	11	(6am - 5pm)
days/yr =	365	
hours/year =	4015	

Monterey Rd Ministorage, San Jose, CA - Project Construction Health Impact Summary

Maximum Impacts at Off-Site Residences

	Unmitigated					
	Maximum Concentrations					Maximum
	Exhaust	Fugitive	Cancer Risk		Hazard	Annual PM2.5
Construction	PM10/DPM	PM2.5	(per million)		Index	Concentration
Year	($\mu g/m^3$)	($\mu g/m^3$)	Child	Adult	(-)	($\mu g/m^3$)
2017	0.1571	0.4828	25.81	0.45	0.031	0.640
2018	0.1758	0.0049	28.87	0.50	0.035	0.181
	0.0000	0.0000	0.00	0.00	0.000	0.000
Total	-	-	**54.7**	**1.0**	-	-
Maximum Annual	0.1758	0.4828	-	-	**0.035**	**0.640**

Monterey Rd Ministorage, San Jose, CA - Construction Impacts - Unmitigated Emissions

Maximum DPM Cancer Risk Calculations From Construction

Off-Site Residential Receptor Locations - 4.5 meters

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

AT = Averaging time for lifetime cancer risk (years)

FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)

DBR = daily breathing rate (L/kg body weight-day)

A = Inhalation absorption factor

EF = Exposure frequency (days/year)

10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information			Infant/Child	Adult - Exposure Information			Adult		
	Exposure				Age	Cancer	Modeled		Age	Cancer		
Exposure	Duration		DPM Conc (ug/m3)		Sensitivity	Risk	DPM Conc (ug/m3)		Sensitivity	Risk	Fugitive	Total
Year	(years)	Age	Year	Annual	Factor	(per million)	Year	Annual	Factor	(per million)	PM2.5	PM2.5
0	0.25	-0.25 - 0*	-	0.0000	10	-	-	-	-	-		
1	1	0 - 1	2017	0.1571	10	25.81	2017	0.1571	1	0.45	0.4828	0.640
2	1	1 - 2	2018	0.1758	10	28.87	2018	0.1758	1	0.50	0.0049	0.181
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00	0.0000	0.000
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1			0.0000	-	-		0.0000	1	0.00		
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65	1			0.0000	-	-		0.0000	1	0.00		
66	1			0.0000	-	-		0.0000	1	0.00		
67	1			0.0000	-	-		0.0000	1	0.00		
68	1			0.0000	-	-		0.0000	1	0.00		
69	1			0.0000	-	-		0.0000	1	0.00		
70	1			0.0000	-	-		0.0000	1	0.00		
Total Increased Cancer Risk						**54.7**				**1.0**		

* Third trimester of pregnancy