

## **Appendix “P”**

*Greenhouse Gas Emissions Memorandum*



December 16, 2022

Michael Brendecke  
 Adkan Engineers  
 6879 Airport Drive  
 Riverside, CA 92504

**Subject: County of Riverside – Transportation Analysis Guidelines Small Project Screening for Tentative Tract Map No. 36805 – Greenhouse Gas Emissions Memorandum**

Dear Mr. Brendecke:

Vista Environmental has conducted this analysis in order to determine if Tentative Tract Map (TTM) No. 36805, that consists of 163 single-family homes on a 96.96 acre project site, qualifies as a “Small Project” as defined in Appendix G of *Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled*, prepared by County of Riverside Transportation Department, December 2020.

Appendix G details that the County has determined that if a Project creates less than 3,000 metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>e) per year than the Project is considered a “Small Project” and according to Figure 2 – VMT Analysis Flowchart shows that if a project is identified as a “Small Project” the project is “Screened” out and the “Project is presumed to cause less-than-significant impact” and no further VMT analysis is required.

In order to determine the greenhouse gas (GHG) emissions created by TTM 36805, the proposed 163 single-family homes on a 96.96 acre lot was entered into CalEEMod Version 2020.4.0 (current adopted version). It should be noted that no changes were made to the default parameters in the CalEEMod model run and the CalEEMod model output file is attached to this Memo and Section 2.2 Overall Operational from the attached Output file shows the following GHG emissions created from the Project.

**Table A – Project Related Greenhouse Gas Annual Emissions**

Category	Greenhouse Gas Emissions (Metric Tons per Year)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Area Sources <sup>1</sup>	53.33	0.05	<0.01	55.04
Energy Usage <sup>2</sup>	316.70	0.02	<0.01	319.35
Mobile Sources <sup>3</sup>	1,692.23	0.08	0.08	1,718.67
Solid Waste <sup>4</sup>	38.78	2.29	0.00	96.08
Water and Wastewater <sup>5</sup>	14.94	0.35	<0.01	26.22
<b>Total GHG Emissions</b>	<b>2,115.99</b>	<b>2.80</b>	<b>0.10</b>	<b>2,215.37</b>
<b>Small Project Screening Threshold</b>				<b>3,000</b>
<b>Exceed Threshold?</b>				<b>No</b>

Notes:

<sup>1</sup> Area sources consist of GHG emissions from consumer products, architectural coatings, hearths, and landscaping equipment.

<sup>2</sup> Energy usage consists of GHG emissions from electricity and natural gas usage.

<sup>3</sup> Mobile sources consist of GHG emissions from vehicles.

<sup>4</sup> Waste includes the CO<sub>2</sub> and CH<sub>4</sub> emissions created from the solid waste placed in landfills.

<sup>5</sup> Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

Source: CalEEMod Version 2020.4.0.



As shown in the above Table, the operation of the Project would create 2,215.37 MTCO<sub>2</sub>e per year. As such, the Project is below the 3,000 MTCO<sub>2</sub>e per year Screening threshold and the Project qualifies as a "Small Project".

Please call me at (949) 510-5355 if you have any questions related to the above analysis.

Sincerely,

A handwritten signature in black ink that reads "Greg Tonkovich". The signature is written in a cursive style.

Greg Tonkovich, AICP

Vista Environmental

949 510 5355

Encl.: CalEEMod Model Output Files

Riverside Co TTM - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**Riverside Co TTM**

**Riverside-South Coast County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	163.00	Dwelling Unit	95.96	293,400.00	466

**1.2 Other Project Characteristics**

Urbanization	Urban	Wind Speed (m/s)	2.4	Precipitation Freq (Days)	28
Climate Zone	10			Operational Year	2025

Utility Company Sonoma Clean Power

CO2 Intensity (lb/MW/hr)	119.98	CH4 Intensity (lb/MW/hr)	0.033	N2O Intensity (lb/MW/hr)	0.004
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**1.3 User Entered Comments & Non-Default Data**

Project Characteristics -

Land Use - 163 single-family homes on 95.96 acres

Construction Phase -

Woodstoves -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	52.92	95.96

**2.0 Emissions Summary**

Riverside Co TTM - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**2.1 Overall Construction**

Unmitigated Construction

Year	tons/yr										MT/yr				CO2e	
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4		N2O
2023											0.0000	416.9870	416.9870	0.1307	3.7000e-004	420.3633
2024											0.0000	460.1132	460.1132	0.1002	5.9500e-003	464.3902
2025											0.0000	400.8141	400.8141	0.0729	6.8000e-003	404.6622
2026											0.0000	398.7187	398.7187	0.0728	6.6100e-003	402.5060
2027											0.0000	396.7422	396.7422	0.0727	6.4200e-003	400.4723
2028											0.0000	393.4472	393.4472	0.0723	6.2300e-003	397.1113
2029											0.0000	393.3541	393.3541	0.0725	6.1000e-003	396.9852
2030											0.0000	203.8415	203.8415	8.5700e-003	8.6000e-004	204.3130
<b>Maximum</b>											<b>0.0000</b>	<b>460.1132</b>	<b>460.1132</b>	<b>0.1307</b>	<b>6.8000e-003</b>	<b>464.3902</b>

Riverside Co TTM - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**2.1 Overall Construction**

**Mitigated Construction**

Year	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
2023											0.0000	416.9865	416.9865	0.1307	3.7000e-004	420.3629
2024											0.0000	460.1127	460.1127	0.1002	5.9500e-003	464.3897
2025											0.0000	400.8138	400.8138	0.0729	6.8000e-003	404.6618
2026											0.0000	398.7183	398.7183	0.0728	6.6100e-003	402.5056
2027											0.0000	396.7418	396.7418	0.0727	6.4200e-003	400.4720
2028											0.0000	393.4468	393.4468	0.0723	6.2300e-003	397.1109
2029											0.0000	393.3537	393.3537	0.0725	6.1000e-003	396.9848
2030											0.0000	203.8413	203.8413	8.5700e-003	8.6000e-004	204.3128
<b>Maximum</b>											<b>0.0000</b>	<b>460.1127</b>	<b>460.1127</b>	<b>0.1307</b>	<b>6.8000e-003</b>	<b>464.3897</b>

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

Riverside Co TTM - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**2.2 Overall Operational**  
**Unmitigated Operational**

Category	tons/yr											MT/yr				
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area											17.3137	36.0168	53.3305	0.0543	1.1800e-003	55.0373
Energy											0.0000	316.7011	316.7011	0.0242	6.8700e-003	319.3510
Mobile											0.0000	1.692.232 2	1.692.232 2	0.0843	0.0817	1,718.674 6
Waste											38.7835	0.0000	38.7835	2.2920	0.0000	96.0844
Water											3.3693	11.5739	14.9432	0.3492	8.5600e-003	26.2241
<b>Total</b>											<b>59.4664</b>	<b>2,056.524 0</b>	<b>2,115.990 4</b>	<b>2.8040</b>	<b>0.0983</b>	<b>2,215.371 4</b>

Riverside Co TTM - Riverside-South Coast County, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**2.2 Overall Operational**

Mitigated Operational

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Area											17.3137	36.0168	53.3305	0.0543	1.1800e-003	55.0373
Energy											0.0000	316.7011	316.7011	0.0242	6.8700e-003	319.3510
Mobile											0.0000	1.692.2322	1.692.2322	0.0843	0.0817	1,718.6746
Waste											38.7835	0.0000	38.7835	2.2920	0.0000	96.0844
Water											3.3693	11.5739	14.9432	0.3492	8.5600e-003	26.2241
<b>Total</b>											<b>59.4664</b>	<b>2,056.5240</b>	<b>2,115.9904</b>	<b>2.8040</b>	<b>0.0983</b>	<b>2,215.3714</b>

Percent Reduction	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
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	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	5/5/2023	7/27/2023	5	60	
2	Grading	Grading	7/28/2023	2/29/2024	5	155	
3	Building Construction	Building Construction	3/1/2024	2/7/2030	5	1550	



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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

4	Paving	2/8/2030	7/11/2030	5	110
5	Architectural Coating	7/12/2030	12/12/2030	5	110

**Acres of Grading (Site Preparation Phase): 90**

**Acres of Grading (Grading Phase): 465**

**Acres of Paving: 0**

**Residential Indoor: 594,135; Residential Outdoor: 198,045; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	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	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

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	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	59.00	17.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

**3.2 Site Preparation - 2023**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	100.3521	100.3521	0.0325	0.0000	101.1635
<b>Total</b>											<b>0.0000</b>	<b>100.3521</b>	<b>100.3521</b>	<b>0.0325</b>	<b>0.0000</b>	<b>101.1635</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.2 Site Preparation - 2023**

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											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
Worker											0.0000	4.5702	4.5702	1.1000e-004	1.2000e-004	4.6087
<b>Total</b>											<b>0.0000</b>	<b>4.5702</b>	<b>4.5702</b>	<b>1.1000e-004</b>	<b>1.2000e-004</b>	<b>4.6087</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	100.3520	100.3520	0.0325	0.0000	101.1634
<b>Total</b>											<b>0.0000</b>	<b>100.3520</b>	<b>100.3520</b>	<b>0.0325</b>	<b>0.0000</b>	<b>101.1634</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.2 Site Preparation - 2023**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											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
Worker											0.0000	4.5702	4.5702	1.1000e-004	1.2000e-004	4.6087
<b>Total</b>											<b>0.0000</b>	<b>4.5702</b>	<b>4.5702</b>	<b>1.1000e-004</b>	<b>1.2000e-004</b>	<b>4.6087</b>

**3.3 Grading - 2023**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	302.6704	302.6704	0.0979	0.0000	305.1177
<b>Total</b>											<b>0.0000</b>	<b>302.6704</b>	<b>302.6704</b>	<b>0.0979</b>	<b>0.0000</b>	<b>305.1177</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.3 Grading - 2023**

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											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
Worker											0.0000	9.3943	9.3943	2.3000e-004	2.5000e-004	9.4735
<b>Total</b>											<b>0.0000</b>	<b>9.3943</b>	<b>9.3943</b>	<b>2.3000e-004</b>	<b>2.5000e-004</b>	<b>9.4735</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	302.6701	302.6701	0.0979	0.0000	305.1173
<b>Total</b>											<b>0.0000</b>	<b>302.6701</b>	<b>302.6701</b>	<b>0.0979</b>	<b>0.0000</b>	<b>305.1173</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.3 Grading - 2023**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											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
Worker											0.0000	9.3943	9.3943	2.3000e-004	2.5000e-004	9.4735
<b>Total</b>											<b>0.0000</b>	<b>9.3943</b>	<b>9.3943</b>	<b>2.3000e-004</b>	<b>2.5000e-004</b>	<b>9.4735</b>

**3.3 Grading - 2024**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	119.9430	119.9430	0.0388	0.0000	120.9128
<b>Total</b>											<b>0.0000</b>	<b>119.9430</b>	<b>119.9430</b>	<b>0.0388</b>	<b>0.0000</b>	<b>120.9128</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.3 Grading - 2024**

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											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
Worker											0.0000	3.6346	3.6346	8.0000e-005	9.0000e-005	3.6637
<b>Total</b>											<b>0.0000</b>	<b>3.6346</b>	<b>3.6346</b>	<b>8.0000e-005</b>	<b>9.0000e-005</b>	<b>3.6637</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	119.9428	119.9428	0.0388	0.0000	120.9126
<b>Total</b>											<b>0.0000</b>	<b>119.9428</b>	<b>119.9428</b>	<b>0.0388</b>	<b>0.0000</b>	<b>120.9126</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.3 Grading - 2024**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											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
Worker											0.0000	3.6346	3.6346	8.0000e-005	9.0000e-005	3.6637
<b>Total</b>											<b>0.0000</b>	<b>3.6346</b>	<b>3.6346</b>	<b>8.0000e-005</b>	<b>9.0000e-005</b>	<b>3.6637</b>

**3.4 Building Construction - 2024**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	252.7155	252.7155	0.0598	0.0000	254.2095
<b>Total</b>											<b>0.0000</b>	<b>252.7155</b>	<b>252.7155</b>	<b>0.0598</b>	<b>0.0000</b>	<b>254.2095</b>



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**3.4 Building Construction - 2024**

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	30.6965	30.6965	3.3000e-004	4.5300e-003	32.0552
Worker											0.0000	53.1235	53.1235	1.2200e-003	1.3300e-003	53.5489
<b>Total</b>											<b>0.0000</b>	<b>83.8201</b>	<b>83.8201</b>	<b>1.5500e-003</b>	<b>5.8600e-003</b>	<b>85.6042</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	252.7152	252.7152	0.0598	0.0000	254.2092
<b>Total</b>											<b>0.0000</b>	<b>252.7152</b>	<b>252.7152</b>	<b>0.0598</b>	<b>0.0000</b>	<b>254.2092</b>

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**3.4 Building Construction - 2024**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	30.6965	30.6965	3.3000e-004	4.5300e-003	32.0552
Worker											0.0000	53.1235	53.1235	1.2200e-003	1.3300e-003	53.5489
<b>Total</b>											<b>0.0000</b>	<b>83.8201</b>	<b>83.8201</b>	<b>1.5500e-003</b>	<b>5.8600e-003</b>	<b>85.6042</b>

**3.4 Building Construction - 2025**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
<b>Total</b>											<b>0.0000</b>	<b>302.6549</b>	<b>302.6549</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4335</b>

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**3.4 Building Construction - 2025**

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	36.1038	36.1038	4.1000e-004	5.3200e-003	37.6991
Worker											0.0000	62.0555	62.0555	1.3200e-003	1.4800e-003	62.5296
<b>Total</b>											<b>0.0000</b>	<b>98.1593</b>	<b>98.1593</b>	<b>1.7300e-003</b>	<b>6.8000e-003</b>	<b>100.2287</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
<b>Total</b>											<b>0.0000</b>	<b>302.6545</b>	<b>302.6545</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4331</b>

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**3.4 Building Construction - 2025**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	36.1038	36.1038	4.1000e-004	5.3200e-003	37.6991
Worker											0.0000	62.0555	62.0555	1.3200e-003	1.4800e-003	62.5296
<b>Total</b>											<b>0.0000</b>	<b>98.1593</b>	<b>98.1593</b>	<b>1.7300e-003</b>	<b>6.8000e-003</b>	<b>100.2287</b>

**3.4 Building Construction - 2026**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
<b>Total</b>											<b>0.0000</b>	<b>302.6549</b>	<b>302.6549</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4335</b>

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**3.4 Building Construction - 2026**

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	35.4471	35.4471	4.2000e-004	5.2100e-003	37.0109
Worker											0.0000	60.6167	60.6167	1.2000e-003	1.3900e-003	61.0616
<b>Total</b>											<b>0.0000</b>	<b>96.0638</b>	<b>96.0638</b>	<b>1.6200e-003</b>	<b>6.6000e-003</b>	<b>98.0725</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
<b>Total</b>											<b>0.0000</b>	<b>302.6545</b>	<b>302.6545</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4331</b>

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**3.4 Building Construction - 2026**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	35.4471	35.4471	4.2000e-004	5.2100e-003	37.0109
Worker											0.0000	60.6167	60.6167	1.2000e-003	1.3900e-003	61.0616
<b>Total</b>											<b>0.0000</b>	<b>96.0638</b>	<b>96.0638</b>	<b>1.6200e-003</b>	<b>6.6000e-003</b>	<b>98.0725</b>

**3.4 Building Construction - 2027**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
<b>Total</b>											<b>0.0000</b>	<b>302.6549</b>	<b>302.6549</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4335</b>

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**3.4 Building Construction - 2027**

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	34.7562	34.7562	4.3000e-004	5.1000e-003	36.2875
Worker											0.0000	59.3311	59.3311	1.0900e-003	1.3200e-003	59.7513
<b>Total</b>											<b>0.0000</b>	<b>94.0873</b>	<b>94.0873</b>	<b>1.5200e-003</b>	<b>6.4200e-003</b>	<b>96.0388</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
<b>Total</b>											<b>0.0000</b>	<b>302.6545</b>	<b>302.6545</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4331</b>

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**3.4 Building Construction - 2027**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	34.7562	34.7562	4.3000e-004	5.1000e-003	36.2875
Worker											0.0000	59.3311	59.3311	1.0900e-003	1.3200e-003	59.7513
<b>Total</b>											<b>0.0000</b>	<b>94.0873</b>	<b>94.0873</b>	<b>1.5200e-003</b>	<b>6.4200e-003</b>	<b>96.0388</b>

**3.4 Building Construction - 2028**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	301.4953	301.4953	0.0709	0.0000	303.2671
<b>Total</b>											<b>0.0000</b>	<b>301.4953</b>	<b>301.4953</b>	<b>0.0709</b>	<b>0.0000</b>	<b>303.2671</b>



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**3.4 Building Construction - 2028**

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	33.9623	33.9623	4.4000e-004	4.9800e-003	35.4564
Worker											0.0000	57.9896	57.9896	1.0000e-003	1.2500e-003	58.3877
<b>Total</b>											<b>0.0000</b>	<b>91.9519</b>	<b>91.9519</b>	<b>1.4400e-003</b>	<b>6.2300e-003</b>	<b>93.8442</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	301.4949	301.4949	0.0709	0.0000	303.2667
<b>Total</b>											<b>0.0000</b>	<b>301.4949</b>	<b>301.4949</b>	<b>0.0709</b>	<b>0.0000</b>	<b>303.2667</b>

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**3.4 Building Construction - 2028**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	33.9623	33.9623	4.4000e-004	4.9800e-003	35.4564
Worker											0.0000	57.9896	57.9896	1.0000e-003	1.2500e-003	58.3877
<b>Total</b>											<b>0.0000</b>	<b>91.9519</b>	<b>91.9519</b>	<b>1.4400e-003</b>	<b>6.2300e-003</b>	<b>93.8442</b>

**3.4 Building Construction - 2029**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	302.6549	302.6549	0.0711	0.0000	304.4335
<b>Total</b>											<b>0.0000</b>	<b>302.6549</b>	<b>302.6549</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4335</b>

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**3.4 Building Construction - 2029**

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	33.4685	33.4685	4.6000e-004	4.9000e-003	34.9389
Worker											0.0000	57.2306	57.2306	9.2000e-004	1.2100e-003	57.6128
<b>Total</b>											<b>0.0000</b>	<b>90.6992</b>	<b>90.6992</b>	<b>1.3800e-003</b>	<b>6.1100e-003</b>	<b>92.5517</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	302.6545	302.6545	0.0711	0.0000	304.4331
<b>Total</b>											<b>0.0000</b>	<b>302.6545</b>	<b>302.6545</b>	<b>0.0711</b>	<b>0.0000</b>	<b>304.4331</b>

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**3.4 Building Construction - 2029**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	33.4685	33.4685	4.6000e-004	4.9000e-003	34.9389
Worker											0.0000	57.2306	57.2306	9.2000e-004	1.2100e-003	57.6128
<b>Total</b>											<b>0.0000</b>	<b>90.6992</b>	<b>90.6992</b>	<b>1.3800e-003</b>	<b>6.1100e-003</b>	<b>92.5517</b>

**3.4 Building Construction - 2030**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	36.8005	36.8005	1.4800e-003	0.0000	36.8375
<b>Total</b>											<b>0.0000</b>	<b>36.8005</b>	<b>36.8005</b>	<b>1.4800e-003</b>	<b>0.0000</b>	<b>36.8375</b>

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**3.4 Building Construction - 2030**

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	3.5275	3.5275	5.0000e-005	5.2000e-004	3.6822
Worker											0.0000	6.0487	6.0487	9.0000e-005	1.2000e-004	6.0881
<b>Total</b>											<b>0.0000</b>	<b>9.5762</b>	<b>9.5762</b>	<b>1.4000e-004</b>	<b>6.4000e-004</b>	<b>9.7704</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	36.8005	36.8005	1.4800e-003	0.0000	36.8374
<b>Total</b>											<b>0.0000</b>	<b>36.8005</b>	<b>36.8005</b>	<b>1.4800e-003</b>	<b>0.0000</b>	<b>36.8374</b>

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**3.4 Building Construction - 2030**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	3.5275	3.5275	5.0000e-005	5.2000e-004	3.6822
Worker											0.0000	6.0487	6.0487	9.0000e-005	1.2000e-004	6.0881
<b>Total</b>											<b>0.0000</b>	<b>9.5762</b>	<b>9.5762</b>	<b>1.4000e-004</b>	<b>6.4000e-004</b>	<b>9.7704</b>

**3.5 Paving - 2030**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	132.5473	132.5473	6.2100e-003	0.0000	132.7027
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>											<b>0.0000</b>	<b>132.5473</b>	<b>132.5473</b>	<b>6.2100e-003</b>	<b>0.0000</b>	<b>132.7027</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.5 Paving - 2030**

Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											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
Worker											0.0000	6.0414	6.0414	9.0000e-005	1.2000e-004	6.0808
<b>Total</b>											<b>0.0000</b>	<b>6.0414</b>	<b>6.0414</b>	<b>9.0000e-005</b>	<b>1.2000e-004</b>	<b>6.0808</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Off-Road											0.0000	132.5472	132.5472	6.2100e-003	0.0000	132.7025
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>											<b>0.0000</b>	<b>132.5472</b>	<b>132.5472</b>	<b>6.2100e-003</b>	<b>0.0000</b>	<b>132.7025</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.5 Paving - 2030**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											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
Worker											0.0000	6.0414	6.0414	9.0000e-005	1.2000e-004	6.0808
<b>Total</b>											<b>0.0000</b>	<b>6.0414</b>	<b>6.0414</b>	<b>9.0000e-005</b>	<b>1.2000e-004</b>	<b>6.0808</b>

**3.6 Architectural Coating - 2030**

**Unmitigated Construction On-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	14.0429	14.0429	5.7000e-004	0.0000	14.0571
<b>Total</b>											<b>0.0000</b>	<b>14.0429</b>	<b>14.0429</b>	<b>5.7000e-004</b>	<b>0.0000</b>	<b>14.0571</b>



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**3.6 Architectural Coating - 2030**  
Unmitigated Construction Off-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											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
Worker											0.0000	4.8331	4.8331	7.0000e-005	1.0000e-004	4.8646
<b>Total</b>											<b>0.0000</b>	<b>4.8331</b>	<b>4.8331</b>	<b>7.0000e-005</b>	<b>1.0000e-004</b>	<b>4.8646</b>

Mitigated Construction On-Site

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	14.0429	14.0429	5.7000e-004	0.0000	14.0571
<b>Total</b>											<b>0.0000</b>	<b>14.0429</b>	<b>14.0429</b>	<b>5.7000e-004</b>	<b>0.0000</b>	<b>14.0571</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**3.6 Architectural Coating - 2030**

**Mitigated Construction Off-Site**

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Hauling											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
Worker											0.0000	4.8331	4.8331	7.0000e-005	1.0000e-004	4.8646
<b>Total</b>											<b>0.0000</b>	<b>4.8331</b>	<b>4.8331</b>	<b>7.0000e-005</b>	<b>1.0000e-004</b>	<b>4.8646</b>

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Mitigated											0.0000	1,692.2322	1,692.2322	0.0843	0.0817	1,718.6746
Unmitigated											0.0000	1,692.2322	1,692.2322	0.0843	0.0817	1,718.6746

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated		Mitigated	
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT		
Single Family Housing	1,538.72	1,555.02	1393.65	5,195,179	5,195,179		
Total	1,538.72	1,555.02	1,393.65	5,195,179	5,195,179		

4.3 Trip Type Information

Land Use	Miles						Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by	
Single Family Housing	14.70	5.90	8.70	40.20	19.20	40.60	86	11	86	11	3	

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.540541	0.056458	0.173793	0.136090	0.025268	0.007074	0.011525	0.018705	0.000610	0.000304	0.023606	0.001094	0.004932

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
tons/yr											MT/yr					
Electricity Mitigated											0.0000	70.6528	70.6528	0.0194	2.3600e-003	71.8406
Electricity Unmitigated											0.0000	70.6528	70.6528	0.0194	2.3600e-003	71.8406
NaturalGas Mitigated											0.0000	246.0483	246.0483	4.7200e-003	4.5100e-003	247.5105
NaturalGas Unmitigated											0.0000	246.0483	246.0483	4.7200e-003	4.5100e-003	247.5105

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**5.2 Energy by Land Use - NaturalGas**

Unmitigated

Land Use	NaturalGas Use kBTU/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr																
Single Family Housing	4.61077e+006											0.0000	246.0483	246.0483	4.7200e-003	4.5100e-003	247.5105
<b>Total</b>												<b>0.0000</b>	<b>246.0483</b>	<b>246.0483</b>	<b>4.7200e-003</b>	<b>4.5100e-003</b>	<b>247.5105</b>

Mitigated

Land Use	NaturalGas Use kBTU/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr																
Single Family Housing	4.61077e+006											0.0000	246.0483	246.0483	4.7200e-003	4.5100e-003	247.5105
<b>Total</b>												<b>0.0000</b>	<b>246.0483</b>	<b>246.0483</b>	<b>4.7200e-003</b>	<b>4.5100e-003</b>	<b>247.5105</b>

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**5.3 Energy by Land Use - Electricity**

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.29824e+006	70.6528	0.0194	2.3600e-003	71.8406
<b>Total</b>		<b>70.6528</b>	<b>0.0194</b>	<b>2.3600e-003</b>	<b>71.8406</b>

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Single Family Housing	1.29824e+006	70.6528	0.0194	2.3600e-003	71.8406
<b>Total</b>		<b>70.6528</b>	<b>0.0194</b>	<b>2.3600e-003</b>	<b>71.8406</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Mitigated											17.3137	36.0168	53.3305	0.0543	1.1800e-003	55.0373
Unmitigated											17.3137	36.0168	53.3305	0.0543	1.1800e-003	55.0373

**6.2 Area by SubCategory**

Unmitigated

SubCategory	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											17.3137	33.2710	50.5847	0.0516	1.1800e-003	52.2257
Landscaping											0.0000	2.7458	2.7458	2.6300e-003	0.0000	2.8116
<b>Total</b>											<b>17.3137</b>	<b>36.0168</b>	<b>53.3305</b>	<b>0.0543</b>	<b>1.1800e-003</b>	<b>55.0373</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**6.2 Area by SubCategory**

**Mitigated**

SubCategory	tons/yr										MT/yr					
	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Heath											17.3137	33.2710	50.5847	0.0516	1.1800e-003	52.2257
Landscaping											0.0000	2.7458	2.7458	2.6300e-003	0.0000	2.8116
<b>Total</b>											<b>17.3137</b>	<b>36.0168</b>	<b>53.3305</b>	<b>0.0543</b>	<b>1.1800e-003</b>	<b>55.0373</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**



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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	14.9432	0.3492	8.5600e-003	26.2241
Unmitigated	14.9432	0.3492	8.5600e-003	26.2241

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	10.6201 / 6.69528	14.9432	0.3492	8.5600e-003	26.2241
<b>Total</b>		<b>14.9432</b>	<b>0.3492</b>	<b>8.5600e-003</b>	<b>26.2241</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**7.2 Water by Land Use**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Single Family Housing	10.6201 / 6.69528	14.9432	0.3492	8.5600e-003	26.2241
<b>Total</b>		<b>14.9432</b>	<b>0.3492</b>	<b>8.5600e-003</b>	<b>26.2241</b>

**8.0 Waste Detail**

**8.1 Mitigation Measures Waste**

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	38.7835	2.2920	0.0000	96.0844
Unmitigated	38.7835	2.2920	0.0000	96.0844

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**8.2 Waste by Land Use**

Unmitigated

Land Use	Waste Disposed tons	Total CO2	CH4	N2O	CO2e
Single Family Housing	191.06	38.7835	2.2920	0.0000	96.0844
<b>Total</b>		<b>38.7835</b>	<b>2.2920</b>	<b>0.0000</b>	<b>96.0844</b>

Mitigated

Land Use	Waste Disposed tons	Total CO2	CH4	N2O	CO2e
Single Family Housing	191.06	38.7835	2.2920	0.0000	96.0844
<b>Total</b>		<b>38.7835</b>	<b>2.2920</b>	<b>0.0000</b>	<b>96.0844</b>

**9.0 Operational Offroad**

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

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

**10.0 Stationary Equipment**

**Fire Pumps and Emergency Generators**

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

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

Equipment Type	Number
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**11.0 Vegetation**