

**UPDATED<sup>1</sup> Table 3.3-1: Estimated Unmitigated Criteria Pollutant Emissions during Construction**

Criteria Emissions	Daily Maximum lbs/day	Total		
		Project Total Tons <sup>(1)</sup>	Applicable Construction Threshold <sup>(2)</sup> Tons/Year	Threshold Exceeded?
Volatile Organic Compounds (VOCs)	16.3	0.4	10	No
Carbon Monoxide (CO)	74.3	2.8	100	No
NO <sub>x</sub>	91.5	3.7	10	No
Sulfur Dioxide	0.9	<0.1	27	No
Particulates (PM <sub>10</sub> )	10.0	0.4	15	No
Particulates (PM <sub>2.5</sub> )	6.6	0.2	15	No
Source: SJVAPCD 2015 Notes: Emissions are for the entire proposed project construction. Key: lbs        pounds NO <sub>x</sub> oxides of nitrogen PM <sub>10</sub> particulate matter less than 10 microns in diameter PM <sub>2.5</sub> particulate matter less than 2.5 microns in diameter SO <sub>2</sub> sulfur dioxide				

<sup>1</sup> PEA Tables 3.3-5 and 3.7-2 have been updated to include the Howland Road Substation modifications and are consistent with a construction start date of May 2020.

**UPDATED Table 3.7-2: Estimated Construction-Related Greenhouse Gas Emissions**

Construction Phase	CO <sub>2</sub> e metric tons/year (w/o APMs)	CO <sub>2</sub> e metric tons/year (w/ APMs)
Vegetation Trimming	< 0.1	< 0.1
Traffic Control	0.2	0.2
TSP Installation	2.7	2.6
Conductor Installation	1.2	1.2
Substation Expansion	10.3	9.7
Other Substation Modifications	5.0	4.7
Helicopter Operations	0.1	0.1
<b>Total</b>	<b>19.4</b>	<b>18.5</b>
<p>Notes:</p> <p>GHG emissions listed above are annual emissions derived from the amortization of total construction emissions over a 30-year period.</p> <p>Reduction in GHG emissions assumes that implementation of APM GHG-1 will achieve a 5 percent reduction in emissions as a result of minimizing idling and maintaining equipment in proper operating condition.</p>		

Construction Phase	Pollutants (tons/yr)						GHG Emissions (MT/yr)			
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Phase 1: Site Preparation 2020</b>										
Construction Equipment	0.00014	0.00068	0.00073	0.000	0.00005	0.00005	0.0643	0.00002	0.000	0.06486
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vendor Trips	0	0.00012	0.00003	0.000	0.00001	0.000	0.0269	0.000	0.000	0.0269
Worker Trips	0.00001	0.00001	0.00006	0.000	0.00002	0	0.0141	0.000	0.000	0.0141
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.00015</i>	<i>0.00081</i>	<i>0.00082</i>	<i>0</i>	<i>0.00008</i>	<i>0.00005</i>	<i>0.1053</i>	<i>0.00002</i>	<i>0</i>	<i>0.10586</i>
<b>Phase 2: Traffic Control 2020</b>										
Construction Equipment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vendor Trips	0.00058	0.017	0.00362	0.00004	0.00105	0.00036	3.8678	0.00024	0.000	3.87452
Worker Trips	0.00115	0.00083	0.00814	0.00002	0.00231	0.00062	2.0344	0.00006	0.000	2.03608
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.00173</i>	<i>0.01783</i>	<i>0.01176</i>	<i>0.00006</i>	<i>0.00336</i>	<i>0.001</i>	<i>5.9022</i>	<i>0.0003</i>	<i>0</i>	<i>5.911</i>
<b>Phase 3: TSP Installation 2020</b>										
Construction Equipment	0.052	0.5084	0.2949	0.00087	0.0221	0.0203	76.0616	0.0246	0.000	76.7504
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vendor Trips	0.00038	0.0111	0.00237	0.00003	0.00068	0.00024	2.5248	0.00016	0.000	2.52928
Worker Trips	0.00113	0.00081	0.00797	0.00002	0.00226	0.00061	1.992	0.00005	0.000	1.9934
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.05351</i>	<i>0.52031</i>	<i>0.30524</i>	<i>0.00092</i>	<i>0.02504</i>	<i>0.021</i>	<i>80.5784</i>	<i>0.02481</i>	<i>0</i>	<i>81.273</i>
<b>Phase 4: Conductor Installation 2020</b>										
Construction Equipment	0.0238	0.2592	0.143	0.00029	0.0131	0.0121	25.206	0.00815	0.000	25.4342
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vendor Trips	0.00122	0.0355	0.00755	0.00008	0.00497	0.00145	8.058	0.0005	0.000	8.072
Worker Trips	0.0018	0.00129	0.0127	0.00004	0.00981	0.0025	3.1788	0.00009	0.000	3.18132
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.02682</i>	<i>0.29599</i>	<i>0.16325</i>	<i>0.00041</i>	<i>0.02788</i>	<i>0.016</i>	<i>36.4428</i>	<i>0.00874</i>	<i>0</i>	<i>36.688</i>
<b>Phase 5a: Substation Expansion 2020</b>										
Construction Equipment	0.0892	0.9427	0.5587	0.00119	0.0413	0.038	104.2214	0.0337	0.000	105.165
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vendor Trips	0.00097	0.0253	0.00544	0.00007	0.00216	0.00075	7.0883	0.00027	0.000	7.09586
Worker Trips	0.00372	0.00267	0.0263	0.00007	0.00747	0.00202	6.5765	0.00018	0.000	6.58154
Fugitive Dust	0	0	0	0	0.112	0.061	0	0	0	0
<i>Phase Totals</i>	<i>0.09389</i>	<i>0.97067</i>	<i>0.59044</i>	<i>0.00133</i>	<i>0.16303</i>	<i>0.102</i>	<i>117.8862</i>	<i>0.03415</i>	<i>0</i>	<i>118.842</i>
<b>Phase 5b: Substation Expansion 2020</b>										
Construction Equipment	0.083	0.8168	0.935	0.00139	0.0471	0.0443	121.0321	0.0304	0.000	121.8833
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vendor Trips	0.00121	0.0352	0.0075	0.00008	0.00216	0.00075	8.0043	0.0005	0.000	8.0183
Worker Trips	0.0107	0.00769	0.0758	0.00021	0.0215	0.00581	18.9454	0.00052	0.000	18.95996
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.09491</i>	<i>0.85969</i>	<i>1.0183</i>	<i>0.00168</i>	<i>0.07076</i>	<i>0.051</i>	<i>147.9818</i>	<i>0.03142</i>	<i>0</i>	<i>148.862</i>
<b>Phase 5c: Substation Expansion 2020</b>										
Construction Equipment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Haul Truck Trips	0.00288	0.10030	0.01530	0.00029	0.00699	0.00214	27.3697	0.00122	0.000	27.40386
Vendor Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Worker Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fugitive Dust	0	0	0	0	0.00066	0.00010	0	0	0	0
<i>Phase Totals</i>	<i>0.00288</i>	<i>0.1003</i>	<i>0.0153</i>	<i>0.00029</i>	<i>0.00765</i>	<i>0.002</i>	<i>27.3697</i>	<i>0.00122</i>	<i>0</i>	<i>27.404</i>
<b>Phase 5d: Substation Expansion - 2020</b>										
Construction Equipment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vendor Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Worker Trips	0.00489	0.00351	0.0346	0.0001	0.00982	0.00266	8.6533	0.00024	0.000	8.66002
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.00489</i>	<i>0.00351</i>	<i>0.0346</i>	<i>0.0001</i>	<i>0.00982</i>	<i>0.003</i>	<i>8.6533</i>	<i>0.00024</i>	<i>0</i>	<i>8.660</i>
<b>Phase 5d: Substation Expansion - 2021</b>										
Construction Equipment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Vendor Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Worker Trips	0.00217	0.0015	0.0151	0.00004	0.00471	0.00127	3.997	0.0001	0.000	3.9998
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.00217</i>	<i>0.0015</i>	<i>0.0151</i>	<i>0.00004</i>	<i>0.00471</i>	<i>0.001</i>	<i>3.997</i>	<i>0.0001</i>	<i>0</i>	<i>4.000</i>
<b>Phase 6: Vierra Substation 2020</b>										
Construction Equipment	0.0153	0.1596	0.0883	0.00026	0.00649	0.00597	22.5412	0.00729	0.000	22.74532
Haul Truck Trips	0.00011	0.0039	0.00059	0.00001	0.00025	0.00008	1.0644	0.00005	0.000	1.0658
Vendor Trips	0.00008	0.00237	0.0005	0.00001	0.00015	0.00005	0.5372	0.00003	0.000	0.53804
Worker Trips	0.0006	0.00043	0.00424	0.00001	0.0012	0.00033	1.0596	0.00003	0.000	1.06044
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.01609</i>	<i>0.1663</i>	<i>0.09363</i>	<i>0.00029</i>	<i>0.00809</i>	<i>0.006</i>	<i>25.2024</i>	<i>0.0074</i>	<i>0</i>	<i>25.410</i>
<b>Phase 7: Kasson Substation 2020</b>										
Construction Equipment	0.0153	0.1596	0.0883	0.00026	0.00649	0.00597	22.5412	0.00729	0.000	22.74532
Haul Truck Trips	0.00002	0.00056	0.00008	0.0000	0.00004	0.00001	0.1521	0.00001	0.000	0.15238
Vendor Trips	0.00008	0.00237	0.0005	0.00001	0.00015	0.00005	0.5372	0.00003	0.000	0.53804
Worker Trips	0.0006	0.00043	0.00424	0.00001	0.0012	0.00033	1.0596	0.00003	0.000	1.06044
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.016</i>	<i>0.16296</i>	<i>0.09312</i>	<i>0.00028</i>	<i>0.00788</i>	<i>0.006</i>	<i>24.2901</i>	<i>0.00736</i>	<i>0</i>	<i>24.496</i>
<b>Phase 8: Tracy Substation 2020</b>										
Construction Equipment	0.0153	0.1596	0.0883	0.00026	0.00649	0.00597	22.5412	0.00729	0.000	22.74532
Haul Truck Trips	0.00002	0.00056	0.00008	0.0000	0.00004	0.00001	0.1521	0.00001	0.000	0.15238
Vendor Trips	0.00008	0.00237	0.0005	0.00001	0.00015	0.00005	0.5372	0.00003	0.000	0.53804
Worker Trips	0.0006	0.00043	0.00424	0.00001	0.0012	0.00033	1.0596	0.00003	0.000	1.06044
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.016</i>	<i>0.16296</i>	<i>0.09312</i>	<i>0.00028</i>	<i>0.00788</i>	<i>0.006</i>	<i>24.2901</i>	<i>0.00736</i>	<i>0</i>	<i>24.496</i>
<b>Phase 9: Manteca Substation 2020</b>										
Construction Equipment	0.0153	0.1596	0.0883	0.00026	0.00649	0.00597	22.5412	0.00729	0.000	22.74532
Haul Truck Trips	0.00002	0.00056	0.00008	0.0000	0.00004	0.00001	0.1521	0.00001	0.000	0.15238

Construction Phase	Pollutants (tons/yr)						GHG Emissions (MT/yr)			
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Vendor Trips	0.00008	0.00237	0.0005	0.00001	0.00015	0.00005	0.5372	0.00003	0.000	0.53804
Worker Trips	0.0006	0.00043	0.00424	0.00001	0.0012	0.00033	1.0596	0.00003	0.000	1.06044
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.016</i>	<i>0.16296</i>	<i>0.09312</i>	<i>0.00028</i>	<i>0.00788</i>	<i>0.006</i>	<i>24.2901</i>	<i>0.00736</i>	<i>0</i>	<i>24.496</i>
<b>Phase 10: Highland Peak 2020</b>										
Construction Equipment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
Vendor Trips	0.00002	0.00059	0.00013	0.000	0.00004	0.00001	0.1343	0.00001	0.000	0.13458
Worker Trips	0.00006	0.00004	0.00042	0.000	0.00012	0.00003	0.106	0.000	0.000	0.106
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.00008</i>	<i>0.00063</i>	<i>0.00055</i>	<i>0</i>	<i>0.00016</i>	<i>0.000</i>	<i>0.2403</i>	<i>0.00001</i>	<i>0</i>	<i>0.241</i>

Construction Phase	Pollutants (tons/yr)						GHG Emissions (MT/yr)			
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Phase 11: Mt Oso - 2020</b>										
Construction Equipment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
Vendor Trips	0.00001	0.00024	0.00005	0.000	0.00001	0.00001	0.0537	0	0.000	0.0537
Worker Trips	0.00002	0.00002	0.00017	0.000	0.00005	0.00001	0.0424	0.000	0.000	0.0424
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.00003</i>	<i>0.00026</i>	<i>0.00022</i>	<i>0</i>	<i>0.00006</i>	<i>0.000</i>	<i>0.0961</i>	<i>0</i>	<i>0</i>	<i>0.096</i>
<b>Phase 11: Mt Oso - 2021</b>										
Construction Equipment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
Vendor Trips	0.00001	0.00032	0.00007	0.000	0.00002	0.00001	0.0798	0	0.000	0.0798
Worker Trips	0.00003	0.00002	0.00023	0.000	0.00007	0.00002	0.0612	0.000	0.000	0.0612
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.00004</i>	<i>0.00034</i>	<i>0.0003</i>	<i>0</i>	<i>0.00009</i>	<i>0.000</i>	<i>0.141</i>	<i>0</i>	<i>0</i>	<i>0.141</i>
<b>Phase 12: Howland Site Preparation 2020</b>										
Construction Equipment	0.0160	0.1598	0.1705	0.00029	0.00852	0.00784	25.480	0.00824	0.000	25.71062
Haul Truck Trips	0.00034	0.01180	0.00180	0.00003	0.00075	0.00023	3.221	0.00014	0.000	3.22492
Vendor Trips	0.00088	0.0257	0.00546	0.00006	0.00158	0.00055	5.8286	0.00036	0.000	5.83868
Worker Trips	0.00099	0.00071	0.00701	0.00002	0.00199	0.00054	1.7519	0.00005	0.000	1.7533
Fugitive Dust	0	0	0	0	0.00008	0.00001	0	0	0	0
<i>Phase Totals</i>	<i>0.01821</i>	<i>0.19801</i>	<i>0.18477</i>	<i>0.0004</i>	<i>0.01292</i>	<i>0.009</i>	<i>36.2814</i>	<i>0.00879</i>	<i>0</i>	<i>36.528</i>
<b>Phase 13: Howland Monopole 2020</b>										
Construction Equipment	0.00182	0.018	0.01850	0.00002	0.00117	0.00108	2.1949	0.0007	0.000	2.21478
Haul Truck Trips	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
Vendor Trips	0.00101	0.0293	0.00624	0.00007	0.0018	0.00063	6.6613	0.00041	0.000	6.67278
Worker Trips	0.00062	0.00044	0.00438	0.00001	0.00124	0.00034	1.0949	0.00003	0.000	1.09574
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.00345</i>	<i>0.04754</i>	<i>0.02912</i>	<i>0.0001</i>	<i>0.00421</i>	<i>0.002</i>	<i>9.9511</i>	<i>0.00115</i>	<i>0</i>	<i>9.983</i>
<b>Phase 14: Howland Indoor Work 2020</b>										
Construction Equipment	0.00048	0.00432	0.00393	0.00001	0.00032	0.00030	0.4472	0.00014	0.000	0.45112
Haul Truck Trips	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.000	0.000	0.000	0
Vendor Trips	0.00039	0.0114	0.00242	0.00003	0.0007	0.00024	2.5786	0.00016	0.000	2.58308
Worker Trips	0.00032	0.00023	0.00262	0.00001	0.00064	0.00017	0.5651	0.00002	0.000	0.56566
Fugitive Dust	0	0	0	0	0.000	0.000	0	0	0	0
<i>Phase Totals</i>	<i>0.00119</i>	<i>0.01595</i>	<i>0.00897</i>	<i>0.00005</i>	<i>0.00166</i>	<i>0.001</i>	<i>3.5909</i>	<i>0.00032</i>	<i>0</i>	<i>3.600</i>

PROJECT TOTALS	Pollutants (tons/yr)						GHG Emissions (MT/yr)			
	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Construction Equipment	0.328	3.348	2.478	0.005	0.160	0.148	444.872	0.135	0.000	448.656
Haul Truck Trips	0.003	0.118	0.018	0.000	0.008	0.002	32.111	0.001	0.000	32.152
Vendor Trips	0.007	0.201	0.043	0.001	0.016	0.005	47.055	0.003	0.000	47.132
Worker Trips	0.030	0.021	0.212	0.001	0.067	0.018	53.251	0.001	0.000	53.292
Fugitive Dust	0.000	0.000	0.000	0.000	0.113	0.061	0.000	0.000	0.000	0.000
Total	0.3680	3.6885	2.7517	0.0065	0.3632	0.2346	577.290	0.141	0.000	581.231

**General Assumptions:**

- 25 cy per load for haul trips
- Total haul trips include both import and export, unphased
- Use CalEEMod default trip lengths:
  - one-way worker trip length = 10.8 mi
  - one-way vendor trip length = 7.3 mi
  - one-way haul trip length = 20 mi
- Pickup/crw cab/boom/bucket/line trucks counted as vendor trips, 2 one way trips per day
- Water trucks counted as vendor trips, traveling 5 mph for 6 hrs per day (30 VMT)
- Global Warming Potentials (GWPs) obtained from the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC). GWPs used here do not include climate-carbon feedbacks.