

**APPENDIX B:  
CONSTRUCTION HEALTH RISK ASSESSMENT**





CalEEMod Output - Annual Average Emissions  
 Separating On-site and Off-site Emissions  
 Tons per Year

**Criteria Air Pollutant Emissions Summary - Construction (tons per year)**

Mitigated Scenario Includes Tier 3 Engines and Fugitive Dust BMPs

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total		2.88	6.12	5.64	0.01	0.40	0.30	0.71	0.10	0.28	0.38
Total Mit		2.47	3.33	5.82	0.01	0.29	0.14	0.43	0.07	0.14	0.21

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total Onsite		2.67	5.08	2.71	0.01	0.08	0.29	0.38	0.01	0.27	0.28
Total On-site Mit		2.26	2.29	2.88	0.01	0.04	0.13	0.16	0.01	0.13	0.13
Total Offsite		0.21	1.04	2.94	0.01	0.32	0.01	0.33	0.09	0.01	0.10
Total Off-site Mit		0.21	1.04	2.94	0.01	0.25	0.01	0.26	0.07	0.01	0.08

Unmitigated Construction

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2016 On-site		0.23	2.16	1.16	0.00	0.07	0.13	0.20	0.01	0.12	0.13
2016 Off-site		0.10	0.54	1.43	0.00	0.15	0.01	0.15	0.04	0.01	0.05
2017 On-site		2.44	2.92	1.55	0.00	0.01	0.16	0.17	0.00	0.15	0.15
2017 Off-site		0.11	0.50	1.50	0.00	0.17	0.01	0.18	0.05	0.01	0.05

Average Annual Emissions With Tier 3 Engines and Fugitive Dust BMPs

	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2016 On-site Mit		0.04	0.91	1.16	0.00	0.03	0.05	0.08	0.00	0.05	0.05
2016 Off-site Mit		0.10	0.54	1.43	0.00	0.12	0.01	0.12	0.03	0.01	0.04
2017 On-site Mit		2.22	1.38	1.72	0.00	0.01	0.08	0.08	0.00	0.08	0.08
2017 Off-site Mit		0.11	0.50	1.50	0.00	0.13	0.01	0.14	0.04	0.01	0.04

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 Tons per Year

**Criteria Air Pollutant Emissions Summary - Construction (tons per year)**

Mitigated Scenario Includes Tier 3 Engines and Fugitive Dust BMPs

tons/yr		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
<b>Site Preparation - 2016</b>											
Unmitigated Construction											
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.03	0.38	0.20	0.00		0.02	0.02		0.02	0.02
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>		<b>0.04</b>	<b>0.40</b>	<b>0.24</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>TOTAL ONSITE</b>		<b>0.03</b>	<b>0.38</b>	<b>0.20</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>TOTAL OFFSITE</b>		<b>0.00</b>	<b>0.01</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Construction with Tier 3 Engines and Fugitive Dust BMPs

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.00	0.00	0.00	0.00	0.00	0.00
Off-Road		0.01	0.24	0.28	0.00		0.01	0.01		0.01	0.01
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>		<b>0.01</b>	<b>0.25</b>	<b>0.31</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>
<b>TOTAL ONSITE MIT</b>		<b>0.01</b>	<b>0.24</b>	<b>0.28</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>
<b>TOTAL OFFSITE MIT</b>		<b>0.00</b>	<b>0.01</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Demolition - 2016**

Unmitigated Construction											
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.07	0.00	0.07	0.01	0.00	0.01
Off-Road		0.06	0.68	0.31	0.00		0.03	0.03		0.03	0.03
Hauling		0.01	0.10	0.12	0.00	0.01	0.00	0.01	0.00	0.00	0.00
Vendor		0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>		<b>0.08</b>	<b>0.79</b>	<b>0.46</b>	<b>0.00</b>	<b>0.08</b>	<b>0.03</b>	<b>0.12</b>	<b>0.01</b>	<b>0.03</b>	<b>0.05</b>
<b>TOTAL ONSITE</b>		<b>0.06</b>	<b>0.68</b>	<b>0.31</b>	<b>0.00</b>	<b>0.07</b>	<b>0.03</b>	<b>0.10</b>	<b>0.01</b>	<b>0.03</b>	<b>0.04</b>
<b>TOTAL OFFSITE</b>		<b>0.01</b>	<b>0.11</b>	<b>0.15</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Construction with Tier 3 Engines and Fugitive Dust BMPs

Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.03	0.00	0.03	0.00	0.00	0.00
Off-Road		0.02	0.30	0.39	0.00		0.01	0.01		0.01	0.01
Hauling		0.01	0.10	0.12	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Vendor		0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>		<b>0.03</b>	<b>0.41</b>	<b>0.54</b>	<b>0.00</b>	<b>0.04</b>	<b>0.01</b>	<b>0.05</b>	<b>0.01</b>	<b>0.01</b>	<b>0.02</b>
<b>TOTAL ONSITE MIT</b>		<b>0.02</b>	<b>0.30</b>	<b>0.39</b>	<b>0.00</b>	<b>0.03</b>	<b>0.01</b>	<b>0.05</b>	<b>0.00</b>	<b>0.01</b>	<b>0.02</b>
<b>TOTAL OFFSITE MIT</b>		<b>0.01</b>	<b>0.11</b>	<b>0.15</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

CalEEMod Output - Annual Average Emissions  
 Separating On-site and Off-site Emissions  
 Tons per Year

**Criteria Air Pollutant Emissions Summary - Construction (tons per year)**

Mitigated Scenario Includes Tier 3 Engines and Fugitive Dust BMPs

tons/yr		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
<b>Building Construction - 2016</b>											
Unmitigated Construction											
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust											
Off-Road		0.13	1.10	0.64	0.00		0.08	0.08		0.07	0.07
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.04	0.35	0.60	0.00	0.02	0.00	0.03	0.01	0.00	0.01
Worker		0.04	0.07	0.65	0.00	0.11	0.00	0.11	0.03	0.00	0.03
<b>Total</b>		<b>0.22</b>	<b>1.52</b>	<b>1.89</b>	<b>0.00</b>	<b>0.13</b>	<b>0.08</b>	<b>0.22</b>	<b>0.04</b>	<b>0.08</b>	<b>0.11</b>
<b>TOTAL ONSITE</b>		<b>0.13</b>	<b>1.10</b>	<b>0.64</b>	<b>0.00</b>	<b>0.00</b>	<b>0.08</b>	<b>0.08</b>	<b>0.00</b>	<b>0.07</b>	<b>0.07</b>
<b>TOTAL OFFSITE</b>		<b>0.09</b>	<b>0.42</b>	<b>1.24</b>	<b>0.00</b>	<b>0.13</b>	<b>0.01</b>	<b>0.14</b>	<b>0.04</b>	<b>0.01</b>	<b>0.04</b>

Construction with Tier 3 Engines and Fugitive Dust BMPs

tons/yr		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust											
Off-Road		0.02	0.37	0.49	0.00		0.02	0.02		0.02	0.02
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.04	0.35	0.60	0.00	0.02	0.00	0.02	0.01	0.00	0.01
Worker		0.04	0.07	0.65	0.00	0.09	0.00	0.09	0.02	0.00	0.02
<b>Total</b>		<b>0.11</b>	<b>0.79</b>	<b>1.73</b>	<b>0.00</b>	<b>0.10</b>	<b>0.03</b>	<b>0.13</b>	<b>0.03</b>	<b>0.03</b>	<b>0.06</b>
<b>TOTAL ONSITE MIT</b>		<b>0.02</b>	<b>0.37</b>	<b>0.49</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>TOTAL OFFSITE MIT</b>		<b>0.09</b>	<b>0.42</b>	<b>1.24</b>	<b>0.00</b>	<b>0.10</b>	<b>0.01</b>	<b>0.11</b>	<b>0.03</b>	<b>0.01</b>	<b>0.03</b>

**Building Construction - 2017**

tons/yr		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Unmitigated Construction											
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust											
Off-Road		0.12	1.03	0.63	0.00		0.07	0.07		0.07	0.07
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.04	0.31	0.57	0.00	0.02	0.00	0.03	0.01	0.00	0.01
Worker		0.04	0.06	0.58	0.00	0.11	0.00	0.11	0.03	0.00	0.03
<b>Total</b>		<b>0.21</b>	<b>1.40</b>	<b>1.77</b>	<b>0.00</b>	<b>0.13</b>	<b>0.08</b>	<b>0.21</b>	<b>0.04</b>	<b>0.07</b>	<b>0.11</b>
<b>TOTAL ONSITE</b>		<b>0.12</b>	<b>1.03</b>	<b>0.63</b>	<b>0.00</b>	<b>0.00</b>	<b>0.07</b>	<b>0.07</b>	<b>0.00</b>	<b>0.07</b>	<b>0.07</b>
<b>TOTAL OFFSITE</b>		<b>0.08</b>	<b>0.37</b>	<b>1.14</b>	<b>0.00</b>	<b>0.13</b>	<b>0.01</b>	<b>0.14</b>	<b>0.04</b>	<b>0.00</b>	<b>0.04</b>

Construction with Tier 3 Engines and Fugitive Dust BMPs

tons/yr		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust											
Off-Road		0.02	0.37	0.49	0.00		0.02	0.02		0.02	0.02
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.04	0.31	0.57	0.00	0.02	0.00	0.02	0.01	0.00	0.01
Worker		0.04	0.06	0.58	0.00	0.09	0.00	0.09	0.02	0.00	0.02
<b>Total</b>		<b>0.10</b>	<b>0.74</b>	<b>1.63</b>	<b>0.00</b>	<b>0.10</b>	<b>0.03</b>	<b>0.13</b>	<b>0.03</b>	<b>0.03</b>	<b>0.06</b>
<b>TOTAL ONSITE MIT</b>		<b>0.02</b>	<b>0.37</b>	<b>0.49</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>TOTAL OFFSITE MIT</b>		<b>0.08</b>	<b>0.37</b>	<b>1.14</b>	<b>0.00</b>	<b>0.10</b>	<b>0.01</b>	<b>0.11</b>	<b>0.03</b>	<b>0.00</b>	<b>0.03</b>

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 Tons per Year

**Criteria Air Pollutant Emissions Summary - Construction (tons per year)**

Mitigated Scenario Includes Tier 3 Engines and Fugitive Dust BMPs

tons/yr		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
<b>Architectural Coating - 2017</b>											
Unmitigated Construction											
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Arch. Coating		2.15					0.00	0.00		0.00	0.00
Off-Road		0.02	0.14	0.12	0.00		0.01	0.01		0.01	0.01
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00
<b>Total</b>		<b>2.18</b>	<b>0.16</b>	<b>0.18</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>
<b>TOTAL ONSITE</b>		<b>2.17</b>	<b>0.14</b>	<b>0.12</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>
<b>TOTAL OFFSITE</b>		<b>0.00</b>	<b>0.01</b>	<b>0.06</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Construction with Tier 3 Engines and Fugitive Dust BMPs

tons/yr		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Arch. Coating		2.15					0.00	0.00		0.00	0.00
Off-Road		0.00	0.09	0.12	0.00		0.01	0.01		0.01	0.01
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00
<b>Total</b>		<b>2.16</b>	<b>0.10</b>	<b>0.18</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>
<b>TOTAL ONSITE MIT</b>		<b>2.15</b>	<b>0.09</b>	<b>0.12</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>
<b>TOTAL OFFSITE MIT</b>		<b>0.00</b>	<b>0.01</b>	<b>0.06</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Grading - 2017**

Unmitigated Construction

tons/yr		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.01	0.00	0.01	0.00	0.00	0.00
Off-Road		0.06	0.75	0.36	0.00		0.03	0.03		0.03	0.03
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.01	0.05	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00
<b>Total</b>		<b>0.07</b>	<b>0.80</b>	<b>0.48</b>	<b>0.00</b>	<b>0.02</b>	<b>0.03</b>	<b>0.06</b>	<b>0.00</b>	<b>0.03</b>	<b>0.03</b>
<b>TOTAL ONSITE</b>		<b>0.06</b>	<b>0.75</b>	<b>0.36</b>	<b>0.00</b>	<b>0.01</b>	<b>0.03</b>	<b>0.05</b>	<b>0.00</b>	<b>0.03</b>	<b>0.03</b>
<b>TOTAL OFFSITE</b>		<b>0.01</b>	<b>0.05</b>	<b>0.12</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Construction with Tier 3 Engines and Fugitive Dust BMPs

tons/yr		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Fugitive Dust						0.01	0.00	0.01	0.00	0.00	0.00
Off-Road		0.02	0.45	0.54	0.00		0.02	0.02		0.02	0.02
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.01	0.05	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>		<b>0.03</b>	<b>0.50</b>	<b>0.66</b>	<b>0.00</b>	<b>0.01</b>	<b>0.02</b>	<b>0.04</b>	<b>0.00</b>	<b>0.02</b>	<b>0.03</b>
<b>TOTAL ONSITE MIT</b>		<b>0.02</b>	<b>0.45</b>	<b>0.54</b>	<b>0.00</b>	<b>0.01</b>	<b>0.02</b>	<b>0.03</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>TOTAL OFFSITE MIT</b>		<b>0.01</b>	<b>0.05</b>	<b>0.12</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

CalEEMod Output - Annual Average Emissions  
 Separating On-site and Off-site Emissions  
 Tons per Year

**Criteria Air Pollutant Emissions Summary - Construction (tons per year)**

Mitigated Scenario Includes Tier 3 Engines and Fugitive Dust BMPs

tons/yr		ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
<b>Paving - 2017</b>											
Unmitigated Construction											
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.08	1.00	0.44	0.00		0.05	0.05		0.04	0.04
Paving		0.00					0.00	0.00		0.00	0.00
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.01	0.06	0.11	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Worker		0.01	0.01	0.08	0.00	0.01	0.00	0.02	0.00	0.00	0.00
<b>Total</b>		<b>0.10</b>	<b>1.07</b>	<b>0.62</b>	<b>0.00</b>	<b>0.02</b>	<b>0.05</b>	<b>0.07</b>	<b>0.01</b>	<b>0.04</b>	<b>0.05</b>
<b>TOTAL ONSITE</b>		<b>0.09</b>	<b>1.00</b>	<b>0.44</b>	<b>0.00</b>	<b>0.00</b>	<b>0.05</b>	<b>0.05</b>	<b>0.00</b>	<b>0.04</b>	<b>0.04</b>
<b>TOTAL OFFSITE</b>		<b>0.01</b>	<b>0.07</b>	<b>0.19</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.02</b>	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>
Construction with Tier 3 Engines and Fugitive Dust BMPs											
Category	tons/yr	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Off-Road		0.02	0.47	0.57	0.00		0.02	0.02		0.02	0.02
Paving		0.00					0.00	0.00		0.00	0.00
Hauling		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor		0.01	0.06	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker		0.01	0.01	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.00
<b>Total</b>		<b>0.04</b>	<b>0.54</b>	<b>0.76</b>	<b>0.00</b>	<b>0.02</b>	<b>0.03</b>	<b>0.04</b>	<b>0.00</b>	<b>0.03</b>	<b>0.03</b>
<b>TOTAL ONSITE MIT</b>		<b>0.03</b>	<b>0.47</b>	<b>0.57</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>TOTAL OFFSITE MIT</b>		<b>0.01</b>	<b>0.07</b>	<b>0.19</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>

Average Daily Emission Calculations  
Pounds per Day

**Criteria Air Pollutant Emissions Summary - Construction (pounds per day)**

Mitigated Scenario Includes Tier 3 Engines and Fugitive Dust BMPs

Annual emissions divided by total construction duration to obtain average daily emissions. Average construction emissions accounts for the duration of each construction phase and the time each piece of construction equipment is onsite.

avg lbs/day	days	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total	457	12.62	26.79	24.70	0.05	1.75	1.33	3.09	0.43	1.24	1.67
Total Mit	457	10.81	14.59	25.45	0.05	1.26	0.62	1.88	0.33	0.61	0.94

avg lbs/day	days	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
Total Onsite	457	11.71	22.24	11.85	0.02	0.37	1.27	1.64	0.05	1.18	1.24
Total On-site Mit	457	9.90	10.04	12.60	0.02	0.17	0.55	0.72	0.02	0.55	0.58
Total Offsite	457	0.91	4.55	12.85	0.02	1.38	0.06	1.45	0.37	0.06	0.43
Total Off-site Mit	457	0.91	4.55	12.85	0.02	1.09	0.06	1.16	0.30	0.06	0.36

**FOR CONSTRUCTION HRA (pounds per day)**

**On-site Details Unmitigated**

avg lbs/day	days	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2016 Onsite	240	1.94	18.02	9.63	0.02	0.60	1.078	1.67	0.09	1.00	1.09
2017 Onsite	217	22.51	26.90	14.31	0.03	0.12	1.486	1.60	0.01	1.38	1.40

**Off-site Details Unmitigated**

avg lbs/day	days	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2016 Offsite	240	0.85	4.48	11.94	0.02	1.22	0.062	1.28	0.33	0.06	0.39
2017 Offsite	217	0.98	4.63	13.85	0.03	1.56	0.064	1.63	0.42	0.06	0.48

**On-site Details with Tier 3 Engines and Fugitive Dust BMPs**

avg lbs/day	days	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2016 Onsite Mit	240	0.37	7.58	9.63	0.02	0.27	0.415	0.68	0.04	0.42	0.46
2017 Onsite Mit	217	20.44	12.76	15.88	0.03	0.05	0.706	0.76	0.01	0.71	0.71

**Off-site Details with Tier 3 Engines and Fugitive Dust BMPs**

avg lbs/day	days	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total
2016 Offsite Mit	240	0.85	4.48	11.94	0.02	0.96	0.062	1.03	0.27	0.06	0.32
2017 Offsite Mit	217	0.98	4.63	13.85	0.03	1.24	0.064	1.30	0.34	0.06	0.40



### Construction Emissions - DPM and PM2.5 Inputs to Risk Tables

Onsite Construction Emissions		DPM <sup>1</sup>	PM <sub>2.5</sub> <sup>2</sup>
2016 Onsite Emissions	Average Daily Emissions (lbs/day)	1.078	1.093
	Average Daily Emissions (lbs/hr)	1.35E-01	1.37E-01
	<b>Emission Rate (g/s)</b>	<b>1.70E-02</b>	<b>1.72E-02</b>
2017 Onsite Emissions	Average Daily Emissions (lbs/day)	1.486	1.396
	Average Daily Emissions (lbs/hr)	1.86E-01	1.75E-01
	<b>Emission Rate (g/s)</b>	<b>2.34E-02</b>	<b>2.20E-02</b>

Note: Emissions assumed to be evenly distributed over entire construction phase area.

Offsite Construction Emissions		DPM <sup>1</sup>	PM <sub>2.5</sub> <sup>2</sup>
2016 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.062	0.385
	Hauling Emissions w/in 1,000 ft (lbs/day) <sup>3</sup>	1.40E-03	8.76E-03
	Emission Rate (lbs/hr)	1.75E-04	1.09E-03
	<b>Emission Rate (g/s)</b>	<b>2.20E-05</b>	<b>1.38E-04</b>
2017 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.064	0.481
	Hauling Emissions w/in 1,000 ft (lbs/day) <sup>3</sup>	1.45E-03	1.09E-02
	Emission Rate (lbs/hr)	1.81E-04	1.37E-03
	<b>Emission Rate (g/s)</b>	<b>2.29E-05</b>	<b>1.72E-04</b>

Note: Emissions evenly distributed over 38 modeled volume sources.

			Residential Risk Scalar <sup>5</sup>
Hours per work day (7:00 AM to 3:30 PM, 30 min of breaks) <sup>4</sup>	2016-2017	8	
Total construction days per year	2016	240	0.92
	2017	217	0.83
Default Hauling Length (miles)	20		
Haul Length within 1,000 ft of Site (mile)	0.45		

<sup>1</sup> DPM emissions taken as PM<sub>10</sub> exhaust emissions from CalEEMod average daily emissions.

<sup>2</sup> PM<sub>2.5</sub> emissions taken as total PM<sub>2.5</sub> (exhaust and fugitive dust) emissions from CalEEMod average daily emissions.

<sup>3</sup> Emissions from CalEEMod offsite average daily emissions, which is based on haul truck trips of 20 miles.

(model default) to evaluate emissions from 0.45 mile route within 1,000 feet of project site.

<sup>4</sup> Work hours applied in Season-Hour-Day of the Week (SHRDOW) variable emissions module in ISCST3 model (see App B - ISCST3 Output Files).

<sup>5</sup> Residential risk scalars determined for each year of construction and to adjust receptor exposures to the exposure durations for each construction year (see App C - Risk Calculations).

**Construction Emissions - DPM and PM2.5  
Inputs to Risk Tables  
with Mitigation (Tier 3 Engines and Fugitive Dust BMPs)**

<b>Onsite Construction Emissions - Mitigated</b>		<b>DPM<sup>1</sup></b>	<b>PM<sub>2.5</sub><sup>2</sup></b>
2016 Onsite Emissions	Average Daily Emissions (lbs/day)	0.415	0.456
	Average Daily Emissions (lbs/hr)	5.19E-02	5.70E-02
	<b>Emission Rate (g/s)</b>	<b>6.54E-03</b>	<b>7.18E-03</b>
2017 Onsite Emissions	Average Daily Emissions (lbs/day)	0.706	0.712
	Average Daily Emissions (lbs/hr)	8.82E-02	8.90E-02
	<b>Emission Rate (g/s)</b>	<b>1.11E-02</b>	<b>1.12E-02</b>

Note: Emissions assumed to be evenly distributed over entire construction phase area.

<b>Offsite Construction Emissions - Mitigated</b>		<b>DPM<sup>1</sup></b>	<b>PM<sub>2.5</sub><sup>2</sup></b>
2016 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.062	0.323
	Hauling Emissions w/in 1,000 ft (lbs/day) <sup>3</sup>	1.40E-03	7.33E-03
	Emission Rate (lbs/hr)	1.75E-04	9.16E-04
	<b>Emission Rate (g/s)</b>	<b>2.20E-05</b>	<b>1.15E-04</b>
2017 Offsite Emissions	Haul Length Daily Emissions (lbs/day)	0.064	0.400
	Hauling Emissions w/in 1,000 ft (lbs/day) <sup>3</sup>	1.45E-03	9.10E-03
	Emission Rate (lbs/hr)	1.81E-04	1.14E-03
	<b>Emission Rate (g/s)</b>	<b>2.29E-05</b>	<b>1.43E-04</b>

Note: Emissions evenly distributed over 38 modeled volume sources.

			Residential Risk Scalar <sup>5</sup>
Hours per work day (7:00 AM to 3:30 PM, 30 min of breaks) <sup>4</sup>	2016-2017	8	
Total construction days per year	2016	240	0.92
	2017	217	0.83
Default Hauling Length (miles)	20		
Haul Length within 1,000 ft of Site (mile)	0.45		

<sup>1</sup> DPM emissions taken as PM<sub>10</sub> exhaust emissions from CalEEMod average daily emissions.

<sup>2</sup> PM<sub>2.5</sub> emissions taken as total PM<sub>2.5</sub> (exhaust and fugitive dust) emissions from CalEEMod average daily emissions.

<sup>3</sup> Emissions from CalEEMod offsite average daily emissions, which is based on haul truck trips of 20 miles.

(model default) to evaluate emissions from 0.45 mile route within 1,000 feet of project site.

<sup>4</sup> Work hours applied in Season-Hour-Day of the Week (SHRDOW) variable emissions module in ISCST3 model (see App B - ISCST3 Output Files).

<sup>5</sup> Residential risk scalars determined for each year of construction and to adjust receptor exposures to the exposure durations for each construction year (see App C - Risk Calculations).

## Hillsdale Shopping Center - CONSTRUCTION San Mateo County, Annual

### 1.0 Project Characteristics

#### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	16.66	1000sqft	0.38	16,656.00	0
Other Asphalt Surfaces	96.66	1000sqft	2.22	96,658.00	0
Other Non-Asphalt Surfaces	37.19	1000sqft	0.85	37,194.00	0
Health Club	40.09	1000sqft	0.92	40,090.00	0
Movie Theater (No Matinee)	10.00	Screen	0.63	43,942.00	0
Strip Mall	177.67	1000sqft	4.08	177,673.00	0

#### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	70
<b>Climate Zone</b>	5			<b>Operational Year</b>	2018
<b>Utility Company</b>	Pacific Gas & Electric Company				
<b>CO2 Intensity (lb/MWhr)</b>	445	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

#### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E's 2012 Intensity Factors

Land Use - Square footage per Overall Site Plan and Applicant

Construction Phase - Construction phasing per Applicant

Off-road Equipment - Building construction equipment per Applicant

Off-road Equipment - Demolition equipment per Applicant

Off-road Equipment - Grading equipment per Applicant

Off-road Equipment - Paving equipment per Applicant

Off-road Equipment - Site preparation equipment per Applicant

Trips and VMT - Workers per Applicant; assume single occupancy commutes. Accounts for concrete/cement truck deliveries

Demolition - 137,586 s.f. of pavement at 4 inches thick; 97,894 s.f. of building. Per CalEEMod Appendix A, 1 cubic yard = 1.3 tons; 1 s.f. of building = 0.046 ton

Construction Off-road Equipment Mitigation - Tier 3 Mitigation. PM reduction percentage per SCAQMD CEQA Handbook

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	25
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	20.00	132.00
tblConstructionPhase	NumDays	230.00	391.00
tblConstructionPhase	NumDays	20.00	43.00
tblConstructionPhase	NumDays	20.00	65.00
tblConstructionPhase	NumDays	20.00	132.00
tblConstructionPhase	NumDays	10.00	44.00
tblConstructionPhase	PhaseEndDate	1/31/2017	8/31/2017
tblConstructionPhase	PhaseEndDate	9/29/2017	9/30/2017
tblConstructionPhase	PhaseEndDate	11/29/2017	7/29/2016
tblConstructionPhase	PhaseEndDate	11/30/2017	7/29/2017
tblConstructionPhase	PhaseEndDate	1/30/2018	10/31/2017
tblConstructionPhase	PhaseStartDate	7/30/2016	3/1/2017
tblConstructionPhase	PhaseStartDate	10/1/2017	6/1/2016
tblConstructionPhase	PhaseStartDate	9/1/2017	5/1/2017
tblConstructionPhase	PhaseStartDate	7/30/2017	5/1/2017
tblLandUse	LandUseSquareFeet	16,660.00	16,656.00
tblLandUse	LandUseSquareFeet	96,660.00	96,658.00
tblLandUse	LandUseSquareFeet	37,190.00	37,194.00
tblLandUse	LandUseSquareFeet	27,500.00	43,942.00
tblLandUse	LandUseSquareFeet	177,670.00	177,673.00
tblOffRoadEquipment	HorsePower	226.00	210.00
tblOffRoadEquipment	HorsePower	162.00	207.00
tblOffRoadEquipment	HorsePower	162.00	207.00
tblOffRoadEquipment	HorsePower	89.00	110.00
tblOffRoadEquipment	HorsePower	84.00	18.00
tblOffRoadEquipment	HorsePower	174.00	220.00
tblOffRoadEquipment	HorsePower	125.00	225.00
tblOffRoadEquipment	HorsePower	80.00	75.00
tblOffRoadEquipment	HorsePower	255.00	92.00
tblOffRoadEquipment	HorsePower	255.00	134.00
tblOffRoadEquipment	HorsePower	97.00	90.00
tblOffRoadEquipment	HorsePower	97.00	90.00
tblOffRoadEquipment	HorsePower	97.00	90.00
tblOffRoadEquipment	HorsePower	46.00	16.00
tblOffRoadEquipment	HorsePower	78.00	21.00
tblOffRoadEquipment	HorsePower	85.00	350.00

tblOffRoadEquipment	HorsePower	162.00	207.00
tblOffRoadEquipment	HorsePower	162.00	31.00
tblOffRoadEquipment	HorsePower	174.00	220.00
tblOffRoadEquipment	HorsePower	80.00	75.00
tblOffRoadEquipment	HorsePower	64.00	74.00
tblOffRoadEquipment	HorsePower	64.00	74.00
tblOffRoadEquipment	HorsePower	97.00	90.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
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tblOffRoadEquipment	UsageHours	7.00	2.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	2.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	1.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	445
tblProjectCharacteristics	OperationalYear	2014	2018
tblTripsAndVMT	HaulingTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	68.00	35.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	16.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	15.00	18.00
tblTripsAndVMT	WorkerTripNumber	154.00	125.00
tblTripsAndVMT	WorkerTripNumber	20.00	18.00
tblTripsAndVMT	WorkerTripNumber	31.00	15.00
tblTripsAndVMT	WorkerTripNumber	18.00	20.00
tblTripsAndVMT	WorkerTripNumber	13.00	25.00

## 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					
2016	0.3347	2.6997	2.5887	4.5500e-003	0.2180	0.1367	0.3546	0.0503	0.1270	0.1773	0.0000	395.8136	395.8136	0.0553	0.0000	396.9744
2017	2.5484	3.4215	3.0561	5.7700e-003	0.1826	0.1682	0.3508	0.0472	0.1566	0.2038	0.0000	493.2669	493.2669	0.0836	0.0000	495.0216
<b>Total</b>	<b>2.8830</b>	<b>6.1212</b>	<b>5.6448</b>	<b>0.0103</b>	<b>0.4006</b>	<b>0.3049</b>	<b>0.7055</b>	<b>0.0975</b>	<b>0.2836</b>	<b>0.3810</b>	<b>0.0000</b>	<b>889.0805</b>	<b>889.0805</b>	<b>0.1388</b>	<b>0.0000</b>	<b>891.9959</b>

#### 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					
2016	0.1461	1.4468	2.5888	4.5500e-003	0.1479	0.0572	0.2051	0.0368	0.0566	0.0934	0.0000	395.8133	395.8133	0.0553	0.0000	396.9741
2017	2.3243	1.8866	3.2263	5.7700e-003	0.1399	0.0835	0.2234	0.0377	0.0829	0.1206	0.0000	493.2666	493.2666	0.0836	0.0000	495.0212
<b>Total</b>	<b>2.4704</b>	<b>3.3334</b>	<b>5.8151</b>	<b>0.0103</b>	<b>0.2879</b>	<b>0.1407</b>	<b>0.4286</b>	<b>0.0745</b>	<b>0.1395</b>	<b>0.2140</b>	<b>0.0000</b>	<b>889.0799</b>	<b>889.0799</b>	<b>0.1388</b>	<b>0.0000</b>	<b>891.9954</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
<b>Percent Reduction</b>	<b>14.31</b>	<b>45.54</b>	<b>-3.02</b>	<b>0.00</b>	<b>28.13</b>	<b>53.87</b>	<b>39.25</b>	<b>23.58</b>	<b>50.81</b>	<b>43.84</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## 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	2/1/2016	3/31/2016	5	44	
2	Building Construction	Building Construction	4/1/2016	9/30/2017	5	391	
3	Demolition	Demolition	6/1/2016	7/29/2016	5	43	
4	Architectural Coating	Architectural Coating	3/1/2017	8/31/2017	5	132	
5	Grading	Grading	5/1/2017	7/29/2017	5	65	
6	Paving	Paving	5/1/2017	10/31/2017	5	132	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 24.38

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 618,320; Non-Residential Outdoor: 206,107 (Architectural Coating

### OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Excavators	2	8.00	207	0.38
Site Preparation	Excavators	2	5.00	31	0.38
Site Preparation	Rubber Tired Dozers	0	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	2	8.00	90	0.37
Building Construction	Air Compressors	1	6.00	21	0.48

Building Construction	Cranes	1	2.00	210	0.29
Building Construction	Forklifts	3	6.00	110	0.20
Building Construction	Generator Sets	1	2.00	18	0.74
Building Construction	Tractors/Loaders/Backhoes	1	4.00	90	0.37
Building Construction	Welders	3	6.00	16	0.45
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Crushing/Proc. Equipment	1	3.00	350	0.78
Demolition	Excavators	1	8.00	207	0.38
Demolition	Rubber Tired Dozers	2	8.00	92	0.40
Demolition	Rubber Tired Dozers	2	8.00	134	0.40
Demolition	Skid Steer Loaders	2	6.00	74	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	207	0.38
Grading	Graders	1	6.00	220	0.41
Grading	Rollers	1	6.00	75	0.38
Grading	Rubber Tired Dozers	0	8.00	255	0.40
Grading	Skid Steer Loaders	2	6.00	74	0.37
Grading	Tractors/Loaders/Backhoes	1	8.00	90	0.37
Paving	Graders	1	8.00	220	0.41
Paving	Pavers	1	1.00	225	0.42
Paving	Paving Equipment	0	8.00	130	0.36
Paving	Rollers	2	4.00	75	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	90	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	18.00	4.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	125.00	35.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	8	18.00	4.00	662.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	15.00	1.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	7	20.00	16.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	25.00	10.00	5.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

### 3.2 Site Preparation - 2016

#### 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0346	0.3843	0.2047	4.6000e-004		0.0194	0.0194		0.0178	0.0178	0.0000	42.9606	42.9606	0.0130	0.0000	43.2327
<b>Total</b>	<b>0.0346</b>	<b>0.3843</b>	<b>0.2047</b>	<b>4.6000e-004</b>	<b>0.0000</b>	<b>0.0194</b>	<b>0.0194</b>	<b>0.0000</b>	<b>0.0178</b>	<b>0.0178</b>	<b>0.0000</b>	<b>42.9606</b>	<b>42.9606</b>	<b>0.0130</b>	<b>0.0000</b>	<b>43.2327</b>

#### Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1500e-003	8.9200e-003	0.0153	2.0000e-005	5.6000e-004	1.3000e-004	6.9000e-004	1.6000e-004	1.2000e-004	2.8000e-004	0.0000	1.8616	1.8616	1.0000e-005	0.0000	1.8619
Worker	1.4200e-003	2.2000e-003	0.0210	4.0000e-005	3.5800e-003	3.0000e-005	3.6100e-003	9.5000e-004	3.0000e-005	9.8000e-004	0.0000	3.2278	3.2278	1.8000e-004	0.0000	3.2315
<b>Total</b>	<b>2.5700e-003</b>	<b>0.0111</b>	<b>0.0362</b>	<b>6.0000e-005</b>	<b>4.1400e-003</b>	<b>1.6000e-004</b>	<b>4.3000e-003</b>	<b>1.1100e-003</b>	<b>1.5000e-004</b>	<b>1.2600e-003</b>	<b>0.0000</b>	<b>5.0894</b>	<b>5.0894</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>5.0934</b>

#### 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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0121	0.2389	0.2778	4.6000e-004		0.0119	0.0119		0.0119	0.0119	0.0000	42.9605	42.9605	0.0130	0.0000	43.2327
<b>Total</b>	<b>0.0121</b>	<b>0.2389</b>	<b>0.2778</b>	<b>4.6000e-004</b>	<b>0.0000</b>	<b>0.0119</b>	<b>0.0119</b>	<b>0.0000</b>	<b>0.0119</b>	<b>0.0119</b>	<b>0.0000</b>	<b>42.9605</b>	<b>42.9605</b>	<b>0.0130</b>	<b>0.0000</b>	<b>43.2327</b>

#### Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1500e-003	8.9200e-003	0.0153	2.0000e-005	4.6000e-004	1.3000e-004	5.9000e-004	1.4000e-004	1.2000e-004	2.5000e-004	0.0000	1.8616	1.8616	1.0000e-005	0.0000	1.8619
Worker	1.4200e-003	2.2000e-003	0.0210	4.0000e-005	2.8100e-003	3.0000e-005	2.8400e-003	7.6000e-004	3.0000e-005	7.9000e-004	0.0000	3.2278	3.2278	1.8000e-004	0.0000	3.2315
<b>Total</b>	<b>2.5700e-003</b>	<b>0.0111</b>	<b>0.0362</b>	<b>6.0000e-005</b>	<b>3.2700e-003</b>	<b>1.6000e-004</b>	<b>3.4300e-003</b>	<b>9.0000e-004</b>	<b>1.5000e-004</b>	<b>1.0400e-003</b>	<b>0.0000</b>	<b>5.0894</b>	<b>5.0894</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>5.0934</b>



### 3.3 Building Construction - 2016

#### 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	0.1333	1.0994	0.6438	1.0100e-003		0.0766	0.0766		0.0714	0.0714	0.0000	88.8381	88.8381	0.0227	0.0000	89.3157
<b>Total</b>	<b>0.1333</b>	<b>1.0994</b>	<b>0.6438</b>	<b>1.0100e-003</b>		<b>0.0766</b>	<b>0.0766</b>		<b>0.0714</b>	<b>0.0714</b>	<b>0.0000</b>	<b>88.8381</b>	<b>88.8381</b>	<b>0.0227</b>	<b>0.0000</b>	<b>89.3157</b>

#### 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	0.0449	0.3476	0.5951	8.0000e-004	0.0219	4.9600e-003	0.0269	6.2800e-003	4.5600e-003	0.0108	0.0000	72.5605	72.5605	5.8000e-004	0.0000	72.5726
Worker	0.0438	0.0682	0.6483	1.3000e-003	0.1107	8.9000e-004	0.1116	0.0295	8.2000e-004	0.0303	0.0000	99.8483	99.8483	5.4600e-003	0.0000	99.9630
<b>Total</b>	<b>0.0887</b>	<b>0.4158</b>	<b>1.2434</b>	<b>2.1000e-003</b>	<b>0.1326</b>	<b>5.8500e-003</b>	<b>0.1385</b>	<b>0.0357</b>	<b>5.3800e-003</b>	<b>0.0411</b>	<b>0.0000</b>	<b>172.4088</b>	<b>172.4088</b>	<b>6.0400e-003</b>	<b>0.0000</b>	<b>172.5356</b>

#### 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	0.0169	0.3743	0.4915	1.0100e-003		0.0243	0.0243		0.0243	0.0243	0.0000	88.8380	88.8380	0.0227	0.0000	89.3156
<b>Total</b>	<b>0.0169</b>	<b>0.3743</b>	<b>0.4915</b>	<b>1.0100e-003</b>		<b>0.0243</b>	<b>0.0243</b>		<b>0.0243</b>	<b>0.0243</b>	<b>0.0000</b>	<b>88.8380</b>	<b>88.8380</b>	<b>0.0227</b>	<b>0.0000</b>	<b>89.3156</b>

#### 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	0.0449	0.3476	0.5951	8.0000e-004	0.0180	4.9600e-003	0.0229	5.3100e-003	4.5600e-003	9.8700e-003	0.0000	72.5605	72.5605	5.8000e-004	0.0000	72.5726
Worker	0.0438	0.0682	0.6483	1.3000e-003	0.0868	8.9000e-004	0.0877	0.0236	8.2000e-004	0.0244	0.0000	99.8483	99.8483	5.4600e-003	0.0000	99.9630
<b>Total</b>	<b>0.0887</b>	<b>0.4158</b>	<b>1.2434</b>	<b>2.1000e-003</b>	<b>0.1048</b>	<b>5.8500e-003</b>	<b>0.1106</b>	<b>0.0289</b>	<b>5.3800e-003</b>	<b>0.0343</b>	<b>0.0000</b>	<b>172.4088</b>	<b>172.4088</b>	<b>6.0400e-003</b>	<b>0.0000</b>	<b>172.5356</b>

### 3.3 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	0.1245	1.0274	0.6288	1.0100e-003		0.0702	0.0702		0.0655	0.0655	0.0000	87.3710	87.3710	0.0225	0.0000	87.8437
<b>Total</b>	<b>0.1245</b>	<b>1.0274</b>	<b>0.6288</b>	<b>1.0100e-003</b>		<b>0.0702</b>	<b>0.0702</b>		<b>0.0655</b>	<b>0.0655</b>	<b>0.0000</b>	<b>87.3710</b>	<b>87.3710</b>	<b>0.0225</b>	<b>0.0000</b>	<b>87.8437</b>

#### 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	0.0418	0.3109	0.5652	8.0000e-004	0.0218	4.2800e-003	0.0261	6.2500e-003	3.9300e-003	0.0102	0.0000	71.0860	71.0860	5.5000e-004	0.0000	71.0975
Worker	0.0387	0.0609	0.5754	1.2900e-003	0.1101	8.5000e-004	0.1110	0.0293	7.8000e-004	0.0301	0.0000	95.6581	95.6581	4.9800e-003	0.0000	95.7626
<b>Total</b>	<b>0.0805</b>	<b>0.3718</b>	<b>1.1406</b>	<b>2.0900e-003</b>	<b>0.1319</b>	<b>5.1300e-003</b>	<b>0.1371</b>	<b>0.0356</b>	<b>4.7100e-003</b>	<b>0.0403</b>	<b>0.0000</b>	<b>166.7441</b>	<b>166.7441</b>	<b>5.5300e-003</b>	<b>0.0000</b>	<b>166.8601</b>

#### 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	0.0168	0.3724	0.4890	1.0100e-003		0.0241	0.0241		0.0241	0.0241	0.0000	87.3709	87.3709	0.0225	0.0000	87.8436
<b>Total</b>	<b>0.0168</b>	<b>0.3724</b>	<b>0.4890</b>	<b>1.0100e-003</b>		<b>0.0241</b>	<b>0.0241</b>		<b>0.0241</b>	<b>0.0241</b>	<b>0.0000</b>	<b>87.3709</b>	<b>87.3709</b>	<b>0.0225</b>	<b>0.0000</b>	<b>87.8436</b>

#### 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	0.0418	0.3109	0.5652	8.0000e-004	0.0179	4.2800e-003	0.0222	5.2900e-003	3.9300e-003	9.2200e-003	0.0000	71.0860	71.0860	5.5000e-004	0.0000	71.0975
Worker	0.0387	0.0609	0.5754	1.2900e-003	0.0864	8.5000e-004	0.0872	0.0235	7.8000e-004	0.0243	0.0000	95.6581	95.6581	4.9800e-003	0.0000	95.7626
<b>Total</b>	<b>0.0805</b>	<b>0.3718</b>	<b>1.1406</b>	<b>2.0900e-003</b>	<b>0.1042</b>	<b>5.1300e-003</b>	<b>0.1094</b>	<b>0.0288</b>	<b>4.7100e-003</b>	<b>0.0335</b>	<b>0.0000</b>	<b>166.7441</b>	<b>166.7441</b>	<b>5.5300e-003</b>	<b>0.0000</b>	<b>166.8601</b>

**3.4 Demolition - 2016**

**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					0.0716	0.0000	0.0716	0.0109	0.0000	0.0109	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0646	0.6786	0.3071	6.1000e-004		0.0333	0.0333		0.0310	0.0310	0.0000	59.5985	59.5985	0.0130	0.0000	59.8714
<b>Total</b>	<b>0.0646</b>	<b>0.6786</b>	<b>0.3071</b>	<b>6.1000e-004</b>	<b>0.0716</b>	<b>0.0333</b>	<b>0.1050</b>	<b>0.0109</b>	<b>0.0310</b>	<b>0.0418</b>	<b>0.0000</b>	<b>59.5985</b>	<b>59.5985</b>	<b>0.0130</b>	<b>0.0000</b>	<b>59.8714</b>

**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	8.4400e-003	0.0996	0.1181	2.4000e-004	5.5200e-003	1.2200e-003	6.7400e-003	1.5100e-003	1.1300e-003	2.6400e-003	0.0000	21.9446	21.9446	1.6000e-004	0.0000	21.9479
Vendor	1.1200e-003	8.7100e-003	0.0149	2.0000e-005	5.5000e-004	1.2000e-004	6.7000e-004	1.6000e-004	1.1000e-004	2.7000e-004	0.0000	1.8193	1.8193	1.0000e-005	0.0000	1.8196
Worker	1.3800e-003	2.1500e-003	0.0205	4.0000e-005	3.5000e-003	3.0000e-005	3.5300e-003	9.3000e-004	3.0000e-005	9.6000e-004	0.0000	3.1544	3.1544	1.7000e-004	0.0000	3.1580
<b>Total</b>	<b>0.0109</b>	<b>0.1105</b>	<b>0.1535</b>	<b>3.0000e-004</b>	<b>9.5700e-003</b>	<b>1.3700e-003</b>	<b>0.0109</b>	<b>2.6000e-003</b>	<b>1.2700e-003</b>	<b>3.8700e-003</b>	<b>0.0000</b>	<b>26.9182</b>	<b>26.9182</b>	<b>3.4000e-004</b>	<b>0.0000</b>	<b>26.9256</b>

**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					0.0322	0.0000	0.0322	4.8800e-003	0.0000	4.8800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0150	0.2962	0.3865	6.1000e-004		0.0136	0.0136		0.0136	0.0136	0.0000	59.5984	59.5984	0.0130	0.0000	59.8713
<b>Total</b>	<b>0.0150</b>	<b>0.2962</b>	<b>0.3865</b>	<b>6.1000e-004</b>	<b>0.0322</b>	<b>0.0136</b>	<b>0.0458</b>	<b>4.8800e-003</b>	<b>0.0136</b>	<b>0.0185</b>	<b>0.0000</b>	<b>59.5984</b>	<b>59.5984</b>	<b>0.0130</b>	<b>0.0000</b>	<b>59.8713</b>

**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	8.4400e-003	0.0996	0.1181	2.4000e-004	4.4800e-003	1.2200e-003	5.7000e-003	1.2600e-003	1.1300e-003	2.3800e-003	0.0000	21.9446	21.9446	1.6000e-004	0.0000	21.9479
Vendor	1.1200e-003	8.7100e-003	0.0149	2.0000e-005	4.5000e-004	1.2000e-004	5.7000e-004	1.3000e-004	1.1000e-004	2.5000e-004	0.0000	1.8193	1.8193	1.0000e-005	0.0000	1.8196
Worker	1.3800e-003	2.1500e-003	0.0205	4.0000e-005	2.7400e-003	3.0000e-005	2.7700e-003	7.5000e-004	3.0000e-005	7.7000e-004	0.0000	3.1544	3.1544	1.7000e-004	0.0000	3.1580
<b>Total</b>	<b>0.0109</b>	<b>0.1105</b>	<b>0.1535</b>	<b>3.0000e-004</b>	<b>7.6700e-003</b>	<b>1.3700e-003</b>	<b>9.0400e-003</b>	<b>2.1400e-003</b>	<b>1.2700e-003</b>	<b>3.4000e-003</b>	<b>0.0000</b>	<b>26.9182</b>	<b>26.9182</b>	<b>3.4000e-004</b>	<b>0.0000</b>	<b>26.9256</b>

### 3.5 Architectural Coating - 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					
Archit. Coating	2.1494					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0219	0.1442	0.1233	2.0000e-004		0.0114	0.0114		0.0114	0.0114	0.0000	16.8515	16.8515	1.7800e-003	0.0000	16.8888
<b>Total</b>	<b>2.1714</b>	<b>0.1442</b>	<b>0.1233</b>	<b>2.0000e-004</b>		<b>0.0114</b>	<b>0.0114</b>		<b>0.0114</b>	<b>0.0114</b>	<b>0.0000</b>	<b>16.8515</b>	<b>16.8515</b>	<b>1.7800e-003</b>	<b>0.0000</b>	<b>16.8888</b>

#### 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	8.1000e-004	6.0100e-003	0.0109	2.0000e-005	4.2000e-004	8.0000e-005	5.0000e-004	1.2000e-004	8.0000e-005	2.0000e-004	0.0000	1.3749	1.3749	1.0000e-005	0.0000	1.3751
Worker	3.1400e-003	4.9500e-003	0.0467	1.0000e-004	8.9500e-003	7.0000e-005	9.0200e-003	2.3800e-003	6.0000e-005	2.4400e-003	0.0000	7.7704	7.7704	4.0000e-004	0.0000	7.7789
<b>Total</b>	<b>3.9500e-003</b>	<b>0.0110</b>	<b>0.0577</b>	<b>1.2000e-004</b>	<b>9.3700e-003</b>	<b>1.5000e-004</b>	<b>9.5200e-003</b>	<b>2.5000e-003</b>	<b>1.4000e-004</b>	<b>2.6400e-003</b>	<b>0.0000</b>	<b>9.1452</b>	<b>9.1452</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>9.1539</b>

#### 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	2.1494					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9200e-003	0.0896	0.1209	2.0000e-004		6.2800e-003	6.2800e-003		6.2800e-003	6.2800e-003	0.0000	16.8515	16.8515	1.7800e-003	0.0000	16.8888
<b>Total</b>	<b>2.1534</b>	<b>0.0896</b>	<b>0.1209</b>	<b>2.0000e-004</b>		<b>6.2800e-003</b>	<b>6.2800e-003</b>		<b>6.2800e-003</b>	<b>6.2800e-003</b>	<b>0.0000</b>	<b>16.8515</b>	<b>16.8515</b>	<b>1.7800e-003</b>	<b>0.0000</b>	<b>16.8888</b>

#### 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	8.1000e-004	6.0100e-003	0.0109	2.0000e-005	3.5000e-004	8.0000e-005	4.3000e-004	1.0000e-004	8.0000e-005	1.8000e-004	0.0000	1.3749	1.3749	1.0000e-005	0.0000	1.3751
Worker	3.1400e-003	4.9500e-003	0.0467	1.0000e-004	7.0200e-003	7.0000e-005	7.0800e-003	1.9100e-003	6.0000e-005	1.9700e-003	0.0000	7.7704	7.7704	4.0000e-004	0.0000	7.7789
<b>Total</b>	<b>3.9500e-003</b>	<b>0.0110</b>	<b>0.0577</b>	<b>1.2000e-004</b>	<b>7.3700e-003</b>	<b>1.5000e-004</b>	<b>7.5100e-003</b>	<b>2.0100e-003</b>	<b>1.4000e-004</b>	<b>2.1500e-003</b>	<b>0.0000</b>	<b>9.1452</b>	<b>9.1452</b>	<b>4.1000e-004</b>	<b>0.0000</b>	<b>9.1539</b>

**3.6 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					0.0129	0.0000	0.0129	1.4000e-003	0.0000	1.4000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0603	0.7490	0.3646	9.0000e-004		0.0323	0.0323		0.0297	0.0297	0.0000	83.4061	83.4061	0.0256	0.0000	83.9427
<b>Total</b>	<b>0.0603</b>	<b>0.7490</b>	<b>0.3646</b>	<b>9.0000e-004</b>	<b>0.0129</b>	<b>0.0323</b>	<b>0.0453</b>	<b>1.4000e-003</b>	<b>0.0297</b>	<b>0.0311</b>	<b>0.0000</b>	<b>83.4061</b>	<b>83.4061</b>	<b>0.0256</b>	<b>0.0000</b>	<b>83.9427</b>

**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	6.3700e-003	0.0474	0.0861	1.2000e-004	3.3200e-003	6.5000e-004	3.9700e-003	9.5000e-004	6.0000e-004	1.5500e-003	0.0000	10.8322	10.8322	8.0000e-005	0.0000	10.8339
Worker	2.0600e-003	3.2500e-003	0.0307	7.0000e-005	5.8700e-003	5.0000e-005	5.9200e-003	1.5600e-003	4.0000e-005	1.6000e-003	0.0000	5.1018	5.1018	2.7000e-004	0.0000	5.1073
<b>Total</b>	<b>8.4300e-003</b>	<b>0.0506</b>	<b>0.1168</b>	<b>1.9000e-004</b>	<b>9.1900e-003</b>	<b>7.0000e-004</b>	<b>9.8900e-003</b>	<b>2.5100e-003</b>	<b>6.4000e-004</b>	<b>3.1500e-003</b>	<b>0.0000</b>	<b>15.9339</b>	<b>15.9339</b>	<b>3.5000e-004</b>	<b>0.0000</b>	<b>15.9413</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8200e-003	0.0000	5.8200e-003	6.3000e-004	0.0000	6.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0221	0.4496	0.5383	9.0000e-004		0.0219	0.0219		0.0219	0.0219	0.0000	83.4060	83.4060	0.0256	0.0000	83.9426
<b>Total</b>	<b>0.0221</b>	<b>0.4496</b>	<b>0.5383</b>	<b>9.0000e-004</b>	<b>5.8200e-003</b>	<b>0.0219</b>	<b>0.0277</b>	<b>6.3000e-004</b>	<b>0.0219</b>	<b>0.0225</b>	<b>0.0000</b>	<b>83.4060</b>	<b>83.4060</b>	<b>0.0256</b>	<b>0.0000</b>	<b>83.9426</b>

**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	6.3700e-003	0.0474	0.0861	1.2000e-004	2.7200e-003	6.5000e-004	3.3800e-003	8.1000e-004	6.0000e-004	1.4000e-003	0.0000	10.8322	10.8322	8.0000e-005	0.0000	10.8339
Worker	2.0600e-003	3.2500e-003	0.0307	7.0000e-005	4.6100e-003	5.0000e-005	4.6500e-003	1.2500e-003	4.0000e-005	1.2900e-003	0.0000	5.1018	5.1018	2.7000e-004	0.0000	5.1073
<b>Total</b>	<b>8.4300e-003</b>	<b>0.0506</b>	<b>0.1168</b>	<b>1.9000e-004</b>	<b>7.3300e-003</b>	<b>7.0000e-004</b>	<b>8.0300e-003</b>	<b>2.0600e-003</b>	<b>6.4000e-004</b>	<b>2.6900e-003</b>	<b>0.0000</b>	<b>15.9339</b>	<b>15.9339</b>	<b>3.5000e-004</b>	<b>0.0000</b>	<b>15.9413</b>

**3.7 Paving - 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	0.0831	0.9984	0.4362	9.4000e-004		0.0473	0.0473		0.0435	0.0435	0.0000	86.9526	86.9526	0.0266	0.0000	87.5121
Paving	2.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0860</b>	<b>0.9984</b>	<b>0.4362</b>	<b>9.4000e-004</b>		<b>0.0473</b>	<b>0.0473</b>		<b>0.0435</b>	<b>0.0435</b>	<b>0.0000</b>	<b>86.9526</b>	<b>86.9526</b>	<b>0.0266</b>	<b>0.0000</b>	<b>87.5121</b>

**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	6.0000e-005	6.8000e-004	8.6000e-004	0.0000	4.0000e-005	1.0000e-005	5.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1634	0.1634	0.0000	0.0000	0.1634
Vendor	8.0900e-003	0.0601	0.1093	1.5000e-004	4.2200e-003	8.3000e-004	5.0400e-003	1.2100e-003	7.6000e-004	1.9700e-003	0.0000	13.7485	13.7485	1.1000e-004	0.0000	13.7507
Worker	5.2400e-003	8.2500e-003	0.0779	1.7000e-004	0.0149	1.1000e-004	0.0150	3.9700e-003	1.1000e-004	4.0700e-003	0.0000	12.9506	12.9506	6.7000e-004	0.0000	12.9648
<b>Total</b>	<b>0.0134</b>	<b>0.0691</b>	<b>0.1881</b>	<b>3.2000e-004</b>	<b>0.0192</b>	<b>9.5000e-004</b>	<b>0.0201</b>	<b>5.1900e-003</b>	<b>8.8000e-004</b>	<b>6.0600e-003</b>	<b>0.0000</b>	<b>26.8625</b>	<b>26.8625</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>26.8789</b>

**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	0.0229	0.4726	0.5749	9.4000e-004		0.0243	0.0243		0.0243	0.0243	0.0000	86.9525	86.9525	0.0266	0.0000	87.5120
Paving	2.9100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0258</b>	<b>0.4726</b>	<b>0.5749</b>	<b>9.4000e-004</b>		<b>0.0243</b>	<b>0.0243</b>		<b>0.0243</b>	<b>0.0243</b>	<b>0.0000</b>	<b>86.9525</b>	<b>86.9525</b>	<b>0.0266</b>	<b>0.0000</b>	<b>87.5120</b>

**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	6.0000e-005	6.8000e-004	8.6000e-004	0.0000	3.0000e-005	1.0000e-005	4.0000e-005	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.1634	0.1634	0.0000	0.0000	0.1634
Vendor	8.0900e-003	0.0601	0.1093	1.5000e-004	3.4600e-003	8.3000e-004	4.2900e-003	1.0200e-003	7.6000e-004	1.7800e-003	0.0000	13.7485	13.7485	1.1000e-004	0.0000	13.7507
Worker	5.2400e-003	8.2500e-003	0.0779	1.7000e-004	0.0117	1.1000e-004	0.0118	3.1800e-003	1.1000e-004	3.2800e-003	0.0000	12.9506	12.9506	6.7000e-004	0.0000	12.9648
<b>Total</b>	<b>0.0134</b>	<b>0.0691</b>	<b>0.1881</b>	<b>3.2000e-004</b>	<b>0.0152</b>	<b>9.5000e-004</b>	<b>0.0161</b>	<b>4.2100e-003</b>	<b>8.8000e-004</b>	<b>5.0800e-003</b>	<b>0.0000</b>	<b>26.8625</b>	<b>26.8625</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>26.8789</b>

**BAAQMD Meteorological Site**

**Name:** San Mateo STP  
**Site ID:** 6801  
**Start Date:** 1/1/1992  
**End Date:** current  
**Operator:** Non-District  
**Latitude:** 37.5702  
**Longitude:** 122.2949  
**Elevation:** 3 m  
**Wind Height:** 10 m  
**UTM - East:** 562.266  
**UTM - North:** 4158.362  
**County:** San Mateo  
**Sensors:** ws, wd, temp  
 RH, precip

Year	Files for Downloading		
	ASCII	ISCST3 300 m mixing height	ISCST3 600 m mixing height
2005	<a href="#">metdata6801-05met.zip</a>	<a href="#">metdata6801-05300.zip</a>	<a href="#">metdata6801-05600.zip</a>
2004	<a href="#">metdata6801-04met.zip</a>	<a href="#">metdata6801-04300.zip</a>	<a href="#">metdata6801-04600.zip</a>
2003	<a href="#">metdata6801-03met.zip</a>	<a href="#">metdata6801-03300.zip</a>	<a href="#">metdata6801-03600.zip</a>
2002	<a href="#">metdata6801-02met.zip</a>	<a href="#">metdata6801-02300.zip</a>	<a href="#">metdata6801-02600.zip</a>
2001	A	A	A
2000	A	A	A
1999	<a href="#">metdata6801-99met.zip</a>	<a href="#">metdata6801-993ra.zip</a>	<a href="#">metdata6801-996ra.zip</a>
1998	<a href="#">metdata6801-98met.zip</a>	<a href="#">metdata6801-98300.zip</a>	<a href="#">metdata6801-98600.zip</a>
1997	<a href="#">metdata6801-97met.zip</a>	A	A
1996	<a href="#">metdata6801-96met.zip</a>	<a href="#">metdata6801-96300.zip</a>	<a href="#">metdata6801-96600.zip</a>
1995	<a href="#">metdata6801-95met.zip</a>	<a href="#">metdata6801-95300.zip</a>	<a href="#">metdata6801-95600.zip</a>
1994	<a href="#">metdata6801-94met.zip</a>	<a href="#">metdata6801-94300.zip</a>	<a href="#">metdata6801-94600.zip</a>
1993	<a href="#">metdata6801-93met.zip</a>	<a href="#">metdata6801-93300.zip</a>	<a href="#">metdata6801-93600.zip</a>
1992	<a href="#">metdata6801-92met.zip</a>	A	A

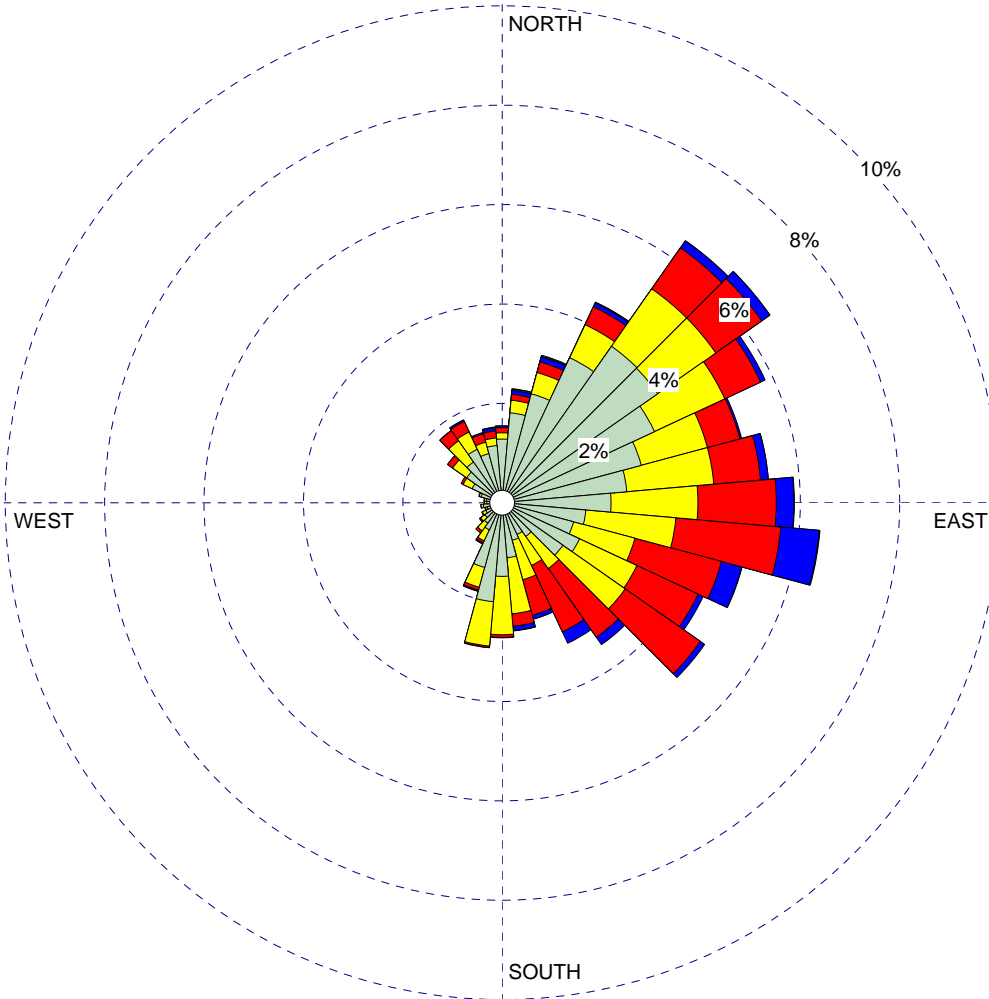
Note: An "A" instead of a filename for any given year in the ASCII column signifies the data are missing. An "A" in the ISCST3 columns indicates the data are either missing or do not meet the EPA 90% data capture rate required for regulatory modeling applications.

WIND ROSE PLOT:

**San Mateo STP Monitoring Station**  
**1/1/2002 - 12/31/2005**

DISPLAY:

**Wind Speed**  
**Flow Vector (blowing to)**



WIND SPEED  
(m/s)

- >= 11.10
- 8.80 - 11.10
- 5.70 - 8.80
- 3.60 - 5.70
- 2.10 - 3.60
- 0.50 - 2.10

Calms: 0.19%

COMMENTS:

DATA PERIOD:

**Start Date: 1/1/2002 - 00:00**  
**End Date: 12/31/2005 - 23:00**

COMPANY NAME:

MODELER:

CALM WINDS:

**0.19%**

TOTAL COUNT:

**35064 hrs.**

AVG. WIND SPEED:

**2.51 m/s**

DATE:

**10/21/2015**

PROJECT NO.:

**CSMA-02.1**



# Model Output

## Unit Emission Rates (1 g/s)

### Results Summary

Hillsdale Shopping Center  
Construction HRA

**Concentration - Source Group: 1**    On-site Emissions

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		4.61497	ug/m^3	561639.63	4154722.75	10.48	0.00	0.00	

**Concentration - Source Group: 2**    Off-site Emissions

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
PERIOD		7.36765	ug/m^3	561707.94	4155101.50	6.16	0.00	0.00	

Hillsdale Shopping Center  
Unit Emission Rates (1 g/s)

```

*** ISCST3 - VERSION 02035 ***      *** Hillsdale Shopping Center      ***      10/21/15
*** Construction HRA                ***                               ***      11:31:57
**MODELOPTS:                        ***                               ***      PAGE 1
CONC                                URBAN ELEV  FLGPOL  DFAULT

```

\*\*\* MODEL SETUP OPTIONS SUMMARY \*\*\*

```

-----
**Intermediate Terrain Processing is Selected

**Model Is Setup For Calculation of Average CONCentration Values.

  -- SCAVENGING/DEPOSITION LOGIC --
**Model Uses NO DRY DEPLETION.  DDPLETE = F
**Model Uses NO WET DEPLETION.  WDPLETE = F
**NO WET SCAVENGING Data Provided.
**NO GAS DRY DEPOSITION Data Provided.
**Model Does NOT Use GRIDDED TERRAIN Data for Depletion Calculations

**Model Uses URBAN Dispersion.

**Model Uses Regulatory DEFAULT Options:
    1. Final Plume Rise.
    2. Stack-tip Downwash.
    3. Buoyancy-induced Dispersion.
    4. Use Calms Processing Routine.
    5. Not Use Missing Data Processing Routine.
    6. Default Wind Profile Exponents.
    7. Default Vertical Potential Temperature Gradients.
    8. "Upper Bound" Values for Supersquat Buildings.
    9. No Exponential Decay for URBAN/Non-SO2

**Model Accepts Receptors on ELEV Terrain.

**Model Accepts FLAGPOLE Receptor Heights.

**Model Calculates PERIOD Averages Only

**This Run Includes:    39 Source(s);    2 Source Group(s); and    111 Receptor(s)

**The Model Assumes A Pollutant Type of:  OTHER

**Model Set To Continue RUNNING After the Setup Testing.

**Output Options Selected:
    Model Outputs Tables of PERIOD Averages by Receptor
    Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                    m for Missing Hours
                                                    b for Both Calm and Missing Hours

```

\*\*Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0  
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07  
Output Units = MICROGRAMS/M\*\*3

\*\*Approximate Storage Requirements of Model = 1.3 MB of RAM.

\*\*Input Runstream File: Hillsdale.INP  
\*\*Output Print File: Hillsdale.OUT  
\*\*Detailed Error/Message File: HILLSD~1.ERR

\*\*\* ISCST3 - VERSION 02035 \*\*\*

\*\*\* Hillsdale Shopping Center  
 \*\*\* Construction HRA

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\*\*MODELOPTs:  
 CONC

URBAN ELEV FLGPOL DFAULT

\*\*\* VOLUME SOURCE DATA \*\*\*

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
L0000001	0	0.26316E-01	561675.6	4154775.8	9.5	4.15	8.84	1.93	SHRDOW
L0000002	0	0.26316E-01	561689.6	4154788.5	9.5	4.15	8.84	1.93	SHRDOW
L0000003	0	0.26316E-01	561703.6	4154801.5	9.2	4.15	8.84	1.93	SHRDOW
L0000004	0	0.26316E-01	561717.6	4154814.3	9.2	4.15	8.84	1.93	SHRDOW
L0000005	0	0.26316E-01	561731.6	4154827.0	8.8	4.15	8.84	1.93	SHRDOW
L0000006	0	0.26316E-01	561745.6	4154840.0	8.8	4.15	8.84	1.93	SHRDOW
L0000007	0	0.26316E-01	561759.6	4154852.8	8.5	4.15	8.84	1.93	SHRDOW
L0000008	0	0.26316E-01	561773.6	4154865.5	8.5	4.15	8.84	1.93	SHRDOW
L0000009	0	0.26316E-01	561787.6	4154878.5	8.4	4.15	8.84	1.93	SHRDOW
L0000010	0	0.26316E-01	561801.7	4154891.3	8.2	4.15	8.84	1.93	SHRDOW
L0000011	0	0.26316E-01	561815.7	4154904.0	8.1	4.15	8.84	1.93	SHRDOW
L0000012	0	0.26316E-01	561829.7	4154917.0	7.7	4.15	8.84	1.93	SHRDOW
L0000013	0	0.26316E-01	561819.2	4154931.0	7.8	4.15	8.84	1.93	SHRDOW
L0000014	0	0.26316E-01	561806.6	4154945.2	7.7	4.15	8.84	1.93	SHRDOW
L0000015	0	0.26316E-01	561794.0	4154959.5	7.7	4.15	8.84	1.93	SHRDOW
L0000016	0	0.26316E-01	561781.4	4154973.5	7.6	4.15	8.84	1.93	SHRDOW
L0000017	0	0.26316E-01	561768.8	4154987.8	7.6	4.15	8.84	1.93	SHRDOW
L0000018	0	0.26316E-01	561756.1	4155002.0	7.3	4.15	8.84	1.93	SHRDOW
L0000019	0	0.26316E-01	561743.5	4155016.2	7.3	4.15	8.84	1.93	SHRDOW
L0000020	0	0.26316E-01	561730.9	4155030.5	7.0	4.15	8.84	1.93	SHRDOW
L0000021	0	0.26316E-01	561718.3	4155044.5	7.0	4.15	8.84	1.93	SHRDOW
L0000022	0	0.26316E-01	561705.6	4155058.8	7.0	4.15	8.84	1.93	SHRDOW
L0000023	0	0.26316E-01	561693.0	4155073.0	6.7	4.15	8.84	1.93	SHRDOW
L0000024	0	0.26316E-01	561680.6	4155087.2	6.7	4.15	8.84	1.93	SHRDOW
L0000025	0	0.26316E-01	561668.8	4155102.2	6.4	4.15	8.84	1.93	SHRDOW
L0000026	0	0.26316E-01	561657.0	4155117.2	6.4	4.15	8.84	1.93	SHRDOW
L0000027	0	0.26316E-01	561645.2	4155132.0	5.8	4.15	8.84	1.93	SHRDOW
L0000028	0	0.26316E-01	561633.4	4155147.0	5.8	4.15	8.84	1.93	SHRDOW
L0000029	0	0.26316E-01	561621.6	4155162.0	5.5	4.15	8.84	1.93	SHRDOW
L0000030	0	0.26316E-01	561609.9	4155176.8	5.7	4.15	8.84	1.93	SHRDOW
L0000031	0	0.26316E-01	561598.1	4155191.8	5.5	4.15	8.84	1.93	SHRDOW
L0000032	0	0.26316E-01	561586.2	4155206.5	5.6	4.15	8.84	1.93	SHRDOW
L0000033	0	0.26316E-01	561574.5	4155221.5	5.4	4.15	8.84	1.93	SHRDOW
L0000034	0	0.26316E-01	561562.7	4155236.5	5.5	4.15	8.84	1.93	SHRDOW
L0000035	0	0.26316E-01	561550.9	4155251.2	5.3	4.15	8.84	1.93	SHRDOW
L0000036	0	0.26316E-01	561539.1	4155266.3	5.5	4.15	8.84	1.93	SHRDOW
L0000037	0	0.26316E-01	561527.4	4155281.0	5.2	4.15	8.84	1.93	SHRDOW
L0000038	0	0.26316E-01	561515.6	4155296.0	5.4	4.15	8.84	1.93	SHRDOW

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\*\*MODELOPTs:  
 CONC

URBAN ELEV FLGPOL DFAULT

\*\*\* AREAPOLY SOURCE DATA \*\*\*

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA (X Y METERS)		BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
1	0	0.40790E-04	561663.6	4154782.2	9.7	4.15	15	1.93	SHRDOW

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CONC                                URBAN ELEV  FLGPOL  DFAULT
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\*\*\* SOURCE IDs DEFINING SOURCE GROUPS \*\*\*

```
GROUP ID                                SOURCE IDs

1      1      ,

2      L0000001, L0000002, L0000003, L0000004, L0000005, L0000006, L0000007, L0000008, L0000009, L0000010, L0000011, L0000012,
      L0000013, L0000014, L0000015, L0000016, L0000017, L0000018, L0000019, L0000020, L0000021, L0000022, L0000023, L0000024,
      L0000025, L0000026, L0000027, L0000028, L0000029, L0000030, L0000031, L0000032, L0000033, L0000034, L0000035, L0000036,
      L0000037, L0000038,
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\*\*MODELOPTs:  
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\* SOURCE EMISSION RATE SCALARS WHICH VARY SEASONALLY, DIURNALLY AND BY DAY OF WEEK (SHRDOW) \*

SOURCE ID = 1		; SOURCE TYPE = AREAPOLY :													
HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR	HOUR	SCALAR
SEASON = WINTER; DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.5000E+00	14	.1000E+01	15	.1000E+01	16	.5000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SPRING; DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.5000E+00	14	.1000E+01	15	.1000E+01	16	.5000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SUMMER; DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.5000E+00	14	.1000E+01	15	.1000E+01	16	.5000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = FALL ; DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.5000E+00	14	.1000E+01	15	.1000E+01	16	.5000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = WINTER; DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SPRING; DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SUMMER; DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = FALL ; DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = WINTER; DAY OF WEEK = SUNDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SPRING; DAY OF WEEK = SUNDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SUMMER; DAY OF WEEK = SUNDAY															

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = FALL ; DAY OF WEEK = SUNDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00



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\*\*\* Hillsdale Shopping Center  
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\*\*MODELOPTs:  
 CONC

URBAN ELEV FLGPOL DFAULT

\* SOURCE EMISSION RATE SCALARS WHICH VARY SEASONALLY, DIURNALLY AND BY DAY OF WEEK (SHRDOW) \*

SOURCE ID = L0000001 through L0000038; SOURCE TYPE = VOLUME :

HR	SC	HR	SC	HR	SC	HR	SC	HR	SC	HR	SC	HR	SC	HR	SC
SEASON = WINTER; DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.5000E+00	14	.1000E+01	15	.1000E+01	16	.5000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SPRING; DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.5000E+00	14	.1000E+01	15	.1000E+01	16	.5000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SUMMER; DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.5000E+00	14	.1000E+01	15	.1000E+01	16	.5000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = FALL ; DAY OF WEEK = WEEKDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.1000E+01
9	.1000E+01	10	.1000E+01	11	.1000E+01	12	.1000E+01	13	.5000E+00	14	.1000E+01	15	.1000E+01	16	.5000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = WINTER; DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SPRING; DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SUMMER; DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = FALL ; DAY OF WEEK = SATURDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = WINTER; DAY OF WEEK = SUNDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SPRING; DAY OF WEEK = SUNDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = SUMMER; DAY OF WEEK = SUNDAY															

1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00
SEASON = FALL ; DAY OF WEEK = SUNDAY															
1	.0000E+00	2	.0000E+00	3	.0000E+00	4	.0000E+00	5	.0000E+00	6	.0000E+00	7	.0000E+00	8	.0000E+00
9	.0000E+00	10	.0000E+00	11	.0000E+00	12	.0000E+00	13	.0000E+00	14	.0000E+00	15	.0000E+00	16	.0000E+00
17	.0000E+00	18	.0000E+00	19	.0000E+00	20	.0000E+00	21	.0000E+00	22	.0000E+00	23	.0000E+00	24	.0000E+00

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\*\*MODELOPTs:  
 CONC

URBAN ELEV FLGPOL DFAULT

\*\*\* DISCRETE CARTESIAN RECEPTORS \*\*\*  
 (X-COORD, Y-COORD, ZELEV, ZFLAG)  
 (METERS)

( 561639.6, 4154722.8, 10.5, 1.5);	( 561644.9, 4154699.0, 10.6, 1.5);
( 561620.4, 4154712.0, 10.7, 1.5);	( 561606.2, 4154703.0, 10.9, 1.5);
( 561590.8, 4154695.5, 11.0, 1.5);	( 561628.2, 4154684.5, 11.0, 1.5);
( 561613.0, 4154675.8, 10.9, 1.5);	( 561597.6, 4154669.0, 11.3, 1.5);
( 561573.8, 4154687.0, 11.2, 1.5);	( 561583.0, 4154660.0, 11.4, 1.5);
( 561559.5, 4154682.2, 11.3, 1.5);	( 561568.4, 4154653.0, 11.6, 1.5);
( 561541.3, 4154674.0, 11.3, 1.5);	( 561649.2, 4154648.2, 10.7, 1.5);
( 561633.4, 4154640.5, 10.8, 1.5);	( 561615.8, 4154631.5, 11.1, 1.5);
( 561600.0, 4154625.5, 11.6, 1.5);	( 561587.6, 4154752.5, 10.7, 1.5);
( 561569.1, 4154737.8, 10.7, 1.5);	( 561563.8, 4154770.3, 10.4, 1.5);
( 561556.1, 4154781.8, 10.4, 1.5);	( 561549.0, 4154796.5, 10.1, 1.5);
( 561543.7, 4154812.2, 10.1, 1.5);	( 561540.9, 4154724.8, 11.2, 1.5);
( 561523.9, 4154755.0, 11.0, 1.5);	( 561529.8, 4154714.5, 11.3, 1.5);
( 561501.6, 4154747.5, 11.0, 1.5);	( 561480.6, 4154738.3, 11.0, 1.5);
( 561516.5, 4154708.5, 11.3, 1.5);	( 561501.0, 4154703.0, 11.3, 1.5);
( 561484.9, 4154695.0, 11.8, 1.5);	( 561462.3, 4154729.8, 11.4, 1.5);
( 561469.4, 4154688.5, 11.9, 1.5);	( 561544.3, 4154834.5, 10.0, 1.5);
( 561539.1, 4154847.2, 10.0, 1.5);	( 561533.2, 4154859.0, 9.5, 1.5);
( 561517.8, 4154846.5, 10.0, 1.5);	( 561488.9, 4154832.0, 10.1, 1.5);
( 561506.9, 4154795.3, 10.4, 1.5);	( 561485.6, 4154786.0, 10.6, 1.5);
( 561469.4, 4154824.2, 10.1, 1.5);	( 561525.1, 4154825.5, 10.0, 1.5);
( 561520.2, 4154891.8, 9.4, 1.5);	( 561510.6, 4154907.2, 9.4, 1.5);
( 561500.7, 4154882.8, 9.5, 1.5);	( 561493.0, 4154899.0, 9.4, 1.5);
( 561477.2, 4154922.5, 8.8, 1.5);	( 561490.2, 4154934.2, 8.9, 1.5);
( 561497.6, 4154919.2, 8.9, 1.5);	( 561508.8, 4154946.0, 8.6, 1.5);
( 561518.0, 4154926.8, 9.0, 1.5);	( 561528.9, 4154946.0, 8.6, 1.5);
( 561548.1, 4154947.5, 8.6, 1.5);	( 561564.1, 4154954.0, 8.5, 1.5);
( 561556.4, 4154969.8, 8.6, 1.5);	( 561539.7, 4154961.0, 8.6, 1.5);
( 561537.5, 4155002.2, 8.0, 1.5);	( 561527.0, 4154994.5, 8.2, 1.5);
( 561524.8, 4155032.5, 7.7, 1.5);	( 561512.4, 4155049.5, 7.6, 1.5);
( 561491.4, 4155040.5, 7.7, 1.5);	( 561499.8, 4155019.8, 8.0, 1.5);
( 561471.6, 4155033.5, 7.8, 1.5);	( 561484.0, 4155009.2, 8.2, 1.5);
( 561494.8, 4154974.2, 8.4, 1.5);	( 561509.4, 4154985.8, 8.2, 1.5);
( 561473.5, 4154969.5, 8.6, 1.5);	( 561456.8, 4154960.5, 8.8, 1.5);
( 561447.2, 4154988.0, 8.5, 1.5);	( 561467.0, 4154993.0, 8.5, 1.5);
( 561449.6, 4155029.2, 8.3, 1.5);	( 561430.8, 4155021.8, 8.4, 1.5);
( 561466.1, 4154866.8, 9.8, 1.5);	( 561448.1, 4154908.5, 9.2, 1.5);
( 561430.8, 4154899.0, 9.3, 1.5);	( 561449.1, 4154858.0, 9.8, 1.5);
( 561426.8, 4154941.5, 8.8, 1.5);	( 561494.2, 4155089.8, 7.3, 1.5);
( 561478.9, 4155112.0, 7.3, 1.5);	( 561453.2, 4155101.5, 7.3, 1.5);
( 561457.4, 4155080.0, 7.5, 1.5);	( 561442.1, 4155072.2, 7.6, 1.5);

( 561432.3, 4155090.5,	7.5,	1.5);	( 561417.0, 4155084.8,	7.9,	1.5);
( 561425.3, 4155064.8,	7.8,	1.5);	( 561409.3, 4155059.0,	8.3,	1.5);
( 561401.7, 4155076.5,	8.1,	1.5);	( 561654.4, 4154622.0,	10.7,	1.5);
( 561641.8, 4154613.0,	10.8,	1.5);	( 561549.2, 4154643.5,	11.8,	1.5);
( 561525.6, 4154666.5,	11.9,	1.5);	( 561717.0, 4155091.2,	6.3,	1.5);
( 561704.5, 4155112.8,	6.2,	1.5);	( 561728.1, 4155127.2,	5.7,	1.5);
( 561752.5, 4155144.8,	5.5,	1.5);	( 561497.8, 4155169.8,	6.4,	1.5);
( 561520.7, 4155179.5,	6.2,	1.5);	( 561485.9, 4155212.2,	6.1,	1.5);
( 561461.5, 4155247.0,	5.9,	1.5);	( 561465.0, 4155148.2,	7.1,	1.5);
( 561707.9, 4155101.5,	6.2,	1.5);	( 561472.0, 4154776.5,	10.7,	1.5);
( 561461.5, 4154772.2,	10.8,	1.5);	( 561590.3, 4154616.5,	11.6,	1.5);
( 561613.2, 4154597.5,	11.4,	1.5);	( 561627.9, 4154604.5,	11.3,	1.5);
( 561568.8, 4154608.8,	12.1,	1.5);	( 561579.2, 4154772.2,	10.4,	1.5);
( 561572.9, 4154792.5,	10.0,	1.5);	( 561562.4, 4154808.5,	10.1,	1.5);
( 561556.2, 4154821.8,	9.9,	1.5);			





\*\*\* ISCST3 - VERSION 02035 \*\*\*      \*\*\* Hillsdale Shopping Center      \*\*\*      10/21/15  
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 CONC

\*\*\* THE SUMMARY OF MAXIMUM PERIOD ( 35064 HRS) RESULTS \*\*\*

\*\* CONC OF OTHER      IN MICROGRAMS/M\*\*3      \*\*

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
1	1ST HIGHEST VALUE IS	4.61497	AT ( 561639.63, 4154722.75,	10.48, 1.50)	DC NA
	2ND HIGHEST VALUE IS	3.90613	AT ( 561717.00, 4155091.25,	6.26, 1.50)	DC NA
	3RD HIGHEST VALUE IS	3.81079	AT ( 561644.88, 4154699.00,	10.55, 1.50)	DC NA
	4TH HIGHEST VALUE IS	3.46416	AT ( 561707.94, 4155101.50,	6.16, 1.50)	DC NA
	5TH HIGHEST VALUE IS	3.30808	AT ( 561620.44, 4154712.00,	10.69, 1.50)	DC NA
	6TH HIGHEST VALUE IS	2.96652	AT ( 561704.50, 4155112.75,	6.21, 1.50)	DC NA
	7TH HIGHEST VALUE IS	2.94536	AT ( 561628.19, 4154684.50,	10.97, 1.50)	DC NA
	8TH HIGHEST VALUE IS	2.57812	AT ( 561606.19, 4154703.00,	10.87, 1.50)	DC NA
	9TH HIGHEST VALUE IS	2.51974	AT ( 561649.19, 4154648.25,	10.69, 1.50)	DC NA
	10TH HIGHEST VALUE IS	2.42490	AT ( 561728.12, 4155127.25,	5.69, 1.50)	DC NA
2	1ST HIGHEST VALUE IS	7.36765	AT ( 561707.94, 4155101.50,	6.16, 1.50)	DC NA
	2ND HIGHEST VALUE IS	7.34194	AT ( 561717.00, 4155091.25,	6.26, 1.50)	DC NA
	3RD HIGHEST VALUE IS	6.76550	AT ( 561704.50, 4155112.75,	6.21, 1.50)	DC NA
	4TH HIGHEST VALUE IS	4.15081	AT ( 561728.12, 4155127.25,	5.69, 1.50)	DC NA
	5TH HIGHEST VALUE IS	3.43460	AT ( 561520.69, 4155179.50,	6.23, 1.50)	DC NA
	6TH HIGHEST VALUE IS	2.84615	AT ( 561752.50, 4155144.75,	5.53, 1.50)	DC NA
	7TH HIGHEST VALUE IS	2.23293	AT ( 561485.88, 4155212.25,	6.06, 1.50)	DC NA
	8TH HIGHEST VALUE IS	2.18909	AT ( 561497.75, 4155169.75,	6.45, 1.50)	DC NA
	9TH HIGHEST VALUE IS	2.09815	AT ( 561639.63, 4154722.75,	10.48, 1.50)	DC NA
	10TH HIGHEST VALUE IS	1.98623	AT ( 561644.88, 4154699.00,	10.55, 1.50)	DC NA

\*\*\* RECEPTOR TYPES:    GC = GRIDCART  
 GP = GRIDPOLR  
 DC = DISCCART  
 DP = DISCPOLR  
 BD = BOUNDARY

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*** ISCST3 - VERSION 02035 ***      *** Hillsdale Shopping Center
***                               *** Construction HRA
**MODELOPTs:
CONC                               URBAN ELEV  FLGPOL  DFAULT

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\*\*\* Message Summary : ISCST3 Model Execution \*\*\*

----- Summary of Total Messages -----

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A Total of           0 Fatal Error Message(s)
A Total of           1 Warning Message(s)
A Total of           67 Informational Message(s)

A Total of           67 Calm Hours Identified

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***** FATAL ERROR MESSAGES *****
*** NONE ***

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***** WARNING MESSAGES *****
RE W282 2178 CHK_EL:RecElev < SrcBase; See non-DFAULT HE>ZI option in MCB#9

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*****
*** ISCST3 Finishes Successfully ***
*****

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**Table C1**  
**MER Output Concentrations**

<b>Model Output Calculations - Residential Receptors (unmitigated)</b>				
Emission Source (a)	ISCST3 Output <sup>1</sup> ( $\mu\text{g}/\text{m}^3$ ) (b)	Pollutant (c)	Emission Rates <sup>2</sup> (g/s) (d)	MER Concentrations ( $\mu\text{g}/\text{m}^3$ ) (e)
	Annual Average		Average Daily	Annual Average
2016 On-site	4.61	DPM PM <sub>2.5</sub>	1.70E-02 1.72E-02	<b>7.83E-02</b> <b>7.94E-02</b>
2016 Off-site	7.37	DPM PM <sub>2.5</sub>	2.20E-05 1.38E-04	<b>1.62E-04</b> <b>1.02E-03</b>
2017 On-site	4.61	DPM PM <sub>2.5</sub>	2.34E-02 2.20E-02	<b>1.08E-01</b> <b>1.01E-01</b>
2017 Off-site	7.37	DPM PM <sub>2.5</sub>	2.29E-05 1.72E-04	<b>1.68E-04</b> <b>1.27E-03</b>
<b>Model Output Calculations - Mitigation (Tier 3 Engines &amp; Fugitive Dust BMPs)</b>				
2016 On-site	4.61	DPM PM <sub>2.5</sub>	6.54E-03 7.18E-03	<b>3.02E-02</b> <b>3.31E-02</b>
2016 Off-site	7.37	DPM PM <sub>2.5</sub>	2.20E-05 1.15E-04	<b>1.62E-04</b> <b>8.51E-04</b>
2017 On-site	4.61	DPM PM <sub>2.5</sub>	1.11E-02 1.12E-02	<b>5.13E-02</b> <b>5.17E-02</b>
2017 Off-site	7.37	DPM PM <sub>2.5</sub>	2.29E-05 1.43E-04	<b>1.68E-04</b> <b>1.06E-03</b>

MER UTM coordinates: 561639.63, 4154722.75

<sup>1</sup> ISCST3 Output based on unit emission rates for sources (1 g/s).

<sup>2</sup> Emission rates from Appendix A - Construction Emissions.

**Table C2**  
**Quantification of Carcinogenic Risks**

Source (a)	MER Conc. (µg/m <sup>3</sup> ) (b)	Weight Fraction (c)	Contaminant (d)	URF (µg/m <sup>3</sup> ) <sup>-1</sup> (e)	CPF (mg/kg/day) <sup>-1</sup> (f)	Dose (by age bin)				Carcinogenic Risks (by age bin)				Total Risk per million (o)	
						3rd Trimester	0 < 2 years	2 < 16 years	16 < 70 years	3rd Trimester	0 < 2 years	2 < 16 years	16 < 70 years		
						(mg/kg-day) (g)	(mg/kg-day) (h)	(mg/kg-day) (i)	(mg/kg-day) (j)	per million (k)	per million (l)	per million (m)	per million (n)		
<b>Unmitigated</b>															
2016	On-Site Emissions	7.83E-02	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	2.7E-05	8.2E-05			8.64E-01	6.99E+00			7.85E+00
	Truck Route	1.62E-04	1.00E+00		3.0E-04	1.1E+00	5.6E-08	1.7E-07			1.79E-03	1.45E-02			1.63E-02
2017	On-Site Emissions	1.08E-01	1.00E+00		3.0E-04	1.1E+00		1.1E-04				1.20E+01			1.20E+01
	Truck Route	1.68E-04	1.00E+00		3.0E-04	1.1E+00		1.8E-07				1.87E-02			1.87E-02
<b>Total Cancer Risk</b>														<b>19.9</b>	
<b>Mitigated Run - Tier 3 Engines &amp; Fugitive Dust BMPs</b>															
2016	On-Site Emissions	3.02E-02	1.00E+00	Diesel Particulate	3.0E-04	1.1E+00	1.0E-05	3.2E-05			3.33E-01	2.69E+00			3.02E+00
	Truck Route	1.62E-04	1.00E+00		3.0E-04	1.1E+00	5.6E-08	1.7E-07			1.79E-03	1.45E-02			1.63E-02
2017	On-Site Emissions	5.13E-02	1.00E+00		3.0E-04	1.1E+00		5.4E-05				5.68E+00			5.68E+00
	Truck Route	1.68E-04	1.00E+00		3.0E-04	1.1E+00		1.8E-07				1.87E-02			1.87E-02
<b>Total Cancer Risk</b>														<b>8.74</b>	

MER UTM coordinates: 561639.63, 4154722.75

		3rd Trimester	0 < 2 years	2 < 16 years	16 < 70 years		
exposure year(s)		2016	2016-2017	n/a	n/a		
Dose Exposure Factors:	exposure frequency (days/year)	350	350	350	350		
	inhalation rate (L/kg-day) <sup>1</sup>	361	1090	745	290		
	inhalation absorption factor	1	1	1	1		
	age sensitivity factor	10	10	3	1		
Risk Calculation Factors:	averaging time (years)	70	70	70	70		
	fraction of time at home	0.85	0.85	0.72	0.73		
	exposure durations per age bin	exposure durations (year)					
		Construction Year	Risk Scalar <sup>2</sup>	3rd Trimester	0 < 2 years	2 < 16 years	16 < 70 years
		2016	0.92	0.25	0.67		
		2017	0.83		0.83		

<sup>1</sup> Inhalation rate taken as the 95th percentile breathing rates (OEHHA, 2015).

<sup>2</sup> In 2016, residential receptors are exposed for 240 work days (i.e. 335 calendar days or 0.92 year) during 2016; in 2017, receptors are exposed for 217 work days (i.e. 303 calendar days or 0.83 year). See App A - Construction Emissions).

**Table C3  
Quantification of Non-Carcinogenic Risks  
Chronic Hazards**

Source (a)	REL Type (b)	MER Conc. ( $\mu\text{g}/\text{m}^3$ ) (c)	Weight Fraction (d)	Contaminant (e)	Chronic Hazards / Toxicological Endpoints*										
					REL ( $\mu\text{g}/\text{m}^3$ ) (f)	RESP (g)	CNS/PNS (h)	CV/BL (i)	IMMUN (j)	KIDN (k)	GI/LV (l)	REPRO (m)	EYES (n)		
<b>Unmitigated</b>															
2016	On-Site Emissions	Chronic	7.83E-02	1.00E+00	Diesel Particulate	5.0E+00	1.6E-02								
	Truck Route		1.62E-04	1.00E+00		5.0E+00	3.2E-05								
2017	On-Site Emissions		1.08E-01	1.00E+00		5.0E+00	2.2E-02								
	Truck Route		1.68E-04	1.00E+00		5.0E+00	3.4E-05								
<b>TOTAL</b>							3.7E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
							<b>Maximum Chronic Hazard 0.037</b>		Resp						
<b>Mitigated Run - Tier 3 Engines &amp; Fugitive Dust BMPs</b>															
2016	On-Site Emissions	Chronic	3.02E-02	1.00E+00	Diesel Particulate	5.0E+00	6.0E-03								
	Truck Route		1.62E-04	1.00E+00		5.0E+00	3.2E-05								
2017	On-Site Emissions		5.13E-02	1.00E+00		5.0E+00	1.0E-02								
	Truck Route		1.68E-04	1.00E+00		5.0E+00	3.4E-05								
<b>TOTAL</b>							1.6E-02	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	0.0E+00	
							<b>Maximum Chronic Hazard 0.016</b>		Resp						

\* Key to Toxicological Endpoints

- RESP                    Respiratory System
- CNS/PNS              Central/Peripheral Nervous System
- CV/BL                 Cardiovascular/Blood System
- IMMUN                Immune System
- KIDN                  Kidney
- REPRO                Reproductive System
- EYES                 Eye irritation and/or other effects

**Table C4**  
**PM<sub>2.5</sub> Concentrations**

Contaminant ( a )	Source ( b )		MER Conc. ( $\mu\text{g}/\text{m}^3$ ) ( c )	Concentration Annual Average ( $\mu\text{g}/\text{m}^3$ ) ( d )
<b>Unmitigated</b>				
PM <sub>2.5</sub>	2016	On-Site Emissions	7.94E-02	0.08
		Truck Route	1.02E-03	
	2017	On-Site Emissions	1.01E-01	0.10
		Truck Route	1.27E-03	
<b>Maximum Annual PM<sub>2.5</sub> Concentration</b>				<b>0.10</b>
<b>Mitigated Run - Tier 3 Engines &amp; Fugitive Dust</b>				
PM <sub>2.5</sub>	2016	On-Site Emissions	3.31E-02	0.03
		Truck Route	8.51E-04	
	2017	On-Site Emissions	5.17E-02	0.05
		Truck Route	1.06E-03	
<b>Maximum Annual PM<sub>2.5</sub> Concentration</b>				<b>0.05</b>