

# APPENDIX B

## American River Common Features (ARCF) 2016 *Air Pollutant Emissions Methods and Results to Support a General Conformity Determination*

Memorandum from Moore Noise, LLC.  
February 4, 2020

# Moore Noise, LLC

## Memo

**To:** SAFCA and U.S. Army Corps  
**From:** Martha Moore / Moore Noise, LLC  
**c:** Drew Sutton / GEI Consultants  
**Date:** February 4, 2020  
**Re:** **American River Common Features (ARCF) 2016  
Air Pollutant Emissions Methods and Results to Support a General  
Conformity Determination**

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### Background

The American River Common Features (ARCF) 2016 Project will be in design, contracting and construction from 2019 through 2024. The U.S. Army Corp of Engineers (USACE), Sacramento Division is managing the ARCF 2016 Project. The ARCF 2016 Project is divided in four categories for purposes of design and contracting. The categories are: Erosion Protection, Sacramento Weir Widening, Stability and Seepage, and Mitigation. Multiple years of construction contracts are planned under each category.

Initial estimates of air pollutant emissions from construction of the ARCF Project exceeded the federal General Conformity Threshold of 25 tons per year for emissions of nitrogen oxides (NO<sub>x</sub>) within the Sacramento Federal Nonattainment Area (SFNA) for ozone. NO<sub>x</sub> contributes to the formation of ozone. Other pollutants of concern under the General Conformity regulations (40 Code of Federal Regulations [CFR] 98) for the Project area are particulates (PM) and volatile organic compounds (VOC). As a result of this exceedance, more detailed emission estimates were prepared in planning for compliance with the General Conformity regulations. This memorandum presents the methods used in the emissions estimates and the results of the estimates.

### Methods

Information regarding design and expected construction methods were developed in coordination with the Project design teams using information developed through June 2019. Where design was not complete and information was preliminary, the assumptions developed to support the emission estimates were more conservative. In general, the goal was to develop emission estimates that are conservative (high), but reasonable, for use in planning for mitigation of project effects.

Once developed, information on material quantities and equipment for each of the four ARCF Project categories was input into the Road Construction Emissions Model (RCEM) Version 8.1.0. Version 8.1.0 is approved for use for federal compliance demonstrations. The Sacramento Metropolitan Air Quality Management District's (SMAQMD) *Harborcraft, Dredge and Barge Emission Factor Calculator* was used to calculate emission factors for use in estimating emissions from barge transport of construction materials.

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## RCEM Model Input Assumptions

Attachments 1 through 5 detail the modeling assumptions and summarize the input data for the RCEM for each of the ARCF Project categories. A list of the Attachment titles follows:

- Attachment 1 – Modeling Assumptions, Erosion Protection
- Attachment 2 – Modeling Assumptions, Sacramento Weir
- Attachment 3 – Modeling Assumptions, Seepage and Stability
- Attachment 4 – Modeling Assumptions, Mitigation Sites
- Attachment 5 – Roadway Construction Emissions Model Input Assumptions Summary for Each Project Contract

## Results

Tables 1 through 6 summarize the results of the model runs and compare the results to the General Conformity Thresholds for the SFNA. Although all emissions shown in the summary tables will occur within the boundary of the SNFA and must be considered in total for comparison to the General Conformity thresholds, there are two air quality agencies with jurisdiction over the emissions. The Sacramento Weir category emissions will occur within the boundary of the Yolo Solano Air Quality Management District (YSAQMD). Emissions from all other categories will occur within the boundary of and under the jurisdiction of the SMAQMD.

The RCEM Input file for the unmitigated case for each contract and the RCEM Output file summary page for each model run are included in Attachment 6 – RCEM Input Files. The input files for the two other mitigation scenarios are identical to the unmitigated input file except for the selection within the RCEM under “Mitigation Options”. The table below shows the RCEM mitigation option for each scenario.

Modeling Scenario	RCEM Selections	
	On-Road Fleet	Off-Road Equipment
<b>Unmitigated</b>	No Mitigation	No Mitigation
<b>On-Road Mitigated</b>	2010 and Newer On-road Vehicles Fleet	No Mitigation
<b>On-Road &amp; All Tier 4 Mitigated</b>	2010 and Newer On-road Vehicles Fleet	Tier 4 Equipment – All Tier 4 Equipment

Where unmitigated emissions are shown to be below the General Conformity Threshold, no further analysis was completed for that pollutant in this document. However, the mitigation commitments contained in Environmental Impact Statements and Reports for the Project and the contracts will be implemented and will reduce emissions for pollutants other than NO<sub>x</sub>. For NO<sub>x</sub>, the USACE is proposing to mitigate emissions first through requiring the use of a fleet of reduced emissions construction vehicles, and then obtaining NO<sub>x</sub> emissions offsets through the SMAQMD for the Erosion Protection, Seepage and Stability, and Mitigation category emissions; and through the YSAQMD for the Sacramento Weir category emissions.

Tables 1, 2 and 3 show emissions with no vehicle fleet mitigation, for mitigation applied to only on-road vehicles, and for the fully mitigated case for both on-road and off-road vehicles. USACE is committing to aggressive control of construction vehicle emissions, including the following emissions controls for NO<sub>x</sub>:

- 2010 and Newer On-Road Vehicle Fleet, with limited exceptions
  - 90% of rated horsepower (HP) of the on-site construction fleet will be equipped with Tier 4 controls
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- All on-site construction fleet will meet at least Tier 1 standards, with limited exceptions pre-approved by USACE.
- Limited exceptions would be allowed only with USACE approval and after contractors provide updated emission estimates showing compliance with total emissions or how emissions would be achieved through offsets or additional mitigation.

Emissions are shown with the 90 percent mitigation assumed for off-road vehicles and assuming that on-road vehicles can achieve emissions equivalent to 100 percent of the vehicle fleet being 2010 or newer. The mitigated vehicle fleet emissions are compared to the General Conformity Thresholds to determine the additional NO<sub>x</sub> emissions mitigation that may be required in offset projects.

Two emission cases were considered to account for the possibility of schedule slippage to later years. Mitigation offsets for NO<sub>x</sub> will be planned to cover the estimated worst case of the emissions scenarios in order to secure enough offsets to fully mitigate potential emissions. The worst case estimated emissions scenario is shown in Table 3. NO<sub>x</sub> offsets will be needed in years 2021, 2022, and 2023 to fully mitigate the anticipated NO<sub>x</sub> emissions. Because emissions offsets from the SMAQMD are allocated quarterly, Table 4 shows the anticipated allocation of emissions to calendar quarters. Tables 5 and 6 shows the allocation of the quarterly emissions to the SMAQMD and the YSAQMD.

As each contract is bid, emissions can be refined based on final design information to support the acquisition of and payment for the emission offsets needed, provided the timing to request offsets from the air agencies can be met.



**Table 1**  
**American River Common Features (ARCF) 2016**  
**General Conformity Determination**  
**Air Quality Emissions by Year and Project (Case 1)**

**2019**

Project	Tons/year (Umitigated)			
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Reach D Contract 1 (SREL Seepage Berm) <sup>1</sup>	0.02	0.15	0.07	0.02
Reach D Contract 1 (Beach Stone Lake Mitigation Site) <sup>1</sup>	0.02	0.32	3.21	0.68
<b>Total Emissions (Sum)</b>	<b>0.0</b>	<b>0.5</b>	<b>3.3</b>	<b>0.7</b>

**2020**

90% Specified % of HP mitigated with Tier 4 controls

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
American River Erosion Contract 1	0.26	2.34	0.49	0.14	0.26	2.34	0.20	0.90	0.19	0.74
Sacramento River Erosion Contract 1	0.19	0.74	0.32	0.09	0.19	0.74	0.19	0.74	0.19	0.74
Sacramento River Erosion Contract 1 - Barge Emissions <sup>2</sup>	0.08	1.24	0.05	0.05	0.08	1.24	0.08	1.24	0.08	1.24
Sacramento River Seepage/ Stability Contract 1 - Berm and Wells	0.63	6.60	2.53	0.75	0.26	0.83	0.26	0.83	0.26	0.83
Sacramento River Seepage/ Stability Contract 1 - Cutoff Wall	2.82	31.60	5.77	2.18	1.30	4.27	1.30	4.27	1.30	4.27
<b>Total Emissions (Sum)</b>	<b>4.0</b>	<b>42.5</b>	<b>9.2</b>	<b>3.2</b>	<b>2.1</b>	<b>9.4</b>	<b>2.0</b>	<b>8.0</b>	<b>2.0</b>	<b>7.8</b>

**2021**

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
American River Erosion Contract 2	1.34	24.78	1.91	0.81	1.19	15.01	0.76	8.21	0.71	7.46
Sacramento River Erosion Contract 2	0.61	5.95	1.34	0.48	0.61	5.89	0.32	1.50	0.29	1.01
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento Weir	1.22	15.78	39.37	8.56	1.16	12.00	0.76	4.78	0.71	3.97
Sacramento Weir - Barge Emissions <sup>2</sup>	0.09	1.23	0.07	0.06	0.09	1.23	0.09	1.23	0.09	1.23
Sacramento River Seepage/ Stability Contract 2 - Berm and Wells	0.51	5.17	1.59	0.51	0.51	4.99	0.22	1.13	0.19	0.71
Sacramento River Seepage/ Stability Contract 2 - Cutoff Wall	2.39	26.13	5.18	1.89	2.36	24.19	1.30	5.90	1.19	3.87
<b>Total Emissions (Sum)</b>	<b>6.6</b>	<b>84.6</b>	<b>49.8</b>	<b>12.6</b>	<b>6.4</b>	<b>68.9</b>	<b>3.9</b>	<b>28.4</b>	<b>3.6</b>	<b>23.9</b>

**Table 1**  
**American River Common Features (ARCF) 2016**  
**General Conformity Determination**  
**Air Quality Emissions by Year and Project (Case 1)**

**2022**

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
American River Erosion Contract 2	1.24	21.82	1.85	0.75	1.10	13.70	0.75	7.93	0.71	7.29
Sacramento River Erosion Contract 2	0.56	5.22	1.30	0.45	0.56	5.18	0.31	1.43	0.29	1.01
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento River Erosion Contract 3	0.56	5.22	1.30	0.45	0.56	5.18	0.31	1.43	0.29	1.01
Sacramento River Erosion Contract 3 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento Weir	1.76	16.98	53.59	11.67	1.75	16.14	1.11	4.47	1.04	3.17
Sacramento River Seepage/ Stability Contract 3 - Cutoff Wall	1.93	20.21	4.70	1.61	1.90	18.84	1.12	4.89	1.04	3.34
Magpie Creek	0.52	8.34	0.67	0.30	0.48	5.45	0.33	3.03	0.31	2.77
<b>Total Emissions (Sum)</b>	<b>7.4</b>	<b>89.0</b>	<b>64.0</b>	<b>15.8</b>	<b>7.2</b>	<b>75.7</b>	<b>4.8</b>	<b>34.4</b>	<b>4.5</b>	<b>29.8</b>

**2023**

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
Mitigation	0.22	1.90	33.11	6.96	0.22	1.89	0.13	0.52	0.13	0.37
Sacramento River Erosion Contract 3	0.52	4.71	1.28	0.43	0.52	4.71	0.31	1.37	0.29	1.00
Sacramento River Erosion Contract 3 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento Weir	1.24	10.75	44.52	9.61	1.24	10.74	0.83	2.87	0.79	1.99
Sacramento Weir - Barge Emissions <sup>2</sup>	0.27	3.41	0.19	0.17	0.27	3.41	0.27	3.41	0.27	3.41
Sacramento River Seepage/ Stability Contract 4 - Berm and Wells	0.43	4.09	2.41	0.65	0.43	4.08	0.22	1.02	0.19	0.68
Sacramento River Seepage/ Stability Contract 4 - Cutoff Wall	0.40	3.85	1.29	0.40	0.40	3.83	0.25	1.04	0.23	0.73
<b>Total Emissions (Sum)</b>	<b>3.5</b>	<b>34.3</b>	<b>83.1</b>	<b>18.5</b>	<b>3.5</b>	<b>34.3</b>	<b>2.4</b>	<b>15.8</b>	<b>2.3</b>	<b>13.8</b>
<b>General Conformity Thresholds</b>	<b>25</b>	<b>25</b>	<b>100</b>	<b>100</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>

Notes: <sup>1</sup> From USACE; <sup>2</sup> No Mitigation

These estimates are preliminary and conservative. Emission estimates will change as the design for these contracts progresses. As a result, the actual emissions may vary somewhat and emissions may shift between years. In all cases analyzed, NOx mitigation offsets will be required in 2021, 2022, and 2023 to fully offset NOx emissions.

**Table 2**  
**American River Common Features (ARCF) 2016**  
**General Conformity Determination**  
**Air Quality Emissions by Year and Project (Case 2)**

**2019**

Project	Tons/year (Umitigated)			
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Reach D Contract 1 (SREL Seepage Berm) <sup>1</sup>	0.02	0.15	0.07	0.02
Reach D Contract 1 (Beach Stone Lake Mitigation Site) <sup>1</sup>	0.02	0.32	3.21	0.68
<b>Total Emissions (Sum)</b>	<b>0.0</b>	<b>0.5</b>	<b>3.3</b>	<b>0.7</b>

**2020**

90% Specified % of HP mitigated with Tier 4 controls

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
Sacramento River Seepage/ Stability Contract 1 - Berm and Wells	0.63	6.60	2.53	0.75	0.26	0.83	0.26	0.83	0.26	0.83
Sacramento River Seepage/ Stability Contract 1 - Cutoff Wall	2.82	31.60	5.77	2.18	1.30	4.27	1.30	4.27	1.30	4.27
<b>Total Emissions (Sum)</b>	<b>3.4</b>	<b>38.2</b>	<b>8.3</b>	<b>2.9</b>	<b>1.6</b>	<b>5.1</b>	<b>1.6</b>	<b>5.1</b>	<b>1.6</b>	<b>5.1</b>

**2021**

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
American River Erosion Contract 1	0.26	2.34	0.49	0.14	0.26	2.34	0.20	0.90	0.19	0.74
Sacramento River Erosion Contract 1	0.19	0.74	0.32	0.09	0.19	0.74	0.19	0.74	0.19	0.74
Sacramento River Erosion Contract 1 - Barge Emissions <sup>2</sup>	0.08	1.24	0.05	0.05	0.08	1.24	0.08	1.24	0.08	1.24
Sacramento Weir	1.23	16.32	39.39	8.56	1.16	12.15	0.77	5.05	0.73	4.26
Sacramento Weir - Barge Emissions <sup>2</sup>	0.09	1.23	0.07	0.06	0.09	1.23	0.09	1.23	0.09	1.23
Sacramento River Seepage/ Stability Contract 2 - Berm and Wells	0.51	5.17	1.59	0.51	0.51	4.99	0.22	1.13	0.19	0.71
Sacramento River Seepage/ Stability Contract 2 - Cutoff Wall	2.39	26.13	5.18	1.89	2.36	24.19	1.30	5.90	1.19	3.87
<b>Total Emissions (Sum)</b>	<b>4.8</b>	<b>53.2</b>	<b>47.1</b>	<b>11.3</b>	<b>4.7</b>	<b>46.9</b>	<b>2.9</b>	<b>16.2</b>	<b>2.7</b>	<b>12.8</b>

**Table 2**  
**American River Common Features (ARCF) 2016**  
**General Conformity Determination**  
**Air Quality Emissions by Year and Project (Case 2)**

**2022**

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
American River Erosion Contract 2	1.24	21.82	1.85	0.75	1.10	13.70	0.75	7.93	0.71	7.29
Sacramento River Erosion Contract 2	0.56	5.22	1.30	0.45	0.56	5.18	0.31	1.43	0.29	1.01
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento River Erosion Contract 3	0.56	5.22	1.30	0.45	0.56	5.18	0.31	1.43	0.29	1.01
Sacramento River Erosion Contract 3 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento Weir	1.74	16.29	53.57	11.66	1.73	15.84	1.10	4.17	1.03	2.87
Sacramento River Seepage/ Stability Contract 3 - Cutoff Wall	1.93	20.21	4.70	1.61	1.90	18.84	1.12	4.89	1.04	3.34
Magpie Creek	0.52	8.34	0.67	0.30	0.48	5.45	0.33	3.03	0.31	2.77
<b>Total Emissions (Sum)</b>	<b>7.4</b>	<b>88.3</b>	<b>64.0</b>	<b>15.8</b>	<b>7.2</b>	<b>75.4</b>	<b>4.8</b>	<b>34.1</b>	<b>4.5</b>	<b>29.5</b>

**2023**

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
Mitigation	0.22	1.90	33.11	6.96	0.22	1.89	0.13	0.52	0.13	0.37
American River Erosion Contract 2	1.24	21.82	1.85	0.75	1.10	13.70	0.75	7.93	0.71	7.29
Sacramento River Erosion Contract 2	0.56	5.22	1.30	0.45	0.56	5.18	0.31	1.43	0.29	1.01
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento River Erosion Contract 3	0.52	4.71	1.28	0.43	0.52	4.71	0.31	1.37	0.29	1.00
Sacramento River Erosion Contract 3 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento Weir	1.24	10.75	44.52	9.61	1.24	10.74	0.83	2.87	0.79	1.99
Sacramento Weir - Barge Emissions <sup>2</sup>	0.27	3.41	0.19	0.17	0.27	3.41	0.27	3.41	0.27	3.41
Sacramento River Seepage/ Stability Contract 4 - Berm and Wells	0.43	4.09	2.41	0.65	0.43	4.08	0.22	1.02	0.19	0.68
Sacramento River Seepage/ Stability Contract 4 - Cutoff Wall	0.40	3.85	1.29	0.40	0.40	3.83	0.25	1.04	0.23	0.73
<b>Total Emissions (Sum)</b>	<b>5.7</b>	<b>67.0</b>	<b>86.6</b>	<b>19.9</b>	<b>5.6</b>	<b>58.8</b>	<b>3.9</b>	<b>30.8</b>	<b>3.7</b>	<b>27.7</b>
<b>General Conformity Thresholds</b>	<b>25</b>	<b>25</b>	<b>100</b>	<b>100</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>

Notes: <sup>1</sup> From USACE; <sup>2</sup> No Mitigation

These estimates are preliminary and conservative. Emission estimates will change as the design for these contracts progresses. As a result, the actual emissions may vary somewhat and emissions may shift between years. NOx mitigation offsets will be required in 2022, and 2023 to fully offset NOx emissions for Case 2.



**Table 3**  
**American River Common Features (ARCF) 2016**  
**General Conformity Determination**  
**Air Quality Emissions Worst Case by Year**

2/2/2020

**2019**

Project	Tons/year (Umitigated)			
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Reach D Contract 1 (SREL Seepage Berm) <sup>1</sup>	0.02	0.15	0.07	0.02
Reach D Contract 1 (Beach Stone Lake Mitigation Site) <sup>1</sup>	0.02	0.32	3.21	0.68
<b>Total Emissions (Sum)</b>	<b>0.0</b>	<b>0.5</b>	<b>3.3</b>	<b>0.7</b>

**2020**

90% Specified % of HP mitigated with Tier 4 controls

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
American River Erosion Contract 1	0.26	2.34	0.49	0.14	0.26	2.34	0.20	0.90	0.19	0.74
Sacramento River Erosion Contract 1	0.19	0.74	0.32	0.09	0.19	0.74	0.19	0.74	0.19	0.74
Sacramento River Erosion Contract 1 - Barge Emissions <sup>2</sup>	0.08	1.24	0.05	0.05	0.08	1.24	0.08	1.24	0.08	1.24
Sacramento River Seepage/ Stability Contract 1 - Berm and Wells	0.63	6.60	2.53	0.75	0.26	0.83	0.26	0.83	0.26	0.83
Sacramento River Seepage/ Stability Contract 1 - Cutoff Wall	2.82	31.60	5.77	2.18	1.30	4.27	1.30	4.27	1.30	4.27
<b>Total Emissions (Sum)</b>	<b>4.0</b>	<b>42.5</b>	<b>9.2</b>	<b>3.2</b>	<b>2.1</b>	<b>9.4</b>	<b>2.0</b>	<b>8.0</b>	<b>2.0</b>	<b>7.8</b>

**2021**

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
American River Erosion Contract 2	1.34	24.78	1.91	0.81	1.19	15.01	0.76	8.21	0.71	7.46
Sacramento River Erosion Contract 2	0.61	5.95	1.34	0.48	0.61	5.89	0.32	1.50	0.29	1.01
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento Weir	1.22	15.78	39.37	8.56	1.16	12.00	0.76	4.78	0.71	3.97
Sacramento Weir - Barge Emissions <sup>2</sup>	0.09	1.23	0.07	0.06	0.09	1.23	0.09	1.23	0.09	1.23
Sacramento River Seepage/ Stability Contract 2 - Berm and Wells	0.51	5.17	1.59	0.51	0.51	4.99	0.22	1.13	0.19	0.71
Sacramento River Seepage/ Stability Contract 2 - Cutoff Wall	2.39	26.13	5.18	1.89	2.36	24.19	1.30	5.90	1.19	3.87
<b>Total Emissions (Sum)</b>	<b>6.6</b>	<b>84.6</b>	<b>49.8</b>	<b>12.6</b>	<b>6.4</b>	<b>68.9</b>	<b>3.9</b>	<b>28.4</b>	<b>3.6</b>	<b>23.9</b>

## 2022

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
American River Erosion Contract 2	1.24	21.82	1.85	0.75	1.10	13.70	0.75	7.93	0.71	7.29
Sacramento River Erosion Contract 2	0.56	5.22	1.30	0.45	0.56	5.18	0.31	1.43	0.29	1.01
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento River Erosion Contract 3	0.56	5.22	1.30	0.45	0.56	5.18	0.31	1.43	0.29	1.01
Sacramento River Erosion Contract 3 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento Weir	1.76	16.98	53.59	11.67	1.75	16.14	1.11	4.47	1.04	3.17
Sacramento River Seepage/ Stability Contract 3 - Cutoff Wall	1.93	20.21	4.70	1.61	1.90	18.84	1.12	4.89	1.04	3.34
Magpie Creek	0.52	8.34	0.67	0.30	0.48	5.45	0.33	3.03	0.31	2.77
<b>Total Emissions (Sum)</b>	<b>7.4</b>	<b>89.0</b>	<b>64.0</b>	<b>15.8</b>	<b>7.2</b>	<b>75.7</b>	<b>4.8</b>	<b>34.4</b>	<b>4.5</b>	<b>29.8</b>

## 2023

Project	Tons/year (Umitigated)				Tons/year (On-Road Mitigated)		Tons/year (On-Road & Tier 4 Mitigated at Specified %)		Tons/year (On-Road & All Tier 4 Mitigated)	
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>	ROG	NO <sub>x</sub>
Mitigation	0.22	1.90	33.11	6.96	0.22	1.89	0.13	0.52	0.13	0.37
American River Erosion Contract 2	1.24	21.82	1.85	0.75	1.10	13.70	0.75	7.93	0.71	7.29
Sacramento River Erosion Contract 2	0.56	5.22	1.30	0.45	0.56	5.18	0.31	1.43	0.29	1.01
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento River Erosion Contract 3	0.52	4.71	1.28	0.43	0.52	4.71	0.31	1.37	0.29	1.00
Sacramento River Erosion Contract 3 - Barge Emissions <sup>2</sup>	0.43	5.61	0.30	0.27	0.43	5.61	0.43	5.61	0.43	5.61
Sacramento Weir	1.24	10.75	44.52	9.61	1.24	10.74	0.83	2.87	0.79	1.99
Sacramento Weir - Barge Emissions <sup>2</sup>	0.27	3.41	0.19	0.17	0.27	3.41	0.27	3.41	0.27	3.41
Sacramento River Seepage/ Stability Contract 4 - Berm and Wells	0.43	4.09	2.41	0.65	0.43	4.08	0.22	1.02	0.19	0.68
Sacramento River Seepage/ Stability Contract 4 - Cutoff Wall	0.40	3.85	1.29	0.40	0.40	3.83	0.25	1.04	0.23	0.73
<b>Total Emissions (Sum)</b>	<b>5.7</b>	<b>67.0</b>	<b>86.6</b>	<b>19.9</b>	<b>5.6</b>	<b>58.8</b>	<b>3.9</b>	<b>30.8</b>	<b>3.7</b>	<b>27.7</b>
<b>General Conformity Thresholds</b>	<b>25</b>	<b>25</b>	<b>100</b>	<b>100</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>	<b>25</b>

Notes: <sup>1</sup> From USACE; <sup>2</sup> No Mitigation

These estimates are preliminary and conservative. Emission estimates will change as the design for these contracts progresses. As a result, the actual emissions may vary somewhat and emissions may shift between years.

In all cases analyzed, NOx mitigation offsets will be required in 2021, 2022, and 2023 to fully offset NOx emissions.

**Table 4**  
**American River Common Features (ARCF) 2016**  
**General Conformity Determination**  
**Allocation of Annual NOx Emissions to Quarters**  
**Includes Only Years Exceeding General Conformity Thresholds After Use of Equipment Mitigation**

**2021**

Project	Tons/year (On-Road & 75% Tier 4 Mitigated)	Allocation as Percent of Annual Emissions				Emissions per Quarter (tons)			
	NO <sub>x</sub>	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
American River Erosion Contract 2	8.21			33%	67%	0.0	0.0	2.7	5.5
Sacramento River Erosion Contract 2	1.50			50%	50%	0.0	0.0	0.7	0.7
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	5.61			50%	50%	0.0	0.0	2.8	2.8
Sacramento Weir	4.78	13%	32%	42%	13%	0.6	1.5	2.0	0.6
Sacramento Weir - Barge Emissions <sup>2</sup>	1.23	13%	32%	42%	13%	0.2	0.4	0.5	0.2
Sacramento River Seepage/ Stability Contract 2 - Berm and Wells	1.13		25%	38%	38%	0.0	0.3	0.4	0.4
Sacramento River Seepage/ Stability Contract 2 - Cutoff Wall	5.90		43%	43%	14%	0.0	2.5	2.5	0.8
<b>Total Emissions (Sum)</b>	<b>28.4</b>								

**2022**

Project	Tons/year (On-Road & 75% Tier 4 Mitigated)	Allocation as Percent of Annual Emissions				Emissions per Quarter (tons)			
	NO <sub>x</sub>	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
American River Erosion Contract 2	7.93			33%	67%	0.0	0.0	2.6	5.3
Sacramento River Erosion Contract 2	1.43			50%	50%	0.0	0.0	0.7	0.7
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	5.61			50%	50%	0.0	0.0	2.8	2.8
Sacramento River Erosion Contract 3	1.43			50%	50%	0.0	0.0	0.7	0.7
Sacramento River Erosion Contract 3 - Barge Emissions <sup>2</sup>	5.61			50%	50%	0.0	0.0	2.8	2.8
Sacramento Weir	4.47	25%	25%	25%	25%	1.1	1.1	1.1	1.1
Sacramento River Seepage/ Stability Contract 3 - Cutoff Wall	4.89		43%	43%	14%	0.0	2.1	2.1	0.7
Magpie Creek	3.03		25%	38%	38%	0.0	0.8	1.1	1.1
<b>Total Emissions (Sum)</b>	<b>34.4</b>								

**2023**

Project	Tons/year (On-Road & 75% Tier 4 Mitigated)	Allocation as Percent of Annual Emissions				Emissions per Quarter (tons)			
	NO <sub>x</sub>	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Mitigation	0.52	25%	25%	25%	25%	0.1	0.1	0.1	0.1
American River Erosion Contract 2	7.93			33%	67%	0.0	0.0	2.6	5.3
Sacramento River Erosion Contract 2	1.43			50%	50%	0.0	0.0	0.7	0.7
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	5.61			50%	50%	0.0	0.0	2.8	2.8
Sacramento River Erosion Contract 3	1.37			50%	50%	0.0	0.0	0.7	0.7
Sacramento River Erosion Contract 3 - Barge Emissions <sup>2</sup>	5.61			50%	50%	0.0	0.0	2.8	2.8
Sacramento Weir	2.87	13%	32%	42%	13%	0.4	0.9	1.2	0.4
Sacramento Weir - Barge Emissions <sup>2</sup>	3.41	13%	32%	42%	13%	0.4	1.1	1.4	0.4
Sacramento River Seepage/ Stability Contract 4 - Berm and Wells	1.02		43%	43%	14%	0.0	0.4	0.4	0.1
Sacramento River Seepage/ Stability Contract 4 - Cutoff Wall	1.04		25%	38%	38%	0.0	0.3	0.4	0.4
<b>Total Emissions (Sum)</b>	<b>30.8</b>								

These estimates are preliminary and conservative. Emission estimates will change as the design for these contracts progresses. As a result, the actual emissions may vary somewhat and emissions may shift between years. In all cases analyzed, NOx mitigation offsets will be required in 2021, 2022, and 2023 to fully offset NOx emissions.

**Table 5**  
**American River Common Features (ARCF) 2016**  
**General Conformity Determination**  
**Allocation of Annual NOx Emissions to Quarters**  
**Emissions Only within Sacramento Metro Air Quality Management District (SMAQMD)**  
**Includes Only Years Exceeding General Conformity Thresholds After Use of Equipment Mitigation**

**2021**

Project	Tons/year (On-Road & 75% Tier 4 Mitigated)	Allocation as Percent of Annual Emissions				Emissions per Quarter (tons)			
	NO <sub>x</sub>	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
American River Erosion Contract 2	8.21			33%	67%	0.0	0.0	2.7	5.5
Sacramento River Erosion Contract 2	1.50			50%	50%	0.0	0.0	0.7	0.7
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	5.61			50%	50%	0.0	0.0	2.8	2.8
Sacramento River Seepage/ Stability Contract 2 - Berm and Wells	1.13		25%	38%	38%	0.0	0.3	0.4	0.4
Sacramento River Seepage/ Stability Contract 2 - Cutoff Wall	5.90		43%	43%	14%	0.0	2.5	2.5	0.8
<b>Total Emissions (Sum)</b>	<b>22.4</b>					0.0	2.8	9.3	10.3

**2022**

Project	Tons/year (On-Road & 75% Tier 4 Mitigated)	Allocation as Percent of Annual Emissions				Emissions per Quarter (tons)			
	NO <sub>x</sub>	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
American River Erosion Contract 2	7.93			33%	67%	0.0	0.0	2.6	5.3
Sacramento River Erosion Contract 2	1.43			50%	50%	0.0	0.0	0.7	0.7
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	5.61			50%	50%	0.0	0.0	2.8	2.8
Sacramento River Erosion Contract 3	1.43			50%	50%	0.0	0.0	0.7	0.7
Sacramento River Erosion Contract 3 - Barge Emissions <sup>2</sup>	5.61			50%	50%	0.0	0.0	2.8	2.8
Sacramento River Seepage/ Stability Contract 3 - Cutoff Wall	4.89		43%	43%	14%	0.0	2.1	2.1	0.7
Magpie Creek	3.03		25%	38%	38%	0.0	0.8	1.1	1.1
<b>Total Emissions (Sum)</b>	<b>29.9</b>					0.0	2.9	12.9	14.1

**2023**

Project	Tons/year (On-Road & 75% Tier 4 Mitigated)	Allocation as Percent of Annual Emissions				Emissions per Quarter (tons)			
	NO <sub>x</sub>	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Mitigation	0.52	25%	25%	25%	25%	0.1	0.1	0.1	0.1
American River Erosion Contract 2	7.93			33%	67%	0.0	0.0	2.6	5.3
Sacramento River Erosion Contract 2	1.43			50%	50%	0.0	0.0	0.7	0.7
Sacramento River Erosion Contract 2 - Barge Emissions <sup>2</sup>	5.61			50%	50%	0.0	0.0	2.8	2.8
Sacramento River Erosion Contract 3	1.37			50%	50%	0.0	0.0	0.7	0.7
Sacramento River Erosion Contract 3 - Barge Emissions <sup>2</sup>	5.61			50%	50%	0.0	0.0	2.8	2.8
Sacramento River Seepage/ Stability Contract 4 - Berm and Wells	1.02		43%	43%	14%	0.0	0.4	0.4	0.1
Sacramento River Seepage/ Stability Contract 4 - Cutoff Wall	1.04		25%	38%	38%	0.0	0.3	0.4	0.4
<b>Total Emissions (Sum)</b>	<b>24.5</b>					0.1	0.8	10.6	13.0

These estimates are preliminary and conservative. Emission estimates will change as the design for these contracts progresses. As a result, the actual emissions may vary somewhat and emissions may shift between years. In all cases analyzed, NOx mitigation offsets will be required in 2021, 2022, and 2023 to fully offset NOx emissions.

**Table 6**  
**American River Common Features (ARCF) 2016**  
**General Conformity Determination**  
**Allocation of Annual NOx Emissions to Quarters**  
**Emissions Only within Yolo Solano Air Quality Management District (YSAQMD)**  
**Includes Only Years Exceeding General Conformity Thresholds After Use of Equipment Mitigation**

**2021**

Project	Tons/year (On-Road & 75% Tier 4 Mitigated)	Allocation as Percent of Annual Emissions				Emissions per Quarter (tons)			
	NO <sub>x</sub>	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sacramento Weir	4.78	13%	32%	42%	13%	0.6	1.5	2.0	0.6
Sacramento Weir - Barge Emissions <sup>2</sup>	1.23	13%	32%	42%	13%	0.2	0.4	0.5	0.2
<b>Total Emissions (Sum)</b>	<b>6.0</b>								

**2022**

Project	Tons/year (On-Road & 75% Tier 4 Mitigated)	Allocation as Percent of Annual Emissions				Emissions per Quarter (tons)			
	NO <sub>x</sub>	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sacramento Weir	4.47	25%	25%	25%	25%	1.1	1.1	1.1	1.1
<b>Total Emissions (Sum)</b>	<b>4.5</b>								

**2023**

Project	Tons/year (On-Road & 75% Tier 4 Mitigated)	Allocation as Percent of Annual Emissions				Emissions per Quarter (tons)			
	NO <sub>x</sub>	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sacramento Weir	2.87	13%	32%	42%	13%	0.4	0.9	1.2	0.4
Sacramento Weir - Barge Emissions <sup>2</sup>	3.41	13%	32%	42%	13%	0.4	1.1	1.4	0.4
<b>Total Emissions (Sum)</b>	<b>6.3</b>								

These estimates are preliminary and conservative. Emission estimates will change as the design for these contracts progresses. As a result, the actual emissions may vary somewhat and emissions may shift between years. In all cases analyzed, NOx mitigation offsets will be required in 2021, 2022, and 2023 to fully offset NOx emissions.

# **Attachment 1**

Modeling Assumptions

Erosion Protection

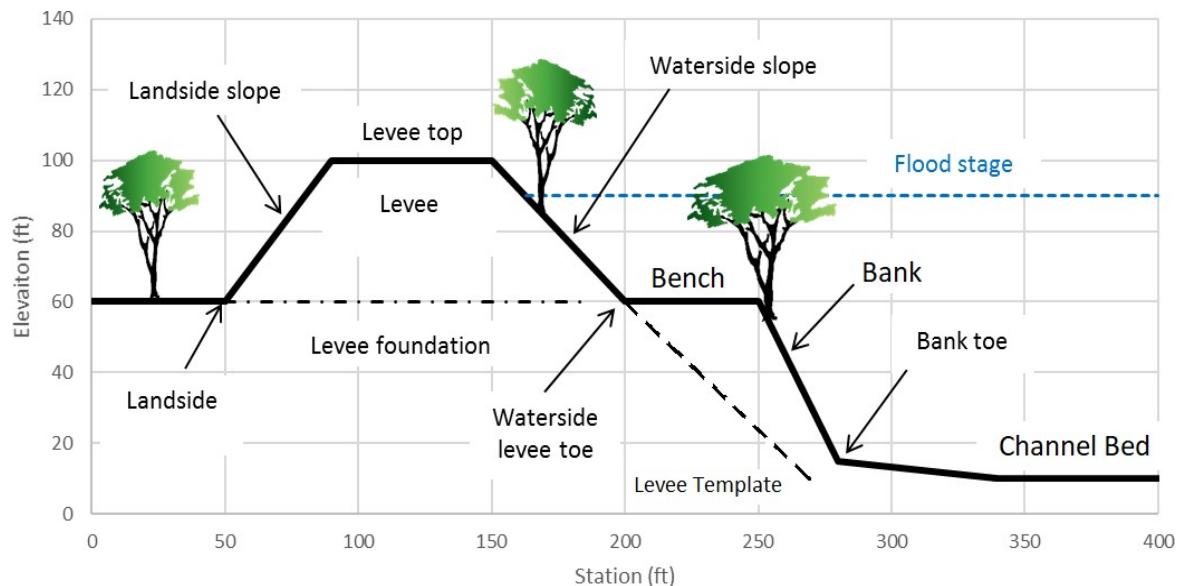
# Supporting Calculations for Material Volumes, Equipment, and Quarterly Allocation of Emissions – Erosion Protection

## General Information

The erosion protection contracts will construct erosion protection repairs on the American and Sacramento Rivers. The following table shows the currently anticipated and conservative schedule assumptions for construction of Erosion Protection contracts. Two cases are evaluated for timing. Case 1 is shown as X. Case two is shown as (X).

Year of Construction	2020	2021	2022	2023
<b>American River</b>				
Contract 1 (Subreach 2)	X	(X)		
Contract 2 (Subreaches 1, 3, 4)		X	X (X)	(X)
Contract 3 (for now assume not needed)				
Contract 4 (for now assume not needed)				
<b>Sacramento River</b>				
Contract 1 (55.2L)	X	(X)		
Contract 2		X	X (X)	(X)
Contract 3			X	X
Contract 4 (for now assume not needed)				

The following graphic shows common design elements for the Erosion Protection repair sites.



General Construction Methods for Erosion Protection (input from Joe Reynolds/USACE estimator) – rock is placed bottom to top. Above the water line – rock is placed with interstitial soil at approximately 70% rock/30% soil mix. On benches soil is placed on top of rock/soil layer for planting. Equipment can generally place 300 ton/hour, with ½ acre disturbed per day per site (Joe Reynolds, 4/11 email). For all projects we should assume end dump trucks at 15 cubic yards/truck trip.

For basic equipment assume tracked excavators and dozers (D6). An equipment set up for each site will consist of clam shell on barge to unload (or crane/loader for trucked material), dozer to push soil around, excavator to mix rock/soil, water truck. Multiple construction sites may operate simultaneously. Generally, grubbing is not performed. Vegetation is cut off at ground level for removal. Based on low to no grubbing, the total volume of exported material for the erosion contracts was adjusted down to 1,000 cubic yards per 15 acres for contracts without a cut bank. Cement will come from in-town Sacramento. Lime will come from Stockton.

## American River Erosion

Project Definition: These contracts will provide erosion protection on the American River from the confluence with the Sacramento River upstream to the end of the federal levee system (approximately 11 miles) – this is broken into four subreaches for the project:

- Subreach 1 – Confluence to Paradise Bend
- Subreach 2 – Paradise Bend to Howe Avenue Bridge
- Subreach 3 – Howe Ave Bridge to Watt Ave Bridge
- Subreach 4 – Upstream of Watt Ave Bridge to end of the federal levee system (~RM 13, Goethe or Riverbend Park)

The American River in-water construction window is August 1 – October 31 (possibly Nov 30). Site preparation could occur prior to 8/1. Tree trimming will occur December to February to avoid nesting birds. Rip rap will be delivered to American River sites by truck. Rock import to construction sites will occur in June prior to the work window.

For the air quality emissions analysis, Subreach 2 (Contract 1) is used as the basis for estimating quantities of materials to be used for all American River Erosion contracts. Subreach 2 extends from about River Mile 5.1 near Paradise Bend upstream to RM 7.8 near the Howe Avenue bridge. Information on the current design plan for Subreach 2 was taken from the *Lower American River Subreach 2 Summary of Bank Protection Conceptual Design Process (10% Basis of Design Report), Draft Report*, November 30, 2018.

Only material volumes for Subreach 2-1 are used to estimate material volumes for future years (Contract 2) based on the linear feet of erosion protection. Data for Subreach 2-3 includes a cut-bank design which is not assumed for other subreaches. The repair sites along Subreach 2 are:

- Site 2-1: Repair site 2-1 includes 0.8 miles of the left bank between RM 5.8 and 6.6
- Site 2-2: Repair site on the right bank starting near Howe Avenue and extending downstream about 1,000 feet (0.2 miles).
- Site 2-3: Repair site located on the right bank that extends from about RM 7.2 downstream to RM 5.8. (1.4 miles)

The Contract 1 total Subreach length is approximately 2.4 miles (12,700 feet). Assuming a 100-foot wide construction corridor, this would be 29 acres. The area of clearing and grubbing (actual work area) is smaller and shown in the following tables.



**Repair Site 2-1, 2-2, and 2-3 Quantities**

Site	Material	Quantity	Unit
2-1	Rock Riprap	126,500	tons
2-1	Topsoil (Planting Benches)	25,500	tons
2-1	Planting Area	2.5	acres
2-1	IWM	200	Trees
2-2	Rock Riprap	10,500	tons
2-2	Topsoil (Planting Benches)	5,500	tons
2-2	Planting Area	0.4	acres
2-2	IWM	55	Trees
2-3	Cobble	36,500	Tons
2-3	Excavation and Off haul	135,000	cubic yards
2-3	Planting Area	12	acres

\*Site 2-3 will have a cut-bank design

Data from Tables 4-3, 4-6, and 4-9 of *Attachment 6 to the Lower American River Subreach 2 Summary of Bank Protection Conceptual Design Process (10% Basis of Design Report)*, Draft Report, November 30, 2018.

**Additional Information Repair Site 2-1, 2-2, 2-3 Quantities**

Site	Material	Quantity	Unit
2-1	Clearing and Grubbing	2.4	Acres
2-2	Clearing and Grubbing	--	Acres
2-3	Clearing and Grubbing	14.3	Acres

Data from Tables 5-1, 5-2, and 5-3 of *Attachment 6 to the Lower American River Subreach 2 Summary of Bank Protection Conceptual Design Process (10% Basis of Design Report)*, Draft Report, November 30, 2018.

**Total Material Volume Estimates for Subreach 2 (Contract 1)**

Type	Material	Quantity	Units	Miles Traveled
Export	Clearing and Grubbing	16.7 (1,100)	Acres (cubic yards)	14
Import	Rip Rap	137,000 (83,000)	Tons (cubic yards)	50
Import	Topsoil Planting Bench	31,000 (23,000)	Tons (cubic yards)	5
Import	Cobble	36,500 (20,300)	Tons (cubic yards)	50
Export	Excavation and Off-haul	135,000	cubic yards	14
Import	IWM	255	Trees	

Note: Estimated haul distances per USACE staff (Anne Baker, email 2/22/2019). Assume: 1.65 ton/cubic yard for rip rap, 1.35 ton/cubic yard for topsoil, 1.8 ton/cubic yard for aggregate/cobble.

Estimated days to place rip rap at expected placement rate of 300 tons/hour. 137,000 tons/3,000 tons per 10-hour day = 46 days. Only one set of placement equipment required to complete placement for Contract 1 during the work window of August 1 – October 31. Expected acreage disturbed per day is ½ acre.

**Total Estimates for Contract 2 (Subreach 1, 3, and 4, assumes no cut-bank construction)**

Type	Material	Basis Quantity Subreach 2-1 (0.8 miles)	Estimated Subreach 1 and 4 (5 miles each)	Estimated Subreach 3 (2.2 miles)	Units	Miles Traveled
Export	Clearing and Grubbing	2.4	15 (1,000)	6.6 (440)	Acres (cubic yards)	14
Import	Rip Rap	126,500	790,625	347,875	Tons	50
Import	Topsoil Planting Bench	25,500	159,375	70,125	Tons	5
Import	IWM	200	1,250	550	Trees	

Note: Subreach 1: RM 0 to 5 = 5 miles; Subreach 2: RM 5 to RM 7.8 = 2.8 miles; Subreach 3 - RM 7.8 to RM 9 = 2.2 miles; Subreach 4: RM 9 to RM 14 = 5 miles

**Contract 2 Summary of Material Quantities**

Subreach	Acres Disturbed	Tons (CY) Rip Rap	Tons (CY) Topsoil
1	15	790,625 (479,200)	159,375 (118,100)
3	6.6	347,875 (210,800)	70,125 (51,950)
4	15	790,625 (479,200)	159,375 (118,100)
<b>Total</b>	<b>36.6</b>	<b>1,929,125 (1,169,200)</b>	<b>388,875 (288,150)</b>
<b>Per Season</b>	<b>18 (1,200 cubic yards)</b>	<b>964,563 (584,600)</b>	<b>194,438 (117,800)</b>

Assume: 1.65 ton/cubic yard for rip rap, 1.35 ton/cubic yard for topsoil. CY = cubic yard.

Subreaches 1, 3, and 4 are planned for completion in 2 seasons. Assume an even split between seasons – 1,929,125 tons rip rap/ 2 seasons = 964,562 tons/season. To estimate days to place rip rap: 964,562 tons/ 3,000 tons per 10-hour day = 322 days to place. Assume 22 days/month for 3 months = 66 days per season available. This would require **5 sets** of placement equipment for both years to complete placement during the work window of August 1 – October 31. Expected acreage disturbed per day is ½ acre per worksite = 2 ½ acres/day for Contract 2 (Subreaches 1, 3, and 4). The total estimated length of the Contract 2 Subreaches is 12.2 miles (64,400 feet), or 32,200 feet per season. Assuming a 100-foot wide construction corridor, this would be 74 acres. The area of clearing and grubbing (work area) is smaller and shown in the table **Contract 2 Summary of Material Quantities** above.

Construction equipment for American River Erosion Contract 1 was reviewed with the project team on 6/27/2019. It was agreed that the following equipment was a conservative (an extra set of basic equipment during grading/excavation) estimate of needed equipment:

**American River Contract 1 Assumed Equipment**

<b>Equipment</b>	<b>Grubbing/Clearing Phase (Number)</b>	<b>Grading/Excavation Phase (number)</b>
Cranes (basic)		2
Excavators (basic)	6	2
Generators	1	1
Graders		2
Off-Highway Trucks		2
Other Construction Equipment		1
Other General Industrial Equipment		2
Material Handling Equipment		1
Rubber Tired Dozers (basic)		2
Signal Boards	6	6
Skid Steer Loaders		3
Sweepers/Scrubbers (basic)	1	1
Tractors/Loaders/Backhoes		2
Trenchers		2

To estimate equipment needed for the American River Contract 2, grubbing and clearing was assumed to have the same equipment each year as Contract 1 based on the estimated acreage cleared (Contract 1: 16.7 acres, Contract 2: 36.6 acres in 2 years or 18.3 acres per year). For the Grading and Excavation Phase, basic equipment was assumed at 5 sets plus an extra set, other equipment was adjusted up slightly. Equipment assumed for each year of Contract 2 is shown below.

**American River Contract 2 Assumed Equipment**

<b>Equipment</b>	<b>Grubbing/Clearing Phase (Number)</b>	<b>Grading/Excavation Phase (number)</b>
Cranes (basic)		6
Excavators (basic)	6	6
Generators	1	3
Graders		4
Off-Highway Trucks		6
Other Construction Equipment		1
Other General Industrial Equipment		2
Material Handling Equipment		1
Rubber Tired Dozers (basic)		6
Rubber Tired Loaders		4
Signal Boards	6	6
Skid Steer Loaders		3
Sweepers/Scrubbers (basic)	1	1
Tractors/Loaders/Backhoes		3
Trenchers		2

The estimated quarterly distribution of emissions for the American River Contracts is shown below.

Year	Q1	Q2	Q3	Q4
All Years		On-Road	1/3	2/3

### Sacramento River Erosion (55.2 L)

Project Definition: These contracts will provide erosion protection on the Sacramento River from the American River confluence downstream to Freeport (approximately 10 miles). On the Sacramento River, work will only occur on the left bank (looking downriver). Subreach 55.2L (Contract 1) will be used as the basis of estimates for the Sacramento River contracts.

The Sacramento River in-water work window is July 1 to October 31. Site preparation could occur prior to July 1. The tree trimming window is December to February. Rip rap (quarry stone and soil-filled quarry stone) will be delivered to Sacramento River sites by barge. The expected shipping approach will use 4-ganged barges from the Bay Area to Rio Vista, anchor at Rio Vista and use smaller tugboats to deliver single barges to construction sites for offloading. Information on the expected horsepower of tugboat engines was provided by staff at Dutra Materials in San Rafael, California. A push boat used to move materials from the quarry in San Rafael to Rio Vista on the Sacramento River typically has two engines at 800 horsepower each (1,600 horsepower total). Typical tugs for movement in the Sacramento River have a single engine at approximately 700 horsepower (Dennis Ferguson, personal communication).

For purposes of the air quality emissions analysis Subreach 55.2L is used as the basis of the material volume estimates for all Sacramento River reaches on a per foot basis. From the *Basis of Design Office Report Sacramento River Bank Protection Project*, DRAFT, Ayres Associates, June 2008, the original length of Subreach 55.2L was 690 feet. At 30 percent design, the length of Subreach 55.2L was increased to 1,150 feet (an increase by a factor of 1.68). The table below shows the original material quantities estimated for Subreach 55.2L, and the increased quantities expected for the increase in the length of the Subreach.

#### Estimate of Material Quantities for Sacramento River Erosion Contract 1

Phase	Estimated Quantity (original 690 ft basis)	Estimated Quantity (1,150 ft basis)	Unit
Clearing	0.81	1.4 (93)	Acres (cubic yards)
Embankment Material, 0.5' Soil Cover	660	1,100	cubic yards
Soil-Filled Quarry Stone	3,691 (6,274)	6,200 (10,500)	cubic yards (tons)
Quarry Stone	10,054 (22,581)	16,800 (37,700)	cubic yards (tons)
Erosion Control Seeding	0.71	1.2	Acres
In-Stream Wood Material	65	109	Each
Fascines	586	980	Each

Data from *Basis of Design Office Report Sacramento River Bank Protection Project*, Appendix G – Quantities, DRAFT, Ayres Associates, June 2008. Embankment soil cover from Figure 6.1 of the Design Office Report.

Estimated days to place rip rap at the expected placement rate of 300 tons/hour - 48,200 tons (10,500 + 37,700)/ 3,000 tons per 10-hour day = 16 days. Using 22 days/month of construction one set of

placement equipment would be required to complete placement during the work window of July 1 – October 31. Expected acreage disturbed per day is ½ acre for Contract 1.

**Estimate of Material Quantities for Sacramento River Erosion Contracts 2 and 3**

The overall estimated length of the Sacramento River Erosion Control Contracts is 29,600 feet. Contracts 2 and 3 are assumed to evenly divide the length remaining after Contract 1 is completed. Contract 2 and 3 are further estimated to required two years each of approximately equal material handling and length for construction duration. Material quantities for Contracts 2 and 3 are calculated on an annual basis by increasing the Subreach 55.2L volumes as follows – total length of 29,600 feet minus Contract 1 length of 1,150 feet = 28,450 feet remaining. This is allocated to Contract 2 and 3 at half of the total length or 14,225 feet for each Contract, and further allocated to each year at half of the individual contract length (7,113 feet). Material quantity estimates are based on the original Subreach 55.2L design at 690 feet, and material quantities are increased by a factor of 10.3 (7,113 feet/690 feet). The estimated material quantities for each year of Contract 2 and 3 are shown in the table below.

**Estimated Material Quantities for Contracts 2 and 3 per Contract and Year**

Phase	Estimated Quantity (690 ft basis)	Estimated Quantity per Contract per Year (7,113 ft basis)	Unit
Clearing	0.81	8.3 (550)	Acres (cubic yards)
Embankment Material, 0.5' Soil Cover	660	6,803	cubic yards
Soil-Filled Quarry Stone	3,691 (6,274)	38,047 (64,672)	cubic yards (tons)
Quarry Stone	10,054 (22,581)	103,636 (232,764)	cubic yards (tons)
Erosion Control Seeding	0.71	7.3	Acres
In-Stream Wood Material	65	670	Each
Fascines	586	6,040	Each

Estimated days to place rip rap at the expected placement rate of 300 tons/hour - 297,436 tons (64,672+232,764)/ 3,000 tons per 10-hour day = 99 days. Using 22 days/month of construction (88 days per season) two sets of placement equipment would, conservatively, be required to complete placement during the work window of July 1 – October 31. However, the project team anticipates that up to 4 work sites may be active simultaneously.

Expected acreage disturbed per day is ½ acre per worksite or 2 acres/day for Contracts 2 and 3 based on 4 active sites.

Construction equipment for the Sacramento River Erosion Contract 1 was estimated based on the American River Contract 1. The estimate of needed equipment is:

**Sacramento River Contract 1 Assumed Equipment**

<b>Equipment</b>	<b>Grubbing/Clearing Phase (Number)</b>	<b>Grading/Excavation Phase (number)</b>
Cranes (basic)		2
Excavators (basic)	6	2
Generators	1	1
Graders		2
Off-Highway Trucks		2
Other Construction Equipment		1
Other General Industrial Equipment		2
Material Handling Equipment		1
Rubber Tired Dozers (basic)		2
Signal Boards	6	6
Skid Steer Loaders		3
Sweepers/Scrubbers (basic)	1	1
Tractors/Loaders/Backhoes		2
Trenchers		2

Sacramento River Erosion Contract 2 is assumed to use the same clearing/grubbing equipment used for American River Contract 1. Equipment for grading and excavation is estimated to be the same as American River Contract 1, but with enough sets of basic equipment to operate 4 sites simultaneously. Expected equipment for Sacramento River Erosion Contracts 2 and 3 is shown below:

**Sacramento River Contracts 2 and 3 Assumed Equipment**

<b>Equipment</b>	<b>Grubbing/Clearing Phase (Number)</b>	<b>Grading/Excavation Phase (number)</b>
Cranes (basic)		4
Excavators (basic)	6	4
Generators	1	1
Graders		2
Off-Highway Trucks		4
Other Construction Equipment		1
Other Construction and Industrial Equipment		2
Material Handling Equipment		1
Rubber Tired Dozers (basic)		4
Signal Boards	6	6
Skid Steer Loaders		4
Sweepers/Scrubbers (basic)	1	1
Loaders/Backhoes		2
Trenchers		2

The estimated quarterly distribution of emissions for the Sacramento River Contracts is shown below.

<b>Year</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
All Years			1/2	1/2

**Barge Emissions Calculations**  
**ARCF 2016**  
**Sacramento River Erosion Protection - Contract 1**

Basic Assumptions

CY per Barge <sup>1</sup>	909
CY Imported <sup>3</sup>	23,000
Miles/ hr per barge	5
Extra Empty Trips	2
Total Hrs per Day	10
lbs/ tons	2000
lbs/MT	2204.62

	San Rafael to Rio Vista (in SFNA)	San Rafael to Rio Vista (in BAAQMD)	Rio Vista to Sacramento Erosion
No. of Barge in Tow	4	4	1
Miles (one-way)	10.4	45	40
<b>Total Tow-Hours</b>	<b>17</b>	<b>75</b>	<b>218</b>

	PM10	PM2.5	NOx	ROG	CO	SO2	CO2	CH4	N2O	CO2e (MT)
Two-Engine Push Boat Emissions (lb/hr)	1.45	1.29	35.04	2.09	8.97	0.01	1417.70	0.06	0.01	1422.56
Tug Boat Emissions (lb/hr)	0.37	0.33	8.53	0.54	1.90	0.00	456.06	0.02	0.00	457.63
Total Emissions for Push Boat - In SFNA (Tons)	0.01	0.01	0.30	0.02	0.08	0.00	12.27	0.00	0.00	11.17
Total Emission for Push Boat- In BAAQMD (Tons) <sup>2</sup>	0.05	0.05	1.31	0.08	0.34	0.00	53.11	0.00	0.00	48.35
Total Emissions for Tug Boat - In SFNA (Tons)	0.04	0.04	0.93	0.06	0.21	0.00	49.80	0.00	0.00	45.33
<b>Sum of Emissions in SFNA (Tons)</b>	<b>0.05</b>	<b>0.05</b>	<b>1.24</b>	<b>0.08</b>	<b>0.29</b>	<b>0.00</b>	<b>62.08</b>	<b>0.00</b>	<b>0.00</b>	<b>56.5</b>

Notes: <sup>1</sup> <https://ihsmarkit.com/country-industry-forecasting.html?ID=106593483> , one barge has the capacity of 1500 tons and assuming 1.65 tons/cy of quarry rock

<sup>2</sup> BAAQMD NOx Threshold is 54 lb/day (Not relevant to General Conformity)

<sup>3</sup> Assuming All Contracts are 1.4 miles long and that 5.32L Reach is only 690 feet long; 10.7 increase in volume

**Barge Emissions Calculations**

**ARCF 2016**

**Sacramento River Erosion Protection - Contracts 2, 3**

**Basic Assumptions**

CY per Barge <sup>1</sup>	909
CY Imported	141,683 per year
Miles/ hr per barge	5
Extra Empty Trips	2
Total Hrs per Day	10
lbs/ tons	2000
lbs/MT	2204.62

	San Rafael to Rio Vista (in SFNA)	San Rafael to Rio Vista (in BAAQMD)	Rio Vista to Sacramento Erosion
No. of Barge in Tow	4	4	1
Miles (one-way)	10.4	45	40
<b>Total Tow-Hours</b>	<b>85</b>	<b>369</b>	<b>1263</b>

	PM10	PM2.5	NOx	ROG	CO	SO2	CO2	CH4	N2O	CO2e (MT)
Two-Engine Push Boat Emissions (lb/hr)	1.61	1.44	35.71	2.09	8.97	0.01	1417.70	0.06	0.01	1422.56
Tug Boat Emissions (lb/hr)	0.37	0.33	6.47	0.54	1.90	0.00	456.06	0.02	0.00	457.63
<b>Total Emissions for Push Boat - In SFNA (Tons)</b>	<b>0.07</b>	<b>0.06</b>	<b>1.52</b>	<b>0.09</b>	<b>0.38</b>	<b>0.00</b>	<b>60.40</b>	<b>0.00</b>	<b>0.00</b>	<b>54.98</b>
<b>Total Emission for Push Boat- In BAAQMD (Tons)<sup>2</sup></b>	<b>0.30</b>	<b>0.26</b>	<b>6.58</b>	<b>0.39</b>	<b>1.65</b>	<b>0.00</b>	<b>261.33</b>	<b>0.01</b>	<b>0.00</b>	<b>237.89</b>
<b>Total Emissions for Tug Boat - In SFNA (Tons)</b>	<b>0.23</b>	<b>0.21</b>	<b>4.09</b>	<b>0.34</b>	<b>1.20</b>	<b>0.00</b>	<b>287.96</b>	<b>0.01</b>	<b>0.00</b>	<b>262.13</b>
<b>Sum of Emissions in SFNA (Tons)</b>	<b>0.30</b>	<b>0.27</b>	<b>5.61</b>	<b>0.43</b>	<b>1.58</b>	<b>0.00</b>	<b>348.36</b>	<b>0.01</b>	<b>0.00</b>	<b>317.1</b>

Notes: <sup>1</sup> <https://ihsmarkit.com/country-industry-forecasting.html?ID=106593483> , one barge has the capacity of 1500 tons and assuming 1.65 tons/cy of quarry rock

<sup>2</sup> BAAQMD NOx Threshold is 54 lb/day (Not relevant to General Conformity)





# **Attachment 2**

Modeling Assumptions

Sacramento Weir

## Supporting Calculations for Material Volumes, Equipment, and Quarterly Allocation of Emissions – Sacramento Weir

### General Information

The Sacramento Weir contracts will construct a new levee section and demolish a temporary levee section near the Sacramento Weir, widen the weir, install a sheet pile cut-off wall with jet grouting, construct a fish passage channel, relocate a road on a constructed bridge section, construct a railroad bridge, place erosion protection and construct additional improvements in support of the primary construction activities. The table below shows the schedule used in the air quality analysis. The only variation anticipated to the schedule is the possibility of construction of the railroad (RR) bridge piles in 2021 instead of 2022. Case 1 is shown as X. Case 2 with the early RR bridge pile installation is shown as Case 2 with (X).

The expected construction schedule is April 15, 2021 to November 1, 2023 year around. Vegetation removal could occur in winter 2021.

### Sacramento Weir Anticipated Schedule for Analysis

	2020	2021	2022	2023
Construct new levee and concrete liner, sheet pile cut-off wall foundation, site prep, temporary road, realigned road, construct island		X		
Construct River Road and RR Bridges, passive weir		(X)	X	
Degrade levees, construct fish passage channel, place erosion protection				X

### General Construction Assumptions:

- Concrete, asphalt, aggregate, and pre-cast haul distances will be 30 miles
- Import soil haul distance will 30 miles
- Export soil will be disposed of on site with an assumed 0.6-mile haul distance
- Weir gates will be imported from out of state with an assumed haul distance of 200 miles within the Sacramento Federal Nonattainment Area (SFNA) air basin. Assume a total of 5 truckloads for delivery of the weir gates.
- Assume all haul trucks are 15 cubic yard end dumps.
- Assume River Road and Railroad Bridge decking is pre-cast members.
- Assume no degrading (excavation) for sheet piling.
- Assume weir, and north levee slope protection are poured in place concrete by pre-mix trucks (sourced at Rancho Cordova). Rebar will come on a flatbed truck. Assume 40,000 pounds (20 tons) rebar per load.
- Assume quarry stone will be delivered by barge. The expected shipping approach will use 4-ganged barges from the Bay Area to Rio Vista, anchor at Rio Vista and use smaller tugboats to deliver single barges to construction sites for offloading. Information on the expected horsepower of tugboat engines was provided by staff at Dutra Materials in San Rafael,

California. A push boat used to move materials from the quarry in San Rafael to Rio Vista on the Sacramento River typically has two engines at 800 horsepower each (1,600 horsepower total). Typical tugs for movement in the Sacramento River have a single engine at approximately 700 horsepower (Dennis Ferguson, personal communication).

At an air emissions review meeting on June 27, 2019, project material volumes were adjusted to the contemporaneous design as shown in the table below:

**Sacramento Weir Materials Summary Table**

<b>Year</b>	<b>Action</b>	<b>Material</b>	<b>Volume</b>	<b>Units</b>
<b>2021</b>	Import	Sheet Piles		
	Import	Soil	370,000	CY
	Import	Concrete	8,000	CY
	Import	Rip Rap (Quarry Rock)	25,000	CY
<b>2022</b>	Import	Asphalt	1,750	CY
	Import	Aggregate	15,000	CY
			1,500	CY
	Import	Concrete	13,700	CY
			7,600	CY
	Import	Rebar	686	Tons
			556	Tons
	Export	Soil	43,000	CY
	Import		3,000	CY
	Import		5,150	CY
	Import	Piles	216	Units
			200	Units
	Import	Pre-Cast Deck Panels Gates		
<b>2023</b>	Export	Soil	370,000	CY
			215,000	CY
			54,000	CY
	Import	Rip Rap (Quarry Rock)	75,000	CY
	Import	Aggregate	1,700	CY
			250	CY

At an air emissions review meeting on June 27, 2019, anticipated construction equipment was reviewed and adjusted as shown in the table below:

**Sacramento Weir Assumed Construction Equipment**

<b>Equipment</b>	<b>Grubbing/ Clearing 2021 (Number)</b>	<b>Grading/ Excavation 2021 (number)</b>	<b>Grading/ Excavation 2022 (number)</b>	<b>Grading/ Excavation 2023 (number)</b>
Bore/Drill Rigs		1		
Cement and Mortar Mixers		4	4	2
Cranes		4	4	2
Excavators	3	3	3	3
Generators	1	2	2	2
Graders			1	1
Off-Highway Trucks	5	5	5	5
Other Construction Equipment		1	1	1
Material Handling Equipment			1	1
Paving Equipment			1	1
Pumps		2	1	1
Rubber Tired Dozers			1	1
Scrapers			1	1
Surfacing Equipment			1	1
Sweepers/Scrubbers		1	1	1
Loaders/Backhoes		2	2	2
Trenchers		1	1	1

The estimated quarterly distribution of emissions for the Sacramento Weir construction is shown below.

<b>Year</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
2021	13%	32%	42%	13%
2022	25%	25%	25%	25%
2023	13%	32%	42%	13%

**Barge Emissions Calculations**

**ARCF 2016**

**Sacramento Weir - 2021**

Basic Assumptions

CY per Barge <sup>1</sup>	909
CY Imported	25,000
Miles/ hr per barge	5
Extra Empty Trips	2
Total Hrs per Day	10
lbs/ tons	2000
lbs/MT	2204.62

	San Rafael to Rio Vista (in SFNA)	San Rafael to Rio Vista (in BAAQMD)	Rio Vista to Sac Weir (in SFNA)
No. of Barge in Tow	4	4	1
Miles (one-way)	10.4	45	47
<b>Total Tow-Hours</b>	<b>18</b>	<b>80</b>	<b>277</b>

	PM10	PM2.5	NOx	ROG	CO	SO2	CO2	CH4	N2O	CO2e (MT)
Two-Engine Push Boat Emissions (lb/hr)	1.61	1.44	35.71	2.09	8.97	0.01	1417.70	0.06	0.01	1422.56
Tug Boat Emissions (lb/hr)	0.37	0.33	6.47	0.54	1.90	0.00	456.06	0.02	0.00	457.63
<b>Total Emissions for Push Boat - In SFNA (Tons)</b>	<b>0.01</b>	<b>0.01</b>	<b>0.33</b>	<b>0.02</b>	<b>0.08</b>	<b>0.00</b>	<b>13.09</b>	<b>0.00</b>	<b>0.00</b>	<b>11.91</b>
<b>Total Emission for Push Boat- In BAAQMD (Tons)<sup>2</sup></b>	<b>0.06</b>	<b>0.06</b>	<b>1.43</b>	<b>0.08</b>	<b>0.36</b>	<b>0.00</b>	<b>56.62</b>	<b>0.00</b>	<b>0.00</b>	<b>51.54</b>
<b>Total Emissions for Tug Boat - In SFNA (Tons)</b>	<b>0.05</b>	<b>0.05</b>	<b>0.90</b>	<b>0.08</b>	<b>0.26</b>	<b>0.00</b>	<b>63.23</b>	<b>0.00</b>	<b>0.00</b>	<b>57.56</b>
<b>Sum of Emissions in SFNA (Tons)</b>	<b>0.07</b>	<b>0.06</b>	<b>1.23</b>	<b>0.09</b>	<b>0.35</b>	<b>0.00</b>	<b>76.32</b>	<b>0.00</b>	<b>0.00</b>	<b>69.5</b>

Notes: <sup>1</sup> <https://ihsmarkit.com/country-industry-forecasting.html?ID=106593483> , one barge has the capacity of 1500 tons and assuming 1.65 tons/cy of quarry rock

<sup>2</sup> BAAQMD NOx Threshold is 54 lb/day (Not relevant to General Conformity)

**Barge Emissions Calculations**  
**ARCF 2016**  
**Sacramento Weir - 2023**

**Basic Assumptions**

CY per Barge <sup>1</sup>	909
CY Imported	75,000
Miles/ hr per barge	5
Extra Empty Trips	2
Total Hrs per Day	10
lbs/ tons	2000
lbs/MT	2204.62

	San Rafael to Rio Vista (in SFNA)	San Rafael to Rio Vista (in BAAQMD)	Rio Vista to Sac Weir (in SFNA)
No. of Barge in Tow	4	4	1
Miles (one-way)	10.4	45	47
<b>Total Tow-Hours</b>	<b>47</b>	<b>204</b>	<b>794</b>

	PM10	PM2.5	NOx	ROG	CO	SO2	CO2	CH4	N2O	CO2e (MT)
Two-Engine Push Boat Emissions (lb/hr)	1.61	1.44	35.71	2.09	8.97	0.01	1417.70	0.06	0.01	1422.56
Tug Boat Emissions (lb/hr)	0.37	0.33	6.47	0.54	1.90	0.00	456.06	0.02	0.00	457.63
<b>Total Emissions for Push Boat - In SFNA (Tons)</b>	<b>0.04</b>	<b>0.03</b>	<b>0.84</b>	<b>0.05</b>	<b>0.21</b>	<b>0.00</b>	<b>33.36</b>	<b>0.00</b>	<b>0.00</b>	<b>30.37</b>
<b>Total Emission for Push Boat- In BAAQMD (Tons)<sup>2</sup></b>	<b>0.16</b>	<b>0.15</b>	<b>3.64</b>	<b>0.21</b>	<b>0.91</b>	<b>0.00</b>	<b>144.34</b>	<b>0.01</b>	<b>0.00</b>	<b>131.39</b>
<b>Total Emissions for Tug Boat - In SFNA (Tons)</b>	<b>0.15</b>	<b>0.13</b>	<b>2.57</b>	<b>0.22</b>	<b>0.76</b>	<b>0.00</b>	<b>181.12</b>	<b>0.01</b>	<b>0.00</b>	<b>164.88</b>
<b>Sum of Emissions in SFNA (Tons)</b>	<b>0.19</b>	<b>0.17</b>	<b>3.41</b>	<b>0.27</b>	<b>0.97</b>	<b>0.00</b>	<b>214.48</b>	<b>0.01</b>	<b>0.00</b>	<b>195.2</b>

Notes: <sup>1</sup> <https://ihsmarkit.com/country-industry-forecasting.html?ID=106593483> , one barge has the capacity of 1500 tons and assuming 1.65 tons/cy of quarry rock

<sup>2</sup> BAAQMD NOx Threshold is 54 lb/day (Not relevant to General Conformity)





# **Attachment 3**

Modeling Assumptions

Seepage and Stability

# Supporting Calculations for Material Volumes, Equipment, and Quarterly Allocation of Emissions – Seepage and Stability

## General Information

The Seepage and Stability contracts will complete levee improvements primarily along the left bank (looking downstream) of the Sacramento River from the confluence with the American River through the pocket areas of Sacramento. Some improvements are also included along the North Area Streams, and on Magpie Creek. Improvement types will include cut-off walls (either soil bentonite or deep mix method [DMM]), seepage and stability berms, and relief wells. At the Magpie Creek Diversion Canal improvements will include raising the left bank levee, constructing a new levee and maintenance road along the west side of Raley Boulevard, adding a new maintenance road between Vinci Avenue and Dry Creek Road, adding erosion protection to the channel, and installing floodgates and culverts. Most of the Seepage and Stability contracts are relatively early in the design process and detailed information is not yet available.

To estimate air pollutant emissions, data from a 65% design cost estimate for the Sacramento River East Levees (SREL) prepared by GEI Consultants in 2015 and 2016 were used. Material volumes and construction equipment estimates from the 65% cost estimate were used as the basis to estimate material volumes and construction equipment for the proposed seepage and stability contracts levee improvements. The original design cost estimate, material volume estimates, and construction equipment estimates are included in this section. Calculations applying the previous estimates to the new contract configurations on a linear foot of levee basis are also included along with the anticipated allocation of reaches to contracts.

The expected construction schedule is April 15 to October 31. Mobilization is assumed to start as early as April 1. The currently anticipated construction schedule for the Seepage and Stability Contracts is shown in the table below:

<b>Seepage and Stability – Anticipated Schedule for Analysis</b>					
	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
SREL					
Contract 1		X			
Contract 2			X		
Contract 3				X	
Contract 4 (Kleinfelder reaches)					X
Reach D	X				
Magpie Creek				X	

### General Construction Assumptions:

- Assume all haul truck are 15 cubic yard end dumps.
- Assume an average of 100 feet of cut-off wall can be completed in one day.
- Additional assumptions are included in the attached calculation sheets.

The estimated quarterly distribution of emissions for the Seepage and Stability contracts is shown below. Quarterly allocations assume construction in April through October only. For berms and wells, the landside construction can slip to quarter 3 (Q3) and quarter 4 (Q4). For cutoff walls, the full construction season is needed and must be completed by October 31.

**Berm and Wells Quarterly Distribution of Emissions**

Year	Q2	Q3	Q4
2020	25%	37.5%	37.5%
2021	25%	37.5%	37.5%
2022	25%	37.5%	37.5%

**Cutoff Wall Quarterly Distribution of Emissions**

Year	Q2	Q3	Q4
2020	43%	43%	14%
2021	43%	43%	14%

Included in the following pages:

- 65% Design Cost Estimate
- Calculations supporting the air quality analysis for the 65% Design
- Calculations using the 65% Design as the basis to allocate materials and equipment to the currently anticipated design for Seepage and Stability (excluding Magpie Creek)
- Calculations using the estimated equipment from the 65% Design to estimate equipment for the currently anticipated design for Seepage and Stability

Bid Schedule A - SAFCA Sacramento River East Levee <i>Landside Berms and Drains and Waterside Blanket</i> (STA 1080+00 to 1117+00, STA 1249+50 to 1253+00, STA 1533+00 to 1536+50)								
Line Item No.	Item Description	Estimated Quantity	Unit	Unit Price (\$)	Total Price (\$)	Unit Price (\$) - base	Total Price (\$) - base	Notes
1	Mobilization and Demobilization	1	LS	\$111,550.00	\$111,600	\$97,000.00	\$97,000	5% of other costs
2	Traffic Control	1	LS	\$111,550.00	\$111,600	\$97,000.00	\$97,000	5% of other costs
3	Storm Water Pollution Control	1	LS	\$111,550.00	\$111,600	\$97,000.00	\$97,000	5% of other costs
4	Demolition (STA 1080+00 to 1117+00, STA 1249+50 to 1253+00, STA 1533+00 to 1536+50)	1	LS	\$57,500.00	\$57,500	\$50,000.00	\$50,000	Reach 2 pole and fence demo. Bumped up to \$50k after comments from Dwanket
5	Remove Bike Path	100	SY	\$17.25	\$1,800	\$15.00	\$1,500	
6	Remove Aggregate Surfacing	340	SY	\$9.20	\$3,300	\$8.00	\$2,800	\$7.90/SY from Southport
9	Remove Utility Crossings (STA 1080+00 to 1117+00, STA 1249+50 to 1253+00, STA 1533+00 to 1536+50)	1	LS	\$247,250.00	\$247,300	\$215,000.00	\$215,000	
10	Clearing and Grubbing **	4.5	AC	\$6,900.00	\$31,100	\$6,000	\$27,000	Includes tree removal
11	Topsoil Stripping **	3,700	CY	\$5.75	\$21,300	\$5.00	\$18,500	
12	Levee Excavation And Disposal (Offsite)	8,500	CY	\$13.80	\$117,300	\$12.00	\$102,000	Clean exc only, \$6.75 haul, \$5 excavate/load
13	Levee Excavation And Disposal (Landfill)	11,300	CY	\$46.00	\$519,800	\$40.00	\$452,000	Contaminated soils only. Equal to the total exc for Reaches 2, 5, and 6. \$11.25 haul, \$5 excavate/load, Cost increased to \$40 to allow for disposal fee at landfill.
14	Drainage Layer	7,700	CY	\$57.50	\$442,800	\$50.00	\$385,000	
15	Levee Embankment Fill (Soil Type 1)	600	CY	\$28.75	\$17,300	\$25.00	\$15,000	\$10 place/compact, \$9.25 haul, \$5 excavate/load
16	Levee Embankment Fill (Soil Type 2)	22,300	CY	\$28.75	\$641,200	\$25.00	\$557,500	\$10 place/compact, \$9.25 haul, \$5 excavate/load
17	Class 2 Aggregate Base	120	TN	\$46.00	\$5,600	\$40.00	\$4,800	
18	Asphalt Concrete Paving	20	TN	\$287.50	\$5,800	\$250.00	\$5,000	
19	Remove and Replace Existing Sign	1	EA	\$293.25	\$400	\$255.00	\$300	Reach 2
20	Remove and Replace Catwalk	1	EA	\$3,450.00	\$3,500	\$3,000.00	\$3,000	Reach 4, for waterside fill
21	Remove and Replace Utility Pole	1	EA	\$23,000.00	\$23,000	\$20,000.00	\$20,000	Reach 11
22	Remove and Raise Storm Drain Manhole	1	EA	\$14,375.00	\$14,400	\$12,500.00	\$12,500	Reach 11
23	Install Chain Link Fence	1,370	LF	\$34.50	\$47,300	\$30.00	\$41,100	New fences in Reach 2 and Reach 5
24	Erosion Control Seeding	4.5	AC	\$4,600.00	\$20,700	\$4,000.00	\$18,000	
25	Allowance for Unlisted Items	1	LS	\$384,100.00	\$384,100	\$334,000.00	\$334,000	20% of other costs
<b>SUBTOTAL SCHEDULE A:</b>					<b>\$2,940,300</b>		<b>\$2,556,000</b>	

\* See notes following Bid Schedule Summary Table.

<b>Bid Schedule B - SAFCA Sacramento River East Levee SB Open Trench Cutoff Wall and SCB DMM Cutoff Wall</b> (STA 1116+00 to 1125+50, STA 1199+00 to 1207+75, STA 1285+00 to 1310+00, STA 1336+00 to 1407+50, STA 1447+00 to 1505+00, STA 1547+50 to 1570+00, STA 1600+00 to 1640+00)								
Line Item No.	Item Description	Estimated Quantity	Unit	Unit Price (\$)	Total Price (\$)	Unit Price (\$)	Total Price (\$)	Notes
1	Mobilization and Demobilization	1	LS	\$2,665,700.00	\$2,665,700	\$2,318,000.00	\$2,318,000	10% of other costs
2	Traffic Control	1	LS	\$1,332,850.00	\$1,332,900	\$1,159,000.00	\$1,159,000	5% of other costs
3	Storm Water Pollution Control	1	LS	\$1,332,850.00	\$1,332,900	\$1,159,000.00	\$1,159,000	5% of other costs
4	Demolition (STA 1116+00 to 1125+50, STA 1199+00 to 1207+75, STA 1285+00 to 1310+00, STA 1336+00 to 1407+50, STA 1447+00 to 1505+00, STA 1547+50 to 1570+00, STA 1600+00 to 1640+00)	1	LS	\$115,000.00	\$115,000	\$100,000.00	\$100,000	Bumped up to 100k after comments from Dan Wanket
5	Remove Bike Path	13,870	SY	\$17.25	\$239,400	\$15.00	\$208,100	
6	Remove Aggregate Surfacing	38,260	SY	\$9.20	\$352,100	\$8.00	\$306,100	\$7.90/SY from Southport
7	Remove Utility Crossings (STA 1116+00 to 1125+50, STA 1199+00 to 1207+75, STA 1285+00 to 1310+00, STA 1336+00 to 1407+50, STA 1447+00 to 1505+00, STA 1547+50 to 1570+00, STA 1600+00 to 1640+00)	1	LS	\$189,750.00	\$189,800	\$165,000.00	\$165,000	
8	Abandon Piezometers	6	EA	\$5,750.00	\$34,500	\$5,000.00	\$30,000	1354+70, 1462+00, 1551+20
9	Provide Pump Station 3 Bypass	1	LS	\$57,500.00	\$57,500	\$50,000.00	\$50,000	Sewer line at Miller Park
10	Clearing and Grubbing **	18.1	AC	\$6,900.00	\$124,900	\$6,000	\$108,600	Includes tree removal
11	Topsoil Stripping **	14,700	CY	\$5.75	\$84,600	\$5.00	\$73,500	
12	Levee Excavation (Levee Degrade and Cutoff Trench)	196,000	CY	\$16.10	\$3,155,600	\$14.00	\$2,744,000	\$8.75 haul, \$5 excavate/load
13	Cutoff Wall, Open Trench Soil-Bentonite (SB) [S]	1,232,000	SF	\$8.05	\$9,917,600	\$7.00	\$8,624,000	
14	Cutoff Wall, Mix-In-Place Soil-Cement-Bentonite (SCB) [S]	114,000	SF	\$26.45	\$3,015,300	\$23.00	\$2,622,000	
15	Levee Embankment Fill (Soil Type 1)	215,000	CY	\$34.50	\$7,417,500	\$30.00	\$6,450,000	\$10 place/compact, \$14.10 haul, \$5 excavate/load
16	Class 2 Aggregate Base	14,080	TN	\$46.00	\$647,700	\$40.00	\$563,200	
17	Asphalt Concrete Paving	2,350	TN	\$287.50	\$675,700	\$250.00	\$587,500	
18	Replace - 24 Inch Pipe - Sump 63	1	LS	\$218,500.00	\$218,500	\$190,000.00	\$190,000	
19	Replace - 2 Inch Electrical Conduit - STA 1460+24	1	LS	\$5,750.00	\$5,800	\$5,000.00	\$5,000	
20	Replace - 2 Inch Water Pipe, 1.5 Inch Sewer Pipe, 1 Inch Electrical Conduit - STA 1460+80 To STA 1460+85	1	LS	\$40,250.00	\$40,300	\$35,000.00	\$35,000	
21	Remove and Replace Utility Pole	8	EA	\$23,000.00	\$184,000	\$20,000.00	\$160,000	Miller Park, G-139, 1550+50, 1612+20
22	Remove and Replace Existing Storm Drain	1	EA	\$5,750.00	\$5,800	\$5,000.00	\$5,000	STA 1120+00
23	Remove and Replace Recycling Box	1	EA	\$1,150.00	\$1,200	\$1,000.00	\$1,000	STA 1123+20
24	Remove and Replace Public Gate	7	EA	\$4,600.00	\$32,200	\$4,000.00	\$28,000	STA 1347+00, 1360+64, 1389+00, 1463+62, 1549+64, 1554+70, 1633+65
25	Remove and Replace Private Gate	2	EA	\$4,600.00	\$9,200	\$4,000.00	\$8,000	1380+36, 1503+40
26	Remove and Replace Chain Link Fence	430	LF	\$46.00	\$19,800	\$40.00	\$17,200	STA 1347+00, 1360+64, 1380+36, 1389+00, 1463+62, 1503+40
27	Remove and Replace Sign	4	EA	\$293.25	\$1,300	\$255.00	\$1,100	1447+92, 1551+30, 1615+26, 1632+90. Cost from Southport

28	Remove and Replace Chain Post Fence	760	LF	\$34.50	\$26,300	\$30.00	\$22,800	G-148, 149
29	Remove and Replace Concrete Walkway	1	LS	\$2,300.00	\$2,300	\$2,000.00	\$2,000	1553+30
30	Erosion Control Seeding	18.1	AC	\$4,600.00	\$83,300	\$4,000.00	\$72,400	
31	Allowance for Unlisted Items	1	LS	\$4,798,950.00	\$4,799,000	\$4,173,000.00	\$4,173,000	20% of other costs
<b>SUBTOTAL SCHEDULE B:</b>							<b>\$31,988,500</b>	

\* See notes following Bid Schedule Summary Table.

**Bid Schedule C - SAFCA Sacramento River East Levee Relief Wells**  
 (STA 1095+50 to 1096+50, STA 1249+00 to 1256+00, STA 1424+00 to 1447+00, STA 1517+00 to 1548+00)

Line Item No.	Item Description	Estimated Quantity	Unit	Unit Price (\$)	Total Price (\$)	Unit Price (\$)	Total Price (\$)	Notes
1	Mobilization and Demobilization	1	LS	\$309,350.00	\$309,400	\$269,000.00	\$269,000	
2	Traffic Control	1	LS	\$309,350.00	\$309,400	\$269,000.00	\$269,000	
3	Storm Water Pollution Control	1	LS	\$309,350.00	\$309,400	\$269,000.00	\$269,000	
4	Demolition (STA 1095+50 to 1096+50, STA 1249+00 to 1256+00, STA 1424+00 to 1447+00, STA 1517+00 to 1548+00)	1	LS	\$57,500.00	\$57,500	\$50,000.00	\$50,000	Placeholder cost
5	Remove Roadway	2,690	SY	\$9.20	\$24,900	\$8.00	\$21,600	\$7.90/SY from Southport
6	Clearing and Grubbing **	0.2	AC	\$6,900.00	\$1,400	\$6,000	\$1,200	Unpaved areas only
7	Topsoil Stripping **	200	CY	\$5.75	\$1,200	\$5.00	\$1,000	Unpaved areas only
8	Relief Well (Less Than 90 Foot Depth)	30	EA	\$63,250.00	\$1,897,500	\$55,000.00	\$1,650,000	Reach 4: 2, Reach 11: 6, Reach 20: 13, Reach 24: 9
9	Relief Well (90 Foot Or Greater Depth)	16	EA	\$86,250.00	\$1,380,000	\$75,000.00	\$1,200,000	Reach 4: 2, Reach 22: 13, Reach 24: 1
10	8-inch Double Wall HDPE Pipe	520	LF	\$230.00	\$119,600	\$200.00	\$104,000	All RW Reaches
11	10-inch Double Wall HDPE Pipe	60	LF	\$258.75	\$15,600	\$225.00	\$13,500	Reach 11
12	12-inch Double Wall HDPE Pipe	1,510	LF	\$287.50	\$434,200	\$250.00	\$377,500	Reach 4, 11, 20, 24
13	15-inch Double Wall HDPE Pipe	500	LF	\$333.50	\$166,800	\$290.00	\$145,000	Reach 4, 11
14	18-inch Double Wall HDPE Pipe	3,390	LF	\$373.75	\$1,267,100	\$325.00	\$1,101,800	Reach 11, 20, 22, 24
15	24-inch Double Wall HDPE Pipe	1,250	LF	\$431.25	\$539,200	\$375.00	\$468,800	Reach 22
16	12-inch Discharge Outlet To Sump	1	EA	\$17,250.00	\$17,300	\$15,000.00	\$15,000	Reach 20
17	18-inch Discharge Outlet To Sump	3	EA	\$23,000.00	\$69,000	\$20,000.00	\$60,000	Reach 11, 20, 24
18	24-inch Discharge Outlet To Sump	1	EA	\$23,000.00	\$23,000	\$20,000.00	\$20,000	Reach 22
19	Class 2 Aggregate Base	730	TN	\$46.00	\$33,600	\$40.00	\$29,200	
20	Asphalt Concrete Paving	460	TN	\$287.50	\$132,300	\$250.00	\$115,000	
21	Erosion Control Seeding	0.2	AC	\$4,600.00	\$1,000	\$4,000.00	\$800	Unpaved areas only
22	Allowance for Unlisted Items	1	LS	\$1,067,200.00	\$1,067,200	\$928,000.00	\$928,000	20% of other costs
<b>SUBTOTAL SCHEDULE C:</b>							<b>\$7,109,400</b>	

\* See notes following Bid Schedule Summary Table.

<b>Bid Schedule D - SAFCA Sacramento River East Levee <i>Landside Slope Flattening and Demolition</i></b> <b>(STA 1321+50 to 1323+00)</b>								
Line Item No.	Item Description	Estimated Quantity	Unit	Unit Price (\$)	Total Price (\$)	Unit Price (\$)	Total Price (\$)	Notes
1	Mobilization and Demobilization	1	LS	\$6,900.00	\$6,900	\$6,000.00	\$6,000	5% of other costs
2	Traffic Control	1	LS	\$6,900.00	\$6,900	\$6,000.00	\$6,000	5% of other costs
3	Storm Water Pollution Control	1	LS	\$6,900.00	\$6,900	\$6,000.00	\$6,000	5% of other costs
4	Demolition (STA 1321+50 to 1323+00)	1	LS	\$115,000.00	\$115,000	\$100,000.00	\$100,000	
5	Clearing and Grubbing **	0.3	AC	\$6,900.00	\$2,100	\$6,000	\$1,800	Unpaved areas only
6	Topsoil Stripping **	300	CY	\$5.75	\$1,800	\$5.00	\$1,500	Unpaved areas only
7	Levee Embankment Fill (Soil Type 2)	500	CY	\$34.50	\$17,300	\$30.00	\$15,000	C-125
8	Erosion Control Seeding	0.3	AC	\$4,600.00	\$1,400	\$4,000.00	\$1,200	Unpaved areas only
9	Allowance for Unlisted Items	1	LS	\$23,805.00	\$23,900	\$20,700.00	\$20,700	
<b>SUBTOTAL SCHEDULE D:</b>							<b>\$182,200</b>	<b>\$158,200</b>

\* See notes following Bid Schedule Summary Table.

<b>Bid Schedule E - SAFCA Sacramento River East Levee <i>Piezometers</i></b> <b>(STA 1080+00 to 1645+00)</b>								
Line Item No.	Item Description	Estimated Quantity	Unit	Unit Price (\$)	Total Price (\$)	Unit Price (\$)	Total Price (\$)	Notes
1	Mobilization and Demobilization	1	LS	\$15,870.00	\$15,900	\$13,800.00	\$13,800	
2	Traffic Control	1	LS	\$15,870.00	\$15,900	\$13,800.00	\$13,800	
3	Storm Water Pollution Control	1	LS	\$15,870.00	\$15,900	\$13,800.00	\$13,800	
4	Abandon Piezometers	8	EA	\$5,750.00	\$46,000	\$5,000.00	\$40,000	14 total, 6 are within levee degrade limits, included in bid schedule B.
5	Piezometer (Open Standpipe)	16	EA	\$5,980.00	\$95,700	\$5,200.00	\$83,200	
6	Piezometer (Vibrating Wire)	23	EA	\$7,130.00	\$164,000	\$6,200.00	\$142,600	Vertical linear feet of piezometer installed.
7	Data Logger (Open Standpipe - Optional)	1	EA	\$1,725.00	\$1,800	\$1,500.00	\$1,500	
8	Data Logger (Vibrating Wire - Optional)	23	EA	\$1,150.00	\$26,500	\$1,000.00	\$23,000	
9	Handheld Readout Device (Vibrating Wire - Optional)	16	EA	\$1,725.00	\$27,600	\$1,500.00	\$24,000	
10	Allowance for Unlisted Items	1	LS	\$61,410.00	\$61,500	\$53,400.00	\$53,400	
<b>SUBTOTAL SCHEDULE E:</b>							<b>\$470,800</b>	<b>\$409,100</b>

\* See notes following Bid Schedule Summary Table.

<b>Bid Schedule F - SAFCA Sacramento River East Levee Erosion Repair</b> <b>(STA 1080+00 to 1645+00)</b>									
Line Item No.	Item Description	Estimated Quantity	Unit	Unit Price (\$)	Total Price (\$)	Unit Price (\$)	Total Price (\$)	Notes	
1	Mobilization and Demobilization	1	LS	\$668,265.00	\$668,300	\$581,100.00	\$581,100		
2	Traffic Control	1	LS	\$668,265.00	\$668,300	\$581,100.00	\$581,100		
3	Storm Water Pollution Control	1	LS	\$668,265.00	\$668,300	\$581,100.00	\$581,100		
4	Clearing and Grubbing **	1.8	AC	\$6,900.00	\$12,200	\$6,000	\$10,600	assumed same as erosion seeding, not included in CBEC estimate	
5	Topsoil Stripping **	900	CY	\$5.75	\$5,200	\$5.00	\$4,500	assumed same as erosion seeding, not included in CBEC estimate	
6	Quarry Rock	103,686	TN	\$86.25	\$8,943,000	\$75.00	\$7,776,500	1.65tn/cy.	
7	Graded Stone C	14,416	TN	\$86.25	\$1,243,500	\$75.00	\$1,081,300	1.65tn/cy.	
8	Filter Rock	6,100	CY	\$57.50	\$350,800	\$50.00	\$305,000	3600lbs/cy. Used agg base unit cost and density	
9	Sand	2,030	CY	\$57.50	\$116,800	\$50.00	\$101,500		
10	Soil	6,750	CY	\$28.75	\$194,200	\$25.00	\$168,800		
11	Gravel Filter	2,736	TN	\$57.50	\$157,400	\$50.00	\$136,800	3600lbs/cy. Used agg base unit cost and density	
12	Coir Fabric	4,260	SY	\$6.20	\$26,500	\$5.39	\$23,000		
13	Beaver Barrier	3,530	CY	\$13.80	\$48,800	\$12.00	\$42,400		
14	Tules (Ballast Bucket)	1,716	EA	\$17.25	\$29,700	\$15.00	\$25,800		
15	Live Siltation Willows	3,585	LF	\$34.50	\$123,800	\$30.00	\$107,600		
16	Willow Pole Cuttings	16,395	EA	\$11.50	\$188,600	\$10.00	\$164,000		
17	Container Plantings	8,501	EA	\$28.75	\$244,500	\$25.00	\$212,600		
18	Erosion Control Seeding	2	AC	\$5,750.00	\$10,200	\$5,000.00	\$8,800		
19	Instream Woody Material	388	EA	\$4,301.00	\$1,668,900	\$3,740.00	\$1,451,200		
20	Allowance for Unlisted Items	1	LS	\$2,305,290.00	\$2,305,300	\$2,004,600.00	\$2,004,600		
<b>SUBTOTAL SCHEDULE F:</b>							<b>\$17,674,300</b>	<b>\$15,368,300</b>	

\* See notes following Bid Schedule Summary Table.



**BID SCHEDULE SUMMARY:**

	<b>SUBTOTAL SCHEDULE A:</b>	<b>\$2,940,300</b>	<b>\$2,556,000</b>
	<b>SUBTOTAL SCHEDULE B:</b>	<b>\$36,787,700</b>	<b>\$31,988,500</b>
	<b>SUBTOTAL SCHEDULE C:</b>	<b>\$8,176,600</b>	<b>\$7,109,400</b>
	<b>SUBTOTAL SCHEDULE D:</b>	<b>\$182,200</b>	<b>\$158,200</b>
	<b>SUBTOTAL SCHEDULE E:</b>	<b>\$470,800</b>	<b>\$409,100</b>
	<b>SUBTOTAL SCHEDULE F:</b>	<b>\$17,674,300</b>	<b>\$15,368,300</b>
	<b>TOTAL (SCHEDULES A+B+C+D+E+F):</b>	<b>\$66,231,900</b>	<b>\$57,589,500</b>

**CONSTRUCTION SUMMARY AND COST RECONCILIATION:**

<b>Work Item</b>	<b>65% Design Estimate</b>	<b>February 2016 Estimate</b>	<b>65% Design - base</b>
Levee Remediation (Schedules A thru E)	\$48,557,600	\$49,532,000	\$42,221,200
Erosion Repair (Schedule F)	\$17,674,300	\$11,554,000	\$15,368,300
Allowance for Penetrations Requiring Remediation Outside Levee Remediation Reaches (not included above)	\$2,200,000	\$2,200,000	\$2,200,000
<b>Total Estimated Cost</b>	<b>\$68,431,900</b>	<b>\$63,286,000</b>	<b>\$59,789,500</b>

Notes:

- 1 Cost Estimate is based on July 2016 65% design drawings
- 2 All quantities are in-place quantities.
- 3 This estimate does not include potential costs to address encroachments, or vegetation removal outside that required for levee remediation
- 4 Construction contingency is assumed to be included separately in the overall program contingency and is not included here

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Material Volume Data from 2016 Sacramento River East Levee Project Allocated to WRDA (ARCF) 2016 Seepage and Stability Contracts Configuration

Phases	Type 1 and Type 2 Fill from Borrow Site (cy)	To/From Stockpile (cy)	From Offsite Quarry (Agg/Asph, cy)	To Offsite Disposal (cy)	Misc Materials (cy)	Duration (months)*	Duration (Months) only for Cutoff Wall Construction	Acres*	Key Assumptions
Data Reference - from 2016 work for NEPA analysis, Opinion of Probable Construction Cost - 65% Design Bid Schedule and Line	A15, 16, D7 B15	A 11, 12, D6 B 11, 12 C 7 F 5, 8, 9, 11	A 14, 17, 18 B 16, 17 C 19, 20 F 6, 7	A5, 6, 13 X B 5, 6 X C5	Input from engineers				
Mobilization					1,500	1	4		25% demobilization/remobilization between seasons
Vegetation/Encroachment Removal					1,500	4	4		vegetation/debris disposal to offsite
Berms, Toe Drains, Slope Flattening	23,400	12,500	7,780	11,400		4	0	4.8	
Utility Relocation						2.3	0		debris removal
Levee Degrade for Cut-Off Wall		210,700		8,710		3	3	18.1	
Utility Relocation						1.7	1.7		debris removal
Cut-Off Wall Construction					7,250	5	5		6000 cy bentonite (2% dry weight in mix and slurry), 1260 cy cement (10% mix)
Levee Reconstruction	215,000		9,130			4	4		agg/asph assumed the same as 2014 analysis in lieu of Bid B17
Relief Wells		200	670	450	750	6	0	0.2	materials deliveries, pipe, etc
Site Restoration					750	3	3		
Demobilization						2	2		

Do not have original documentation of assumptions.

[Txt Blue - GEI AQ Assumptions](#)

\*Duration comes from the original SREL work - SRELConstruction Assumptions2016.xls

\*Acres from the Bid Schedule referenced.

Original Quantity Assumptions for SREL in 2016 from D Sutton/GEI (Sacramento River East Levee Project Admin Draft EA, Table 2-2):

Cut-Off Walls: 23,535 linear feet  
Berms: 2,288 linear feet  
Relief Wells: 42 wells

**Assumptions:**

Debris assumptions for asphalt removal volumes - assume 6-in depth 0.167 yd  
X - Allocate previous utility relocation by ratio of total cost Schedule A (\$247250 - 57%) to Schedule B (\$189750 - 43%)  
From Bid Schedule, assume for quarry rock = 1.65 ton/cy  
From Bid Schedule, assume for filter rock and aggregate = 1.8 tons/cy (3600 lbs/cy)  
Asphalt concrete delivered in 20 ton loads = 1.96 tons/cy

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Sacramento River Seepage and Stability Contracts - construction assumptions and quantities

Year	Contract <sup>1</sup>	Reach <sup>1</sup>	Acres Disturbed	Cut-Off Wall, Bentonite, Trench (Linear FT) <sup>1</sup>	Cut-Off Wall, DMM (Linear FT) <sup>1</sup>	Berm (feet) <sup>1</sup>	Other Construction <sup>1</sup>	Linear FT CO Wall Total	% Total Linear Feet of CO Wall	% Total Linear Feet of DMM	Total % of Cutoff Wall	Anticipated COW Schedule from Client (months)	Calculated COW Schedule based on 100 linear feet/day (Months)	Notes
2020	1	4-1	1.5				4 relief wells, water side levee reconstruction (blanket) berm	14,000			34%	7	6.4	Reach Length is 225 ft
	1	4-2	3.5			525								Reach Length 380 ft (corrected)
	1	6-2	2.0	380					1%					
	1	7-1	2.5	570					1%					
	1	7-2	3			448	seepage berm							
	1	9	5	700					2%					
	1	12	6.5		860						2%			
	1	13a	7		930						2%			
	1	24	6.1		1,560						4%			
	1	25	1.7	450					1%					
	1	26	6.0	1,550					4%					
	1	L2	11.6	3,000					7%					
1	27	15.5	4,000					10%						
2021	2	5	2			600	partial berm and berm and jet grout	11,670			29%	7	5.3	
	2	6-1	1			700								
	2	8	10	1,400					3%					
	2	13b	7.5	920					2%					
	2	14	19	2,600					6%					
	2	15	16.7	3,700					9%					
	2	16	8.3	1,850					5%					
2	21-2	7.5	1,200					3%						
2022	3	11-2	1	570			relief wells, joint fix, or cut off wall	12,215	1%		30%	7	5.6	
	3	11-3	0	665					2%					
	3	17	4	1,600					4%					
	3	20	10.5	5,200			possible relief wells		13%					
	3	21-1	8	2,850					7%					
	3	22	4.5	1,330					3%					
2023	4		19	2,700				2,700	7%		6.7%	7	1.2	Contract 4 is new reaches (Kleinfelder and North Area Streams)
	4		9			1,300	levee raise							
Total:			200	37,235	3,350	3,573		40,585	92%	8%	100%	28	18	
Total Linear Feet Cut-Off Walls (BT+DDM) and Berms = 44,158														

- 1) Allocation of reaches to Contracts and Reach length information from USACE (from Hans during meeting with Anne Baker/USACE 4/11/2019), and team meeting 6/27/2019 for Kleinfelder and NAS
- 2) Acres disturbed estimated either - by GEI engineering staff, or - by allocating total acres provided by Anne Baker/USACE by reach length, or - by using a calculate acres/linear foot based on Reach 9 (5 acres/700 linear feet = 0.0071 acre/LF)

**Txt Red - GEI Engineer Assumptions**

Txt Green - Calc From Anne's Doc

Txt Blue - Calc based on acre/LF

- 3) Treat all cut off walls as soil bentonite for worst case assumption, allocate total previous volumes from SREL based on percentage of linear feet.
- 4) New Berm Split - to allocate 2016 SREL estimates, need to include Reach 2 (2019 construction season)

Reach	Berm Length (ft)	% of Total
2	450	11%
4-2	525	13%
7-2	448	11%
5	600	15%
6-1	700	17%
Cnt 4	1300	32%
4023		32%

**Contract 1**  
24%

**Contract 2**  
32%

**Contract 4**  
32%

- 5) Acres disturbed per year and months for COW construction based on rule of thumb for production rate (100 LF/day)

Year	Acres Disturbed	% Total Acres Disturbed per Year	Acres Disturbed for Berms and Wells	Linear Feet for Berms/Wells	Linear Miles for Berms/Wells	Acres Disturbed for COW	Linear Feet for COW	Linear Miles for COW	Days to Construct COW at 100 LF per Day	Months to Construct COW (@ 22 Days /Mo)
2020	72	36%	8	973	0.18	64	14,000	2.65	140	6.4
2021	72	36%	8	1,300	0.25	69	11,670	2.21	117	5.3
2022	28	14%	0	-	-	28	12,215	2.31	122	5.6
2023	29	14%	9	1,300	0.25	19	2,700	0.51	27	1.2

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ARCF 2016  
General Conformity Analysis

Data from Previous SREL Analysis Allocated to Sacramento S\_S Contracts by Year  
Data Source - Opinion of Probable Construction Cost - 65% Design

Phases	Import			Import			Import			Export			Import		
	Type 1 and Type 2 Fill from Borrow Site (cy) (from SAC S_S Adjusted)	Trip Distance (miles)	Round Trips (miles)	To/From Stockpile (cy) (from SAC S_S Adjusted)	Trip Distance (miles)	Round Trips (miles)	From Offsite Quarry (Agg/Asph, cy) (from SAC S_S Adjusted)	Trip Distance (miles)	Round Trips (miles)	To Offsite Disposal (cy) (from SAC S_S Adjusted)	Trip Distance (miles)	Round Trips (miles)	Misc Materials (cy) (from SAC S_S Adjusted)	Trip Distance (miles)	Round Trips (miles)
Data Reference - from 2016 work for NEPA analysis, Opinion of Probable Construction Cost - 65% Design Bid Schedule and Line	A15, 16, D7 B15			A 11, 12, D6 B 11, 12 C 7 F 5, 8, 9, 11			A 14, 17, 18 B 16, 17 C 19, 20 F 6, 7			A5, 6, 13 X B 5, 6 X C5			B13, 15		
Mobilization													2,565	15	30
Vegetation/Encroachment Removal										2,565	13	26			
Berms, Toe Drains, Slope Flattening	40,015	13	26	21,375	30	60	13,304	13	26	19,494	30	60			
Utility										51	13	26			
Cut-Off Walls	367,656	13	26	360,302	30	60	15,613	13	26	14,929	30	60	12,398	4.5	9
Relief Wells				342	30	60	1,146	13	26	770	13	26	1,283	6.5	13
2020 Contract 1				33	30	60	109	13	26	73	13	26	122	6.5	13
Site Restoration													1,283	15	30
Demobilization													2,565	15	30

Notes:  
Berm and toes drain total not equal to 100% because Reach 2 not part of current contract.  
Relief well total equal to 2020 Contract 1 only for reduction of number of wells relative to 2016 data.

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 ARCF 2016  
 General Conformity Analysis

Data from Previous SREL Analysis Allocated to Sacramento S\_S Contracts by Year

Data Source - Opinion of Probable Construction Cost - 65% Design

Assumptions:

Assumed truck volume =	15 cubic yards
Assume all fill (Type 1 and Type 2) from WWTP Borrow Site at	13 miles
Assume all stockpile is at undecided location at	30 miles
Assume haul to landfill at	13 miles

Current plan is to take import fill from WWTP (8521 Laguna Station Road, Elk Grove) - this is approximately 13 miles from top of Pocket using Pocket Road.  
 Export material current plan is to go to Railyards Development in Downtown Sacramento (5-6 miles), however may not be able to dispose here due to poor alignment in construction schedule, so use 30 miles for soil export material.

Assume berms split as follows:

24%	2020
32%	2021
32%	2023

Allocated Cut Off Walls as follows:

Contract 1	2020	34.5%
Contract 2	2021	28.8%
Contract 3	2022	30.1%
Contract 4	2023	6.7%

Assume mobilization split:

2020	30%
2021	20%
2022	20%
2023	30%

SREL Material Volume Increase: 1.71 times the material volumes estimated in 2016 based on the increase in linear feet of cut-off walls and berms from 25,873 linear feet in 2016 to current length

Relief Well \*\*: 10% \*\*Table 2-2: 42 relief wells total from 2016 (current 4 wells)

Assumed barge volume from Offsite Quarry (Barge)= 909 cubic yards\*

\* One barge has the capacity of 1,500 tons. Jun 4, 2009. From Bid Schedule, assume 1.65 tons/cy of quarry rock. At density, one barge has the capacity of 909 cubic yards.

<https://ihsmarkit.com/country-industry-forecasting.html?ID=106593483>

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 WRDA 2016  
 General Conformity Analysis  
 Seepage and Stability Contracts  
 Conceptual Construction Equipment Estimate

Estimate of Construction Equipment Based on Sacramento River East Levee 2016 Air Quality Analysis Data  
 Pages 1 and 2 contain original equipment estimates. Allocation to WRDA S/S Tasks is Shown on Page 3.  
 Allocation to RCEM Equipment categories is shown on page 4.

*This list shows the types of equipment the contractor would select from and is not intended to be prescriptive of what they shall use.*

Project Phase	Equipment Description	CalEEMod/EMFAC Category	Mobilization		Vegetation and Encroachment Removal		Levee Degradation for Cutoff Wall Installation		Cutoff Wall Installation		Construction of Stability Berms and Toes Drains	
			Maximum Quantity of Vehicles	Duration per vehicle (mths)	Maximum Quantity of Vehicles	Duration per vehicle (mths)	Maximum Quantity of Vehicles	Duration per vehicle (mths)	Maximum Quantity of Vehicles	Duration per vehicle (mths)	Maximum Quantity of Vehicles	Duration per vehicle (mths)
	Equipment/supply Transport Trucks	HDT	5	0.25							1	4
	Hydraulic Excavator	Excavator			1	4	2	3			1	4
	Long-Stick Excavator	Excavator							3	5		
	Front-end Loader	T/L/B			1	4	1	3	3	5	1	4
	Bulldozer	Rubber Tired Dozer					3	3	5	5	2	4
	Highway Dump Truck	HDT			5	4	20	3			10	2
	Grader	Grader					1	3			2	2
	Water Truck	HDT					1	3			1	4
	Self-propelled Sheepsfoot or Tramping Roller	Roller									2	2
	Vibratory Smooth-Wheel Compactor	Roller									1	2
	Forklift	Forklift							5	5		
	DMM Rig	Drill Rig							2	2.5		
	Bulk Material and Hydration Silos	none							8	5		
	Truck-Mounted Crane	Crane							2	2		
	Concrete Transit Truck	HDT										
	Lubricating Truck	T7 Utility										
	Pickup Truck	LDT1-2										
	Drill Rig (truck-mounted)	Drill Rig										
	Hydro-seed Truck	T6 Instate Heavy										

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 WRDA 2016  
 General Conformity Analysis  
 Seepage and Stability Contracts  
 Conceptual Construction Equipment Estimate

Project Phase		Utility Relocation		Levee Reconstruction after Completion of Cutoff Wall		Relief Well Installation		Site Restoration and Demobilization	
Equipment Description	CalEEMod/EMFAC Category	Maximum Quantity of Vehicles	Duration per vehicle (mths)	Maximum Quantity of Vehicles	Duration per vehicle (mths)	Maximum Quantity of Vehicles	Duration per vehicle (mths)	Maximum Quantity of Vehicles	Duration per vehicle (mths)
Equipment/supply Transport Trucks	HDT	1	2			1	6	1	2
Hydraulic Excavator	Excavator	1	2	2	4	1	6	1	2
Long-Stick Excavator	Excavator								
Front-end Loader	T/L/B	1	2	1	4			1	3
Bulldozer	Rubber Tired Dozer			4	4				
Highway Dump Truck	HDT	1	2	20	4				
Grader	Grader			2	4			1	3
Water Truck	HDT			2	4			1	3
Self-propelled Sheepsfoot or Tramping Roller	Roller			2	4				
Vibratory Smooth-Wheel Compactor	Roller			1	4				
Forklift	Forklift					1	6	1	3
DMM Rig	Drill Rig								
Bulk Material and Hydration Silos	none								
Truck-Mounted Crane	Crane	1	2						
Concrete Transit Truck	HDT	1	2			1	1		
Lubricating Truck	T7 Utility			1	16				
Pickup Truck	LDT1-2								
Drill Rig (truck-mounted)	Drill Rig					2	6		
Hydro-seed Truck	T6 Instate Heavy							1	3



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 WRDA 2016  
 General Conformity Analysis  
 Seepage and Stability Contracts  
 Conceptual Construction Equipment Estimate

Project Phase		Conservative Estimate Maximum Quantity of Vehicles for WRDA 2016 Seepage and Stability Contracts CalEEMod/EMFAC Categories				
Equipment Description	CalEEMod/EMFAC Category	Vegetation Encroachment Removal; Utility Reloation	Berms, Toe Drains, Slope Flattening; Relief Wells	Mobilization; Cutoff Wall; Site Restoration and Demobilization	Vegetation Encroachment Removal	Berms, Toe Drains, Slope Flattening
Equipment/supply Transport Trucks	HDT	1	1	5	0	1
Hydraulic Excavator	Excavator	1	1	2	1	1
Long-Stick Excavator	Excavator	0	0	3	0	0
Front-end Loader	T/L/B	1	1	3	1	1
Bulldozer	Rubber Tired Dozer	0	2	5	0	2
Highway Dump Truck	HDT	5	10	20	5	10
Grader	Grader	0	2	2	0	2
Water Truck	HDT	0	1	2	0	1
Self-propelled Sheepsfoot or Tramping Roller	Roller	0	2	2	0	2
Vibratory Smooth-Wheel Compactor	Roller	0	1	1	0	1
Forklift	Forklift	0	1	5	0	0
DMM Rig	Drill Rig	0	0	2	0	0
Bulk Material and Hydration Silos	none	0	0	8	0	0
Truck-Mounted Crane	Crane	1	0	2	0	0
Concrete Transit Truck	HDT	1	1	0	0	0
Lubricating Truck	T7 Utility	0	0	1	0	0
Pickup Trick	LDT1-2	0	0	0	0	0
Drill Rig (truck-mounted)	Drill Rig	0	2	0	0	0
Hydro-seed Truck	T6 Instate Heavy	0	0	1	0	0

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 WRDA 2016  
 General Conformity Analysis  
 Seepage and Stability Contracts  
 Conceptual Construction Equipment Estimate

Project Phase	Note: Maximum equipment estimates based on SREL 2016 65% design information have been doubled for input into the RCEM for WRDA (ARCF) 2016 to reflect the approximate doubling of material volumes.						
Equipment Description	CalEEMod/EMFAC Category	RCEM Equipment Category	Conservative Estimate Maximum Quantity of Vehicles for WRDA 2016 Seepage and Stability Contracts RCEM Categories with On-Road Vehicles Removed				
		Additional Equipment Added per Project Team	Vegetation Encroachment Removal; Utility Reloation	Berms, Toe Drains, Slope Flattening; Relief Wells	Mobilization; Cutoff Wall; Site Restoration and Demobilization	Vegetation Encroachment Removal	Berms, Toe Drains, Slope Flattening
Equipment/supply Transport Trucks	HDT						
Hydraulic Excavator	Excavator	Excavator	2	2	10	2	2
Long-Stick Excavator	Excavator						
Front-end Loader	T/L/B	Tractor/Loader/Balckhoe	2	2	6	2	2
Bulldozer	Rubber Tired Dozer	Rubber Tired Dozer		4	10		4
Highway Dump Truck	HDT						
Grader	Grader	Grader		4	4		4
Water Truck	HDT	Water Truck		2	4		2
Self-propelled Sheepsfoot or Tramping Roller	Roller	Roller		6	6		6
Vibratory Smooth-Wheel Compactor	Roller						
Forklift	Forklift	Rough Terrain Forklift		2	10		
DMM Rig	Drill Rig	Bore/Drill Rigs		4	4		
Bulk Material and Hydration Silos	none	Other Material Handling			16		
Truck-Mounted Crane	Crane	Crane	2		4		
Concrete Transit Truck	HDT						
Lubricating Truck	T7 Utility						
Pickup Trick	LDT1-2	Generator Sets		1	1		1
Drill Rig (truck-mounted)	Drill Rig	Signal Boards	1	6	6	1	6
Hydro-seed Truck	T6 Instate Heavy	Sweeper	1	1	1	1	1

# **Attachment 4**

Modeling Assumptions

Mitigation Sites

## Supporting Calculations for Material Volumes, Equipment, and Quarterly Allocation of Emissions – Mitigation

The mitigation contract will establish a terrestrial mitigation site of Elderberry. Construction activities will include clearing and grubbing of the full site and installation of plantings, fencing, and irrigation. The initial assumption is for a 50-acre site. Construction is planned for 2023 and will be year around (emissions are assumed evenly distributed). Construction equipment assumptions were supplied by the U.S. Army Corp of Engineers, Sacramento Division based on previous similar projects.

# **Attachment 5**

Roadway Construction Emissions Model

Input Assumptions

American River Erosion - Contract 1

Type	Material	Quantity	Unit	Miles per Trip
Export	soil, veg	1,100	CY	14
Import	rock	83,000	CY	50
Import	soil,veg	23,000	CY	5
Import	cobble	20,300	CY	50
Export	soil	135,000	CY	14

American River Erosion - Contract 2, per season

Type	Material	Quantity	Unit	Miles per Trip
Export	soil, veg	1,200	CY	14
Import	rock	584,600	CY	50
Import	soil, veg	117,800	CY	5

Sacramento River Erosion- Contract 1

Type	Material	Quantity	Unit	Miles per Trip	Barge Miles in BAAQMD
Export	soil, veg	93	CY	20	
Import	soil, veg	1,100	CY	5	
Barge	rip rap	23,000	CY	45	50.4

Sacramento River Erosion- Contracts 2 - 3, per contract, per season

Type	Material	Quantity	Unit	Miles per Trip	Barge Miles in BAAQMD
Export	soil, veg	550	CY	20	
Import	soil, veg	6,803	CY	5	
Barge	rip rap	141,683	CY	45	50.4

Sacramento Weir

Type	Material	Quantity	Unit	Miles per Trip	Barge Miles in BAAQMD
Export	soil and veg.	20,000	CY	0.6	
Import	soil	370,000	CY	30	
Import	concrete	8,000	CY	30	
Import	concrete	21,300	CY	30	
Import	asphalt	1,750	CY	30	
Import	road base	15,000	CY	30	
Import	aggregate, fill	4,500	CY	30	
Export	soil	43,000	CY	0.6	
Import	aggregate, fill	5,150	CY	30	
Export	soil	585,000	CY	0.6	
Import	rip rap	-	CY	40	
Import	rip rap	-	CY	40	
Export	soil	54,000	CY	0.6	
Import	rock	1,700	CY	30	
Import	gravel	250	CY	30	
Barge	rip rap	25,000	CY	57.4	45
Barge	rip rap	75,000	CY	57.4	45

Magpie Creek

Type	Material	Quantity	Unit	Miles per Trip
Import	soil	5,940	CY	50
Import	soil	13,200	CY	50
Import	aggregate	59,400	CY	50
Import	concrete	29,700	CY	50
Export	soil	9,900	CY	20
Import	stone	100,000	CY	50

SREL

Type	Material	Quantity	Unit	Miles per Trip
Import	misc. material - mobilization	2,565	CY	15
Export	offsite disposal - veg	2,565	CY	13
Import	type 1,2 fill - berm	40,015	CY	13
Import	stockpile - berm	21,375	CY	30
Import	offsite quarry -berm	13,304	CY	13
Export	offsite disposal - berm	19,494	CY	13
Export	offsite disposal - utility	51	CY	13
Import	type 1,2 fill - cutoff walls	367,656	CY	13
Import	stockpile - cutoff walls	360,302	CY	30
Import	offsite quarry - cutoff walls	15,613	CY	13
Export	offsite disposal - cutoff walls	14,929	CY	13
Import	misc. material - cutoff walls	12,398	CY	4.5
Import	stockpile - relief wells	33	CY	30
Import	offsite quarry - relief wells	109	CY	13
Export	offsite disposal - relief wells	73	CY	13
Import	misc. material - relief wells	122	CY	6.5
Import	misc. material - site restoration	1,283	CY	15
Import	misc. material - demobilization	2,565	CY	15

Mitigation

Type	Material	Quantity	Unit	Miles per Trip
Export	soil, veg	800	CY	10
Export	soil	12,000	CY	10



SAFCA/ USACE  
 Sacramento Supplemental Projects General Conformity Analysis  
 Roadway Construction Emissions Model (RCEM) Input Assumptions

**Basic Project Model Assumptions**

<i>Project Name</i> <sup>1</sup> :	American River Erosion Contract 1	<i>Assumed Mitigation:</i>	On-Road	2010 and Newer On-Road Vehicle Fleet
<i>Modeled As:</i>	Other Linear Project		Off-Road	Tier 4 Equipment
<i>Predominant Soil Type:</i>	Weathered Rock Earth			90% of HP as Tier 4 Equipment
<i>Project Length:</i>	12,700 feet	2.4 miles		
<i>Project Width:</i>	100 feet			
<i>Project Area:</i>	29 acres	<i>Note:</i>	<sup>1</sup> Contract 1 is only Reach 2	
<i>Maximum Area Disturbed/Day:</i>	5 acres		<sup>2</sup> 0.3 months for clearing/ grubbing and 3 months for grading/excavating	
<i>Water Trucks Used:</i>	Yes		Expect one active construction site.	
<i>Total Working Days in a Month:</i>	22			
<i>Months Worked each Year:</i>				
2020	3 Months <sup>2</sup>			
2021	0 Months			
2022	0 Months			
2023	0 Months			
<i>Haul Truck Capacity:</i>	15 CY			
<i>User Override Equipment:</i>	10 Hours/Day			

**Material Hauling/Handling Quantities by Task**

Year	Task	Model As	Import Volume (CY/day)	Export Volume (CY/day)	Material	Miles per Trip (Import)	Miles per Trip (Export)	Miles Round Trip (for modeling)	Trips/day (one way and round)	No. of Employees
2020	Clearing and Grubbing	Grubbing/ Clearing	0	167	soil, vegetation	0	14	28	11	40
2020	Rock RipRap	Grading/ Excavation	1,258	0	rock	50	0	100	84	75
2020	Top Soil (Planting Bench)	Grading/ Excavation	348	0	soil, vegetation	5	0	10	23	30
2020	Cobble	Grading/ Excavation	308	0	cobble	50	0	100	22	75
2020	Excavation and Offhaul	Grading/ Excavation	0	2045	soil	0	14	28	136	75
<b>2020</b>	<b>All</b>	<b>Grubbing/ Clearing</b>	<b>0</b>	<b>167</b>	<b>Soil</b>			<b>28</b>		<b>40</b>
<b>2020</b>	<b>All</b>	<b>Grading/ Excavation</b>	<b>1914</b>	<b>2045</b>	<b>Soil</b>			<b>61</b>		<b>75</b>

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**Equipment - Number of Individual Equipment Pieces Operating for Various Construction Phases**

Equipment	No. of Equipment	
	Grubbing/ Clearing 2020	Grading/ Excavating 2020
Aerial Lifts	0	0
Air Compressors	0	0
Bore/Drill Rigs	0	0
Cement and Mortar Mixers	0	0
Concrete/Industrial Saws	0	0
Cranes	0	2
Crawler Tractors	0	0
Crushing/Proc. Equipment	0	0
Excavators	6	2
Forklifts	0	0
Generator Sets	1	1
Graders	0	2
Off-Highway Tractors	0	0
Off-Highway Trucks	0	2
Other Construction Equipment	0	1
Other General Industrial Equipment	0	2
Other Material Handling Equipment	0	1
Pavers	0	0
Paving Equipment	0	0
Plate Compactors	0	0
Pressure Washers	0	0
Pumps	0	0
Rollers	0	0
Rough Terrain Forklifts	0	0
Rubber Tired Dozers	0	2
Rubber Tired Loaders	0	0
Scrapers	0	0
Signal Boards	6	6
Skid Steer Loaders	0	3
Surfacing Equipment	0	0
Sweepers/Scrubbers	1	1
Tractors/Loaders/Backhoes	0	2
Trenchers	0	2
Welders	0	0

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 Roadway Construction Emissions Model (RCEM) Input Assumptions

**Basic Project Model Assumptions**

<i>Project Name:</i>	American River Erosion Contract 2	<i>Assumed Mitigation:</i>	On-Road	2010 and Newer On-Road Vehicle Fleet
<i>Modeled As:</i>	Other Linear Project		Off-Road	Tier 4 Equipment
<i>Predominant Soil Type:</i>	Weathered Rock Earth			90% of HP as Tier 4 Equipment
<i>Project Length:</i>	32,200 feet	6.1 miles per season		
<i>Project Width:</i>	100 feet			
<i>Project Area:</i>	74 acres	Note:	<sup>1</sup> 0.3 months for clearing/ grubbing and 3 months for grading/excavating	
<i>Maximum Area Disturbed/Day:</i>	5 acres		<sup>2</sup> Material volumes are per season, assumed equal for both seasons	
<i>Water Trucks Used:</i>	Yes		Expect five active construction sites operating concurrently.	
<i>Total Working Days in a Month:</i>	22			
<i>Months Worked each Year:</i>				
2020	0 Months			
2021	3 Months <sup>1</sup>			
2022	3 Months			
2023	0 Months			
<i>Haul Truck Capacity:</i>	15 CY			
<i>User Override Equipment:</i>	10 Hours/Day			

**Material Hauling/Handling Quantities by Task**

Year	Task	Model As	Import Volume (CY/day)	Export Volume (CY/day)	Material	Miles per Trip (Import)	Miles per Trip (Export)	Miles Round Trip (for modeling)	Trips /day (one way round)	No. of Employees
2021	Clearing and Grubbing <sup>2</sup>	Grubbing/ Clearing	0	182	soil, vegetation	0	14	28	12	40
2021	Rock RipRap <sup>2</sup>	Grading/ Excavation	8,858	0	rock	50	0	100	591	75
2021	Top Soil (Planting Bench) <sup>2</sup>	Grading/ Excavation	1785	0	soil, vegetation	5	0	10	119	30
	<b>2021 All</b>	<b>Grubbing/ Clearing</b>	<b>0</b>	<b>182</b>	<b>Soil</b>			<b>28</b>		<b>40</b>
	<b>2021 All</b>	<b>Grading/ Excavation</b>	<b>10642</b>	<b>0</b>	<b>Soil</b>			<b>85</b>		<b>75</b>

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 Sacramento Supplemental Projects General Conformity Analysis  
 Roadway Construction Emissions Model (RCEM) Input Assumptions

**Equipment - Number of Individual Equipment Pieces Operating for Various Construction Phases**

Equipment	No. of Equipment	
	Grubbing/ Clearing 2021 <sup>2</sup>	Grading/ Excavating 2021 <sup>2</sup>
Aerial Lifts	0	0
Air Compressors	0	0
Bore/Drill Rigs	0	0
Cement and Mortar Mixers	0	0
Concrete/Industrial Saws	0	0
Cranes	0	6
Crawler Tractors	0	0
Crushing/Proc. Equipment	0	0
Excavators	6	6
Forklifts	0	0
Generator Sets	1	3
Graders	0	4
Off-Highway Tractors	0	0
Off-Highway Trucks	0	6
Other Construction Equipment	0	1
Other General Industrial Equipment	0	2
Other Material Handling Equipment <sup>5</sup>	0	1
Pavers	0	0
Paving Equipment	0	0
Plate Compactors	0	0
Pressure Washers	0	0
Pumps	0	0
Rollers	0	0
Rough Terrain Forklifts	0	0
Rubber Tired Dozers	0	6
Rubber Tired Loaders	0	4
Scrapers	0	0
Signal Boards	6	6
Skid Steer Loaders	0	3
Surfacing Equipment	0	0
Sweepers/Scrubbers	1	1
Tractors/Loaders/Backhoes	0	3
Trenchers	0	2
Welders	0	0

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 Roadway Construction Emissions Model (RCEM) Input Assumptions

**Basic Project Model Assumptions**

<i>Project Name:</i>	Sac River Erosion Contract 1	<i>Assumed Mitigation:</i>	On-Road	2010 and Newer On-Road Vehicle Fleet
<i>Modeled As:</i>	Other Linear Project		Off-Road	Tier 4 Equipment
<i>Predominant Soil Type:</i>	Weathered Rock Earth			90% of HP as Tier 4 Equipment
<i>Project Length:</i>	1,150 feet			
<i>Project Width:</i>	80 feet			
<i>Project Area (acres):</i>	2 acres	<i>Note:</i>	<sup>1</sup> 0.3 months for clearing/ grubbing and 4 months for grading/excavating	
<i>Maximum Area Disturbed/Day:</i>	2 acres		<sup>2</sup> Reach 55.2 L is 1150 feet long	
<i>Water Trucks Used:</i>	Yes		Expect one active construction site.	
<i>Total Working in Month:</i>	22 days			
<i>Months Worked each Year:</i>				
2020	4 Months <sup>1</sup>			
2021	0 Months			
2022	0 Months			
2023	0 Months			
<i>Haul Truck Capacity:</i>	15 CY			
<i>User Override Equipment:</i>	10 Hours/Day			

**Material Hauling/Handling Quantities by Task**

Year	Task	Model As	Import Volume (CY/day)	Export Volume (CY/day)	Material	Miles per Trip (Import)	Miles per Trip (Export)	Miles Round Trip (for modeling)	Trips/day (one way and round)	No. of Employees
2020	Site Prep. (Soil export) - C1	Grubbing/ Clearing	0	14	soil and veg.	0	20	40	1	25
2020	Hydroseed/Add soil to Rock - C1	Grading/ Excavation	13		soil and veg.	5	0	10	1	40
<b>2020</b>	<b>All</b>	<b>Grubbing/ Clearing</b>	<b>0</b>	<b>14</b>	<b>Soil</b>			<b>40</b>		<b>25</b>
<b>2020</b>	<b>All</b>	<b>Grading/ Excavation</b>	<b>13</b>	<b>0</b>	<b>Soil</b>			<b>10</b>		<b>40</b>

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**Equipment - Number of Individual Equipment Pieces Operating for Various Construction Phases**

Equipment	No. of Equipment	
	Grubbing/ Clearing Phase	Grading/ Excavating
Aerial Lifts	0	0
Air Compressors	0	0
Bore/Drill Rigs	0	0
Cement and Mortar Mixers	0	0
Concrete/Industrial Saws	0	0
Cranes	0	2
Crawler Tractors	0	0
Crushing/Proc. Equipment	0	0
Excavators	6	2
Forklifts	0	0
Generator Sets	1	1
Graders	0	2
Off-Highway Tractors	0	0
Off-Highway Trucks	0	2
Other Construction Equipment	0	1
Other General Industrial Equipment	0	2
Other Material Handling Equipment	0	1
Pavers	0	0
Paving Equipment	0	0
Plate Compactors	0	0
Pressure Washers	0	0
Pumps	0	0
Rollers	0	0
Rough Terrain Forklifts	0	0
Rubber Tired Dozers	0	2
Rubber Tired Loaders	0	0
Scrapers	0	0
Signal Boards	6	6
Skid Steer Loaders	0	3
Surfacing Equipment	0	0
Sweepers/Scrubbers	1	1
Tractors/Loaders/Backhoes	0	2
Trenchers	0	2
Welders	0	0

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**Basic Project Model Assumptions**

<i>Project Name:</i>	Sac River Erosion Contracts 2 and 3	<i>Assumed Mitigation:</i>	On-Road	2010 and Newer On-Road Vehicle Fleet
<i>Modeled As:</i>	Other Linear Project		Off-Road	Tier 4 Equipment
<i>Predominant Soil Type:</i>	Weathered Rock Earth			90% of HP as Tier 4 Equipment
<i>Project Length:</i>	7,113 feet	1.3 miles each year, each contract		
<i>Project Width:</i>	80 feet			
<i>Project Area (acres):</i>	13 acres	<i>Note:</i>		<sup>1</sup> 0.3 months for clearing/ grubbing and 4 months for grading/excavating
<i>Maximum Area Disturbed/Day:</i>	5 acres			<sup>2</sup> Material Volumes are per contract, per year
<i>Water Trucks Used:</i>	Yes			Expect four active construction sites operating concurrently.
<i>Total Working in Month:</i>	22 days			
<i>Months Worked each Year:</i>				
2020	0 Months <sup>1</sup>			
2021	4 Months <sup>1</sup>			
2022	4 Months <sup>1</sup>			
2023	0 Months <sup>1</sup>			
<i>Haul Truck Capacity:</i>	15 CY			
<i>User Override Equipment:</i>	10 Hours/Day			

**Material Hauling/Handling Quantities by Task**

Year	Task	Model As	Import Volume (CY/day)	Export Volume (CY/day)	Material	Miles per Trip (Import)	Miles per Trip (Export)	Miles Round Trip (for modeling)	Trips/day (one way and round)	No. of Employees
2021	Site Prep. (Soil export) - C1	Grubbing/ Clearing	0	83	soil and veg.	0	20	40	6	25
2021	Hydroseed/Add soil to Rock - C1	Grading/ Excavation	77		soil and veg.	5	0	10	5	55
2021	All	Grubbing/ Clearing	0	83	Soil			40		25
2021	All	Grading/ Excavation	77	0	Soil			10		55

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 Roadway Construction Emissions Model (RCEM) Input Assumptions

**Equipment - Number of Individual Equipment Pieces Operating for Various Construction Phases**

Equipment	No. of Equipment	
	Grubbing/ Clearing 2021 <sup>2</sup>	Grading/ Excavating 2021 <sup>2</sup>
Aerial Lifts	0	0
Air Compressors	0	0
Bore/Drill Rigs	0	0
Cement and Mortar Mixers	0	0
Concrete/Industrial Saws	0	0
Cranes	0	4
Crawler Tractors	0	0
Crushing/Proc. Equipment	0	0
Excavators	6	4
Forklifts	0	0
Generator Sets	1	1
Graders	0	2
Off-Highway Tractors	0	0
Off-Highway Trucks	0	4
Other Construction Equipment	0	1
Other General Industrial Equipment	0	2
Other Material Handling Equipment	0	1
Pavers	0	0
Paving Equipment	0	0
Plate Compactors	0	0
Pressure Washers	0	0
Pumps	0	0
Rollers	0	0
Rough Terrain Forklifts	0	0
Rubber Tired Dozers	0	4
Rubber Tired Loaders	0	0
Scrapers	0	0
Signal Boards	6	6
Skid Steer Loaders	0	4
Surfacing Equipment	0	0
Sweepers/Scrubbers	1	1
Tractors/Loaders/Backhoes	0	2
Trenchers	0	2
Welders	0	0



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**Basic Project Model Assumptions**

<i>Project Name:</i>	Sacramento Weir Widening	Case 1	<i>Assumed Mitigation:</i>	On-Road	2010 and Newer On-Road Vehicle Fleet
<i>Modeled As:</i>	Other Linear Project			Off-Road	Tier 4 Equipment
<i>Predominant Soil Type:</i>	Weathered Rock Earth				90% of HP as Tier 4 Equipment
<i>Project Length:</i>	7,000 feet		1.3 miles		
<i>Project Width:</i>	3,000 feet		<i>Note:</i>	<sup>1</sup> fish passage channel = 200 acres; remaining project area = 285 acres	
<i>Project Area (acres)<sup>1</sup>:</i>	482 acres				
<i>Maximum Area Disturbed/Day:</i>	40 acres			<sup>2</sup> 0.8 months for clearing/ grubbing and	
<i>Water Trucks Used:</i>	Yes			8 months for grading/excavating	
<i>Total Working in Month:</i>	22 days				
<i>Months Worked each Year:</i>					
2020	0 Months				
2021	8 Months <sup>2</sup>				
2022	12 Months				
2023	10 Months				
<i>Haul Truck Capacity:</i>	15 CY				
<i>User Override Equipment:</i>	10 Hours/Day				

**Material Hauling/Handling Quantities by Task**

Year	Task	Model As	Import Volume (CY/day)	Export Volume (CY/day)	Material	Miles per Trip (Import)	Miles per Trip (Export)	Miles Round Trip (for modeling)	Trips/day (one way and round)	No. of Employees
2021	Site Prep. (Excavating Vegetation)	Grubbing/ Clearing	0	1,136	soil and veg.	0	0.6	1.2	76	40
2021	Complete Constr. of North Levee - Import Material	Grading/ Excavation	2102	0	soil	30	0	60	140	75
2021	Complete Constr. of North Levee - Concrete Slope Protection	Grading/ Excavation	45	0	concrete	30	0	60	3	75
2021	Island Rock Rip Rap	Grading/ Excavation	0	0	rip rap	40	0	1.2	0	75
2022	Construct Passive Weir Structure	Grading/ Excavation	81	0	concrete	30	0	60	6	75
2022	Temp. Rd, Rd 126, and River Road - asphalt	Grading/ Excavation	7	0	asphalt	30	0	60	0	75
2022	Temp. Rd, Rd. 126, and River Road - road base	Grading/ Excavation	57	0	road base	30	0	60	4	75
2022	Railroad Bridge	Grading/ Excavation	17	163	aggregate, fill	30	0.6	61.2	12	75
2022	River Road Bridge	Grading/ Excavation	20	0	aggregate, fill	30	0	60	2	75
2023	Degrade old levees	Grading/ Excavation	0	2659	soil, veg.	0	0.6	1.2	177	40
2023	Sac River Rock/ Rip Rap	Grading/ Excavation	0	0	rip rap	40	0	1.2	0	75
2023	Fish Passage Channel Excavate	Grading/ Excavation	0	245	concrete	0	0.6	1.2	16	75
2023	Fish Passage Rock Liner	Grading/ Excavation	8	0	rock	30	0	60	1	75
2023	Fish Passage Maintenance Rd	Grading/ Excavation	1	0	gravel	30	0	60	0	75
<b>2021</b>	<b>All</b>	<b>Grubbing/ Clearing</b>	<b>0</b>	<b>1136</b>	<b>Soil</b>			<b>1.2</b>		<b>40</b>
<b>2021</b>	<b>All</b>	<b>Grading/ Excavation</b>	<b>2148</b>	<b>0</b>	<b>Soil</b>			<b>60.0</b>		<b>75</b>
<b>2022</b>	<b>All</b>	<b>Grading/ Excavation</b>	<b>181</b>	<b>163</b>	<b>Asphalt/Soil</b>			<b>60.6</b>		<b>75</b>
<b>2023</b>	<b>All</b>	<b>Grading/ Excavation</b>	<b>9</b>	<b>2905</b>	<b>Soil</b>			<b>1.4</b>		<b>75</b>

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**Equipment - Number of Individual Equipment Pieces Operating for Various Construction Phases**

Equipment	No. of Equipment			
	Grubbing/Clearing Phase 2021	Grading/ Excavating 2021	Grading/ Excavating 2022	Grading/ Excavating 2023
Aerial Lifts	0	0	0	0
Air Compressors	0	0	0	0
Bore/Drill Rigs	0	1	0	0
Cement and Mortar Mixers	0	4	4	2
Concrete/Industrial Saws	0	0	0	0
Cranes	0	4	4	2
Crawler Tractors	0	0	0	0
Crushing/Proc. Equipment	0	0	0	0
Excavators	3	3	3	3
Forklifts	0	0	0	0
Generator Sets	1	2	2	2
Graders	0	0	1	1
Off-Highway Tractors	0	0	0	0
Off-Highway Trucks	5	5	5	5
Other Construction Equipment	0	1	1	1
Other General Industrial Equipment	0	0	0	0
Other Material Handling Equipment	0	0	1	1
Pavers	0	0	0	0
Paving Equipment	0	0	1	1
Plate Compactors	0	0	0	0
Pressure Washers	0	0	0	0
Pumps	0	2	1	1
Rollers	0	0	0	0
Rough Terrain Forklifts	0	0	0	0
Rubber Tired Dozers	0	0	1	1
Rubber Tired Loaders	0	0	0	0
Scrapers	0	0	1	1
Signal Boards	0	0	0	0
Skid Steer Loaders	0	0	0	0
Surfacing Equipment	0	0	1	1
Sweepers/Scrubbers	0	1	1	1
Tractors/Loaders/Backhoes	0	2	2	2
Trenchers	0	1	1	1
Welders	0	0	0	0

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**Basic Project Model Assumptions**

<i>Project Name:</i>	Sacramento Weir Widening	Case 2	<i>Assumed Mitigation:</i>	On-Road	2010 and Newer On-Road Vehicle Fleet
<i>Modeled As:</i>	Other Linear Project			Off-Road	Tier 4 Equipment
<i>Predominant Soil Type:</i>	Weathered Rock Earth				90% of HP as Tier 4 Equipment
<i>Project Length:</i>	7,000 feet				
<i>Project Width:</i>	3,000 feet		<i>Note:</i>	<sup>1</sup> fish passage channel = 200 acres; remaining project area	
<i>Project Area (acres)<sup>1</sup>:</i>	482 acres			= 285 acres	
<i>Maximum Area Disturbed/Day:</i>	40 acres			<sup>2</sup> 0.8 months for clearing/ grubbing and	
<i>Water Trucks Used:</i>	Yes			8 months for grading/excavating	
<i>Total Working in Month:</i>	22 days				
<i>Months Worked each Year:</i>					
2020	0 Months				
2021	8 Months <sup>2</sup>				
2022	12 Months				
2023	10 Months				
<i>Haul Truck Capacity:</i>	15 CY				
<i>User Override Equipment:</i>	10 Hours/Day				

**Material Hauling/Handling Quantities by Task**

Year	Task	Model As	Import Volume (CY/day)	Export Volume (CY/day)	Material	Miles per Trip (Import)	Miles per Trip (Export)	Miles Round Trip (for modeling)	Trips/day (one way and round)	No. of Employees
2021	Site Prep. (Excavating Vegetation)	Grubbing/ Clearing	0	1,136	soil and veg.	0	0.6	1.2	76	40
2021	Complete Constr. of North Levee - Import Material	Grading/ Excavation	2102	0	soil	30	0	60	140	75
2021	Complete Constr. of North Levee - Concrete Slope	Grading/ Excavation	45	0	concrete	30	0	60	3	75
2021	Island Rock Rip Rap	Grading/ Excavation	0	0	rip rap	40	0	1.2	0	75
2022	Construct Passive Weir Structure	Grading/ Excavation	81	0	concrete, asphalt	30	0	60	6	75
2022	Temp. Rd, Rd 126, and River Road - asphalt	Grading/ Excavation	7	0	asphalt	30	0	60	0	75
2022	Temp. Rd, Rd. 126, and River Road - road base	Grading/ Excavation	57	0	road base	30	0	60	4	75
2021	Railroad Bridge	Grading/ Excavation	26	244	aggregate, fill	30	0.6	61.2	18	75
2022	River Road Bridge	Grading/ Excavation	20	0	aggregate, fill	30	0	60	2	75
2023	Degrade old levees	Grading/ Excavation	0	2659	soil, veg.	0	0.6	1.2	177	40
2023	Sac River Rock/ Rip Rap	Grading/ Excavation	0	0	rip rap	40	0	1.2	0	75
2023	Fish Passage Channel Excavate	Grading/ Excavation	0	245	concrete	0	0.6	1.2	16	75
2023	Fish Passage Rock Liner	Grading/ Excavation	8	0	rock	30	0	60	1	75
2023	Fish Passage Maintenance Rd	Grading/ Excavation	1	0	gravel	30	0	60	0	75
<b>2021</b>	<b>All</b>	<b>Grubbing/ Clearing</b>	<b>0</b>	<b>1136</b>	<b>Soil</b>			<b>1.2</b>		<b>40</b>
<b>2021</b>	<b>All</b>	<b>Grading/ Excavation</b>	<b>2173</b>	<b>244</b>	<b>Soil</b>			<b>60.1</b>		<b>75</b>
<b>2022</b>	<b>All</b>	<b>Grading/ Excavation</b>	<b>164</b>	<b>0</b>	<b>Soil/Asphalt</b>			<b>60.0</b>		<b>75</b>
<b>2023</b>	<b>All</b>	<b>Grading/ Excavation</b>	<b>9</b>	<b>2905</b>	<b>Soil</b>			<b>1.4</b>		<b>75</b>

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**Equipment - Number of Individual Equipment Pieces Operating for Various Construction Phases**

Equipment	No. of Equipment			
	Grubbing/Clearing Phase 2021	Grading/ Excavating 2021	Grading/ Excavating 2022	Grading/ Excavating 2023
Aerial Lifts	0	0	0	0
Air Compressors	0	0	0	0
Bore/Drill Rigs	0	1	0	0
Cement and Mortar Mixers	0	4	4	2
Concrete/Industrial Saws	0	0	0	0
Cranes	0	4	4	2
Crawler Tractors	0	0	0	0
Crushing/Proc. Equipment	0	0	0	0
Excavators	3	3	3	3
Forklifts	0	0	0	0
Generator Sets	1	2	2	2
Graders	0	0	1	1
Off-Highway Tractors	0	0	0	0
Off-Highway Trucks	5	5	5	5
Other Construction Equipment	0	1	1	1
Other General Industrial Equipment	0	0	0	0
Other Material Handling Equipment	0	0	1	1
Pavers	0	0	0	0
Paving Equipment	0	0	1	1
Plate Compactors	0	0	0	0
Pressure Washers	0	0	0	0
Pumps	0	2	1	1
Rollers	0	0	0	0
Rough Terrain Forklifts	0	0	0	0
Rubber Tired Dozers	0	0	1	1
Rubber Tired Loaders	0	0	0	0
Scrapers	0	0	1	1
Signal Boards	0	0	0	0
Skid Steer Loaders	0	0	0	0
Surfacing Equipment	0	0	1	1
Sweepers/Scrubbers	0	1	1	1
Tractors/Loaders/Backhoes	0	2	2	2
Trenchers	0	1	1	1
Welders	0	0	0	0

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Basic Project Model Assumptions		Assume berms split as follows:			Calculated Construction Months:		
Project Name:	Seepage and Stability				2020	24%	4
Modeled As:	Other Linear Project				2021	32%	4
Predominant Soil Type:	Weathered Rock Earth				2023	32%	4
Project Length:	44158 feet	Allocated Cut Off Walls as follows:					
Project Width:	200 feet		Contract 1		2020	34%	6.4
Project Area (acres):	203 acres <sup>1</sup>		Contract 2		2021	29%	5.3
Maximum Area Disturbed/Day:	5 acres <sup>1</sup>		Contract 3		2022	30%	5.6
Water Trucks Used:	Yes		Contract 4		2023	7%	1.2
Total Working in Month:	22 days	Assume mobilization split:					
Months Worked each Year:					2020	30%	1
2020	7.8 Months <sup>2</sup>				2021	20%	1
2021	7.2 Months <sup>3</sup>				2022	20%	1
2022	7 Months <sup>4</sup>				2023	30%	1
2023	4 Months			Relief Well <sup>5</sup> :	10%		3
Haul Truck Capacity (CY):	15 CY	Percent Acre Disturbed:					
Employee 1-way distance:	20 miles				2020	36%	
Employee 1-way trip:	2 per day				2021	36%	
User Override Equipment:	10 Hours/Day				2022	14%	
Assumed Mitigation:	On-Road	2010 and Newer On-Road Vehicle Fleet			2023	14%	
	Off-Road	Tier 4 Equipment	Vegetation Removal/Utility Relocation				1
		90% of HP as Tier 4 Equipment	Site Restoration				0.75
			Demobilization				0.5
Note:	<sup>1</sup> Total acres/LF for all 4 years						
	<sup>2</sup> Total Months (CO Walls, Mob, Demob, VR, Restoration; assumes berms and wells are concurrent at 4 months)						
	<sup>3</sup> Total Months (CO Walls, Mob, Demob, VR, Restoration; assumes berms are concurrent at 4 months)						
	<sup>4</sup> Total Months (CO Walls, Mob, Demob, VR, Restoration)						
	<sup>5</sup> 2016 design had 42 relief wells, current design has 4						

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Material Hauling/Handling Quantities by Task										
Year	Task	Model As	Import Volume (CY/day)	Export Volume (CY/day)	Material	Miles per Trip (Import)	Miles per Trip (Export)	Miles Round Trip (for modeling)	Trips/day (one way and round)	No. of Employees
2020	Mobilization	Grading/ Excavation	35	0	misc.	15	0	30	2	
2020	Vegetation/Encroachment Removal	Grubbing/ Clearing	0	40	soil and veg.	0	13	26	3	
2020	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	109	0	Type 1,2 Fill	13	0	26	7	
2020	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	58	0	stockpile	30	0	60	4	
2020	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	36	0	offsite quarry	13	0	26	2	
2020	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	0	53	offsite disposal	0	13	26	4	
2020	Utility	Grubbing/ Clearing	0	1	offsite disposal	13	0	26	0	
2020	Cutoff Walls	Grading/ Excavation	888	0	Type 1,2 Fill	13	0	26	59	
2020	Cutoff Walls	Grading/ Excavation	870	0	stockpile	30	0	60	58	
2020	Cutoff Walls	Grading/ Excavation	38	0	offsite quarry	13	0	26	3	
2020	Cutoff Walls	Grading/ Excavation	0	36	offsite disposal	0	13	26	2	
2020	Cutoff Walls	Grading/ Excavation	30	0	misc.	5	0	9	2	
2020	Relief Wells	Grading/ Excavation - Break 1	0.5	0	stockpile	30	0	60	0	
2020	Relief Wells	Grading/ Excavation - Break 1	2	0	offsite quarry	13	0	26	0	
2020	Relief Wells	Grading/ Excavation - Break 1	0	1	offsite disposal	0	13	26	0	
2020	Relief Wells	Grading/ Excavation - Break 1	2	0	misc.	7	0	13	0	
2020	Site Restoration	Grading/ Excavation	28	0	misc.	15	0	30	2	
2020	Demobilization	Grading/ Excavation	70	0	misc.	15	0	30	5	
2021	Mobilization	Grading/ Excavation	23	0	misc.	15	0	30	2	
2021	Vegetation/Encroachment Removal	Grubbing/ Clearing	0	34	soil, veg.	0	13	26	2	
2021	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	146	0	Type 1,2 Fill	13	0	26	10	
2021	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	78	0	stockpile	30	0	60	5	
2021	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	48	0	offsite quarry	13	0	26	3	
2021	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	0	71	offsite disposal	0	13	26	5	
2021	Utility	Grubbing/ Clearing	0	1	offsite disposal	13	0	26	0	
2021	Cutoff Walls	Grading/ Excavation	914	0	Type 1,2 Fill	13	0	26	61	
2021	Cutoff Walls	Grading/ Excavation	896	0	stockpile	30	0	60	60	
2021	Cutoff Walls	Grading/ Excavation	39	0	offsite quarry	13	0	26	3	
2021	Cutoff Walls	Grading/ Excavation	0	37	offsite disposal	0	13	26	2	
2021	Cutoff Walls	Grading/ Excavation	31	0	misc.	5	0	9	2	
2021	Site Restoration	Grading/ Excavation	28	0	misc.	15	0	30	2	
2021	Demobilization	Grading/ Excavation	47	0	misc.	15	0	30	3	
2022	Mobilization	Grading/ Excavation	23	0	misc.	15	0	30	2	
2022	Vegetation/Encroachment Removal	Grubbing/ Clearing	0	35	misc.	0	13	26	2	
2022	Cutoff Walls	Grading/ Excavation	895	0	Type 1,2 Fill	13	0	26	60	
2022	Cutoff Walls	Grading/ Excavation	877	0	stockpile	30	0	60	58	
2022	Cutoff Walls	Grading/ Excavation	38	0	offsite quarry	13	0	26	3	
2022	Cutoff Walls	Grading/ Excavation	0	36	offsite disposal	0	13	26	2	
2022	Cutoff Walls	Grading/ Excavation	30	0	misc.	5	0	9	2	
2022	Site Restoration	Grading/ Excavation	11	0	misc.	15	0	30	1	
2022	Demobilization	Grading/ Excavation	47	0	misc.	15	0	30	3	
2023	Mobilization	Grading/ Excavation	35	0	misc.	15	0	30	2	
2023	Vegetation/Encroachment Removal	Grubbing/ Clearing	0	8	soil and veg.	0	13	26	1	
2023	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	146	0	Type 1,2 Fill	13	0	26	10	
2023	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	78	0	stockpile	30	0	60	5	
2023	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	48	0	offsite quarry	13	0	26	3	
2023	Berms, Toe Drains, Slope Flattening	Grading/ Excavation - Break 1	0	71	offsite disposal	0	13	26	5	
2023	Utility	Grubbing/ Clearing	0	1	offsite disposal	13	0	26	0	
2023	Cutoff Walls	Grading/ Excavation	933	0	Type 1,2 Fill	13	0	26	62	
2023	Cutoff Walls	Grading/ Excavation	914	0	stockpile	30	0	60	61	
2023	Cutoff Walls	Grading/ Excavation	40	0	offsite quarry	13	0	26	3	
2023	Cutoff Walls	Grading/ Excavation	0	38	offsite disposal	0	13	26	3	
2023	Cutoff Walls	Grading/ Excavation	31	0	misc.	5	0	9	2	
2023	Site Restoration	Grading/ Excavation	11	0	misc.	15	0	30	1	
2023	Demobilization	Grading/ Excavation	70	0	misc.	15	0	30	5	







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**Basic Project Model Assumptions**

<i>Project Name:</i>	Magpie Creek	<i>Assumed Mitigation:</i>	On-Road	2010 and Newer On-Road Vehicle Fleet
<i>Modeled As:</i>	Other Linear Project		Off-Road	Tier 4 Equipment
<i>Predominant Soil Type:</i>	Weathered Rock Earth			90% of HP as Tier 4 Equipment
<i>Project Length:</i>	3,100 feet	0.59 miles		
<i>Project Width:</i>	59 feet			
<i>Project Area (acres):</i>	4 acres			
<i>Maximum Area Disturbed/Day:</i>	1 acres			
<i>Water Trucks Used:</i>	Yes			
<i>Total Working in Month:</i>	22 days			
<i>Months Worked each Year:</i>				
2020	0 Months			
2021	0 Months			
2022	3 Months			
2023	0 Months			
<i>Haul Truck Capacity:</i>	15 CY			
<i>User Override Equipment:</i>	10 Hours/Day			

**Material Hauling/Handling Quantities by Task**

Year	Task	Model As	Import Volume (CY/day)	Export Volume (CY/day)	Material	Miles per Trip (Import)	Miles per Trip (Export)	Miles Round Trip (for modeling)	Trips/day (one way and round)	No. of Employees
2022	Levee Raise	Grading/ Excavation	90	0	soil	50	0	100	6	40
2022	New Levees	Grading/ Excavation	200	0	soil	50	0	100	13	75
2022	Channel Improvement	Grading/ Excavation	0	150	soil	0	20	40	10	75
2022	Bank Protection	Grading/ Excavation	1515	0	stone	50	0	100	101	75
2022	Maintenance Roads	Grading/ Excavation	900	0	aggregate	50	0	100	60	75
2022	Culvert	Grading/ Excavation	450	0	concrete	50	0	100	31	75
<b>2022</b>	<b>All</b>	<b>Grading/ Excavation</b>	<b>2705</b>	<b>150</b>	<b>Soil</b>			<b>97</b>		<b>75</b>
2022	All	Grading/ Excavation	450	0	Asphalt			100		75

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**Equipment - Number of Individual Equipment Pieces Operating for Various Construction Phases**

Equipment	No. of Equipment	
	Grading/Excavating	
Aerial Lifts	0	
Air Compressors	0	
Bore/Drill Rigs	0	
Cement and Mortar Mixers	1	
Concrete/Industrial Saws	0	
Cranes	1	
Crawler Tractors	0	
Crushing/Proc. Equipment	0	
Excavators	2	
Forklifts	0	
Generator Sets	1	
Graders	1	
Off-Highway Tractors	0	
Off-Highway Trucks	2	
Other Construction Equipment	2	
Other General Industrial Equipment	2	
Other Material Handling Equipment	10	
Pavers	0	
Paving Equipment	0	
Plate Compactors	0	
Pressure Washers	0	
Pumps	0	
Rollers	2	
Rough Terrain Forklifts	0	
Rubber Tired Dozers	2	
Rubber Tired Loaders	0	
Scrapers	1	
Signal Boards	3	
Skid Steer Loaders	0	
Surfacing Equipment	1	
Sweepers/Scrubbers	1	
Tractors/Loaders/Backhoes	2	
Trenchers	0	
Welders	2	

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**Basic Project Model Assumptions**

<i>Project Name:</i>	Mitigation		<i>Assumed Mitigation:</i>	
<i>Modeled As:</i>	Other Linear Project		On-Road	2010 and Newer On-Road Vehicle Fleet
<i>Predominant Soil Type:</i>	Weathered Rock Earth		Off-Road	Tier 4 Equipment
<i>Project Length:</i>	2,500 feet	0.47 miles		90% of HP as Tier 4 Equipment
<i>Project Width:</i>	900 feet			
<i>Project Area (acres):</i>	52 acres			
<i>Maximum Area Disturbed/Day:</i>	5 acres		<i>Note:</i>	<sup>1</sup> 0.6 months for clearing/ grubbing and 6 months for grading/excavating
<i>Water Trucks Used:</i>	Yes			
<i>Total Working in Month:</i>	22 days			
<i>Months Worked Each Year:</i>				
2020	0 Months			
2021	0 Months			
2022	0 Months			
2023	6 Months <sup>1</sup>			
<i>Haul Truck Capacity:</i>	15 CY			
<i>User Override Equipment:</i>	10 Hours/Day			

**Material Hauling/Handling Quantities by Task**

Year	Task	Model As	Import Volume (CY/day)	Export Volume (CY/day)	Material	Miles per Trip (Import)	Miles per Trip (Export)	Miles Round Trip (for modeling)	Trips/day (one way and round)	No. of Employees
2023	Site Prep	Grubbing/ Clearing	0	6	soil, veg.	0	10	20	0.4	40
2023	Install Planting, Fencing, and Irrigation	Grading/ Excavation	0	91	rip rap	0	10	20	6	75
<b>2023</b>	<b>All</b>	<b>Grubbing/ Clearing</b>	<b>0</b>	<b>6</b>	<b>Soil</b>			<b>20</b>		<b>40</b>
<b>2023</b>	<b>All</b>	<b>Grading/ Excavation</b>	<b>0</b>	<b>91</b>	<b>Soil</b>			<b>20</b>		<b>75</b>

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**Equipment - Number of Individual Equipment Pieces Operating for Various Construction Phases**

Equipment	No. of Equipment	
	Grubbing/ Clearing Phase	Grading/ Excavating
Aerial Lifts	0	0
Air Compressors	0	0
Bore/Drill Rigs	0	0
Cement and Mortar Mixers	0	0
Concrete/Industrial Saws	0	0
Cranes	0	0
Crawler Tractors	0	0
Crushing/Proc. Equipment	0	0
Excavators	3	2
Forklifts	0	0
Generator Sets	0	1
Graders	0	1
Off-Highway Tractors	0	0
Off-Highway Trucks	0	0
Other Construction Equipment	0	2
Other General Industrial Equipment	0	0
Other Material Handling Equipment	0	0
Pavers	0	0
Paving Equipment	0	0
Plate Compactors	0	0
Pressure Washers	0	0
Pumps	0	0
Rollers	0	0
Rough Terrain Forklifts	0	0
Rubber Tired Dozers	0	1
Rubber Tired Loaders	0	0
Scrapers	0	0
Signal Boards	0	0
Skid Steer Loaders	0	0
Surfacing Equipment	0	0
Sweepers/Scrubbers	1	1
Tractors/Loaders/Backhoes	0	2
Trenchers	0	0
Welders	0	0

# **Attachment 6**

## RCEM Input and Output Files

For each contract, the following are attached:

- Unmitigated Input and Output
- On-Road Mitigated Output
- On-Road and Off-Road Mitigated Output


*Erosion Protection*  
American River  
Sacramento River

### Road Construction Emissions Model Data Entry Worksheet

**Note:** Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project type. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name	American River Erosion Contract		
Construction Start Year	2020	Enter a Year between 2014 and 2025 (inclusive)	
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construct	
Project Construction Time	3.30	months	
Working Days per Month	22.00	days (assume 22 if unknown)	
Predominant Soil/Site Type: Enter 1, 2, or 3 <small>(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)</small>	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)	
Project Length	2.40	miles	
Total Project Area	29.00	acres	
Maximum Area Disturbed/Day	5.00	acres	
Water Trucks Used?	1	1. Yes 2. No	



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

#### Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd <sup>3</sup> /day)	Export Volume (yd <sup>3</sup> /day)
Soil	Grubbing/Land Clearing	15.00	0.00	167.00
	Grading/Excavator	15.00	1914.00	2045.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavator			
	Drainage/Utilities/Sub-Grade			
	Paving			

#### Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Stand:

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of	Calculated	User Override of	Default
	Construction Months	Months	Phase Starting Date	Phase Starting Date
Grubbing/Land Clearing	0.30	0.33	4/5/2022	1/1/2020
Grading/Excavation	3.00	1.49	4/15/2022	1/11/2020
Drainage/Utilities/Sub-Grade	0.00	0.99	Program	4/12/2020
Paving	0.00	0.50	Program	4/12/2020
<b>Totals (Months)</b>		3		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated										
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Miles/round trip - Grubbing/Land Clearing	28.00			12	336.00										
Miles/round trip - Grading/Excavation	61.00			264	16104.00										
Miles/round trip - Drainage/Utilities/Sub-Grade				0	0.00										
Miles/round trip - Paving				0	0.00										
<b>Emission Rates</b>															
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86	0.00	0.05	0.00	0.05	1,612.86
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86	0.00	0.05	0.00	0.05	1,612.86
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>															
Pounds per day - Grubbing/Land Clearing	0.07	0.32	2.39	0.08	0.04	0.01	1,182.70	0.00	0.04	1,194.73	0.00	0.04	0.00	0.04	1,194.73
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	3.90	0.00	0.00	3.94	0.00	0.00	0.00	0.00	3.94
Pounds per day - Grading/Excavation	3.47	15.24	114.76	3.99	1.75	0.54	56,684.93	0.16	1.92	57,261.75	0.00	1.92	0.00	1.92	57,261.75
Tons per const. Period - Grading/Excavation	0.11	0.50	3.79	0.13	0.06	0.02	1,870.60	0.01	0.06	1,889.64	0.00	0.06	0.00	0.06	1,889.64
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.11	0.50	3.79	0.13	0.06	0.02	1,874.51	0.01	0.06	1,893.58	0.00	0.06	0.00	0.06	1,893.58

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated										
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Miles/round trip - Grubbing/Land Clearing				0	0.00										
Miles/round trip - Grading/Excavation				0	0.00										
Miles/round trip - Drainage/Utilities/Sub-Grade				0	0.00										
Miles/round trip - Paving				0	0.00										
<b>Emission Rates</b>															
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86	0.00	0.05	0.00	0.05	1,612.86
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86	0.00	0.05	0.00	0.05	1,612.86
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>															
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Note: Worker commute default values can be overridden in cells D113 through D11

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values		Calculated Daily Trips		Calculated Daily VMT			
User Input		Commute Default Values									
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearin	40					80		1,600.00			
No. of employees: Grading/Excavatio	75					150		3,000.00			
No. of employees: Drainage/Utilities/Sub-Grad						0		0.00			
No. of employees: Paving						0		0.00			
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Grading/Excavation (grams/mile)		0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)		0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Grading/Excavation (grams/trip)		0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.21	3.60	0.35	0.16	0.07	0.01	1,242.58	0.03	0.01	1,247.58
Tons per const. Period - Grubbing/Land Clearing		0.00	0.01	0.00	0.00	0.00	0.00	4.10	0.00	0.00	4.12
Pounds per day - Grading/Excavatio		0.40	6.75	0.66	0.31	0.13	0.02	2,329.85	0.05	0.03	2,339.21
Tons per const. Period - Grading/Excavatio		0.01	0.22	0.02	0.01	0.00	0.00	76.88	0.00	0.00	77.19
Pounds per day - Drainage/Utilities/Sub-Grad		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec		0.01	0.23	0.02	0.01	0.00	0.00	80.99	0.00	0.00	81.31

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Vehicle/Day		Default Values Miles Traveled/Vehicle/Day		Calculated Daily VMT	
User Input											
Grubbing/Land Clearing - Exhaust	1							40.00			40.00
Grading/Excavation - Exhaust	1							40.00			40.00
Drainage/Utilities/Subgrade	0										0.00
Paving	0										0.00
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Grading/Excavation (grams/mile)		0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.01	0.04	0.29	0.01	0.00	0.00	140.80	0.00	0.00	142.23
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.47
Pounds per day - Grading/Excavatio		0.01	0.04	0.29	0.01	0.00	0.00	140.80	0.00	0.00	142.23
Tons per const. Period - Grading/Excavatio		0.00	0.00	0.01	0.00	0.00	0.00	4.65	0.00	0.00	4.69
Pounds per day - Drainage/Utilities/Sub-Grad		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec		0.00	0.00	0.01	0.00	0.00	0.00	5.11	0.00	0.00	5.16

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust		User Override of Maximum Acreage Disturbed/Day		Default Maximum Acreage/Day		PM10 pounds/day		PM10 tons/period		PM2.5 pounds/day		PM2.5 tons/period	
Fugitive Dust - Grubbing/Land Clearing	5.00					50.00		0.17		10.40		0.03	
Fugitive Dust - Grading/Excavation	0.50					5.00		0.17		1.04		0.03	
Fugitive Dust - Drainage/Utilities/Subgrad						0.00		0.00		0.00		0.00	

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is select

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default											
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Excavators	1.57	25.19	13.75	0.66	0.61	0.04	3,868.79	1.25	0.04	3,910.51
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Generator Sets	0.41	4.59	3.66	0.18	0.18	0.01	778.79	0.04	0.01	781.46
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Sweepers/Scrubbers	0.24	2.40	2.25	0.15	0.14	0.00	307.72	0.10	0.00	311.03
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing			pounds per day	2.65	34.43	22.36	1.10	1.04	0.06	5,325.16	1.43	0.05	5,374.74
	Grubbing/Land Clearing			tons per phase	0.01	0.11	0.07	0.00	0.00	0.00	17.57	0.00	0.00	17.74

Grading/Excavator	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tie	Cranes	0.91	4.63	10.23	0.42	0.39	0.01	1,366.84	0.44	0.01	1,381.57
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tie	Excavators	0.52	8.40	4.58	0.22	0.20	0.01	1,289.60	0.42	0.01	1,303.50
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Generator Sets	0.41	4.59	3.66	0.18	0.18	0.01	778.79	0.04	0.01	781.46
2.00			Model Default Tie	Graders	1.39	11.05	13.05	0.73	0.67	0.02	1,514.01	0.49	0.01	1,530.28
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tie	Off-Highway Trucks	1.31	8.36	9.98	0.36	0.33	0.03	3,181.56	1.03	0.03	3,215.81
1.00			Model Default Tie	Other Construction Equipmen	0.47	5.03	4.77	0.25	0.23	0.01	747.91	0.24	0.01	755.99
2.00			Model Default Tie	Other General Industrial Equipmen	0.45	4.84	4.22	0.26	0.24	0.01	620.05	0.20	0.01	626.74
1.00			Model Default Tie	Other Material Handling Equipmen	0.33	4.68	2.79	0.15	0.14	0.01	695.43	0.22	0.01	702.93
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tie	Rubber Tired Dozers	2.14	17.52	21.62	0.99	0.91	0.02	2,155.67	0.70	0.02	2,178.82
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73
3.00			Model Default Tie	Skid Steer Loaders	0.26	5.20	3.48	0.13	0.12	0.01	751.47	0.24	0.01	759.57
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Sweepers/Scrubbers	0.24	2.40	2.25	0.15	0.14	0.00	307.72	0.10	0.00	311.03
2.00			Model Default Tie	Tractors/Loaders/Backhoes	0.42	5.65	4.23	0.23	0.21	0.01	760.86	0.25	0.01	769.05
2.00			Model Default Tie	Trenchers	0.94	6.75	8.77	0.62	0.57	0.01	848.81	0.27	0.01	857.95
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavator			pounds per day	10.23	91.34	96.35	4.80	4.44	0.16	15,388.57	4.68	0.14	15,546.45
	Grading/Excavator			tons per phase	0.34	3.01	3.18	0.16	0.15	0.01	507.82	0.15	0.00	513.03



Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =</b>					<b>0.35</b>	<b>3.13</b>	<b>3.25</b>	<b>0.16</b>	<b>0.15</b>	<b>0.01</b>	<b>525.40</b>	<b>0.16</b>	<b>0.00</b>	<b>530.77</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F4

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> American River Erosion Contract 1														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.95	38.39	25.39	51.36	1.36	50.00	11.55	1.15	10.40	0.08	7,891.24	1.46	0.11	7,959.28
Grading/Excavation	14.11	113.36	212.05	14.11	9.11	5.00	7.37	6.33	1.04	0.73	74,544.15	4.89	2.09	75,289.65
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	14.11	113.36	212.05	51.36	9.11	50.00	11.55	6.33	10.40	0.73	74,544.15	4.89	2.09	75,289.65
Total (tons/construction project)	0.48	3.87	7.08	0.64	0.31	0.33	0.28	0.21	0.07	0.02	2,486.00	0.17	0.07	2,510.82

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 3  
 Total Project Area (acres) -> 29  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	167	0	336	0	1,600	40
Grading/Excavation	3,959	0	16,104	0	3,000	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> American River Erosion Contract 1														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.13	0.08	0.17	0.00	0.17	0.04	0.00	0.03	0.00	26.04	0.00	0.00	23.83
Grading/Excavation	0.47	3.74	7.00	0.47	0.30	0.17	0.24	0.21	0.03	0.02	2,459.96	0.16	0.07	2,253.98
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.47	3.74	7.00	0.47	0.30	0.17	0.24	0.21	0.03	0.02	2,459.96	0.16	0.07	2,253.98
Total (tons/construction project)	0.48	3.87	7.08	0.64	0.31	0.33	0.28	0.21	0.07	0.02	2,486.00	0.17	0.07	2,277.80

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> American River Erosion Contract 1														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.92	38.34	23.86	51.35	1.35	50.00	11.54	1.14	10.40	0.08	7,851.53	1.45	0.10	7,918.76
Grading/Excavation	13.01	111.32	146.49	13.77	8.77	5.00	7.04	6.00	1.04	0.71	72,839.33	4.84	1.98	73,549.71
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	13.01	111.32	146.49	51.35	8.77	50.00	11.54	6.00	10.40	0.71	72,839.33	4.84	1.98	73,549.71
Total (tons/construction project)	0.44	3.80	4.91	0.62	0.29	0.33	0.27	0.20	0.07	0.02	2,429.61	0.16	0.07	2,453.27

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 3  
 Total Project Area (acres) -> 29  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	167	0	336	0	1,600	40
Grading/Excavation	3,959	0	16,104	0	3,000	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> American River Erosion Contract 1														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.13	0.08	0.17	0.00	0.17	0.04	0.00	0.03	0.00	25.91	0.00	0.00	23.71
Grading/Excavation	0.43	3.67	4.83	0.45	0.29	0.17	0.23	0.20	0.03	0.02	2,403.70	0.16	0.07	2,201.89
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.43	3.67	4.83	0.45	0.29	0.17	0.23	0.20	0.03	0.02	2403.70	0.16	0.07	2,201.89
Total (tons/construction project)	0.44	3.80	4.91	0.62	0.29	0.33	0.27	0.20	0.07	0.02	2429.61	0.16	0.07	2,225.59

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.



Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> American River Erosion Contract 1														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.02	45.60	9.99	50.60	0.60	50.00	10.83	0.43	10.40	0.08	7,851.53	1.45	0.10	7,918.76
Grading/Excavation	7.75	120.95	69.78	9.64	4.64	5.00	3.22	2.18	1.04	0.71	72,839.33	4.84	1.98	73,549.71
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	7.75	120.95	69.78	50.60	4.64	50.00	10.83	2.18	10.40	0.71	72,839.33	4.84	1.98	73,549.71
Total (tons/construction project)	0.26	4.14	2.34	0.49	0.16	0.33	0.14	0.07	0.07	0.02	2,429.61	0.16	0.07	2,453.27

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 3  
 Total Project Area (acres) -> 29  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	167	0	336	0	1,600	40
Grading/Excavation	3,959	0	16,104	0	3,000	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> American River Erosion Contract 1														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.15	0.03	0.17	0.00	0.17	0.04	0.00	0.03	0.00	25.91	0.00	0.00	23.71
Grading/Excavation	0.26	3.99	2.30	0.32	0.15	0.17	0.11	0.07	0.03	0.02	2,403.70	0.16	0.07	2,201.89
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.26	3.99	2.30	0.32	0.15	0.17	0.11	0.07	0.03	0.02	2403.70	0.16	0.07	2,201.89
Total (tons/construction project)	0.26	4.14	2.34	0.49	0.16	0.33	0.14	0.07	0.07	0.02	2429.61	0.16	0.07	2,225.59

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

### Road Construction Emissions Model Data Entry Worksheet

**Note:** Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through D41 for all project type. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**


Project Name	American River Erosion Contract 2	
Construction Start Year	2021	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construct
Project Construction Time	3.30	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 <small>(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)</small>	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	6.10	miles
Total Project Area	74.00	acres
Maximum Area Disturbed/Day	5.00	acres
Water Trucks Used?	1	1. Yes 2. No

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	15.00	0.00	182.00
	Grading/Excavator	15.00	10642.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavator			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Stand:



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of	Calculated	User Override of	Default
	Construction Months	Months	Phase Starting Date	Phase Starting Date
Grubbing/Land Clearing	0.30	0.33	4/5/2021	1/1/2021
Grading/Excavation	3.00	1.49	4/15/2021	1/1/2021
Drainage/Utilities/Sub-Grade	0.00	0.99	Program	4/13/2021
Paving	0.00	0.50	Program	4/13/2021
<b>Totals (Months)</b>		3		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated												
	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
<b>User Input</b>																	
Miles/round trip - Grubbing/Land Clearing	28.00				13	364.00											
Miles/round trip - Grading/Excavation	85.00				710	60350.00											
Miles/round trip - Drainage/Utilities/Sub-Grade					0	0.00											
Miles/round trip - Paving					0	0.00											
<b>Emission Rates</b>																	
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92							
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92							
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
<b>Hauling Emissions</b>																	
Pounds per day - Grubbing/Land Clearing	0.08	0.35	2.93	0.09	0.04	0.01	1,295.61	0.00	0.04	1,308.79							
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	4.28	0.00	0.00	4.34							
Pounds per day - Grading/Excavation	13.52	57.57	485.00	15.26	6.88	2.05	214,807.51	0.63	7.28	216,993.03							
Tons per const. Period - Grading/Excavation	0.45	1.90	16.01	0.50	0.23	0.07	7,088.65	0.02	0.24	7,160.77							
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
<b>Total tons per construction project</b>	<b>0.45</b>	<b>1.90</b>	<b>16.01</b>	<b>0.50</b>	<b>0.23</b>	<b>0.07</b>	<b>7,092.92</b>	<b>0.02</b>	<b>0.24</b>	<b>7,165.09</b>							

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated												
	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
<b>User Input</b>																	
Miles/round trip - Grubbing/Land Clearing					0	0.00											
Miles/round trip - Grading/Excavation					0	0.00											
Miles/round trip - Drainage/Utilities/Sub-Grade					0	0.00											
Miles/round trip - Paving					0	0.00											
<b>Emission Rates</b>																	
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92							
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92							
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
<b>Emissions</b>																	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00							
<b>Total tons per construction project</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>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>							

Note: Worker commute default values can be overridden in cells D113 through D11

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values		Calculated Daily Trips		Calculated Daily VMT		
User Input										
Miles/one-way trip	20									
One-way trips/day	2									
No. of employees: Grubbing/Land Clearin	40				80			1,600.00		
No. of employees: Grading/Excavatio	75				150			3,000.00		
No. of employees: Drainage/Utilities/Sub-Grad					0			0.00		
No. of employees: Paving					0			0.00		
<b>Emission Rates</b>										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48
Grading/Excavation (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35
Grading/Excavation (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>										
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing	0.23	3.90	0.39	0.17	0.07	0.01	1,284.42	0.03	0.02	1,289.97
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	4.24	0.00	0.00	4.26
Pounds per day - Grading/Excavatio	0.43	7.30	0.73	0.31	0.13	0.02	2,408.28	0.05	0.03	2,418.68
Tons per const. Period - Grading/Excavatio	0.01	0.24	0.02	0.01	0.00	0.00	79.47	0.00	0.00	79.82
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec	0.02	0.25	0.03	0.01	0.00	0.00	83.71	0.00	0.00	84.07

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Vehicle/Day		Default Values Miles Traveled/Vehicle/Day		Calculated Daily VMT	
User Input											
Grubbing/Land Clearing - Exhaust	1					40.00					40.00
Grading/Excavation - Exhaust	5					40.00					200.00
Drainage/Utilities/Subgrade											0.00
Paving											0.00
<b>Emission Rates</b>											
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92	
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>											
	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.01	0.04	0.32	0.01	0.00	0.00	142.37	0.00	0.00	143.82	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.47	
Pounds per day - Grading/Excavatio	0.04	0.19	1.61	0.05	0.02	0.01	711.87	0.00	0.02	719.12	
Tons per const. Period - Grading/Excavatio	0.00	0.01	0.05	0.00	0.00	0.00	23.49	0.00	0.00	23.73	
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction projec	0.00	0.01	0.05	0.00	0.00	0.00	23.96	0.00	0.00	24.21	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust		User Override of Maximum Acreage Disturbed/Day		Default Maximum Acreage/Day		PM10 pounds/day		PM10 tons/period		PM2.5 pounds/day		PM2.5 tons/period	
User Input													
Fugitive Dust - Grubbing/Land Clearing	5.00					50.00		0.17		10.40		0.03	
Fugitive Dust - Grading/Excavation	2.50					25.00		0.83		5.20		0.17	
Fugitive Dust - Drainage/Utilities/Subgrad						0.00		0.00		0.00		0.00	

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is select

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default											
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Excavators	1.77	25.32	16.66	0.81	0.74	0.04	3,870.16	1.25	0.04	3,911.89
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Generator Sets	0.45	4.61	3.96	0.21	0.21	0.01	778.79	0.04	0.01	781.53
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Sweepers/Scrubbers	0.29	2.44	2.57	0.19	0.17	0.00	307.72	0.10	0.00	311.03
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day			2.94	34.62	25.89	1.31	1.23	0.06	5,326.53	1.43	0.05	5,376.19
	Grubbing/Land Clearing	tons per phase			0.01	0.11	0.09	0.00	0.00	0.00	17.58	0.00	0.00	17.74

Grading/Excavator	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Cranes	3.03	14.55	35.58	1.44	1.33	0.04	4,099.84	1.33	0.04	4,144.02
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Excavators	1.77	25.32	16.66	0.81	0.74	0.04	3,870.16	1.25	0.04	3,911.89
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tie	Generator Sets	1.34	13.82	11.87	0.63	0.63	0.02	2,336.38	0.12	0.02	2,344.60
4.00			Model Default Tie	Graders	3.20	22.52	30.62	1.71	1.57	0.03	3,027.78	0.98	0.03	3,060.33
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Off-Highway Trucks	4.52	26.90	39.28	1.44	1.32	0.10	9,541.22	3.09	0.09	9,643.99
1.00			Model Default Tie	Other Construction Equipmen	0.52	5.07	5.48	0.29	0.26	0.01	748.16	0.24	0.01	756.23
2.00			Model Default Tie	Other General Industrial Equipmen	0.53	4.93	4.90	0.34	0.31	0.01	620.05	0.20	0.01	626.74
1.00			Model Default Tie	Other Material Handling Equipmer	0.37	4.71	3.31	0.17	0.15	0.01	695.43	0.22	0.01	702.93
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Rubber Tired Dozers	6.64	54.52	68.55	3.13	2.88	0.07	6,462.63	2.09	0.06	6,532.07
4.00			Model Default Tie	Rubber Tired Loaders	1.69	7.88	19.03	0.63	0.58	0.03	2,981.41	0.96	0.03	3,013.61
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73
3.00			Model Default Tie	Skid Steer Loaders	0.28	5.21	3.76	0.15	0.14	0.01	750.74	0.24	0.01	758.84
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Sweepers/Scrubbers	0.29	2.44	2.57	0.19	0.17	0.00	307.72	0.10	0.00	311.03
3.00			Model Default Tie	Tractors/Loaders/Backhoes	0.71	8.56	7.18	0.42	0.39	0.01	1,140.01	0.37	0.01	1,152.28
2.00			Model Default Tie	Trenchers	0.99	6.77	9.12	0.66	0.61	0.01	848.74	0.27	0.01	857.88
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavator		pounds per day		26.32	205.45	260.62	12.12	11.21	0.39	37,800.14	11.51	0.34	38,188.17
	Grading/Excavator		tons per phase		0.87	6.78	8.60	0.40	0.37	0.01	1,247.40	0.38	0.01	1,260.21



Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =</b>					<b>0.88</b>	<b>6.89</b>	<b>8.69</b>	<b>0.40</b>	<b>0.37</b>	<b>0.01</b>	<b>1,264.98</b>	<b>0.38</b>	<b>0.01</b>	<b>1,277.95</b>



Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F4

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> American River Erosion Contract 2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	3.26	38.90	29.52	51.58	1.58	50.00	11.75	1.35	10.40	0.08	8,048.93	1.46	0.11	8,118.77
Grading/Excavation	40.31	270.51	747.96	52.74	27.74	25.00	23.44	18.24	5.20	2.47	255,727.80	12.19	7.67	258,319.01
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	40.31	270.51	747.96	52.74	27.74	50.00	23.44	18.24	10.40	2.47	255,727.80	12.19	7.67	258,319.01
Total (tons/construction project)	1.34	9.06	24.78	1.91	0.92	0.99	0.81	0.61	0.21	0.08	8,465.58	0.41	0.25	8,551.32

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 3  
 Total Project Area (acres) -> 74  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	182	0	364	0	1,600	40
Grading/Excavation	10,642	0	60,350	0	3,000	200
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> American River Erosion Contract 2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.13	0.10	0.17	0.01	0.17	0.04	0.00	0.03	0.00	26.56	0.00	0.00	24.31
Grading/Excavation	1.33	8.93	24.68	1.74	0.92	0.83	0.77	0.60	0.17	0.08	8,439.02	0.40	0.25	7,733.40
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	1.33	8.93	24.68	1.74	0.92	0.83	0.77	0.60	0.17	0.08	8,439.02	0.40	0.25	7,733.40
Total (tons/construction project)	1.34	9.06	24.78	1.91	0.92	0.99	0.81	0.61	0.21	0.08	8,465.58	0.41	0.25	7,757.71

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> American River Erosion Contract 2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	3.23	38.84	27.55	51.57	1.57	50.00	11.74	1.34	10.40	0.08	8,000.00	1.46	0.11	8,068.90
Grading/Excavation	35.68	262.11	452.01	51.14	26.14	25.00	21.90	16.70	5.20	2.40	248,395.07	11.98	7.22	250,844.82
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>35.68</b>	<b>262.11</b>	<b>452.01</b>	<b>51.57</b>	<b>26.14</b>	<b>50.00</b>	<b>21.90</b>	<b>16.70</b>	<b>10.40</b>	<b>2.40</b>	<b>248,395.07</b>	<b>11.98</b>	<b>7.22</b>	<b>250,844.82</b>
<b>Total (tons/construction project)</b>	<b>1.19</b>	<b>8.78</b>	<b>15.01</b>	<b>1.86</b>	<b>0.87</b>	<b>0.99</b>	<b>0.76</b>	<b>0.56</b>	<b>0.21</b>	<b>0.08</b>	<b>8,223.44</b>	<b>0.40</b>	<b>0.24</b>	<b>8,304.51</b>

Notes:	Project Start Year ->	2021
	Project Length (months) ->	3
	Total Project Area (acres) ->	74
	Maximum Area Disturbed/Day (acres) ->	5
	Water Truck Used? ->	Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	182	0	364	0	1,600	40
Grading/Excavation	10,642	0	60,350	0	3,000	200
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> American River Erosion Contract 2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.13	0.09	0.17	0.01	0.17	0.04	0.00	0.03	0.00	26.40	0.00	0.00	24.16
Grading/Excavation	1.18	8.65	14.92	1.69	0.86	0.83	0.72	0.55	0.17	0.08	8,197.04	0.40	0.24	7,509.64
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>1.18</b>	<b>8.65</b>	<b>14.92</b>	<b>1.69</b>	<b>0.86</b>	<b>0.83</b>	<b>0.72</b>	<b>0.55</b>	<b>0.17</b>	<b>0.08</b>	<b>8197.04</b>	<b>0.40</b>	<b>0.24</b>	<b>7,509.64</b>
<b>Total (tons/construction project)</b>	<b>1.19</b>	<b>8.78</b>	<b>15.01</b>	<b>1.86</b>	<b>0.87</b>	<b>0.99</b>	<b>0.76</b>	<b>0.56</b>	<b>0.21</b>	<b>0.08</b>	<b>8223.44</b>	<b>0.40</b>	<b>0.24</b>	<b>7,533.80</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> American River Erosion Contract 2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.04	45.92	10.15	50.61	0.61	50.00	10.83	0.43	10.40	0.08	8,000.00	1.46	0.11	8,068.90
Grading/Excavation	21.34	288.94	225.04	40.39	15.39	25.00	11.96	6.76	5.20	2.40	248,395.07	11.98	7.22	250,844.82
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	21.34	288.94	225.04	50.61	15.39	50.00	11.96	6.76	10.40	2.40	248,395.07	11.98	7.22	250,844.82
Total (tons/construction project)	0.71	9.69	7.46	1.50	0.51	0.99	0.43	0.22	0.21	0.08	8,223.44	0.40	0.24	8,304.51

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 3  
 Total Project Area (acres) -> 74  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	182	0	364	0	1,600	40
Grading/Excavation	10,642	0	60,350	0	3,000	200
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> American River Erosion Contract 2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.15	0.03	0.17	0.00	0.17	0.04	0.00	0.03	0.00	26.40	0.00	0.00	24.16
Grading/Excavation	0.70	9.54	7.43	1.33	0.51	0.83	0.39	0.22	0.17	0.08	8,197.04	0.40	0.24	7,509.64
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.70	9.54	7.43	1.33	0.51	0.83	0.39	0.22	0.17	0.08	8,197.04	0.40	0.24	7,509.64
Total (tons/construction project)	0.71	9.69	7.46	1.50	0.51	0.99	0.43	0.22	0.21	0.08	8,223.44	0.40	0.24	7,533.80

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

**Road Construction Emissions Model**  
**Data Entry Worksheet**

Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with yellow or blue background can be modified. Program defaults have a white background

The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project type. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project

**Input Type**

Project Name: American River Erosion Contract 2


Construction Start Year: 2022  
Enter a Year between 2014 and 2025 (inclusive)

Project Type: 4  
1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway  
2) Road Widening : Project to add a new lane to an existing roadway  
3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane  
4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construct

Project Construction Time: 3.30 months  
Working Days per Month: 22.00 days (assume 22 if unknown)

Predominant Soil/Site Type: Enter 1, 2, or 3  
(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)

Project Length: 6.10 miles  
Total Project Area: 74.00 acres  
Maximum Area Disturbed/Day: 5.00 acres  
Water Trucks Used? 1 Yes, 2 No



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	15.00	0.00	182.00
	Grading/Excavator	15.00	10642.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavator			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation	No Mitigation	<small>Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer</small>
Off-road Equipment Emissions Mitigation	No Mitigation	<small>Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a>). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Stand:</small>

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of	Calculated	User Override of	Default
	Construction Months	Months	Phase Starting Date	Phase Starting Date
Grubbing/Land Clearing	0.30	0.33	4/5/2022	1/1/2022
Grading/Excavation	3.00	1.49	4/15/2022	1/1/2022
Drainage/Utilities/Sub-Grade	0.00	0.99	Program	4/13/2022
Paving	0.00	0.50	Program	4/13/2022
<b>Totals (Months)</b>		3		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated										
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Miles/round trip - Grubbing/Land Clearing	28.00			13	364.00										
Miles/round trip - Grading/Excavation	85.00			710	60350.00										
Miles/round trip - Drainage/Utilities/Sub-Grade				0	0.00										
Miles/round trip - Paving				0	0.00										
<b>Emission Rates</b>															
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86					
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86					
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
<b>Hauling Emissions</b>															
Pounds per day - Grubbing/Land Clearing	0.08	0.34	2.59	0.09	0.04	0.01	1,281.25	0.00	0.04	1,294.29					
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	4.23	0.00	0.00	4.27					
Pounds per day - Grading/Excavation	13.02	57.10	430.07	14.94	6.57	2.03	212,427.69	0.60	7.20	214,589.35					
Tons per const. Period - Grading/Excavation	0.43	1.88	14.19	0.49	0.22	0.07	7,010.11	0.02	0.24	7,081.45					
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
<b>Total tons per construction project</b>	0.43	1.89	14.20	0.49	0.22	0.07	7,014.34	0.02	0.24	7,085.72					

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated										
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Miles/round trip - Grubbing/Land Clearing				0	0.00										
Miles/round trip - Grading/Excavation				0	0.00										
Miles/round trip - Drainage/Utilities/Sub-Grade				0	0.00										
Miles/round trip - Paving				0	0.00										
<b>Emission Rates</b>															
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86					
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86					
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
<b>Emissions</b>															
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
<b>Total tons per construction project</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					

Note: Worker commute default values can be overridden in cells D113 through D11

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values		Calculated Daily Trips		Calculated Daily VMT			
User Input											
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearin	40				80			1,600.00			
No. of employees: Grading/Excavatio	75				150			3,000.00			
No. of employees: Drainage/Utilities/Sub-Grad					0			0.00			
No. of employees: Paving					0			0.00			
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Grading/Excavation (grams/mile)		0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)		0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Grading/Excavation (grams/trip)		0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.21	3.60	0.35	0.16	0.07	0.01	1,242.58	0.03	0.01	1,247.58
Tons per const. Period - Grubbing/Land Clearing		0.00	0.01	0.00	0.00	0.00	0.00	4.10	0.00	0.00	4.12
Pounds per day - Grading/Excavatio		0.40	6.75	0.66	0.31	0.13	0.02	2,329.85	0.05	0.03	2,339.21
Tons per const. Period - Grading/Excavatio		0.01	0.22	0.02	0.01	0.00	0.00	76.88	0.00	0.00	77.19
Pounds per day - Drainage/Utilities/Sub-Grad		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec		0.01	0.23	0.02	0.01	0.00	0.00	80.99	0.00	0.00	81.31

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Vehicle/Day		Default Values Miles Traveled/Vehicle/Day		Calculated Daily VMT	
User Input											
Grubbing/Land Clearing - Exhaust	1						40.00				40.00
Grading/Excavation - Exhaust	5						40.00				200.00
Drainage/Utilities/Subgrade											0.00
Paving											0.00
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Grading/Excavation (grams/mile)		0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.01	0.04	0.29	0.01	0.00	0.00	140.80	0.00	0.00	142.23
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.47
Pounds per day - Grading/Excavatio		0.04	0.19	1.43	0.05	0.02	0.01	703.99	0.00	0.02	711.15
Tons per const. Period - Grading/Excavatio		0.00	0.01	0.05	0.00	0.00	0.00	23.23	0.00	0.00	23.47
Pounds per day - Drainage/Utilities/Sub-Grad		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec		0.00	0.01	0.05	0.00	0.00	0.00	23.70	0.00	0.00	23.94

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust		User Override of Maximum Acreage Disturbed/Day		Default Maximum Acreage/Day		PM10 pounds/day		PM10 tons/period		PM2.5 pounds/day		PM2.5 tons/period	
Fugitive Dust - Grubbing/Land Clearing	5.00					50.00	0.17	10.40	0.03				
Fugitive Dust - Grading/Excavation	2.50					25.00	0.83	5.20	0.17				
Fugitive Dust - Drainage/Utilities/Subgrad						0.00	0.00	0.00	0.00				

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is select

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default											
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Excavators	1.57	25.19	13.75	0.66	0.61	0.04	3,868.79	1.25	0.04	3,910.51
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Generator Sets	0.41	4.59	3.66	0.18	0.18	0.01	778.79	0.04	0.01	781.46
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Sweepers/Scrubbers	0.24	2.40	2.25	0.15	0.14	0.00	307.72	0.10	0.00	311.03
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing			pounds per day	2.65	34.43	22.36	1.10	1.04	0.06	5,325.16	1.43	0.05	5,374.74
	Grubbing/Land Clearing			tons per phase	0.01	0.11	0.07	0.00	0.00	0.00	17.57	0.00	0.00	17.74



Grading/Excavator	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Cranes	2.74	18.89	30.70	1.27	1.17	0.04	4,100.51	1.33	0.04	4,144.71
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Excavators	1.57	25.19	13.75	0.66	0.61	0.04	3,868.79	1.25	0.04	3,910.51
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tie	Generator Sets	1.24	13.78	10.98	0.55	0.55	0.02	2,336.38	0.11	0.02	2,344.39
4.00			Model Default Tie	Graders	2.79	22.10	26.10	1.45	1.33	0.03	3,028.02	0.98	0.03	3,060.56
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Off-Highway Trucks	3.94	25.07	29.95	1.09	1.00	0.10	9,544.67	3.09	0.09	9,647.44
1.00			Model Default Tie	Other Construction Equipmen	0.47	5.03	4.77	0.25	0.23	0.01	747.91	0.24	0.01	755.99
2.00			Model Default Tie	Other General Industrial Equipmen	0.45	4.84	4.22	0.26	0.24	0.01	620.05	0.20	0.01	626.74
1.00			Model Default Tie	Other Material Handling Equipmer	0.33	4.68	2.79	0.15	0.14	0.01	695.43	0.22	0.01	702.93
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Rubber Tired Dozers	6.41	52.55	64.87	2.97	2.73	0.07	6,467.00	2.09	0.06	6,536.47
4.00			Model Default Tie	Rubber Tired Loaders	1.44	7.54	14.50	0.50	0.46	0.03	2,963.57	0.97	0.03	3,015.78
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73
3.00			Model Default Tie	Skid Steer Loaders	0.26	5.20	3.48	0.13	0.12	0.01	751.47	0.24	0.01	759.57
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Sweepers/Scrubbers	0.24	2.40	2.25	0.15	0.14	0.00	307.72	0.10	0.00	311.03
3.00			Model Default Tie	Tractors/Loaders/Backhoes	0.62	8.48	6.35	0.34	0.31	0.01	1,141.29	0.37	0.01	1,153.57
2.00			Model Default Tie	Trenchers	0.94	6.75	8.77	0.62	0.57	0.01	848.81	0.27	0.01	857.95
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavator			pounds per day	23.86	199.74	226.59	10.51	9.72	0.39	37,811.49	11.50	0.34	38,199.39
	Grading/Excavator			tons per phase	0.79	6.59	7.48	0.35	0.32	0.01	1,247.78	0.38	0.01	1,260.58

Drainage/Utilities/Subgrad		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grad			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grad			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =</b>					<b>0.80</b>	<b>6.71</b>	<b>7.55</b>	<b>0.35</b>	<b>0.32</b>	<b>0.01</b>	<b>1,265.35</b>	<b>0.38</b>	<b>0.01</b>	<b>1,278.32</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F4

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> American River Erosion Contract 2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.95	38.42	25.59	51.37	1.37	50.00	11.55	1.15	10.40	0.08	7,989.79	1.46	0.11	8,058.84
Grading/Excavation	37.32	263.77	658.74	50.81	25.81	25.00	21.64	16.44	5.20	2.45	253,273.02	12.16	7.59	255,839.10
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	37.32	263.77	658.74	51.37	25.81	50.00	21.64	16.44	10.40	2.45	253,273.02	12.16	7.59	255,839.10
Total (tons/construction project)	1.24	8.83	21.82	1.85	0.86	0.99	0.75	0.55	0.21	0.08	8,384.38	0.41	0.25	8,469.28

Notes:	Project Start Year ->	2022
	Project Length (months) ->	3
	Total Project Area (acres) ->	74
	Maximum Area Disturbed/Day (acres) ->	5
	Water Truck Used? ->	Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	182	0	364	0	1,600	40
Grading/Excavation	10,642	0	60,350	0	3,000	200
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> American River Erosion Contract 2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.13	0.08	0.17	0.00	0.17	0.04	0.00	0.03	0.00	26.37	0.00	0.00	24.13
Grading/Excavation	1.23	8.70	21.74	1.68	0.85	0.83	0.71	0.54	0.17	0.08	8,358.01	0.40	0.25	7,659.16
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	1.23	8.70	21.74	1.68	0.85	0.83	0.71	0.54	0.17	0.08	8358.01	0.40	0.25	7,659.16
Total (tons/construction project)	1.24	8.83	21.82	1.85	0.86	0.99	0.75	0.55	0.21	0.08	8384.38	0.41	0.25	7,683.28

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> American River Erosion Contract 2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.92	38.37	23.95	51.36	1.36	50.00	11.54	1.14	10.40	0.08	7,947.13	1.45	0.11	8,015.30
Grading/Excavation	33.18	256.11	412.83	49.52	24.52	25.00	20.40	15.20	5.20	2.39	246,878.91	11.97	7.17	249,313.26
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>33.18</b>	<b>256.11</b>	<b>412.83</b>	<b>51.36</b>	<b>24.52</b>	<b>50.00</b>	<b>20.40</b>	<b>15.20</b>	<b>10.40</b>	<b>2.39</b>	<b>246,878.91</b>	<b>11.97</b>	<b>7.17</b>	<b>249,313.26</b>
<b>Total (tons/construction project)</b>	<b>1.10</b>	<b>8.58</b>	<b>13.70</b>	<b>1.80</b>	<b>0.81</b>	<b>0.99</b>	<b>0.71</b>	<b>0.51</b>	<b>0.21</b>	<b>0.08</b>	<b>8,173.23</b>	<b>0.40</b>	<b>0.24</b>	<b>8,253.79</b>

Notes:	Project Start Year ->	2022
	Project Length (months) ->	3
	Total Project Area (acres) ->	74
	Maximum Area Disturbed/Day (acres) ->	5
	Water Truck Used? ->	Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	182	0	364	0	1,600	40
Grading/Excavation	10,642	0	60,350	0	3,000	200
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> American River Erosion Contract 2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.13	0.08	0.17	0.00	0.17	0.04	0.00	0.03	0.00	26.23	0.00	0.00	24.00
Grading/Excavation	1.09	8.45	13.62	1.63	0.81	0.83	0.67	0.50	0.17	0.08	8,147.00	0.39	0.24	7,463.79
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>1.09</b>	<b>8.45</b>	<b>13.62</b>	<b>1.63</b>	<b>0.81</b>	<b>0.83</b>	<b>0.67</b>	<b>0.50</b>	<b>0.17</b>	<b>0.08</b>	<b>8147.00</b>	<b>0.39</b>	<b>0.24</b>	<b>7,463.79</b>
<b>Total (tons/construction project)</b>	<b>1.10</b>	<b>8.58</b>	<b>13.70</b>	<b>1.80</b>	<b>0.81</b>	<b>0.99</b>	<b>0.71</b>	<b>0.51</b>	<b>0.21</b>	<b>0.08</b>	<b>8173.23</b>	<b>0.40</b>	<b>0.24</b>	<b>7,487.79</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> American River Erosion Contract 2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.02	45.62	10.08	50.61	0.61	50.00	10.83	0.43	10.40	0.08	7,947.13	1.45	0.11	8,015.30
Grading/Excavation	21.29	288.65	219.89	40.39	15.39	25.00	11.95	6.75	5.20	2.39	246,878.91	11.97	7.17	249,313.26
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>21.29</b>	<b>288.65</b>	<b>219.89</b>	<b>50.61</b>	<b>15.39</b>	<b>50.00</b>	<b>11.95</b>	<b>6.75</b>	<b>10.40</b>	<b>2.39</b>	<b>246,878.91</b>	<b>11.97</b>	<b>7.17</b>	<b>249,313.26</b>
<b>Total (tons/construction project)</b>	<b>0.71</b>	<b>9.68</b>	<b>7.29</b>	<b>1.50</b>	<b>0.51</b>	<b>0.99</b>	<b>0.43</b>	<b>0.22</b>	<b>0.21</b>	<b>0.08</b>	<b>8,173.23</b>	<b>0.40</b>	<b>0.24</b>	<b>8,253.79</b>

Notes:	Project Start Year ->	2022
	Project Length (months) ->	3
	Total Project Area (acres) ->	74
	Maximum Area Disturbed/Day (acres) ->	5
	Water Truck Used? ->	Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	182	0	364	0	1,600	40
Grading/Excavation	10,642	0	60,350	0	3,000	200
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> American River Erosion Contract 2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.15	0.03	0.17	0.00	0.17	0.04	0.00	0.03	0.00	26.23	0.00	0.00	24.00
Grading/Excavation	0.70	9.53	7.26	1.33	0.51	0.83	0.39	0.22	0.17	0.08	8,147.00	0.39	0.24	7,463.79
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>0.70</b>	<b>9.53</b>	<b>7.26</b>	<b>1.33</b>	<b>0.51</b>	<b>0.83</b>	<b>0.39</b>	<b>0.22</b>	<b>0.17</b>	<b>0.08</b>	<b>8147.00</b>	<b>0.39</b>	<b>0.24</b>	<b>7,463.79</b>
<b>Total (tons/construction project)</b>	<b>0.71</b>	<b>9.68</b>	<b>7.29</b>	<b>1.50</b>	<b>0.51</b>	<b>0.99</b>	<b>0.43</b>	<b>0.22</b>	<b>0.21</b>	<b>0.08</b>	<b>8173.23</b>	<b>0.40</b>	<b>0.24</b>	<b>7,487.79</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

**Road Construction Emissions Model**  
**Data Entry Worksheet**

Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project type. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project

**Input Type**

Project Name: 2020 SRErosion\_Contract1

Construction Start Year: 2020

Project Type: 4

Project Construction Time: 4.30 months

Working Days per Month: 22.00

Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)

Project Length: 0.22 miles


Total Project Area: 2.00 acres

Maximum Area Disturbed/Day: 2.00 acres

Water Trucks Used?: 1

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To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.



Enter a Year between 2014 and 2025 (inclusive)

1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway  
 2) Road Widening : Project to add a new lane to an existing roadway  
 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane  
 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construct

1) Sand Gravel : Use for quaternary deposits (Delta/West County)  
 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta)  
 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	15.00	0.00	14.00
	Grading/Excavator	15.00	13.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavator			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation: No Mitigation

Off-road Equipment Emissions Mitigation: No Mitigation

Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer  
 Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<http://www.airquality.org/ceqa/mitigation.shtml>).  
 Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Stand:

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected



Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of	Calculated	User Override of	Default
	Construction Months	Months	Phase Starting Date	Phase Starting Date
Grubbing/Land Clearing	0.30	0.43	8/1/2020	1/1/2020
Grading/Excavation	4.00	1.72	8/11/2020	1/11/2020
Drainage/Utilities/Sub-Grade	0.00	1.51	Program	5/12/2020
Paving	0.00	0.65	Program	5/12/2020
<b>Totals (Months)</b>		<b>4</b>		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated							
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT							
Miles/round trip - Grubbing/Land Clearing	40.00			1	40.00							
Miles/round trip - Grading/Excavation	10.00			1	10.00							
Miles/round trip - Drainage/Utilities/Sub-Grade				0	0.00							
Miles/round trip - Paving				0	0.00							
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>		
Grubbing/Land Clearing (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31		
Grading/Excavation (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31		
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>		
Pounds per day - Grubbing/Land Clearing	0.01	0.04	0.36	0.01	0.00	0.00	143.89	0.00	0.00	145.36		
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.48		
Pounds per day - Grading/Excavation	0.00	0.01	0.09	0.00	0.00	0.00	35.97	0.00	0.00	36.34		
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	1.58	0.00	0.00	1.60		
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
<b>Total tons per construction project</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>2.06</b>	<b>0.00</b>	<b>0.00</b>	<b>2.08</b>		

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated							
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT							
Miles/round trip - Grubbing/Land Clearing				0	0.00							
Miles/round trip - Grading/Excavation				0	0.00							
Miles/round trip - Drainage/Utilities/Sub-Grade				0	0.00							
Miles/round trip - Paving				0	0.00							
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>		
Grubbing/Land Clearing (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31		
Grading/Excavation (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31		
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>		
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
<b>Total tons per construction project</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>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		

Note: Worker commute default values can be overridden in cells D113 through D11

Worker Commute Emissions		User Override of Worker		Default Values		Calculated		Calculated			
User Input		Commute Default Values		Daily Trips		Daily VMT		Daily VMT			
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearin	25			50		1,000.00					
No. of employees: Grading/Excavatio	40			80		1,600.00					
No. of employees: Drainage/Utilities/Sub-Grad				0		0.00					
No. of employees: Paving				0		0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.02	1.08	0.11	0.05	0.02	0.00	371.46	0.01	0.00	373.08
Grading/Excavation (grams/mile)		0.02	1.08	0.11	0.05	0.02	0.00	371.46	0.01	0.00	373.08
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	1.00	2.55	0.20	0.00	0.00	0.00	0.00	84.03	0.01	0.01	86.84
Grading/Excavation (grams/trip)	1.00	2.55	0.20	0.00	0.00	0.00	0.00	84.03	0.01	0.01	86.84
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.16	2.65	0.27	0.10	0.04	0.01	828.20	0.02	0.01	0.01	832.07
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	2.73	0.00	0.00	0.00	2.75
Pounds per day - Grading/Excavatio	0.25	4.25	0.44	0.17	0.07	0.01	1,325.12	0.03	0.02	0.02	1,331.31
Tons per const. Period - Grading/Excavatio	0.01	0.19	0.02	0.01	0.00	0.00	58.31	0.00	0.00	0.00	58.58
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec	0.01	0.20	0.02	0.01	0.00	0.00	61.04	0.00	0.00	0.00	61.32

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input		Default # Water Trucks		Number of Water Trucks		Miles Traveled/Vehicle/Day		Miles Traveled/Vehicle/Day		Daily VMT	
Grubbing/Land Clearing - Exhaust	1					40.00				40.00	
Grading/Excavation - Exhaust	1					40.00				40.00	
Drainage/Utilities/Subgrade										0.00	
Paving										0.00	
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31
Grading/Excavation (grams/mile)		0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.01	0.04	0.36	0.01	0.00	0.00	0.00	143.89	0.00	0.00	145.36
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.48
Pounds per day - Grading/Excavatio	0.01	0.04	0.36	0.01	0.00	0.00	0.00	143.89	0.00	0.00	145.36
Tons per const. Period - Grading/Excavatio	0.00	0.00	0.02	0.00	0.00	0.00	0.00	6.33	0.00	0.00	6.40
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec	0.00	0.00	0.02	0.00	0.00	0.00	0.00	6.81	0.00	0.00	6.88

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust		User Override of Max		Default		PM10		PM10		PM2.5		PM2.5	
		Acreage Disturbed/Day		Maximum Acreage/Day		pounds/day		tons/period		pounds/day		tons/period	
Fugitive Dust - Grubbing/Land Clearing	2.00					20.00		0.07		4.16		0.01	
Fugitive Dust - Grading/Excavation	0.50					5.00		0.22		1.04		0.05	
Fugitive Dust - Drainage/Utilities/Subgrad						0.00		0.00		0.00		0.00	

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is select

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default											
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Excavators	1.52	20.23	14.93	0.72	0.67	0.03	3,095.67	1.00	0.03	3,129.04
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Generator Sets	0.40	3.71	3.48	0.20	0.20	0.01	623.04	0.04	0.00	625.31
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Sweepers/Scrubbers	0.27	1.99	2.33	0.19	0.17	0.00	246.18	0.08	0.00	248.83
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t									
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing		pounds per day	2.53	27.73	22.90	1.19	1.12	0.05	4,260.77	1.15	0.04	4,300.57
		Grubbing/Land Clearing		tons per phase	0.01	0.09	0.08	0.00	0.00	0.00	14.06	0.00	0.00	14.19

Grading/Excavator	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tie	Cranes	0.89	4.14	10.55	0.43	0.40	0.01	1,093.39	0.35	0.01	1,105.18
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tie	Excavators	0.51	6.74	4.98	0.24	0.22	0.01	1,031.89	0.33	0.01	1,043.01
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Generator Sets	0.40	3.71	3.48	0.20	0.20	0.01	623.04	0.04	0.00	625.31
2.00			Model Default Tie	Graders	1.43	9.16	14.00	0.78	0.72	0.01	1,209.88	0.39	0.01	1,222.88
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tie	Off-Highway Trucks	1.32	7.58	12.58	0.46	0.42	0.03	2,544.52	0.82	0.02	2,571.93
1.00			Model Default Tie	Other Construction Equipmen	0.49	4.12	5.24	0.28	0.25	0.01	598.80	0.19	0.01	605.27
2.00			Model Default Tie	Other General Industrial Equipmen	0.47	3.98	4.29	0.31	0.29	0.01	496.04	0.16	0.00	501.39
1.00			Model Default Tie	Other Material Handling Equipmer	0.30	3.74	2.79	0.14	0.13	0.01	556.35	0.18	0.01	562.34
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tie	Rubber Tired Dozers	1.92	15.87	20.30	0.93	0.86	0.02	1,726.14	0.56	0.02	1,744.68
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
3.00			Model Default Tie	Skid Steer Loaders	0.24	4.17	3.19	0.14	0.13	0.01	600.51	0.19	0.01	606.98
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Sweepers/Scrubbers	0.27	1.99	2.33	0.19	0.17	0.00	246.18	0.08	0.00	248.83
2.00			Model Default Tie	Tractors/Loaders/Backhoes	0.42	4.61	4.25	0.27	0.25	0.01	607.74	0.20	0.01	614.28
2.00			Model Default Tie	Trenchers	0.87	5.48	7.89	0.59	0.54	0.01	678.76	0.22	0.01	686.07
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavator		pounds per day	9.88	77.09	98.00	5.04	4.66	0.13	12,309.11	3.75	0.11	12,435.55	
	Grading/Excavator		tons per phase	0.43	3.39	4.31	0.22	0.20	0.01	541.60	0.16	0.00	547.16	



Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =</b>					<b>0.44</b>	<b>3.48</b>	<b>4.39</b>	<b>0.23</b>	<b>0.21</b>	<b>0.01</b>	<b>555.66</b>	<b>0.17</b>	<b>0.00</b>	<b>561.36</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F4

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2020_SRErosion_Contract1														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.70	30.46	23.90	21.31	1.31	20.00	5.33	1.17	4.16	0.06	5,376.75	1.17	0.06	5,423.35
Grading/Excavation	10.14	81.38	98.89	10.22	5.22	5.00	5.77	4.73	1.04	0.14	13,814.10	3.78	0.13	13,948.56
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	10.14	81.38	98.89	21.31	5.22	20.00	5.77	4.73	4.16	0.14	13,814.10	3.78	0.13	13,948.56
Total (tons/construction project)	0.46	3.68	4.43	0.52	0.23	0.29	0.27	0.21	0.06	0.01	625.56	0.17	0.01	631.63

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 2  
 Maximum Area Disturbed/Day (acres) -> 2  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	14	0	40	0	1,000	40
Grading/Excavation	13	0	10	0	1,600	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2020_SRErosion_Contract1														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.08	0.07	0.00	0.07	0.02	0.00	0.01	0.00	17.74	0.00	0.00	16.24
Grading/Excavation	0.45	3.58	4.35	0.45	0.23	0.22	0.25	0.21	0.05	0.01	607.82	0.17	0.01	556.78
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.45	3.58	4.35	0.45	0.23	0.22	0.25	0.21	0.05	0.01	607.82	0.17	0.01	556.78
Total (tons/construction project)	0.46	3.68	4.43	0.52	0.23	0.29	0.27	0.21	0.06	0.01	625.56	0.17	0.01	573.01

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.



Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2020_SRErosion_Contract1														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.70	30.44	23.43	21.31	1.31	20.00	5.33	1.17	4.16	0.06	5,366.10	1.17	0.06	5,412.50
Grading/Excavation	10.14	81.37	98.60	10.22	5.22	5.00	5.77	4.73	1.04	0.14	13,807.44	3.78	0.13	13,941.77
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	10.14	81.37	98.60	21.31	5.22	20.00	5.77	4.73	4.16	0.14	13,807.44	3.78	0.13	13,941.77
Total (tons/construction project)	0.45	3.68	4.42	0.52	0.23	0.29	0.27	0.21	0.06	0.01	625.24	0.17	0.01	631.30

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 2  
 Maximum Area Disturbed/Day (acres) -> 2  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	14	0	40	0	1,000	40
Grading/Excavation	13	0	10	0	1,600	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2020_SRErosion_Contract1														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.08	0.07	0.00	0.07	0.02	0.00	0.01	0.00	17.71	0.00	0.00	16.20
Grading/Excavation	0.45	3.58	4.34	0.45	0.23	0.22	0.25	0.21	0.05	0.01	607.53	0.17	0.01	556.51
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.45	3.58	4.34	0.45	0.23	0.22	0.25	0.21	0.05	0.01	607.53	0.17	0.01	556.51
Total (tons/construction project)	0.45	3.68	4.42	0.52	0.23	0.29	0.27	0.21	0.06	0.01	625.24	0.17	0.01	572.71

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2020_SRErosion_Contract1														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.57	36.07	7.32	20.40	0.40	20.00	4.47	0.31	4.16	0.06	5,366.10	1.17	0.06	5,412.50
Grading/Excavation	4.24	85.06	16.31	5.72	0.72	5.00	1.61	0.57	1.04	0.14	13,807.44	3.78	0.13	13,941.77
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	4.24	85.06	16.31	20.40	0.72	20.00	4.47	0.57	4.16	0.14	13,807.44	3.78	0.13	13,941.77
Total (tons/construction project)	0.19	3.86	0.74	0.32	0.03	0.29	0.09	0.03	0.06	0.01	625.24	0.17	0.01	631.30

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 2  
 Maximum Area Disturbed/Day (acres) -> 2  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	14	0	40	0	1,000	40
Grading/Excavation	13	0	10	0	1,600	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2020_SRErosion_Contract1														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.12	0.02	0.07	0.00	0.07	0.01	0.00	0.01	0.00	17.71	0.00	0.00	16.20
Grading/Excavation	0.19	3.74	0.72	0.25	0.03	0.22	0.07	0.03	0.05	0.01	607.53	0.17	0.01	556.51
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.19	3.74	0.72	0.25	0.03	0.22	0.07	0.03	0.05	0.01	607.53	0.17	0.01	556.51
Total (tons/construction project)	0.19	3.86	0.74	0.32	0.03	0.29	0.09	0.03	0.06	0.01	625.24	0.17	0.01	572.71

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

**Road Construction Emissions Model**      **Version 8.1.0**

**Data Entry Worksheet**

Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project type. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new proje

**Input Type**

Project Name: 2021 SRErosion Contract

Construction Start Year: 2021

Project Type: 4

Project Construction Time: 4.30 months

Working Days per Month: 22.00

Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22): 1


Project Length: 1.30 miles

Total Project Area: 13.00 acres

Maximum Area Disturbed/Day: 5.00 acres

Water Trucks Used?: 1

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.



Enter a Year between 2014 and 2025 (inclusive)

1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway  
 2) Road Widening : Project to add a new lane to an existing roadway  
 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane  
 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construct

1) Sand Gravel : Use for quaternary deposits (Delta/West County)  
 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta)  
 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)

1. Yes  
2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd <sup>3</sup> /day)	Export Volume (yd <sup>3</sup> /day)
Soil	Grubbing/Land Clearing	15.00	0.00	83.00
	Grading/Excavator	15.00	77.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavator			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation: No Mitigation

Off-road Equipment Emissions Mitigation: No Mitigation

Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer  
 Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<http://www.airquality.org/ceqa/mitigation.shtml>).  
 Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Stand:

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selecte

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of	Calculated	User Override of	Default
	Construction Months	Months	Phase Starting Date	Phase Starting Date
Grubbing/Land Clearing	0.30	0.43	8/1/2021	1/1/2021
Grading/Excavation	4.00	1.72	8/11/2021	1/11/2021
Drainage/Utilities/Sub-Grade	0.00	1.51	Program	5/13/2021
Paving	0.00	0.65	Program	5/13/2021
<b>Totals (Months)</b>		<b>4</b>		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated										
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Miles/round trip: Grubbing/Land Clearing	40.00			6	240.00										
Miles/round trip: Grading/Excavation	10.00			6	60.00										
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00										
Miles/round trip: Paving				0	0.00										
<b>Emission Rates</b>						<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92	0.00	0.05	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92	0.00	0.05	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>						<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.05	0.23	1.93	0.06	0.03	0.01	854.25	0.00	0.03	862.94	0.00	0.03	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	2.92	0.00	0.00	2.95	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.01	0.06	0.48	0.02	0.01	0.00	213.56	0.00	0.01	215.73	0.00	0.01	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.02	0.00	0.00	0.00	9.40	0.00	0.00	9.49	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	<b>0.00</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>12.22</b>	<b>0.00</b>	<b>0.00</b>	<b>12.34</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated										
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Miles/round trip: Grubbing/Land Clearing				0	0.00										
Miles/round trip: Grading/Excavation				0	0.00										
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00										
Miles/round trip: Paving				0	0.00										
<b>Emission Rates</b>						<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92	0.00	0.05	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92	0.00	0.05	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>						<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</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>	<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>	<b>0.00</b>

Note: Worker commute default values can be overridden in cells D113 through D11

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values		Calculated Daily Trips		Calculated Daily VMT		
<b>User Input</b>										
Miles/one-way trip	20									
One-way trips/day	2									
No. of employees: Grubbing/Land Clearin	25				50			1,000.00		
No. of employees: Grading/Excavatio	55				110			2,200.00		
No. of employees: Drainage/Utilities/Sub-Grad					0			0.00		
No. of employees: Paving					0			0.00		
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48
Grading/Excavation (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35
Grading/Excavation (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.14	2.43	0.24	0.10	0.04	0.01	802.76	0.02	0.01	806.23
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	2.65	0.00	0.00	2.66
Pounds per day - Grading/Excavatio	0.32	5.36	0.54	0.23	0.10	0.02	1,766.07	0.04	0.02	1,773.70
Tons per const. Period - Grading/Excavatio	0.01	0.24	0.02	0.01	0.00	0.00	77.71	0.00	0.00	78.04
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec	0.01	0.24	0.02	0.01	0.00	0.00	80.36	0.00	0.00	80.70

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Vehicle/Day		Default Values Miles Traveled/Vehicle/Day		Calculated Daily VMT	
<b>User Input</b>											
Grubbing/Land Clearing - Exhaust	1					40.00				40.00	
Grading/Excavation - Exhaust	4					40.00				160.00	
Drainage/Utilities/Subgrade										0.00	
Paving										0.00	
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92	
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.01	0.04	0.32	0.01	0.00	0.00	142.37	0.00	0.00	143.82	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.47	
Pounds per day - Grading/Excavatio	0.04	0.15	1.29	0.04	0.02	0.01	569.50	0.00	0.02	575.29	
Tons per const. Period - Grading/Excavatio	0.00	0.01	0.06	0.00	0.00	0.00	25.06	0.00	0.00	25.31	
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction projec	0.00	0.01	0.06	0.00	0.00	0.00	25.53	0.00	0.00	25.79	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust		User Override of Maximum Acreage Disturbed/Day		Default Maximum Acreage/Day		PM10 pounds/day		PM10 tons/period		PM2.5 pounds/day		PM2.5 tons/period	
Fugitive Dust - Grubbing/Land Clearing	5.00					50.00		0.17	10.40	0.03			
Fugitive Dust - Grading/Excavatio	2.00					20.00		0.88	4.16	0.16			
Fugitive Dust - Drainage/Utilities/Subgrad						0.00		0.00	0.00	0.00			

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is select

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier											
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Excavators	1.42	20.25	13.33	0.65	0.59	0.03	3,096.13	1.00	0.03	3,129.51
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Generator Sets	0.36	3.68	3.17	0.17	0.17	0.01	623.04	0.03	0.00	625.23
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Sweepers/Scrubbers	0.23	1.95	2.06	0.15	0.14	0.00	246.18	0.08	0.00	248.83
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t									
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing		pounds per day	2.35	27.69	20.71	1.05	0.99	0.05	4,261.22	1.14	0.04	4,300.98
		Grubbing/Land Clearing		tons per phase	0.01	0.09	0.07	0.00	0.00	0.00	14.06	0.00	0.00	14.19

Grading/Excavator	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tie	Cranes	1.62	7.76	18.98	0.77	0.71	0.02	2,186.58	0.71	0.02	2,210.14
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tie	Excavators	0.95	13.50	8.89	0.43	0.40	0.02	2,064.09	0.67	0.02	2,086.34
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Generator Sets	0.36	3.68	3.17	0.17	0.17	0.01	623.04	0.03	0.00	625.23
2.00			Model Default Tie	Graders	1.28	9.01	12.25	0.68	0.63	0.01	1,211.11	0.39	0.01	1,224.13
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tie	Off-Highway Trucks	2.41	14.35	20.95	0.77	0.71	0.05	5,088.65	1.65	0.05	5,143.46
1.00			Model Default Tie	Other Construction Equipmen	0.42	4.06	4.38	0.23	0.21	0.01	598.52	0.19	0.01	604.99
2.00			Model Default Tie	Other General Industrial Equipmen	0.43	3.95	3.92	0.27	0.25	0.01	496.04	0.16	0.00	501.39
1.00			Model Default Tie	Other Material Handling Equipmer	0.29	3.77	2.65	0.13	0.12	0.01	556.35	0.18	0.01	562.34
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tie	Rubber Tired Dozers	3.54	29.08	36.56	1.67	1.54	0.04	3,446.74	1.11	0.03	3,483.77
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
4.00			Model Default Tie	Skid Steer Loaders	0.30	5.56	4.01	0.16	0.15	0.01	800.79	0.26	0.01	809.43
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Sweepers/Scrubbers	0.23	1.95	2.06	0.15	0.14	0.00	246.18	0.08	0.00	248.83
2.00			Model Default Tie	Tractors/Loaders/Backhoes	0.38	4.57	3.83	0.23	0.21	0.01	608.00	0.20	0.01	614.55
2.00			Model Default Tie	Trenchers	0.79	5.41	7.29	0.53	0.49	0.01	678.99	0.22	0.01	686.30
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
	Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00			Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavator			pounds per day	13.34	108.44	131.09	6.28	5.80	0.20	18,900.96	5.88	0.17	19,098.29
	Grading/Excavator			tons per phase	0.59	4.77	5.77	0.26	0.26	0.01	831.64	0.26	0.01	840.32





Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =</b>					<b>0.59</b>	<b>4.86</b>	<b>5.84</b>	<b>0.28</b>	<b>0.26</b>	<b>0.01</b>	<b>845.70</b>	<b>0.26</b>	<b>0.01</b>	<b>854.52</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F4

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2021_SRErosion_Contract2															
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)	
Grubbing/Land Clearing	2.56	30.40	23.20	51.22	1.22	50.00	11.46	1.06	10.40	0.06	6,060.60	1.16	0.08	6,113.94	
Grading/Excavation	13.70	114.01	133.40	26.56	6.56	20.00	10.08	5.92	4.16	0.22	21,450.10	5.92	0.22	21,663.02	
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Maximum (pounds/day)</b>	<b>13.70</b>	<b>114.01</b>	<b>133.40</b>	<b>51.22</b>	<b>6.56</b>	<b>50.00</b>	<b>11.46</b>	<b>5.92</b>	<b>10.40</b>	<b>0.22</b>	<b>21,450.10</b>	<b>5.92</b>	<b>0.22</b>	<b>21,663.02</b>	
<b>Total (tons/construction project)</b>	<b>0.61</b>	<b>5.12</b>	<b>5.95</b>	<b>1.34</b>	<b>0.29</b>	<b>1.05</b>	<b>0.48</b>	<b>0.26</b>	<b>0.22</b>	<b>0.01</b>	<b>963.80</b>	<b>0.26</b>	<b>0.01</b>	<b>973.35</b>	

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 13  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	83	0	240	0	1,000	40
Grading/Excavation	77	0	60	0	2,200	160
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2021_SRErosion_Contract2															
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)	
Grubbing/Land Clearing	0.01	0.10	0.08	0.17	0.00	0.17	0.04	0.00	0.03	0.00	20.00	0.00	0.00	18.30	
Grading/Excavation	0.60	5.02	5.87	1.17	0.29	0.88	0.44	0.26	0.18	0.01	943.80	0.26	0.01	864.71	
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Maximum (tons/phase)</b>	<b>0.60</b>	<b>5.02</b>	<b>5.87</b>	<b>1.17</b>	<b>0.29</b>	<b>0.88</b>	<b>0.44</b>	<b>0.26</b>	<b>0.18</b>	<b>0.01</b>	<b>943.80</b>	<b>0.26</b>	<b>0.01</b>	<b>864.71</b>	
<b>Total (tons/construction project)</b>	<b>0.61</b>	<b>5.12</b>	<b>5.95</b>	<b>1.34</b>	<b>0.29</b>	<b>1.05</b>	<b>0.48</b>	<b>0.26</b>	<b>0.22</b>	<b>0.01</b>	<b>963.80</b>	<b>0.26</b>	<b>0.01</b>	<b>883.02</b>	

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2021_SRErosion_Contract2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.53	30.36	21.83	51.22	1.22	50.00	11.45	1.05	10.40	0.06	6,026.69	1.16	0.08	6,079.38
Grading/Excavation	13.69	113.98	132.32	26.56	6.56	20.00	10.07	5.91	4.16	0.22	21,423.45	5.92	0.22	21,635.86
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>13.69</b>	<b>113.98</b>	<b>132.32</b>	<b>51.22</b>	<b>6.56</b>	<b>50.00</b>	<b>11.45</b>	<b>5.91</b>	<b>10.40</b>	<b>0.22</b>	<b>21,423.45</b>	<b>5.92</b>	<b>0.22</b>	<b>21,635.86</b>
<b>Total (tons/construction project)</b>	<b>0.61</b>	<b>5.12</b>	<b>5.89</b>	<b>1.34</b>	<b>0.29</b>	<b>1.05</b>	<b>0.48</b>	<b>0.26</b>	<b>0.22</b>	<b>0.01</b>	<b>962.52</b>	<b>0.26</b>	<b>0.01</b>	<b>972.04</b>

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 13  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	83	0	240	0	1,000	40
Grading/Excavation	77	0	60	0	2,200	160
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2021_SRErosion_Contract2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.07	0.17	0.00	0.17	0.04	0.00	0.03	0.00	19.89	0.00	0.00	18.20
Grading/Excavation	0.60	5.02	5.82	1.17	0.29	0.88	0.44	0.26	0.18	0.01	942.63	0.26	0.01	863.63
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>0.60</b>	<b>5.02</b>	<b>5.82</b>	<b>1.17</b>	<b>0.29</b>	<b>0.88</b>	<b>0.44</b>	<b>0.26</b>	<b>0.18</b>	<b>0.01</b>	<b>942.63</b>	<b>0.26</b>	<b>0.01</b>	<b>863.63</b>
<b>Total (tons/construction project)</b>	<b>0.61</b>	<b>5.12</b>	<b>5.89</b>	<b>1.34</b>	<b>0.29</b>	<b>1.05</b>	<b>0.48</b>	<b>0.26</b>	<b>0.22</b>	<b>0.01</b>	<b>962.52</b>	<b>0.26</b>	<b>0.01</b>	<b>881.83</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2021_SRErosion_Contract2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.58	36.02	7.92	50.45	0.45	50.00	10.73	0.33	10.40	0.06	6,026.69	1.16	0.08	6,079.38
Grading/Excavation	6.43	125.27	22.39	21.03	1.03	20.00	4.97	0.81	4.16	0.22	21,423.45	5.92	0.22	21,635.86
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	6.43	125.27	22.39	50.45	1.03	50.00	10.73	0.81	10.40	0.22	21,423.45	5.92	0.22	21,635.86
Total (tons/construction project)	0.29	5.63	1.01	1.09	0.05	1.05	0.25	0.04	0.22	0.01	962.52	0.26	0.01	972.04

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 13  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	83	0	240	0	1,000	40
Grading/Excavation	77	0	60	0	2,200	160
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2021_SRErosion_Contract2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.12	0.03	0.17	0.00	0.17	0.04	0.00	0.03	0.00	19.89	0.00	0.00	18.20
Grading/Excavation	0.28	5.51	0.99	0.93	0.05	0.88	0.22	0.04	0.18	0.01	942.63	0.26	0.01	863.63
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.28	5.51	0.99	0.93	0.05	0.88	0.22	0.04	0.18	0.01	942.63	0.26	0.01	863.63
Total (tons/construction project)	0.29	5.63	1.01	1.09	0.05	1.05	0.25	0.04	0.22	0.01	962.52	0.26	0.01	881.83

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

**Road Construction Emissions Model**      **Version 8.1.0**

**Data Entry Worksheet**

Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project type. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new proje

**Input Type**

Project Name: 2022 SRErosion Contract

Construction Start Year: 2022

Project Type: 4

Project Construction Time: 4.30 months

Working Days per Month: 22.00

Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22): 1


Project Length: 1.30 miles

Total Project Area: 13.00 acres

Maximum Area Disturbed/Day: 5.00 acres

Water Trucks Used?: 1

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.



Enter a Year between 2014 and 2025 (inclusive)

1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway  
 2) Road Widening : Project to add a new lane to an existing roadway  
 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane  
 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construct

1) Sand Gravel : Use for quaternary deposits (Delta/West County)  
 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta)  
 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)

1. Yes  
2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	15.00	0.00	83.00
	Grading/Excavator	15.00	77.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavator			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation: No Mitigation

Off-road Equipment Emissions Mitigation: No Mitigation

Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer  
 Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<http://www.airquality.org/ceqa/mitigation.shtml>).  
 Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Stand:

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selecte

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of	Calculated	User Override of	Default
	Construction Months	Months	Phase Starting Date	Phase Starting Date
Grubbing/Land Clearing	0.30	0.43	8/1/2022	1/1/2022
Grading/Excavation	4.00	1.72	8/11/2022	1/11/2022
Drainage/Utilities/Sub-Grade	0.00	1.51	Program	5/13/2022
Paving	0.00	0.65	Program	5/13/2022
<b>Totals (Months)</b>		<b>4</b>		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated										
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Miles/round trip: Grubbing/Land Clearing	40.00			6	240.00										
Miles/round trip: Grading/Excavation	10.00			6	60.00										
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00										
Miles/round trip: Paving				0	0.00										
<b>Emission Rates</b>															
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86					
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86					
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
<b>Hauling Emissions</b>															
Pounds per day - Grubbing/Land Clearing	0.05	0.23	1.71	0.06	0.03	0.01	844.78	0.00	0.03	853.38					
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	2.79	0.00	0.00	2.82					
Pounds per day - Grading/Excavation	0.01	0.06	0.43	0.01	0.01	0.00	211.20	0.00	0.01	213.34					
Tons per const. Period - Grading/Excavation	0.00	0.00	0.02	0.00	0.00	0.00	9.29	0.00	0.00	9.39					
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
<b>Total tons per construction project</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>12.08</b>	<b>0.00</b>	<b>0.00</b>	<b>12.20</b>					

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated										
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Miles/round trip: Grubbing/Land Clearing				0	0.00										
Miles/round trip: Grading/Excavation				0	0.00										
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00										
Miles/round trip: Paving				0	0.00										
<b>Emission Rates</b>															
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86					
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86					
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
<b>Emissions</b>															
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
<b>Total tons per construction project</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>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>					

Note: Worker commute default values can be overridden in cells D113 through D11

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values		Calculated Daily Trips		Calculated Daily VMT		
<b>User Input</b>										
Miles/one-way trip	20									
One-way trips/day	2									
No. of employees: Grubbing/Land Clearin	25				50			1,000.00		
No. of employees: Grading/Excavatio	55				110			2,200.00		
No. of employees: Drainage/Utilities/Sub-Grad					0			0.00		
No. of employees: Paving					0			0.00		
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Grading/Excavation (grams/mile)	0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Grading/Excavation (grams/trip)	0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.13	2.25	0.22	0.10	0.04	0.01	776.62	0.02	0.01	779.74
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	2.56	0.00	0.00	2.57
Pounds per day - Grading/Excavatio	0.29	4.95	0.48	0.23	0.10	0.02	1,708.55	0.04	0.02	1,715.42
Tons per const. Period - Grading/Excavatio	0.01	0.22	0.02	0.01	0.00	0.00	75.18	0.00	0.00	75.48
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec	0.01	0.23	0.02	0.01	0.00	0.00	77.74	0.00	0.00	78.05

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Vehicle/Day		Default Values Miles Traveled/Vehicle/Day		Calculated Daily VMT	
<b>User Input</b>											
Grubbing/Land Clearing - Exhaust	1				40.00					40.00	
Grading/Excavation - Exhaust	4				40.00					160.00	
Drainage/Utilities/Subgrade										0.00	
Paving										0.00	
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86	
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.01	0.04	0.29	0.01	0.00	0.00	140.80	0.00	0.00	142.23	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.47	
Pounds per day - Grading/Excavatio	0.03	0.15	1.14	0.04	0.02	0.01	563.19	0.00	0.02	568.92	
Tons per const. Period - Grading/Excavatio	0.00	0.01	0.05	0.00	0.00	0.00	24.78	0.00	0.00	25.03	
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction projec	0.00	0.01	0.05	0.00	0.00	0.00	25.24	0.00	0.00	25.50	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust		User Override of Maximum Acreage Disturbed/Day		Default Maximum Acreage/Day		PM10 pounds/day		PM10 tons/period		PM2.5 pounds/day		PM2.5 tons/period	
Fugitive Dust - Grubbing/Land Clearing	5.00				50.00			0.17	10.40	0.03			
Fugitive Dust - Grading/Excavatio	2.00				20.00			0.88	4.16	0.16			
Fugitive Dust - Drainage/Utilities/Subgrad					0.00			0.00	0.00	0.00			



Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is select

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default											
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Excavators	1.25	20.15	11.00	0.53	0.49	0.03	3,095.03	1.00	0.03	3,126.40
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Generator Sets	0.33	3.68	2.93	0.15	0.15	0.01	623.04	0.03	0.00	625.17
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Sweepers/Scrubbers	0.19	1.92	1.80	0.12	0.11	0.00	246.18	0.06	0.00	248.83
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t									
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing		pounds per day	2.12	27.55	17.89	0.88	0.83	0.05	4,260.13	1.14	0.04	4,299.79
		Grubbing/Land Clearing		tons per phase	0.01	0.09	0.06	0.00	0.00	0.00	14.06	0.00	0.00	14.19

Grading/Excavator	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4.00		Model Default Tie	Cranes	1.46	7.41	16.37	0.68	0.63	0.02	2,186.94	0.71	0.02	2,210.51
	0.00		Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4.00		Model Default Tie	Excavators	0.84	13.43	7.33	0.35	0.33	0.02	2,063.36	0.67	0.02	2,085.60
	0.00		Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1.00		Model Default Tie	Generator Sets	0.33	3.68	2.93	0.15	0.15	0.01	623.04	0.03	0.00	625.17
	2.00		Model Default Tie	Graders	1.11	8.84	10.44	0.58	0.53	0.01	1,211.21	0.39	0.01	1,224.23
	0.00		Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4.00		Model Default Tie	Off-Highway Trucks	2.10	13.37	15.98	0.58	0.53	0.05	5,090.49	1.65	0.05	5,145.30
	1.00		Model Default Tie	Other Construction Equipmen	0.38	4.02	3.82	0.20	0.18	0.01	598.33	0.19	0.01	604.79
	2.00		Model Default Tie	Other General Industrial Equipmen	0.36	3.87	3.38	0.21	0.19	0.01	496.04	0.16	0.00	501.39
	1.00		Model Default Tie	Other Material Handling Equipmer	0.27	3.74	2.23	0.12	0.11	0.01	556.35	0.18	0.01	562.34
	0.00		Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4.00		Model Default Tie	Rubber Tired Dozers	3.42	28.03	34.60	1.58	1.46	0.04	3,449.07	1.12	0.03	3,486.12
	0.00		Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6.00		Model Default Tie	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
	4.00		Model Default Tie	Skid Steer Loaders	0.28	5.55	3.71	0.14	0.13	0.01	801.57	0.26	0.01	810.21
	0.00		Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1.00		Model Default Tie	Sweepers/Scrubbers	0.19	1.92	1.80	0.12	0.11	0.00	246.18	0.08	0.00	248.83
	2.00		Model Default Tie	Tractors/Loaders/Backhoes	0.33	4.52	3.39	0.18	0.17	0.01	608.69	0.20	0.01	615.24
	2.00		Model Default Tie	Trenchers	0.76	5.40	7.02	0.50	0.46	0.01	679.05	0.22	0.01	686.36
	0.00		Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grading/Excavator		pounds per day	12.16	105.57	115.15	5.48	5.06	0.20	18,906.18	5.88	0.17	19,103.48
		Grading/Excavator		tons per phase	0.54	4.65	5.07	0.24	0.22	0.01	831.87	0.26	0.01	840.55

Drainage/Utilities/Subgrad		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grad					pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grad					tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Equipment Tier	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =</b>					<b>0.54</b>	<b>4.74</b>	<b>5.13</b>	<b>0.24</b>	<b>0.23</b>	<b>0.01</b>	<b>845.93</b>	<b>0.26</b>	<b>0.01</b>	<b>854.74</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F4

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2022_SRErosion_Contract2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.31	30.06	20.10	51.06	1.06	50.00	11.30	0.90	10.40	0.06	6,022.32	1.16	0.08	6,075.14
Grading/Excavation	12.50	110.73	117.20	25.76	5.76	20.00	9.34	5.18	4.16	0.22	21,389.12	5.92	0.22	21,601.17
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>12.50</b>	<b>110.73</b>	<b>117.20</b>	<b>51.06</b>	<b>5.76</b>	<b>50.00</b>	<b>11.30</b>	<b>5.18</b>	<b>10.40</b>	<b>0.22</b>	<b>21,389.12</b>	<b>5.92</b>	<b>0.22</b>	<b>21,601.17</b>
<b>Total (tons/construction project)</b>	<b>0.56</b>	<b>4.97</b>	<b>5.22</b>	<b>1.30</b>	<b>0.26</b>	<b>1.05</b>	<b>0.45</b>	<b>0.23</b>	<b>0.22</b>	<b>0.01</b>	<b>960.99</b>	<b>0.26</b>	<b>0.01</b>	<b>970.50</b>

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 13  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	83	0	240	0	1,000	40
Grading/Excavation	77	0	60	0	2,200	160
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2022_SRErosion_Contract2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.07	0.17	0.00	0.17	0.04	0.00	0.03	0.00	19.87	0.00	0.00	18.19
Grading/Excavation	0.55	4.87	5.16	1.13	0.25	0.88	0.41	0.23	0.18	0.01	941.12	0.26	0.01	862.24
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>0.55</b>	<b>4.87</b>	<b>5.16</b>	<b>1.13</b>	<b>0.25</b>	<b>0.88</b>	<b>0.41</b>	<b>0.23</b>	<b>0.18</b>	<b>0.01</b>	<b>941.12</b>	<b>0.26</b>	<b>0.01</b>	<b>862.24</b>
<b>Total (tons/construction project)</b>	<b>0.56</b>	<b>4.97</b>	<b>5.22</b>	<b>1.30</b>	<b>0.26</b>	<b>1.05</b>	<b>0.45</b>	<b>0.23</b>	<b>0.22</b>	<b>0.01</b>	<b>960.99</b>	<b>0.26</b>	<b>0.01</b>	<b>880.43</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2022_SRErosion_Contract2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.30	30.03	18.96	51.05	1.05	50.00	11.30	0.90	10.40	0.06	5,992.75	1.16	0.08	6,044.96
Grading/Excavation	12.49	110.71	116.30	25.75	5.75	20.00	9.33	5.17	4.16	0.22	21,365.88	5.91	0.21	21,577.46
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>12.49</b>	<b>110.71</b>	<b>116.30</b>	<b>51.05</b>	<b>5.75</b>	<b>50.00</b>	<b>11.30</b>	<b>5.17</b>	<b>10.40</b>	<b>0.22</b>	<b>21,365.88</b>	<b>5.91</b>	<b>0.21</b>	<b>21,577.46</b>
<b>Total (tons/construction project)</b>	<b>0.56</b>	<b>4.97</b>	<b>5.18</b>	<b>1.30</b>	<b>0.26</b>	<b>1.05</b>	<b>0.45</b>	<b>0.23</b>	<b>0.22</b>	<b>0.01</b>	<b>959.87</b>	<b>0.26</b>	<b>0.01</b>	<b>969.36</b>

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 13  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	83	0	240	0	1,000	40
Grading/Excavation	77	0	60	0	2,200	160
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2022_SRErosion_Contract2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.06	0.17	0.00	0.17	0.04	0.00	0.03	0.00	19.78	0.00	0.00	18.10
Grading/Excavation	0.55	4.87	5.12	1.13	0.25	0.88	0.41	0.23	0.18	0.01	940.10	0.26	0.01	861.30
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>0.55</b>	<b>4.87</b>	<b>5.12</b>	<b>1.13</b>	<b>0.25</b>	<b>0.88</b>	<b>0.41</b>	<b>0.23</b>	<b>0.18</b>	<b>0.01</b>	<b>940.10</b>	<b>0.26</b>	<b>0.01</b>	<b>861.30</b>
<b>Total (tons/construction project)</b>	<b>0.56</b>	<b>4.97</b>	<b>5.18</b>	<b>1.30</b>	<b>0.26</b>	<b>1.05</b>	<b>0.45</b>	<b>0.23</b>	<b>0.22</b>	<b>0.01</b>	<b>959.87</b>	<b>0.26</b>	<b>0.01</b>	<b>879.39</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2022_SRErosion_Contract2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.57	35.83	7.87	50.45	0.45	50.00	10.73	0.33	10.40	0.06	5,992.75	1.16	0.08	6,044.96
Grading/Excavation	6.40	124.87	22.32	21.03	1.03	20.00	4.97	0.81	4.16	0.22	21,365.88	5.91	0.21	21,577.46
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	6.40	124.87	22.32	50.45	1.03	50.00	10.73	0.81	10.40	0.22	21,365.88	5.91	0.21	21,577.46
Total (tons/construction project)	0.29	5.61	1.01	1.09	0.05	1.05	0.25	0.04	0.22	0.01	959.87	0.26	0.01	969.36

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 13  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	83	0	240	0	1,000	40
Grading/Excavation	77	0	60	0	2,200	160
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2022_SRErosion_Contract2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.12	0.03	0.17	0.00	0.17	0.04	0.00	0.03	0.00	19.78	0.00	0.00	18.10
Grading/Excavation	0.28	5.49	0.98	0.93	0.05	0.88	0.22	0.04	0.18	0.01	940.10	0.26	0.01	861.30
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.28	5.49	0.98	0.93	0.05	0.88	0.22	0.04	0.18	0.01	940.10	0.26	0.01	861.30
Total (tons/construction project)	0.29	5.61	1.01	1.09	0.05	1.05	0.25	0.04	0.22	0.01	959.87	0.26	0.01	879.39

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.




**Road Construction Emissions Model**  
**Data Entry Worksheet**

Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project type. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new proje

**Input Type**

Project Name	2023 SRErosion Contract	
Construction Start Year	2023	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construct
Project Construction Time	4.30	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 <small>(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)</small>	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	1.30	miles
Total Project Area	13.00	acres
Maximum Area Disturbed/Day	5.00	acres
Water Trucks Used?	1	1. Yes 2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	15.00	0.00	83.00
	Grading/Excavator	15.00	77.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavator			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigator	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Stand:

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selecte

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

Data Entry Worksheet

2

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of	Calculated	User Override of	Default
	Construction Months	Months	Phase Starting Date	Phase Starting Date
Grubbing/Land Clearing	0.30	0.43	8/1/2023	1/1/2023
Grading/Excavation	4.00	1.72	8/11/2023	1/11/2023
Drainage/Utilities/Sub-Grade	0.00	1.51	Program	5/13/2023
Paving	0.00	0.65	Program	5/13/2023
<b>Totals (Months)</b>		<b>4</b>		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated										
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Miles/round trip: Grubbing/Land Clearing	40.00			6	240.00										
Miles/round trip: Grading/Excavation	10.00			6	60.00										
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00										
Miles/round trip: Paving				0	0.00										
<b>Emission Rates</b>						<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.06	0.37	1.31	0.04	0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.04	0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Drainage/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>						<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.03	0.20	0.69	0.05	0.03	0.20	0.69	0.05	0.02	0.01	815.84	0.00	0.03	824.13
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.69	0.00	0.00	2.72
Pounds per day - Grading/Excavation		0.01	0.05	0.17	0.01	0.01	0.05	0.17	0.01	0.01	0.00	203.96	0.00	0.01	206.03
Tons per const. Period - Grading/Excavation		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	8.97	0.00	0.00	9.07
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>		<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>11.67</b>	<b>0.00</b>	<b>0.00</b>	<b>11.79</b>

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emission:	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated										
User Input	Miles/Round Trip	Miles/Round Trip	Round Trips/Day	Round Trips/Day	Daily VMT	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Miles/round trip: Grubbing/Land Clearing				0	0.00										
Miles/round trip: Grading/Excavation				0	0.00										
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00										
Miles/round trip: Paving				0	0.00										
<b>Emission Rates</b>						<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.06	0.37	1.31	0.04	0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.04	0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Drainage/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>						<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</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>	<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>

Note: Worker commute default values can be overridden in cells D113 through D11

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values		Calculated Daily Trips		Calculated Daily VMT		
<b>User Input</b>										
Miles/one-way trip	20									
One-way trips/day	2									
No. of employees: Grubbing/Land Clearin	25				50			1,000.00		
No. of employees: Grading/Excavatio	55				110			2,200.00		
No. of employees: Drainage/Utilities/Sub-Grad					0			0.00		
No. of employees: Paving					0			0.00		
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.02	0.85	0.08	0.05	0.02	0.00	336.27	0.01	0.00	337.46
Grading/Excavation (grams/mile)	0.02	0.85	0.08	0.05	0.02	0.00	336.27	0.01	0.00	337.46
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.81	1.86	0.14	0.00	0.00	0.00	77.20	0.01	0.01	79.12
Grading/Excavation (grams/trip)	0.81	1.86	0.14	0.00	0.00	0.00	77.20	0.01	0.01	79.12
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.12	2.09	0.20	0.10	0.04	0.01	749.87	0.01	0.01	752.68
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	2.47	0.00	0.00	2.48
Pounds per day - Grading/Excavatio	0.27	4.59	0.43	0.23	0.09	0.02	1,649.71	0.03	0.02	1,655.90
Tons per const. Period - Grading/Excavatio	0.01	0.20	0.02	0.01	0.00	0.00	72.59	0.00	0.00	72.86
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec	0.01	0.21	0.02	0.01	0.00	0.00	75.06	0.00	0.00	75.34

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Vehicle/Day		Default Values Miles Traveled/Vehicle/Day		Calculated Daily VMT	
<b>User Input</b>											
Grubbing/Land Clearing - Exhaust	1				40.00					40.00	
Grading/Excavation - Exhaust	4				40.00					160.00	
Drainage/Utilities/Subgrade										0.00	
Paving										0.00	
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58	
Grading/Excavation (grams/mile)	0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.01	0.03	0.12	0.01	0.00	0.00	135.97	0.00	0.00	137.35	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.45	
Pounds per day - Grading/Excavatio	0.22	0.13	0.46	0.04	0.01	0.01	543.89	0.00	0.02	549.42	
Tons per const. Period - Grading/Excavatio	0.00	0.01	0.02	0.00	0.00	0.00	23.93	0.00	0.00	24.17	
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction projec	0.00	0.01	0.02	0.00	0.00	0.00	24.38	0.00	0.00	24.63	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust		User Override of Maximum Acreage Disturbed/Day		Default Maximum Acreage/Day		PM10 pounds/day		PM10 tons/period		PM2.5 pounds/day		PM2.5 tons/period	
Fugitive Dust - Grubbing/Land Clearing	5.00				50.00			0.17	10.40	0.03			
Fugitive Dust - Grading/Excavatio	2.00				20.00			0.88	4.16	0.16			
Fugitive Dust - Drainage/Utilities/Subgrad					0.00			0.00	0.00	0.00			

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is select

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default											
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Excavators	1.17	20.17	9.59	0.47	0.43	0.03	3,095.59	1.00	0.03	3,126.96
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Generator Sets	0.31	3.67	2.72	0.13	0.13	0.01	623.04	0.03	0.00	625.12
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Sweepers/Scrubbers	0.18	1.92	1.71	0.11	0.10	0.00	246.18	0.06	0.00	248.83
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t									
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing		pounds per day	2.00	27.56	16.16	0.79	0.74	0.05	4,260.69	1.14	0.04	4,300.29
		Grubbing/Land Clearing		tons per phase	0.01	0.09	0.05	0.00	0.00	0.00	14.06	0.00	0.00	14.19

Grading/Excavator	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tie	Cranes	1.38	7.18	14.93	0.62	0.57	0.02	2,186.90	0.71	0.02	2,210.47
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tie	Excavators	0.78	13.44	6.39	0.31	0.29	0.02	2,063.73	0.67	0.02	2,085.98
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Generator Sets	0.31	3.67	2.72	0.13	0.13	0.01	623.04	0.03	0.00	625.12
2.00			Model Default Tie	Graders	0.99	8.73	8.98	0.49	0.45	0.01	1,210.95	0.39	0.01	1,223.96
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tie	Off-Highway Trucks	2.01	13.09	14.20	0.51	0.47	0.05	5,094.09	1.65	0.05	5,148.92
1.00			Model Default Tie	Other Construction Equipmen	0.35	4.00	3.44	0.18	0.16	0.01	598.26	0.19	0.01	604.72
2.00			Model Default Tie	Other General Industrial Equipmen	0.32	3.85	3.09	0.18	0.16	0.01	496.04	0.16	0.00	501.39
1.00			Model Default Tie	Other Material Handling Equipmer	0.26	3.74	2.08	0.11	0.10	0.01	556.35	0.18	0.01	562.34
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tie	Rubber Tired Dozers	3.21	26.53	31.72	1.45	1.33	0.04	3,450.20	1.12	0.03	3,487.27
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tie	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
4.00			Model Default Tie	Skid Steer Loaders	0.26	5.54	3.46	0.12	0.11	0.01	801.95	0.26	0.01	810.59
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Sweepers/Scrubbers	0.18	1.92	1.71	0.11	0.10	0.00	246.18	0.08	0.00	248.83
2.00			Model Default Tie	Tractors/Loaders/Backhoes	0.31	4.51	3.10	0.15	0.14	0.01	609.37	0.20	0.01	615.93
2.00			Model Default Tie	Trenchers	0.72	5.38	6.72	0.47	0.43	0.01	679.57	0.22	0.01	686.88
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavator		pounds per day		11.41	103.38	104.69	4.92	4.55	0.20	18,912.48	5.88	0.17	19,109.78
	Grading/Excavator		tons per phase		0.50	4.55	4.61	0.22	0.20	0.01	832.15	0.26	0.01	840.83

Drainage/Utilities/Subgrad		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	Program-estimate				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grad			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grad			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =</b>					<b>0.51</b>	<b>4.64</b>	<b>4.66</b>	<b>0.22</b>	<b>0.20</b>	<b>0.01</b>	<b>846.21</b>	<b>0.26</b>	<b>0.01</b>	<b>855.02</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F4

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET



Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2023_SRErosion_Contract2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.16	29.87	17.17	50.96	0.96	50.00	11.21	0.81	10.40	0.06	5,962.36	1.16	0.08	6,014.46
Grading/Excavation	11.71	108.15	105.76	25.20	5.20	20.00	8.82	4.66	4.16	0.22	21,310.04	5.91	0.21	21,521.14
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>11.71</b>	<b>108.15</b>	<b>105.76</b>	<b>50.96</b>	<b>5.20</b>	<b>50.00</b>	<b>11.21</b>	<b>4.66</b>	<b>10.40</b>	<b>0.22</b>	<b>21,310.04</b>	<b>5.91</b>	<b>0.21</b>	<b>21,521.14</b>
<b>Total (tons/construction project)</b>	<b>0.52</b>	<b>4.86</b>	<b>4.71</b>	<b>1.28</b>	<b>0.23</b>	<b>1.05</b>	<b>0.43</b>	<b>0.21</b>	<b>0.22</b>	<b>0.01</b>	<b>957.32</b>	<b>0.26</b>	<b>0.01</b>	<b>966.78</b>

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 13  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	83	0	240	0	1,000	40
Grading/Excavation	77	0	60	0	2,200	160
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2023_SRErosion_Contract2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.06	0.17	0.00	0.17	0.04	0.00	0.03	0.00	19.68	0.00	0.00	18.01
Grading/Excavation	0.52	4.76	4.65	1.11	0.23	0.88	0.39	0.21	0.18	0.01	937.64	0.26	0.01	859.05
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>0.52</b>	<b>4.76</b>	<b>4.65</b>	<b>1.11</b>	<b>0.23</b>	<b>0.88</b>	<b>0.39</b>	<b>0.21</b>	<b>0.18</b>	<b>0.01</b>	<b>937.64</b>	<b>0.26</b>	<b>0.01</b>	<b>859.05</b>
<b>Total (tons/construction project)</b>	<b>0.52</b>	<b>4.86</b>	<b>4.71</b>	<b>1.28</b>	<b>0.23</b>	<b>1.05</b>	<b>0.43</b>	<b>0.21</b>	<b>0.22</b>	<b>0.01</b>	<b>957.32</b>	<b>0.26</b>	<b>0.01</b>	<b>877.06</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2023_SRErosion_Contract2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.16	29.87	17.10	50.96	0.96	50.00	11.21	0.81	10.40	0.06	5,961.27	1.16	0.08	6,013.06
Grading/Excavation	11.71	108.15	105.70	25.20	5.20	20.00	8.82	4.66	4.16	0.22	21,309.18	5.91	0.21	21,520.04
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	11.71	108.15	105.70	50.96	5.20	50.00	11.21	4.66	10.40	0.22	21,309.18	5.91	0.21	21,520.04
Total (tons/construction project)	0.52	4.86	4.71	1.28	0.23	1.05	0.43	0.21	0.22	0.01	957.28	0.26	0.01	966.72

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 13  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	83	0	240	0	1,000	40
Grading/Excavation	77	0	60	0	2,200	160
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2023_SRErosion_Contract2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.06	0.17	0.00	0.17	0.04	0.00	0.03	0.00	19.67	0.00	0.00	18.00
Grading/Excavation	0.52	4.76	4.65	1.11	0.23	0.88	0.39	0.20	0.18	0.01	937.60	0.26	0.01	859.01
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.52	4.76	4.65	1.11	0.23	0.88	0.39	0.20	0.18	0.01	937.60	0.26	0.01	859.01
Total (tons/construction project)	0.52	4.86	4.71	1.28	0.23	1.05	0.43	0.21	0.22	0.01	957.28	0.26	0.01	877.01

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> 2023_SRErosion_Contract2														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.56	35.67	7.73	50.45	0.45	50.00	10.73	0.33	10.40	0.06	5,961.27	1.16	0.08	6,013.06
Grading/Excavation	6.38	124.50	22.18	21.03	1.03	20.00	4.97	0.81	4.16	0.22	21,309.18	5.91	0.21	21,520.04
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>6.38</b>	<b>124.50</b>	<b>22.18</b>	<b>50.45</b>	<b>1.03</b>	<b>50.00</b>	<b>10.73</b>	<b>0.81</b>	<b>10.40</b>	<b>0.22</b>	<b>21,309.18</b>	<b>5.91</b>	<b>0.21</b>	<b>21,520.04</b>
<b>Total (tons/construction project)</b>	<b>0.29</b>	<b>5.60</b>	<b>1.00</b>	<b>1.09</b>	<b>0.05</b>	<b>1.05</b>	<b>0.25</b>	<b>0.04</b>	<b>0.22</b>	<b>0.01</b>	<b>957.28</b>	<b>0.26</b>	<b>0.01</b>	<b>966.72</b>

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 13  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	83	0	240	0	1,000	40
Grading/Excavation	77	0	60	0	2,200	160
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> 2023_SRErosion_Contract2														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.12	0.03	0.17	0.00	0.17	0.04	0.00	0.03	0.00	19.67	0.00	0.00	18.00
Grading/Excavation	0.28	5.48	0.98	0.93	0.05	0.88	0.22	0.04	0.18	0.01	937.60	0.26	0.01	859.01
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>0.28</b>	<b>5.48</b>	<b>0.98</b>	<b>0.93</b>	<b>0.05</b>	<b>0.88</b>	<b>0.22</b>	<b>0.04</b>	<b>0.18</b>	<b>0.01</b>	<b>937.60</b>	<b>0.26</b>	<b>0.01</b>	<b>859.01</b>
<b>Total (tons/construction project)</b>	<b>0.29</b>	<b>5.60</b>	<b>1.00</b>	<b>1.09</b>	<b>0.05</b>	<b>1.05</b>	<b>0.25</b>	<b>0.04</b>	<b>0.22</b>	<b>0.01</b>	<b>957.28</b>	<b>0.26</b>	<b>0.01</b>	<b>877.01</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

*Sacramento Weir Widening*

Case 1

Case 2


**Road Construction Emissions Model**
**Version 8.1.0**

**Data Entry Worksheet**

Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name	2021 Sac Weir	
Construction Start Year	2021	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	8.80	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	1.30	miles
Total Project Area	482.00	acres
Maximum Area Disturbed/Day	40.00	acres
Water Trucks Used?	1	1. Yes 2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you coded not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd <sup>3</sup> /day)	Export Volume (yd <sup>3</sup> /day)
Soil	Grubbing/Land Clearing	15.00	0.00	1136.00
	Grading/Excavation	15.00	2148.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.80	0.88	3/1/2021	1/1/2021
Grading/Excavation	8.00	3.52	3/26/2021	1/26/2021
Drainage/Utilities/Sub-Grade	0.00	Program		9/27/2021
Paving	0.00	1.32		9/27/2021
<b>Totals (Months)</b>		9		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing	1.20			76	91.20					
Miles/round trip: Grading/Excavation	60.00			144	8640.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.02	0.09	0.73	0.02	0.01	0.00	324.61	0.00	0.01	327.92
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	2.86	0.00	0.00	2.89
Pounds per day - Grading/Excavation	1.94	8.24	69.44	2.19	0.98	0.29	30,752.89	0.09	1.04	31,065.78
Tons per const. Period - Grading/Excavation	0.17	0.73	6.11	0.19	0.09	0.03	2,706.25	0.01	0.09	2,733.79
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.17	0.73	6.12	0.19	0.09	0.03	2,709.11	0.01	0.09	2,736.67

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing				0	0.00					
Miles/round trip: Grading/Excavation				0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker		Default Values							
User Input	Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT							
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing	40		80	1,600.00							
No. of employees: Grading/Excavation	75		150	3,000.00							
No. of employees: Drainage/Utilities/Sub-Grade			0	0.00							
No. of employees: Paving			0	0.00							
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Grading/Excavation (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grubbing/Land Clearing (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Grading/Excavation (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.23	3.90	0.39	0.17	0.07	0.01	1,284.42	0.03	0.02	1,289.97	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.03	0.00	0.00	0.00	0.00	11.30	0.00	0.00	11.35	
Pounds per day - Grading/Excavation	0.43	7.30	0.73	0.31	0.13	0.02	2,408.28	0.05	0.03	2,418.68	
Tons per const. Period - Grading/Excavation	0.04	0.64	0.06	0.03	0.01	0.00	211.93	0.00	0.00	212.84	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.04	0.68	0.07	0.03	0.01	0.00	223.23	0.01	0.00	224.20	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Truck		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT				
Grubbing/Land Clearing - Exhaust	3		40.00				120.00				
Grading/Excavation - Exhaust	3		40.00				120.00				
Drainage/Utilities/Subgrade							0.00				
Paving							0.00				
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92	
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.03	0.11	0.96	0.03	0.01	0.00	427.12	0.00	0.01	431.47	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	3.76	0.00	0.00	3.80	
Pounds per day - Grading/Excavation	0.03	0.11	0.96	0.03	0.01	0.00	427.12	0.00	0.01	431.47	
Tons per const. Period - Grading/Excavation	0.00	0.01	0.08	0.00	0.00	0.00	37.59	0.00	0.00	37.97	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.01	0.09	0.00	0.00	0.00	41.35	0.00	0.00	41.77	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day					
Fugitive Dust - Grubbing/Land Clearing				400.00	3.52	83.20	0.73
Fugitive Dust - Grading/Excavation				400.00	35.20	83.20	7.32
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tier	Excavators	0.89	12.66	8.33	0.40	0.37	0.02	1,935.08	0.63	0.02	1,955.95
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.45	4.61	3.96	0.21	0.21	0.01	778.79	0.04	0.01	781.53
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00			Model Default Tier	Off-Highway Trucks	3.77	22.42	32.73	1.20	1.10	0.08	7,951.02	2.57	0.07	8,036.66
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day			5.10	39.68	45.02	1.81	1.69	0.11	10,664.89	3.24	0.09	10,774.14
	Grubbing/Land Clearing	tons per phase			0.04	0.35	0.40	0.02	0.01	0.00	93.85	0.03	0.00	94.81



Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles		Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
	0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1.00			Model Default Tier	Bore/Drill Rigs	0.30	2.42	3.52	0.11	0.10	0.01	1,062.70	0.34	0.01	1,074.16
	4.00			Model Default Tier	Cement and Mortar Mixers	0.29	1.54	1.84	0.07	0.07	0.00	252.56	0.03	0.00	253.87
	0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	4.00			Model Default Tier	Cranes	2.02	9.70	23.72	0.96	0.89	0.03	2,733.23	0.88	0.02	2,762.68
	0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	3.00			Model Default Tier	Excavators	0.89	12.66	8.33	0.40	0.37	0.02	1,935.08	0.63	0.02	1,955.95
	0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2.00			Model Default Tier	Generator Sets	0.89	9.21	7.92	0.42	0.42	0.02	1,557.59	0.08	0.01	1,563.07
	0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	5.00			Model Default Tier	Off-Highway Trucks	3.77	22.42	32.73	1.20	1.10	0.08	7,951.02	2.57	0.07	8,036.66
	1.00			Model Default Tier	Other Construction Equipment	0.52	5.07	5.48	0.29	0.26	0.01	748.16	0.24	0.01	756.23
	0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2.00			Model Default Tier	Pumps	0.95	9.35	8.03	0.44	0.44	0.02	1,557.59	0.08	0.01	1,563.21
	0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1.00			Model Default Tier	Sweepers/Scrubbers	0.29	2.44	2.57	0.19	0.17	0.00	307.72	0.10	0.00	311.03
	2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.47	5.71	4.79	0.28	0.26	0.01	760.01	0.25	0.01	768.19
	1.00			Model Default Tier	Trenchers	0.50	3.38	4.56	0.33	0.30	0.00	424.37	0.14	0.00	428.94
	0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grading/Excavation		pounds per day	10.89	83.89	103.48	4.70	4.40	0.20	19,290.04	5.34	0.17	19,474.00	
		Grading/Excavation		tons per phase	0.96	7.38	9.11	0.41	0.39	0.02	1,697.52	0.47	0.01	1,713.71	

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
					If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab									
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e				
	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					1.00	7.73	9.50	0.43	0.40	0.02	1,791.37	0.50	0.02	1,808.52

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2021 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	5.38	43.78	47.11	402.03	2.03	400.00	84.98	1.78	83.20	0.13	12,701.05	3.27	0.14	12,823.49
Grading/Excavation	13.29	99.56	174.61	407.22	7.22	400.00	88.72	5.52	83.20	0.52	52,878.33	5.49	1.26	53,389.93
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>13.29</b>	<b>99.56</b>	<b>174.61</b>	<b>407.22</b>	<b>7.22</b>	<b>400.00</b>	<b>88.72</b>	<b>5.52</b>	<b>83.20</b>	<b>0.52</b>	<b>52,878.33</b>	<b>5.49</b>	<b>1.26</b>	<b>53,389.93</b>
<b>Total (tons/construction project)</b>	<b>1.22</b>	<b>9.15</b>	<b>15.78</b>	<b>39.37</b>	<b>0.65</b>	<b>38.72</b>	<b>8.56</b>	<b>0.50</b>	<b>8.05</b>	<b>0.05</b>	<b>4,765.06</b>	<b>0.51</b>	<b>0.11</b>	<b>4,811.16</b>

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 9  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	1136	0	91	0	1,600	120
Grading/Excavation	2,148	0	8,640	0	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2021 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.05	0.39	0.41	3.54	0.02	3.52	0.75	0.02	0.73	0.00	111.77	0.03	0.00	102.37
Grading/Excavation	1.17	8.76	15.37	35.84	0.64	35.20	7.81	0.49	7.32	0.05	4,653.29	0.48	0.11	4,262.28
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>1.17</b>	<b>8.76</b>	<b>15.37</b>	<b>35.84</b>	<b>0.64</b>	<b>35.20</b>	<b>7.81</b>	<b>0.49</b>	<b>7.32</b>	<b>0.05</b>	<b>4653.29</b>	<b>0.48</b>	<b>0.11</b>	<b>4,262.28</b>
<b>Total (tons/construction project)</b>	<b>1.22</b>	<b>9.15</b>	<b>15.78</b>	<b>39.37</b>	<b>0.65</b>	<b>38.72</b>	<b>8.56</b>	<b>0.50</b>	<b>8.05</b>	<b>0.05</b>	<b>4765.06</b>	<b>0.51</b>	<b>0.11</b>	<b>4,364.66</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2021 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	5.36	43.75	46.08	402.03	2.03	400.00	84.97	1.77	83.20	0.13	12,675.47	3.27	0.14	12,797.42
Grading/Excavation	12.62	98.34	131.80	406.99	6.99	400.00	88.50	5.30	83.20	0.51	51,817.48	5.45	1.19	52,308.61
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>12.62</b>	<b>98.34</b>	<b>131.80</b>	<b>406.99</b>	<b>6.99</b>	<b>400.00</b>	<b>88.50</b>	<b>5.30</b>	<b>83.20</b>	<b>0.51</b>	<b>51,817.48</b>	<b>5.45</b>	<b>1.19</b>	<b>52,308.61</b>
<b>Total (tons/construction project)</b>	<b>1.16</b>	<b>9.04</b>	<b>12.00</b>	<b>39.35</b>	<b>0.63</b>	<b>38.72</b>	<b>8.54</b>	<b>0.48</b>	<b>8.05</b>	<b>0.05</b>	<b>4,671.48</b>	<b>0.51</b>	<b>0.11</b>	<b>4,715.78</b>

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 9  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	1136	0	91	0	1,600	120
Grading/Excavation	2,148	0	8,640	0	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2021 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.05	0.38	0.41	3.54	0.02	3.52	0.75	0.02	0.73	0.00	111.54	0.03	0.00	102.17
Grading/Excavation	1.11	8.65	11.60	35.82	0.62	35.20	7.79	0.47	7.32	0.05	4,559.94	0.48	0.10	4,175.96
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>1.11</b>	<b>8.65</b>	<b>11.60</b>	<b>35.82</b>	<b>0.62</b>	<b>35.20</b>	<b>7.79</b>	<b>0.47</b>	<b>7.32</b>	<b>0.05</b>	<b>4,559.94</b>	<b>0.48</b>	<b>0.10</b>	<b>4,175.96</b>
<b>Total (tons/construction project)</b>	<b>1.16</b>	<b>9.04</b>	<b>12.00</b>	<b>39.35</b>	<b>0.63</b>	<b>38.72</b>	<b>8.54</b>	<b>0.48</b>	<b>8.05</b>	<b>0.05</b>	<b>4,671.48</b>	<b>0.51</b>	<b>0.11</b>	<b>4,278.12</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2021 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	3.59	67.86	7.72	400.55	0.55	400.00	83.59	0.39	83.20	0.13	12,675.47	3.27	0.14	12,797.42
Grading/Excavation	7.74	134.56	44.38	403.02	3.02	400.00	84.77	1.57	83.20	0.51	51,817.48	5.45	1.19	52,308.61
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	7.74	134.56	44.38	403.02	3.02	400.00	84.77	1.57	83.20	0.51	51,817.48	5.45	1.19	52,308.61
Total (tons/construction project)	0.71	12.44	3.97	38.99	0.27	38.72	8.20	0.14	8.05	0.05	4,671.48	0.51	0.11	4,715.78

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 9  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	1136	0	91	0	1,600	120
Grading/Excavation	2,148	0	8,640	0	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2021 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.03	0.60	0.07	3.52	0.00	3.52	0.74	0.00	0.73	0.00	111.54	0.03	0.00	102.17
Grading/Excavation	0.68	11.84	3.91	35.47	0.27	35.20	7.46	0.14	7.32	0.05	4,559.94	0.48	0.10	4,175.96
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.68	11.84	3.91	35.47	0.27	35.20	7.46	0.14	7.32	0.05	4,559.94	0.48	0.10	4,175.96
Total (tons/construction project)	0.71	12.44	3.97	38.99	0.27	38.72	8.20	0.14	8.05	0.05	4,671.48	0.51	0.11	4,278.12

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

**Road Construction Emissions Model**  
**Data Entry Worksheet**

Note: Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name: 2022 Sac Weir

Construction Start Year: 2022  
Enter a Year between 2014 and 2025 (inclusive)

Project Type: 4  
For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data

Project Construction Time: 12.00 months  
Working Days per Month: 22.00 days (assume 22 if unknown)

Predominant Soil/Site Type: Enter 1, 2, or 3  
(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)

Project Length: 1.30 miles


Total Project Area: 482.00 acres

Maximum Area Disturbed/Day: 40.00 acres

Water Trucks Used?: 1  
1. Yes  
2. No

Version 8.1.0

To begin a new project, click this button to clear data previously entered. This button will only work if you coded not to disable macros when loading this spreadsheet.



Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	15.00	0.00	0.00
	Grading/Excavation	15.00	94.00	163.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing	15.00	0.00	0.00
	Grading/Excavation	15.00	88.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation: No Mitigation  
Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer

Off-road Equipment Emissions Mitigation: No Mitigation  
Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<http://www.airquality.org/ceqa/mitigation.shtml>).  
Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.



Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	1.20		1/1/2022
Grading/Excavation	12.00	4.80		1/1/2022
Drainage/Utilities/Sub-Grade	0.00	Program	4.20	1/1/2023
Paving	0.00	1.80		1/1/2023
<b>Totals (Months)</b>		12		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation		61.00			18	1098.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86	
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.24	1.04	7.82	0.27	0.12	0.04	3,864.88	0.01	0.13	3,904.21	
Tons per const. Period - Grading/Excavation	0.03	0.14	1.03	0.04	0.02	0.00	510.16	0.00	0.02	515.36	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.03	0.14	1.03	0.04	0.02	0.00	510.16	0.00	0.02	515.36	

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation		60.00			6	360.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86	
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.08	0.34	2.57	0.09	0.04	0.01	1,267.17	0.00	0.04	1,280.07	
Tons per const. Period - Grading/Excavation	0.01	0.04	0.34	0.01	0.01	0.00	167.27	0.00	0.01	168.97	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.01	0.04	0.34	0.01	0.01	0.00	167.27	0.00	0.01	168.97	

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker		Default Values							
User Input	Commute Default Values	Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT						
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing	0			0	0.00						
No. of employees: Grading/Excavation	75			150	3,000.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/trip)	0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77	
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.40	6.75	0.66	0.31	0.13	0.02	2,329.85	0.05	0.03	2,339.21	
Tons per const. Period - Grading/Excavation	0.05	0.89	0.09	0.04	0.02	0.00	307.54	0.01	0.00	308.78	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.05	0.89	0.09	0.04	0.02	0.00	307.54	0.01	0.00	308.78	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Truck		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT	
Grubbing/Land Clearing - Exhaust	1		40.00							40.00	
Grading/Excavation - Exhaust	3		40.00							120.00	
Drainage/Utilities/Subgrade										0.00	
Paving										0.00	
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.03	0.11	0.86	0.03	0.01	0.00	422.59	0.00	0.01	426.69	
Tons per const. Period - Grading/Excavation	0.00	0.01	0.11	0.00	0.00	0.00	55.76	0.00	0.00	56.32	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.01	0.11	0.00	0.00	0.00	55.76	0.00	0.00	56.32	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default		PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	Maximum Acreage/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing					0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavation					400.00	52.80	83.20	10.98
Fugitive Dust - Drainage/Utilities/Subgrade					0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
0.00	Program-estimate		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A	Type	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Cement and Mortar Mixers	0.29	1.54	1.84	0.07	0.07	0.00	252.58	0.03	0.00	253.87
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Cranes	1.82	9.26	20.47	0.85	0.78	0.03	2,733.67	0.88	0.02	2,763.14
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tier	Excavators	0.78	12.59	6.87	0.33	0.31	0.02	1,934.40	0.63	0.02	1,955.25
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Generator Sets	0.82	9.19	7.32	0.37	0.37	0.02	1,557.59	0.07	0.01	1,562.93
1.00			Model Default Tier	Graders	0.70	5.53	6.52	0.36	0.33	0.01	757.00	0.24	0.01	765.14
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00			Model Default Tier	Off-Highway Trucks	3.29	20.89	24.96	0.91	0.83	0.08	7,953.90	2.57	0.07	8,039.53
1.00			Model Default Tier	Other Construction Equipment	0.47	5.03	4.77	0.25	0.23	0.01	747.91	0.24	0.01	755.99
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Other Material Handling Equipment	0.33	4.68	2.79	0.15	0.14	0.01	695.43	0.22	0.01	702.93
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Paving Equipment	0.22	3.16	2.16	0.11	0.10	0.01	489.35	0.16	0.00	494.63
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Pumps	0.44	4.66	3.71	0.19	0.19	0.01	778.79	0.04	0.01	781.53
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rubber Tired Dozers	1.07	8.76	10.81	0.49	0.45	0.01	1,077.83	0.35	0.01	1,089.41
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Scrapers	1.01	7.86	11.03	0.43	0.40	0.02	1,812.83	0.59	0.02	1,832.37
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Surfacing Equipment	0.22	1.95	2.62	0.10	0.09	0.01	790.45	0.26	0.01	798.98
1.00			Model Default Tier	Sweepers/Scrubbers	0.24	2.40	2.25	0.15	0.14	0.00	307.72	0.10	0.00	311.03
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.42	5.65	4.23	0.23	0.21	0.01	760.86	0.25	0.01	769.05
1.00			Model Default Tier	Trenchers	0.47	3.37	4.39	0.31	0.29	0.00	424.41	0.14	0.00	428.97
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			pounds per day	12.60	106.51	116.74	5.30	4.93	0.24	23,074.73	6.77	0.20	23,304.77
	Grading/Excavation			tons per phase	1.66	14.06	15.41	0.70	0.65	0.03	3,045.86	0.89	0.03	3,076.23

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
					If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab									
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
	0.00		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab														
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					1.66	14.06	15.41	0.70	0.65	0.03	3,045.86	0.89	0.03	3,076.23

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2022 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	13.34	114.76	128.64	406.00	6.00	400.00	88.43	5.23	83.20	0.32	30,959.02	6.83	0.42	31,254.95
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>13.34</b>	<b>114.76</b>	<b>128.64</b>	<b>406.00</b>	<b>6.00</b>	<b>400.00</b>	<b>88.43</b>	<b>5.23</b>	<b>83.20</b>	<b>0.32</b>	<b>30,959.02</b>	<b>6.83</b>	<b>0.42</b>	<b>31,254.95</b>
<b>Total (tons/construction project)</b>	<b>1.76</b>	<b>15.15</b>	<b>16.98</b>	<b>53.59</b>	<b>0.79</b>	<b>52.80</b>	<b>11.67</b>	<b>0.69</b>	<b>10.98</b>	<b>0.04</b>	<b>4,086.59</b>	<b>0.90</b>	<b>0.06</b>	<b>4,125.65</b>

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 12  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	40
Grading/Excavation	257	88	1,098	360	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2022 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	1.76	15.15	16.98	53.59	0.79	52.80	11.67	0.69	10.98	0.04	4,086.59	0.90	0.06	3,742.77
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>1.76</b>	<b>15.15</b>	<b>16.98</b>	<b>53.59</b>	<b>0.79</b>	<b>52.80</b>	<b>11.67</b>	<b>0.69</b>	<b>10.98</b>	<b>0.04</b>	<b>4086.59</b>	<b>0.90</b>	<b>0.06</b>	<b>3,742.77</b>
<b>Total (tons/construction project)</b>	<b>1.76</b>	<b>15.15</b>	<b>16.98</b>	<b>53.59</b>	<b>0.79</b>	<b>52.80</b>	<b>11.67</b>	<b>0.69</b>	<b>10.98</b>	<b>0.04</b>	<b>4086.59</b>	<b>0.90</b>	<b>0.06</b>	<b>3,742.77</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.



The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2022 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	13.24	114.56	122.24	405.97	5.97	400.00	88.40	5.20	83.20	0.31	30,792.39	6.82	0.41	31,084.88
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	13.24	114.56	122.24	405.97	5.97	400.00	88.40	5.20	83.20	0.31	30,792.39	6.82	0.41	31,084.88
Total (tons/construction project)	1.75	15.12	16.14	53.59	0.79	52.80	11.67	0.69	10.98	0.04	4,064.59	0.90	0.05	4,103.20

Notes:	Project Start Year ->	2022
	Project Length (months) ->	12
	Total Project Area (acres) ->	482
	Maximum Area Disturbed/Day (acres) ->	40
	Water Truck Used? ->	Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	40
Grading/Excavation	257	88	1,098	360	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2022 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	1.75	15.12	16.14	53.59	0.79	52.80	11.67	0.69	10.98	0.04	4,064.59	0.90	0.05	3,722.40
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	1.75	15.12	16.14	53.59	0.79	52.80	11.67	0.69	10.98	0.04	4064.59	0.90	0.05	3,722.40
Total (tons/construction project)	1.75	15.12	16.14	53.59	0.79	52.80	11.67	0.69	10.98	0.04	4064.59	0.90	0.05	3,722.40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2022 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	7.88	150.77	24.02	401.51	1.51	400.00	84.25	1.05	83.20	0.31	30,792.39	6.82	0.41	31,084.88
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	7.88	150.77	24.02	401.51	1.51	400.00	84.25	1.05	83.20	0.31	30,792.39	6.82	0.41	31,084.88
Total (tons/construction project)	1.04	19.90	3.17	53.00	0.20	52.80	11.12	0.14	10.98	0.04	4,064.59	0.90	0.05	4,103.20

Notes:	Project Start Year ->	2022
	Project Length (months) ->	12
	Total Project Area (acres) ->	482
	Maximum Area Disturbed/Day (acres) ->	40
	Water Truck Used? ->	Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	40
Grading/Excavation	257	88	1,098	360	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2022 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	1.04	19.90	3.17	53.00	0.20	52.80	11.12	0.14	10.98	0.04	4,064.59	0.90	0.05	3,722.40
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	1.04	19.90	3.17	53.00	0.20	52.80	11.12	0.14	10.98	0.04	4064.59	0.90	0.05	3,722.40
Total (tons/construction project)	1.04	19.90	3.17	53.00	0.20	52.80	11.12	0.14	10.98	0.04	4064.59	0.90	0.05	3,722.40


PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

### Road Construction Emissions Model Data Entry Worksheet

**Note:** Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name	2023 Sac Weir	
Construction Start Year	2023	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	10.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	1.30	miles
Total Project Area	482.00	acres
Maximum Area Disturbed/Day	40.00	acres
Water Trucks Used?	1	1. Yes 2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you coded not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

#### Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	15.00	0.00	0.00
	Grading/Excavation	15.00	9.00	2905.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing	15.00	0.00	0.00
	Grading/Excavation	15.00	0.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			

#### Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	1.00		1/1/2023
Grading/Excavation	10.00	4.00		1/1/2023
Drainage/Utilities/Sub-Grade	0.00	Program 3.50		11/2/2023
Paving	0.00	1.50		11/2/2023
<b>Totals (Months)</b>		10		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing		0.00			0	0.00					
Miles/round trip: Grading/Excavation		1.40			195	273.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.04	0.22	0.79	0.06	0.02	0.01	928.01	0.00	0.03	937.45
Tons per const. Period - Grading/Excavation		0.00	0.02	0.09	0.01	0.00	0.00	102.08	0.00	0.00	103.12
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.02	0.09	0.01	0.00	0.00	102.08	0.00	0.00	103.12

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker		Default Values		Calculated					
User Input	Commute Default Values	Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT						
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing	0			0	0.00						
No. of employees: Grading/Excavation	75			150	3,000.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.02	0.85	0.08	0.05	0.02	0.00	336.27	0.01	0.00	337.46	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/trip)	0.81	1.86	0.14	0.00	0.00	0.00	77.20	0.01	0.01	79.12	
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.37	6.26	0.59	0.31	0.13	0.02	2,249.60	0.04	0.02	2,258.05	
Tons per const. Period - Grading/Excavation	0.04	0.69	0.07	0.03	0.01	0.00	247.46	0.00	0.00	248.39	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.04	0.69	0.07	0.03	0.01	0.00	247.46	0.00	0.00	248.39	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT				
Grubbing/Land Clearing - Exhaust							0.00				
Grading/Excavation - Exhaust	3		40.00				120.00				
Drainage/Utilities/Subgrade							0.00				
Paving							0.00				
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.02	0.10	0.35	0.03	0.01	0.00	407.92	0.00	0.01	412.06	
Tons per const. Period - Grading/Excavation	0.00	0.01	0.04	0.00	0.00	0.00	44.87	0.00	0.00	45.33	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.01	0.04	0.00	0.00	0.00	44.87	0.00	0.00	45.33	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default		PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	Maximum Acreage/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing					0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavation					400.00	44.00	83.20	9.15
Fugitive Dust - Drainage/Utilities/Subgrade					0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
0.00	Program-estimate		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A	Type	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
				Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Cement and Mortar Mixers	0.15	0.77	0.92	0.04	0.04	0.00	126.29	0.01	0.00	126.93
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Cranes	0.86	4.49	9.33	0.39	0.36	0.01	1,366.81	0.44	0.01	1,381.54
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tier	Excavators	0.73	12.60	5.99	0.29	0.27	0.02	1,934.75	0.63	0.02	1,955.60
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Generator Sets	0.76	9.17	6.79	0.32	0.32	0.02	1,557.59	0.07	0.01	1,562.79
1.00			Model Default Tier	Graders	0.62	5.46	5.61	0.31	0.28	0.01	756.84	0.24	0.01	764.97
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00			Model Default Tier	Off-Highway Trucks	3.13	20.45	22.19	0.80	0.74	0.08	7,959.51	2.57	0.07	8,045.19
1.00			Model Default Tier	Other Construction Equipment	0.44	5.00	4.30	0.22	0.21	0.01	747.83	0.24	0.01	755.90
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Other Material Handling Equipment	0.32	4.67	2.61	0.14	0.13	0.01	695.43	0.22	0.01	702.93
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Paving Equipment	0.21	3.17	1.99	0.10	0.09	0.01	489.35	0.16	0.00	494.63
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Pumps	0.41	4.66	3.44	0.17	0.17	0.01	778.79	0.04	0.01	781.43
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rubber Tired Dozers	1.00	8.29	9.91	0.45	0.42	0.01	1,078.19	0.35	0.01	1,089.77
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Scrapers	0.97	7.57	10.21	0.40	0.37	0.02	1,812.63	0.59	0.02	1,832.16
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Surfacing Equipment	0.22	1.95	2.48	0.09	0.09	0.01	790.19	0.26	0.01	798.72
1.00			Model Default Tier	Sweepers/Scrubbers	0.23	2.40	2.13	0.14	0.13	0.00	307.72	0.10	0.00	311.03
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.38	5.64	3.88	0.19	0.18	0.01	761.71	0.25	0.01	769.91
1.00			Model Default Tier	Trenchers	0.45	3.36	4.20	0.29	0.27	0.00	424.73	0.14	0.00	429.30
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			pounds per day	10.88	99.65	95.98	4.35	4.04	0.22	21,588.36	6.30	0.19	21,802.82
	Grading/Excavation			tons per phase	1.20	10.96	10.56	0.48	0.44	0.02	2,374.72	0.69	0.02	2,398.31

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
					If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab									
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
Type	Equipment Tier	Type	Equipment Tier	Type	Equipment Tier	Type	Equipment Tier	Type	Equipment Tier	Type	Equipment Tier	Type	Equipment Tier	Type
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					1.20	10.96	10.56	0.48	0.44	0.02	2,374.72	0.69	0.02	2,398.31

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2023 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	11.31	106.23	97.70	404.74	4.74	400.00	87.41	4.21	83.20	0.26	25,173.90	6.35	0.26	25,410.39
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>11.31</b>	<b>106.23</b>	<b>97.70</b>	<b>404.74</b>	<b>4.74</b>	<b>400.00</b>	<b>87.41</b>	<b>4.21</b>	<b>83.20</b>	<b>0.26</b>	<b>25,173.90</b>	<b>6.35</b>	<b>0.26</b>	<b>25,410.39</b>
<b>Total (tons/construction project)</b>	<b>1.24</b>	<b>11.69</b>	<b>10.75</b>	<b>44.52</b>	<b>0.52</b>	<b>44.00</b>	<b>9.61</b>	<b>0.46</b>	<b>9.15</b>	<b>0.03</b>	<b>2,769.13</b>	<b>0.70</b>	<b>0.03</b>	<b>2,795.14</b>

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 10  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	2,914	0	273	0	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2023 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	1.24	11.69	10.75	44.52	0.52	44.00	9.61	0.46	9.15	0.03	2,769.13	0.70	0.03	2,535.74
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>1.24</b>	<b>11.69</b>	<b>10.75</b>	<b>44.52</b>	<b>0.52</b>	<b>44.00</b>	<b>9.61</b>	<b>0.46</b>	<b>9.15</b>	<b>0.03</b>	<b>2,769.13</b>	<b>0.70</b>	<b>0.03</b>	<b>2,535.74</b>
<b>Total (tons/construction project)</b>	<b>1.24</b>	<b>11.69</b>	<b>10.75</b>	<b>44.52</b>	<b>0.52</b>	<b>44.00</b>	<b>9.61</b>	<b>0.46</b>	<b>9.15</b>	<b>0.03</b>	<b>2,769.13</b>	<b>0.70</b>	<b>0.03</b>	<b>2,535.74</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2023 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	11.31	106.23	97.61	404.74	4.74	400.00	87.41	4.21	83.20	0.26	25,172.37	6.35	0.26	25,408.42
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>11.31</b>	<b>106.23</b>	<b>97.61</b>	<b>404.74</b>	<b>4.74</b>	<b>400.00</b>	<b>87.41</b>	<b>4.21</b>	<b>83.20</b>	<b>0.26</b>	<b>25,172.37</b>	<b>6.35</b>	<b>0.26</b>	<b>25,408.42</b>
<b>Total (tons/construction project)</b>	<b>1.24</b>	<b>11.69</b>	<b>10.74</b>	<b>44.52</b>	<b>0.52</b>	<b>44.00</b>	<b>9.61</b>	<b>0.46</b>	<b>9.15</b>	<b>0.03</b>	<b>2,768.96</b>	<b>0.70</b>	<b>0.03</b>	<b>2,794.93</b>

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 10  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	2,914	0	273	0	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2023 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	1.24	11.69	10.74	44.52	0.52	44.00	9.61	0.46	9.15	0.03	2,768.96	0.70	0.03	2,535.54
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>1.24</b>	<b>11.69</b>	<b>10.74</b>	<b>44.52</b>	<b>0.52</b>	<b>44.00</b>	<b>9.61</b>	<b>0.46</b>	<b>9.15</b>	<b>0.03</b>	<b>2,768.96</b>	<b>0.70</b>	<b>0.03</b>	<b>2,535.54</b>
<b>Total (tons/construction project)</b>	<b>1.24</b>	<b>11.69</b>	<b>10.74</b>	<b>44.52</b>	<b>0.52</b>	<b>44.00</b>	<b>9.61</b>	<b>0.46</b>	<b>9.15</b>	<b>0.03</b>	<b>2,768.96</b>	<b>0.70</b>	<b>0.03</b>	<b>2,535.54</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2023 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	7.17	140.45	18.11	401.13	1.13	400.00	84.04	0.84	83.20	0.26	25,172.37	6.35	0.26	25,408.42
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	7.17	140.45	18.11	401.13	1.13	400.00	84.04	0.84	83.20	0.26	25,172.37	6.35	0.26	25,408.42
Total (tons/construction project)	0.79	15.45	1.99	44.12	0.12	44.00	9.24	0.09	9.15	0.03	2,768.96	0.70	0.03	2,794.93

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 10  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	2,914	0	273	0	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2023 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.79	15.45	1.99	44.12	0.12	44.00	9.24	0.09	9.15	0.03	2,768.96	0.70	0.03	2,535.54
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.79	15.45	1.99	44.12	0.12	44.00	9.24	0.09	9.15	0.03	2,768.96	0.70	0.03	2,535.54
Total (tons/construction project)	0.79	15.45	1.99	44.12	0.12	44.00	9.24	0.09	9.15	0.03	2,768.96	0.70	0.03	2,535.54

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

**Road Construction Emissions Model**      **Version 8.1.0**

**Data Entry Worksheet**

Note: Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name: 2021 Sac Weir

Construction Start Year: 2021 Enter a Year between 2014 and 2025 (inclusive)

Project Type: 4  
For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data

Project Construction Time: 8.80 months  
Working Days per Month: 22.00 days (assume 22 if unknown)

Predominant Soil/Site Type: Enter 1, 2, or 3  
(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)


Project Length: 1.30 miles

Total Project Area: 482.00 acres

Maximum Area Disturbed/Day: 40.00 acres

Water Trucks Used?: 1  
1. Yes  
2. No

To begin a new project, click this button to clear data previously entered. This button will only work if you coded not to disable macros when loading this spreadsheet.



Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	15.00	0.00	1136.00
	Grading/Excavation	15.00	2173.00	244.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation: No Mitigation Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer

Off-road Equipment Emissions Mitigation: No Mitigation Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/ceqa/mitigation.shtml).  
Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.80	0.88	5/1/2021	1/1/2021
Grading/Excavation	8.00	3.52	5/26/2021	1/26/2021
Drainage/Utilities/Sub-Grade	0.00	Program		9/27/2021
Paving	0.00	1.32		9/27/2021
<b>Totals (Months)</b>		9		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing	1.20			76	91.20					
Miles/round trip: Grading/Excavation	60.00			162	9720.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Grading/Excavation (grams/mile)	0.10	0.43	3.60	0.11	0.05	0.02	1,612.71	0.00	0.05	1,629.12
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.02	0.09	0.73	0.02	0.01	0.00	324.61	0.00	0.01	327.92
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	2.86	0.00	0.00	2.89
Pounds per day - Grading/Excavation	2.17	9.26	77.23	2.45	1.10	0.33	34,558.67	0.10	1.17	34,910.29
Tons per const. Period - Grading/Excavation	0.19	0.82	6.80	0.22	0.10	0.03	3,041.16	0.01	0.10	3,072.11
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	<b>0.19</b>	<b>0.82</b>	<b>6.80</b>	<b>0.22</b>	<b>0.10</b>	<b>0.03</b>	<b>3,044.02</b>	<b>0.01</b>	<b>0.10</b>	<b>3,074.99</b>

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing				0	0.00					
Miles/round trip: Grading/Excavation				0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Grading/Excavation (grams/mile)	0.10	0.43	3.60	0.11	0.05	0.02	1,612.71	0.00	0.05	1,629.12
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</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>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker		Default Values		Calculated					
User Input		Commute Default Values		Daily Trips	Daily VMT						
Miles/one-way trip		20									
One-way trips/day		2									
No. of employees: Grubbing/Land Clearing		40		80	1,600.00						
No. of employees: Grading/Excavation		75		150	3,000.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48
Grading/Excavation (grams/mile)		0.02	0.98	0.10	0.05	0.02	0.00	358.86	0.01	0.00	360.29
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)		0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35
Grading/Excavation (grams/trip)		0.92	2.26	0.17	0.00	0.00	0.00	81.66	0.01	0.01	84.09
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.23	3.90	0.39	0.17	0.07	0.01	1,284.42	0.03	0.02	1,289.97
Tons per const. Period - Grubbing/Land Clearing		0.00	0.03	0.00	0.00	0.00	0.00	11.30	0.00	0.00	11.35
Pounds per day - Grading/Excavation		0.43	7.25	0.72	0.31	0.13	0.02	2,400.44	0.05	0.03	2,410.74
Tons per const. Period - Grading/Excavation		0.04	0.64	0.06	0.03	0.01	0.00	211.24	0.00	0.00	212.14
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.04	0.67	0.07	0.03	0.01	0.00	222.54	0.00	0.00	223.50

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Truck		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input		Default # Water Trucks		Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day		Miles Traveled/Vehicle/Day	Daily VMT		
Grubbing/Land Clearing - Exhaust		3			40.00				120.00		
Grading/Excavation - Exhaust		3			40.00				120.00		
Drainage/Utilities/Subgrade									0.00		
Paving									0.00		
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Grading/Excavation (grams/mile)		0.10	0.43	3.60	0.11	0.05	0.02	1,612.71	0.00	0.05	1,629.12
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.03	0.11	0.96	0.03	0.01	0.00	427.12	0.00	0.01	431.47
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.01	0.00	0.00	0.00	3.76	0.00	0.00	3.80
Pounds per day - Grading/Excavation		0.03	0.11	0.95	0.03	0.01	0.00	426.65	0.00	0.01	430.99
Tons per const. Period - Grading/Excavation		0.00	0.01	0.08	0.00	0.00	0.00	37.55	0.00	0.00	37.93
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.01	0.09	0.00	0.00	0.00	41.30	0.00	0.00	41.72

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10		PM2.5	
	Acreage Disturbed/Day	Maximum Acreage/Day		pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing				400.00	3.52	83.20	0.73
Fugitive Dust - Grading/Excavation				400.00	35.20	83.20	7.32
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00



Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tier	Excavators	0.89	12.66	8.33	0.40	0.37	0.02	1,935.08	0.63	0.02	1,955.95
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.45	4.61	3.96	0.21	0.21	0.01	778.79	0.04	0.01	781.53
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00			Model Default Tier	Off-Highway Trucks	3.77	22.42	32.73	1.20	1.10	0.08	7,951.02	2.57	0.07	8,036.66
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing		pounds per day	5.10	39.68	45.02	1.81	1.69	0.11	10,664.89	3.24	0.09	10,774.14
		Grubbing/Land Clearing		tons per phase	0.04	0.35	0.40	0.02	0.01	0.00	93.85	0.03	0.00	94.81

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles		Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
	0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1.00			Model Default Tier	Bore/Drill Rigs	0.30	2.41	3.43	0.10	0.01	1,062.87	0.34	0.01	1,074.36	
	4.00			Model Default Tier	Cement and Mortar Mixers	0.29	1.54	1.84	0.07	0.00	252.58	0.03	0.00	253.87	
	0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	4.00			Model Default Tier	Cranes	2.00	9.66	23.40	0.95	0.88	0.03	2,733.27	0.88	0.02	2,762.73
	0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	3.00			Model Default Tier	Excavators	0.88	12.65	8.19	0.40	0.36	0.02	1,935.01	0.63	0.02	1,955.88
	0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2.00			Model Default Tier	Generator Sets	0.89	9.21	7.86	0.41	0.41	0.02	1,557.59	0.08	0.01	1,563.05
	0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	5.00			Model Default Tier	Off-Highway Trucks	3.72	22.26	31.96	1.17	1.08	0.08	7,951.31	2.57	0.07	8,036.95
	1.00			Model Default Tier	Other Construction Equipment	0.52	5.06	5.41	0.28	0.26	0.01	748.13	0.24	0.01	756.21
	0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2.00			Model Default Tier	Pumps	0.94	9.35	7.96	0.44	0.44	0.02	1,557.59	0.08	0.01	1,563.19
	0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1.00			Model Default Tier	Sweepers/Scrubbers	0.28	2.43	2.54	0.19	0.17	0.00	307.72	0.10	0.00	311.03
	2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.47	5.70	4.73	0.28	0.25	0.01	760.09	0.25	0.01	768.27
	1.00			Model Default Tier	Trenchers	0.49	3.38	4.54	0.33	0.30	0.00	424.37	0.14	0.00	428.94
	0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles			Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grading/Excavation			pounds per day	10.78	83.67	101.85	4.62	4.33	0.20	19,290.54	5.34	0.17	19,474.48
		Grading/Excavation			tons per phase	0.95	7.36	8.96	0.41	0.38	0.02	1,697.57	0.47	0.01	1,713.75

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
	0.00		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>0.99</b>	<b>7.71</b>	<b>9.36</b>	<b>0.42</b>	<b>0.40</b>	<b>0.02</b>	<b>1,791.42</b>	<b>0.50</b>	<b>0.02</b>	<b>1,808.57</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2021 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	5.38	43.78	47.11	402.03	2.03	400.00	84.98	1.78	83.20	0.13	12,701.05	3.27	0.14	12,823.49
Grading/Excavation	13.40	100.30	180.76	407.42	7.42	400.00	88.77	5.57	83.20	0.56	56,676.30	5.49	1.39	57,226.49
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>13.40</b>	<b>100.30</b>	<b>180.76</b>	<b>407.42</b>	<b>7.42</b>	<b>400.00</b>	<b>88.77</b>	<b>5.57</b>	<b>83.20</b>	<b>0.56</b>	<b>56,676.30</b>	<b>5.49</b>	<b>1.39</b>	<b>57,226.49</b>
<b>Total (tons/construction project)</b>	<b>1.23</b>	<b>9.21</b>	<b>16.32</b>	<b>39.39</b>	<b>0.67</b>	<b>38.72</b>	<b>8.56</b>	<b>0.51</b>	<b>8.05</b>	<b>0.05</b>	<b>5,099.28</b>	<b>0.51</b>	<b>0.12</b>	<b>5,148.78</b>

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 9  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	1136	0	91	0	1,600	120
Grading/Excavation	2,417	0	9,720	0	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2021 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.05	0.39	0.41	3.54	0.02	3.52	0.75	0.02	0.73	0.00	111.77	0.03	0.00	102.37
Grading/Excavation	1.18	8.83	15.91	35.85	0.65	35.20	7.81	0.49	7.32	0.05	4,987.51	0.48	0.12	4,568.57
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>1.18</b>	<b>8.83</b>	<b>15.91</b>	<b>35.85</b>	<b>0.65</b>	<b>35.20</b>	<b>7.81</b>	<b>0.49</b>	<b>7.32</b>	<b>0.05</b>	<b>4,987.51</b>	<b>0.48</b>	<b>0.12</b>	<b>4,568.57</b>
<b>Total (tons/construction project)</b>	<b>1.23</b>	<b>9.21</b>	<b>16.32</b>	<b>39.39</b>	<b>0.67</b>	<b>38.72</b>	<b>8.56</b>	<b>0.51</b>	<b>8.05</b>	<b>0.05</b>	<b>5,099.28</b>	<b>0.51</b>	<b>0.12</b>	<b>4,670.94</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2021 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	5.36	43.75	46.08	402.03	2.03	400.00	84.97	1.77	83.20	0.13	12,675.47	3.27	0.14	12,797.42
Grading/Excavation	12.66	98.94	133.48	407.16	7.16	400.00	88.53	5.33	83.20	0.55	55,499.91	5.46	1.31	56,027.27
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>12.66</b>	<b>98.94</b>	<b>133.48</b>	<b>407.16</b>	<b>7.16</b>	<b>400.00</b>	<b>88.53</b>	<b>5.33</b>	<b>83.20</b>	<b>0.55</b>	<b>55,499.91</b>	<b>5.46</b>	<b>1.31</b>	<b>56,027.27</b>
<b>Total (tons/construction project)</b>	<b>1.16</b>	<b>9.09</b>	<b>12.15</b>	<b>39.37</b>	<b>0.65</b>	<b>38.72</b>	<b>8.54</b>	<b>0.48</b>	<b>8.05</b>	<b>0.05</b>	<b>4,995.54</b>	<b>0.51</b>	<b>0.12</b>	<b>5,043.02</b>

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 9  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	1136	0	91	0	1,600	120
Grading/Excavation	2,417	0	9,720	0	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2021 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.05	0.38	0.41	3.54	0.02	3.52	0.75	0.02	0.73	0.00	111.54	0.03	0.00	102.17
Grading/Excavation	1.11	8.71	11.75	35.83	0.63	35.20	7.79	0.47	7.32	0.05	4,883.99	0.48	0.12	4,472.83
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>1.11</b>	<b>8.71</b>	<b>11.75</b>	<b>35.83</b>	<b>0.63</b>	<b>35.20</b>	<b>7.79</b>	<b>0.47</b>	<b>7.32</b>	<b>0.05</b>	<b>4883.99</b>	<b>0.48</b>	<b>0.12</b>	<b>4,472.83</b>
<b>Total (tons/construction project)</b>	<b>1.16</b>	<b>9.09</b>	<b>12.15</b>	<b>39.37</b>	<b>0.65</b>	<b>38.72</b>	<b>8.54</b>	<b>0.48</b>	<b>8.05</b>	<b>0.05</b>	<b>4995.54</b>	<b>0.51</b>	<b>0.12</b>	<b>4,575.00</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2021 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	3.59	67.86	7.72	400.55	0.55	400.00	83.59	0.39	83.20	0.13	12,675.47	3.27	0.14	12,797.42
Grading/Excavation	7.90	135.39	47.69	403.26	3.26	400.00	84.87	1.67	83.20	0.55	55,499.91	5.46	1.31	56,027.27
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	7.90	135.39	47.69	403.26	3.26	400.00	84.87	1.67	83.20	0.55	55,499.91	5.46	1.31	56,027.27
Total (tons/construction project)	0.73	12.51	4.26	39.01	0.29	38.72	8.20	0.15	8.05	0.05	4,995.54	0.51	0.12	5,043.02

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 9  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	1136	0	91	0	1,600	120
Grading/Excavation	2,417	0	9,720	0	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2021 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.03	0.60	0.07	3.52	0.00	3.52	0.74	0.00	0.73	0.00	111.54	0.03	0.00	102.17
Grading/Excavation	0.69	11.91	4.20	35.49	0.29	35.20	7.47	0.15	7.32	0.05	4,883.99	0.48	0.12	4,472.83
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.69	11.91	4.20	35.49	0.29	35.20	7.47	0.15	7.32	0.05	4883.99	0.48	0.12	4,472.83
Total (tons/construction project)	0.73	12.51	4.26	39.01	0.29	38.72	8.20	0.15	8.05	0.05	4995.54	0.51	0.12	4,575.00

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.



**Barge Emissions Calculations**  
**ARCF 2016**  
**Sacramento Weir - 2021**

**Basic Assumptions**

CY per Barge <sup>1</sup>	909
CY Imported	25,000
Miles/ hr per barge	5
Extra Empty Trips	2
Total Hrs per Day	10
lbs/ tons	2000
lbs/MT	2204.62

	San Rafael to Rio Vista (in SFNA)	San Rafael to Rio Vista (in BAAQMD)	Rio Vista to Sac Weir (in SFNA)
No. of Barge in Tow	4	4	1
Miles (one-way)	10.4	45	47
<b>Total Tow-Hours</b>	<b>18</b>	<b>80</b>	<b>277</b>

	PM10	PM2.5	NOx	ROG	CO	SO2	CO2	CH4	N2O	CO2e (MT)
Two-Engine Push Boat Emissions (lb/hr)	1.61	1.44	35.71	2.09	8.97	0.01	1417.70	0.06	0.01	1422.56
Tug Boat Emissions (lb/hr)	0.37	0.33	6.47	0.54	1.90	0.00	456.06	0.02	0.00	457.63
<b>Total Emissions for Push Boat - In SFNA (Tons)</b>	<b>0.01</b>	<b>0.01</b>	<b>0.33</b>	<b>0.02</b>	<b>0.08</b>	<b>0.00</b>	<b>13.09</b>	<b>0.00</b>	<b>0.00</b>	<b>11.91</b>
<b>Total Emission for Push Boat- In BAAQMD (Tons)<sup>2</sup></b>	<b>0.06</b>	<b>0.06</b>	<b>1.43</b>	<b>0.08</b>	<b>0.36</b>	<b>0.00</b>	<b>56.62</b>	<b>0.00</b>	<b>0.00</b>	<b>51.54</b>
<b>Total Emissions for Tug Boat - In SFNA (Tons)</b>	<b>0.05</b>	<b>0.05</b>	<b>0.90</b>	<b>0.08</b>	<b>0.26</b>	<b>0.00</b>	<b>63.23</b>	<b>0.00</b>	<b>0.00</b>	<b>57.56</b>
<b>Sum of Emissions in SFNA (Tons)</b>	<b>0.07</b>	<b>0.06</b>	<b>1.23</b>	<b>0.09</b>	<b>0.35</b>	<b>0.00</b>	<b>76.32</b>	<b>0.00</b>	<b>0.00</b>	<b>69.5</b>

Notes: <sup>1</sup> <https://ihsmarkit.com/country-industry-forecasting.html?ID=106593483> , one barge has the capacity of 1500 tons and assuming 1.65 tons/cy of quarry rock

<sup>2</sup> BAAQMD NOx Threshold is 54 lb/day (Not relevant to General Conformity)

**Road Construction Emissions Model**      **Version 8.1.0**

**Data Entry Worksheet**

Note: Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name: 2022 Sac Weir

Construction Start Year: 2022 Enter a Year between 2014 and 2025 (inclusive)

Project Type: 4  
For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data

Project Construction Time: 12.00 months  
Working Days per Month: 22.00 days (assume 22 if unknown)

Predominant Soil/Site Type: Enter 1, 2, or 3  
(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)


Project Length: 1.30 miles

Total Project Area: 482.00 acres

Maximum Area Disturbed/Day: 40.00 acres

Water Trucks Used?: 1  
1. Yes  
2. No

To begin a new project, click this button to clear data previously entered. This button will only work if you coded not to disable macros when loading this spreadsheet.



Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	15.00	0.00	0.00
	Grading/Excavation	15.00	88.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing	15.00	0.00	0.00
	Grading/Excavation	15.00	77.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation	No Mitigation	<small>Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer</small>
Off-road Equipment Emissions Mitigation	No Mitigation	<small>Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a>). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard</small>

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	1.20		1/1/2022
Grading/Excavation	12.00	4.80		1/1/2022
Drainage/Utilities/Sub-Grade	0.00	Program		1/1/2023
Paving	0.00	1.80		1/1/2023
<b>Totals (Months)</b>		12		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing				0	0.00					
Miles/round trip: Grading/Excavation	60.00			6	360.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.08	0.34	2.57	0.09	0.04	0.01	1,267.17	0.00	0.04	1,280.07
Tons per const. Period - Grading/Excavation	0.01	0.04	0.34	0.01	0.01	0.00	167.27	0.00	0.01	168.97
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.01	0.04	0.34	0.01	0.01	0.00	167.27	0.00	0.01	168.97

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing				0	0.00					
Miles/round trip: Grading/Excavation	60.00			6	360.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Drainage/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.08	0.34	2.57	0.09	0.04	0.01	1,267.17	0.00	0.04	1,280.07
Tons per const. Period - Grading/Excavation	0.01	0.04	0.34	0.01	0.01	0.00	167.27	0.00	0.01	168.97
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.01	0.04	0.34	0.01	0.01	0.00	167.27	0.00	0.01	168.97

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker		Default Values							
User Input	Commute Default Values	Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT						
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing	0			0	0.00						
No. of employees: Grading/Excavation	75			150	3,000.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/trip)	0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77	
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.40	6.75	0.66	0.31	0.13	0.02	2,329.85	0.05	0.03	2,339.21	
Tons per const. Period - Grading/Excavation	0.05	0.89	0.09	0.04	0.02	0.00	307.54	0.01	0.00	308.78	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.05	0.89	0.09	0.04	0.02	0.00	307.54	0.01	0.00	308.78	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT	
Grubbing/Land Clearing - Exhaust										0.00	
Grading/Excavation - Exhaust	3		40.00							120.00	
Drainage/Utilities/Subgrade										0.00	
Paving										0.00	
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.03	0.11	0.86	0.03	0.01	0.00	422.59	0.00	0.01	426.69	
Tons per const. Period - Grading/Excavation	0.00	0.01	0.11	0.00	0.00	0.00	55.76	0.00	0.00	56.32	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.01	0.11	0.00	0.00	0.00	55.76	0.00	0.00	56.32	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default		PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	Maximum Acreage/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing					0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavation					400.00	52.80	83.20	10.98
Fugitive Dust - Drainage/Utilities/Subgrade					0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
0.00	Program-estimate		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A	Type	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
		Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Cement and Mortar Mixers	0.29	1.54	1.84	0.07	0.07	0.00	252.58	0.03	0.00	253.87
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Cranes	1.82	9.26	20.47	0.85	0.78	0.03	2,733.67	0.88	0.02	2,763.14
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tier	Excavators	0.78	12.59	6.87	0.33	0.31	0.02	1,934.40	0.63	0.02	1,955.25
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Generator Sets	0.82	9.19	7.32	0.37	0.37	0.02	1,557.59	0.07	0.01	1,562.93
1.00			Model Default Tier	Graders	0.70	5.53	6.52	0.36	0.33	0.01	757.00	0.24	0.01	765.14
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00			Model Default Tier	Off-Highway Trucks	3.29	20.89	24.96	0.91	0.83	0.08	7,953.90	2.57	0.07	8,039.53
1.00			Model Default Tier	Other Construction Equipment	0.47	5.03	4.77	0.25	0.23	0.01	747.91	0.24	0.01	755.99
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Other Material Handling Equipment	0.33	4.68	2.79	0.15	0.14	0.01	695.43	0.22	0.01	702.93
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Paving Equipment	0.22	3.16	2.16	0.11	0.10	0.01	489.35	0.16	0.00	494.63
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Pumps	0.44	4.66	3.71	0.19	0.19	0.01	778.79	0.04	0.01	781.53
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Rubber Tired Dozers	1.07	8.76	10.81	0.49	0.45	0.01	1,077.83	0.35	0.01	1,089.41
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Scrapers	1.01	7.86	11.03	0.43	0.40	0.02	1,812.83	0.59	0.02	1,832.37
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Surfacing Equipment	0.22	1.95	2.62	0.10	0.09	0.01	790.45	0.26	0.01	798.98
1.00			Model Default Tier	Sweepers/Scrubbers	0.24	2.40	2.25	0.15	0.14	0.00	307.72	0.10	0.00	311.03
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.42	5.65	4.23	0.23	0.21	0.01	760.86	0.25	0.01	769.05
1.00			Model Default Tier	Trenchers	0.47	3.37	4.39	0.31	0.29	0.00	424.41	0.14	0.00	428.97
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>									
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grading/Excavation		pounds per day	12.60	106.51	116.74	5.30	4.93	0.24	23,074.73	6.77	0.20	23,304.77
		Grading/Excavation		tons per phase	1.66	14.06	15.41	0.70	0.65	0.03	3,045.86	0.89	0.03	3,076.23

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
					If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab									
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade					pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade					tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
	0.00		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>1.66</b>	<b>14.06</b>	<b>15.41</b>	<b>0.70</b>	<b>0.65</b>	<b>0.03</b>	<b>3,045.86</b>	<b>0.89</b>	<b>0.03</b>	<b>3,076.23</b>



Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2022 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	13.18	114.06	123.39	405.82	5.82	400.00	88.35	5.15	83.20	0.29	28,361.32	6.82	0.33	28,630.81
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>13.18</b>	<b>114.06</b>	<b>123.39</b>	<b>405.82</b>	<b>5.82</b>	<b>400.00</b>	<b>88.35</b>	<b>5.15</b>	<b>83.20</b>	<b>0.29</b>	<b>28,361.32</b>	<b>6.82</b>	<b>0.33</b>	<b>28,630.81</b>
<b>Total (tons/construction project)</b>	<b>1.74</b>	<b>15.06</b>	<b>16.29</b>	<b>53.57</b>	<b>0.77</b>	<b>52.80</b>	<b>11.66</b>	<b>0.68</b>	<b>10.98</b>	<b>0.04</b>	<b>3,743.69</b>	<b>0.90</b>	<b>0.04</b>	<b>3,779.27</b>

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 12  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	88	77	360	360	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2022 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	1.74	15.06	16.29	53.57	0.77	52.80	11.66	0.68	10.98	0.04	3,743.69	0.90	0.04	3,428.53
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>1.74</b>	<b>15.06</b>	<b>16.29</b>	<b>53.57</b>	<b>0.77</b>	<b>52.80</b>	<b>11.66</b>	<b>0.68</b>	<b>10.98</b>	<b>0.04</b>	<b>3,743.69</b>	<b>0.90</b>	<b>0.04</b>	<b>3,428.53</b>
<b>Total (tons/construction project)</b>	<b>1.74</b>	<b>15.06</b>	<b>16.29</b>	<b>53.57</b>	<b>0.77</b>	<b>52.80</b>	<b>11.66</b>	<b>0.68</b>	<b>10.98</b>	<b>0.04</b>	<b>3,743.69</b>	<b>0.90</b>	<b>0.04</b>	<b>3,428.53</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2022 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	13.13	113.95	119.97	405.80	5.80	400.00	88.33	5.13	83.20	0.29	28,272.61	6.82	0.33	28,540.28
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>13.13</b>	<b>113.95</b>	<b>119.97</b>	<b>405.80</b>	<b>5.80</b>	<b>400.00</b>	<b>88.33</b>	<b>5.13</b>	<b>83.20</b>	<b>0.29</b>	<b>28,272.61</b>	<b>6.82</b>	<b>0.33</b>	<b>28,540.28</b>
<b>Total (tons/construction project)</b>	<b>1.73</b>	<b>15.04</b>	<b>15.84</b>	<b>53.57</b>	<b>0.77</b>	<b>52.80</b>	<b>11.66</b>	<b>0.68</b>	<b>10.98</b>	<b>0.04</b>	<b>3,731.98</b>	<b>0.90</b>	<b>0.04</b>	<b>3,767.32</b>

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 12  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	88	77	360	360	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2022 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	1.73	15.04	15.84	53.57	0.77	52.80	11.66	0.68	10.98	0.04	3,731.98	0.90	0.04	3,417.69
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>1.73</b>	<b>15.04</b>	<b>15.84</b>	<b>53.57</b>	<b>0.77</b>	<b>52.80</b>	<b>11.66</b>	<b>0.68</b>	<b>10.98</b>	<b>0.04</b>	<b>3731.98</b>	<b>0.90</b>	<b>0.04</b>	<b>3,417.69</b>
<b>Total (tons/construction project)</b>	<b>1.73</b>	<b>15.04</b>	<b>15.84</b>	<b>53.57</b>	<b>0.77</b>	<b>52.80</b>	<b>11.66</b>	<b>0.68</b>	<b>10.98</b>	<b>0.04</b>	<b>3731.98</b>	<b>0.90</b>	<b>0.04</b>	<b>3,417.69</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> 2022 Sac Weir														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	7.77	150.16	21.76	401.35	1.35	400.00	84.18	0.98	83.20	0.29	28,272.61	6.82	0.33	28,540.28
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	7.77	150.16	21.76	401.35	1.35	400.00	84.18	0.98	83.20	0.29	28,272.61	6.82	0.33	28,540.28
Total (tons/construction project)	1.03	19.82	2.87	52.98	0.18	52.80	11.11	0.13	10.98	0.04	3,731.98	0.90	0.04	3,767.32

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 12  
 Total Project Area (acres) -> 482  
 Maximum Area Disturbed/Day (acres) -> 40  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	88	77	360	360	3,000	120
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> 2022 Sac Weir														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	1.03	19.82	2.87	52.98	0.18	52.80	11.11	0.13	10.98	0.04	3,731.98	0.90	0.04	3,417.69
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	1.03	19.82	2.87	52.98	0.18	52.80	11.11	0.13	10.98	0.04	3731.98	0.90	0.04	3,417.69
Total (tons/construction project)	1.03	19.82	2.87	52.98	0.18	52.80	11.11	0.13	10.98	0.04	3731.98	0.90	0.04	3,417.69

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

**Barge Emissions Calculations**  
**ARCF 2016**  
**Sacramento Weir - 2023**

**Basic Assumptions**

CY per Barge <sup>1</sup>	909
CY Imported	75,000
Miles/ hr per barge	5
Extra Empty Trips	2
Total Hrs per Day	10
lbs/ tons	2000
lbs/MT	2204.62

	San Rafael to Rio Vista (in SFNA)	San Rafael to Rio Vista (in BAAQMD)	Rio Vista to Sac Weir (in SFNA)
No. of Barge in Tow	4	4	1
Miles (one-way)	10.4	45	47
<b>Total Tow-Hours</b>	<b>47</b>	<b>204</b>	<b>794</b>

	PM10	PM2.5	NOx	ROG	CO	SO2	CO2	CH4	N2O	CO2e (MT)
Two-Engine Push Boat Emissions (lb/hr)	1.61	1.44	35.71	2.09	8.97	0.01	1417.70	0.06	0.01	1422.56
Tug Boat Emissions (lb/hr)	0.37	0.33	6.47	0.54	1.90	0.00	456.06	0.02	0.00	457.63
<b>Total Emissions for Push Boat - In SFNA (Tons)</b>	<b>0.04</b>	<b>0.03</b>	<b>0.84</b>	<b>0.05</b>	<b>0.21</b>	<b>0.00</b>	<b>33.36</b>	<b>0.00</b>	<b>0.00</b>	<b>30.37</b>
<b>Total Emission for Push Boat- In BAAQMD (Tons)<sup>2</sup></b>	<b>0.16</b>	<b>0.15</b>	<b>3.64</b>	<b>0.21</b>	<b>0.91</b>	<b>0.00</b>	<b>144.34</b>	<b>0.01</b>	<b>0.00</b>	<b>131.39</b>
<b>Total Emissions for Tug Boat - In SFNA (Tons)</b>	<b>0.15</b>	<b>0.13</b>	<b>2.57</b>	<b>0.22</b>	<b>0.76</b>	<b>0.00</b>	<b>181.12</b>	<b>0.01</b>	<b>0.00</b>	<b>164.88</b>
<b>Sum of Emissions in SFNA (Tons)</b>	<b>0.19</b>	<b>0.17</b>	<b>3.41</b>	<b>0.27</b>	<b>0.97</b>	<b>0.00</b>	<b>214.48</b>	<b>0.01</b>	<b>0.00</b>	<b>195.2</b>

Notes: <sup>1</sup> <https://ihsmarkit.com/country-industry-forecasting.html?ID=106593483> , one barge has the capacity of 1500 tons and assuming 1.65 tons/cy of quarry rock

<sup>2</sup> BAAQMD NOx Threshold is 54 lb/day (Not relevant to General Conformity)


*Seepage and Stability*  
Reach D  
Magpie Creek  
Sacramento River and NAS

### Road Construction Emissions Model Data Entry Worksheet

**Note:** Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name	Reach D Berm	
Construction Start Year	2019	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	2.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 <small>(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)</small>	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.09	miles
Total Project Area	3.50	acres
Maximum Area Disturbed/Day	0.25	acres
Water Trucks Used?	1	1. Yes 2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

#### Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd <sup>3</sup> /day)	Export Volume (yd <sup>3</sup> /day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	13.00	542.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

#### Mitigation Options

On-road Fleet Emissions Mitigation	2010 and Newer On-road Vehicles Fleet	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	Tier 4 Equipment	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ).
Will all off-road equipment be tier 4?	All Tier 4 Equipment	Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

**The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.**

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	0.20		1/1/2019
Grading/Excavation	2.00	0.80		1/1/2019
Drainage/Utilities/Sub-Grade	0.00	Program		3/3/2019
Paving	0.00	0.30		3/3/2019
<b>Totals (Months)</b>		2		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation		40.00		42	42	1680.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
<b>2010+ Model Year Mitigation Option Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>		<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.25	1.34	5.47	0.38	0.15	0.06	5,840.06	0.01	0.19	5,897.60
Tons per const. Period - Grading/Excavation		0.01	0.03	0.12	0.01	0.00	0.00	128.48	0.00	0.00	129.75
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.01	0.03	0.12	0.01	0.00	0.00	128.48	0.00	0.00	129.75

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
<b>2010+ Model Year Mitigation Option Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values							
User Input				Calculated Daily Trips	Calculated Daily VMT						
Miles/one-way trip	10										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing				0	0.00						
No. of employees: Grading/Excavation				30	300.00						
No. of employees: Drainage/Utilities/Sub-Grade	15			0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.02	1.19	0.13	0.05	0.02	0.00	381.71	0.01	0.01	383.53	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/trip)	1.08	2.86	0.23	0.00	0.00	0.00	85.97	0.01	0.01	89.17	
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.09	0.98	0.10	0.03	0.01	0.00	258.14	0.01	0.00	259.56	
Tons per const. Period - Grading/Excavation	0.00	0.02	0.00	0.00	0.00	0.00	5.68	0.00	0.00	5.71	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.02	0.00	0.00	0.00	0.00	5.68	0.00	0.00	5.71	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Program Estimate of		User Override of Truck		Default Values		Calculated			
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT					
Grubbing/Land Clearing - Exhaust				3.00		0.00					
Grading/Excavation - Exhaust						0.00					
Drainage/Utilities/Subgrade						0.00					
Paving						0.00					
<b>2010+ Model Year Mitigation Option Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/period	PM2.5 pounds/day	PM2.5 tons/period
Fugitive Dust - Grubbing/Land Clearing			0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavation			2.50	0.06	0.52	0.01
Fugitive Dust - Drainage/Utilities/Subgrade			0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default											Type
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Grubbing/Land Clearing		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Grubbing/Land Clearing		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Excavators	0.16	4.04	0.33	0.02	0.02	0.01	527.30	0.17	0.00	532.86
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Plate Compactors	0.02	0.36	0.32	0.02	0.02	0.00	34.48	0.00	0.00	34.65
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Tier 4	Rubber Tired Dozers	0.27	4.68	0.54	0.03	0.02	0.01	882.19	0.28	0.01	891.46
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab														
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grading/Excavation		pounds per day	0.45	9.08	1.19	0.06	0.06	0.01	1,443.97	0.45	0.01	1,458.97
		Grading/Excavation		tons per phase	0.01	0.20	0.03	0.00	0.00	0.00	31.77	0.01	0.00	32.10

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Override of Default Number of Vehicles	Program-estimate				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
				Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>		<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Tier 4	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Tier 4	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					0.01	0.20	0.03	0.00	0.00	0.00	31.77	0.01	0.00	32.10

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		206		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Reach D Berm														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.79	11.40	6.76	2.97	0.47	2.50	0.74	0.22	0.52	0.07	7,542.17	0.47	0.21	7,616.13
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.79	11.40	6.76	2.97	0.47	2.50	0.74	0.22	0.52	0.07	7,542.17	0.47	0.21	7,616.13
Total (tons/construction project)	0.02	0.25	0.15	0.07	0.01	0.06	0.02	0.00	0.01	0.00	165.93	0.01	0.00	167.55

Notes:  
 Project Start Year -> 2019  
 Project Length (months) -> 2  
 Total Project Area (acres) -> 4  
 Maximum Area Disturbed/Day (acres) -> 0  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	542	0	1,680	0	300	0
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Reach D Berm														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.02	0.25	0.15	0.07	0.01	0.06	0.02	0.00	0.01	0.00	165.93	0.01	0.00	152.00
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.02	0.25	0.15	0.07	0.01	0.06	0.02	0.00	0.01	0.00	165.93	0.01	0.00	152.00
Total (tons/construction project)	0.02	0.25	0.15	0.07	0.01	0.06	0.02	0.00	0.01	0.00	165.93	0.01	0.00	152.00

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

### Road Construction Emissions Model Data Entry Worksheet

**Note:** Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name: Beach Stone Lake Mitigation Site

Construction Start Year: 2019  
Enter a Year between 2014 and 2025 (inclusive)


Project Type: 4  
1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway  
2) Road Widening : Project to add a new lane to an existing roadway  
3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane  
4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction

Project Construction Time: 2.00 months  
Working Days per Month: 20.00 days (assume 22 if unknown)

Predominant Soil/Site Type: Enter 1, 2, or 3  
(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)

Project Length: 0.33 miles  
Total Project Area: 30.00 acres  
Maximum Area Disturbed/Day: 8.00 acres

Water Trucks Used?: 1  
1. Yes  
2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

#### Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	0.00		
	Grading/Excavation	0.00		
	Drainage/Utilities/Sub-Grade	0.00		
	Paving	0.00		
Asphalt	Grubbing/Land Clearing	0.00		
	Grading/Excavation	0.00		
	Drainage/Utilities/Sub-Grade	0.00		
	Paving	0.00		

#### Mitigation Options

On-road Fleet Emissions Mitigation:  Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer

Off-road Equipment Emissions Mitigation:  Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<http://www.airquality.org/ceqa/mitigation.shtml>).  
 Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.



Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	0.20		1/1/2019
Grading/Excavation	4.00	0.80		1/1/2019
Drainage/Utilities/Sub-Grade	0.00	Program		5/3/2019
Paving	0.00	0.30		5/3/2019
<b>Totals (Months)</b>		4		

Please note: You have entered a different number of months than the project length shown in cell D16.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing		0.00			0	0.00					
Miles/round trip: Grading/Excavation		0.00			0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade		0.00			0	0.00					
Miles/round trip: Paving		0.00			0	0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32
Drainage/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32
Drainage/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values							
User Input				Calculated Daily Trips	Calculated Daily VMT						
Miles/one-way trip											
One-way trips/day				0	0.00						
No. of employees: Grubbing/Land Clearing				0	0.00						
No. of employees: Grading/Excavation	9			0	0.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.02	1.19	0.13	0.05	0.02	0.00	381.71	0.01	0.01	383.53	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/trip)	1.08	2.86	0.23	0.00	0.00	0.00	85.97	0.01	0.01	89.17	
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Program Estimate of		User Override of Truck		Default Values		Calculated			
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT					
Grubbing/Land Clearing - Exhaust						0.00					
Grading/Excavation - Exhaust	1			10.00		10.00					
Drainage/Utilities/Subgrade						0.00					
Paving						0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.07	0.36	1.48	0.10	0.04	0.02	1,576.79	0.00	0.05	1,592.32	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.00	0.01	0.03	0.00	0.00	0.00	34.76	0.00	0.00	35.10	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	1.39	0.00	0.00	1.40	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	1.39	0.00	0.00	1.40	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10		PM2.5	
	Acreage Disturbed/Day	Maximum Acreage/Day		pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing				0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavation	8.00			80.00	3.20	16.64	0.67
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
	Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
		Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Crawler Tractors	0.60	2.53	7.84	0.30	0.27	0.01	762.62	0.24	0.01	770.66
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			pounds per day	0.60	2.53	7.84	0.30	0.27	0.01	762.62	0.24	0.01	770.66
	Grading/Excavation			tons per phase	0.02	0.10	0.31	0.01	0.01	0.00	30.50	0.01	0.00	30.83

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>															
					<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>										
Number of Vehicles		Equipment Tier			Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/DnH Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>0.02</b>	<b>0.10</b>	<b>0.31</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>30.50</b>	<b>0.01</b>	<b>0.00</b>	<b>30.83</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		206		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Beach Stone Lake Mitigation Site														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.60	2.54	7.88	80.30	0.30	80.00	16.91	0.27	16.64	0.01	797.38	0.24	0.01	805.77
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.60	2.54	7.88	80.30	0.30	80.00	16.91	0.27	16.64	0.01	797.38	0.24	0.01	805.77
Total (tons/construction project)	0.02	0.10	0.32	3.21	0.01	3.20	0.68	0.01	0.67	0.00	31.90	0.01	0.00	32.23

Notes:  
 Project Start Year -> 2019  
 Project Length (months) -> 2  
 Total Project Area (acres) -> 30  
 Maximum Area Disturbed/Day (acres) -> 8  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	10
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Beach Stone Lake Mitigation Site														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.02	0.10	0.32	3.21	0.01	3.20	0.68	0.01	0.67	0.00	31.90	0.01	0.00	29.24
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.02	0.10	0.32	3.21	0.01	3.20	0.68	0.01	0.67	0.00	31.90	0.01	0.00	29.24
Total (tons/construction project)	0.02	0.10	0.32	3.21	0.01	3.20	0.68	0.01	0.67	0.00	31.90	0.01	0.00	29.24

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.



**Road Construction Emissions Model**  
**Data Entry Worksheet**

Version 8.1.0

Note: Required data input sections have a yellow background.  
 Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
 The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
 Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

**Input Type**

Project Name	Maggie Creek	
Construction Start Year	2022	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	3.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.59	miles
Total Project Area	4.00	acres
Maximum Area Disturbed/Day	1.00	acre
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	15.00	0.00	0.00
	Grading/Excavation	15.00	2705.00	150.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing	15.00	0.00	0.00
	Grading/Excavation	15.00	450.00	0.00
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	0.30		1/1/2022
Grading/Excavation	3.00	1.35	4/15/2022	1/1/2022
Drainage/Utilities/Sub-Grade	0.00	Program		4/3/2022
Paving	0.00	0.45		4/3/2022
<b>Totals (Months)</b>		3		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing	0.00			0	0.00					
Miles/round trip: Grading/Excavation	97.00			191	18527.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	4.00	17.53	132.03	4.59	2.02	0.62	65,213.72	0.19	2.21	65,877.33
Tons per const. Period - Grading/Excavation	0.13	0.58	4.36	0.15	0.07	0.02	2,152.05	0.01	0.07	2,173.95
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.13	0.58	4.36	0.15	0.07	0.02	2,152.05	0.01	0.07	2,173.95

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing	0.00			0	0.00					
Miles/round trip: Grading/Excavation	100.00			30	3000.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.65	2.84	21.38	0.74	0.33	0.10	10,559.79	0.03	0.36	10,667.24
Tons per const. Period - Grading/Excavation	0.02	0.09	0.71	0.02	0.01	0.00	348.47	0.00	0.01	352.02
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.02	0.09	0.71	0.02	0.01	0.00	348.47	0.00	0.01	352.02

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker		Default Values		Calculated					
User Input		Commute Default Values		Daily Trips	Daily VMT						
Miles/one-way trip		20									
One-way trips/day		2									
No. of employees: Grubbing/Land Clearing		0		0	0.00						
No. of employees: Grading/Excavation		75		150	3,000.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Drainage/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)		0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Drainage/Utilities/Sub-Grade (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.40	6.75	0.66	0.31	0.13	0.02	2,329.85	0.05	0.03	2,339.21
Tons per const. Period - Grading/Excavation		0.01	0.22	0.02	0.01	0.00	0.00	76.88	0.00	0.00	77.19
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.01	0.22	0.02	0.01	0.00	0.00	76.88	0.00	0.00	77.19

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input		Default # Water Trucks		Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day		Miles Traveled/Vehicle/Day		Daily VMT	
Grubbing/Land Clearing - Exhaust		0			0.00					0.00	
Grading/Excavation - Exhaust		1			40.00					40.00	
Drainage/Utilities/Subgrade										0.00	
Paving										0.00	
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Drainage/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.01	0.04	0.29	0.01	0.00	0.00	140.90	0.00	0.00	142.23
Tons per const. Period - Grading/Excavation		0.00	0.00	0.01	0.00	0.00	0.00	4.65	0.00	0.00	4.69
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.01	0.00	0.00	0.00	4.65	0.00	0.00	4.69

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day					
Fugitive Dust - Grubbing/Land Clearing				0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavation				10.00	0.33	2.08	0.07
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
0.00	Program-estimate		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A	Type	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cranes	0.36	1.85	4.09	0.17	0.16	0.01	546.73	0.18	0.00	552.63
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.42	6.72	3.67	0.18	0.16	0.01	1,031.68	0.33	0.01	1,042.80
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.33	3.68	2.93	0.15	0.15	0.01	623.04	0.03	0.00	625.17
1.00			Model Default Tier	Graders	0.56	4.42	5.22	0.29	0.27	0.01	605.60	0.20	0.01	612.11
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Off-Highway Trucks	1.05	6.68	7.99	0.29	0.27	0.03	2,545.25	0.82	0.02	2,572.65
2.00			Model Default Tier	Other Construction Equipment	0.75	8.04	7.63	0.40	0.37	0.01	1,196.66	0.39	0.01	1,209.59
2.00			Model Default Tier	Other General Industrial Equipment	0.36	3.87	3.38	0.21	0.19	0.01	496.04	0.16	0.00	501.39
10.00			Model Default Tier	Other Material Handling Equipment	2.66	37.42	22.31	1.21	1.11	0.06	5,963.46	1.80	0.05	5,623.44
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Rollers	0.34	3.77	3.49	0.20	0.19	0.01	514.56	0.17	0.00	520.10
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Rubber Tired Dozers	1.71	14.01	17.30	0.79	0.73	0.02	1,724.53	0.56	0.02	1,743.06
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Scrapers	0.81	6.29	8.82	0.34	0.32	0.02	1,450.26	0.47	0.01	1,465.90
3.00			Model Default Tier	Signal Boards	0.17	0.90	1.08	0.04	0.04	0.00	147.94	0.02	0.00	148.69
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Surfacing Equipment	0.18	1.56	2.09	0.08	0.07	0.01	632.36	0.20	0.01	639.18
1.00			Model Default Tier	Sweepers/Scrubbers	0.19	1.92	1.80	0.12	0.11	0.00	246.18	0.08	0.00	248.83
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.33	4.52	3.39	0.18	0.17	0.01	608.69	0.20	0.01	615.24
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Welders	0.55	3.39	2.93	0.13	0.13	0.01	414.96	0.05	0.00	417.23
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			pounds per day	10.83	109.35	98.48	4.79	4.44	0.19	18,398.45	5.65	0.16	18,588.79
	Grading/Excavation			tons per phase	0.36	3.61	3.25	0.16	0.15	0.01	607.15	0.19	0.01	613.43

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
					If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab									
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e				
				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>0.36</b>	<b>3.61</b>	<b>3.25</b>	<b>0.16</b>	<b>0.15</b>	<b>0.01</b>	<b>607.15</b>	<b>0.19</b>	<b>0.01</b>	<b>613.43</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		206		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET



Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Magpie Creek														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	15.88	136.50	252.83	20.44	10.44	10.00	9.00	6.92	2.08	0.94	96,642.60	5.92	2.77	97,614.80
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>15.88</b>	<b>136.50</b>	<b>252.83</b>	<b>20.44</b>	<b>10.44</b>	<b>10.00</b>	<b>9.00</b>	<b>6.92</b>	<b>2.08</b>	<b>0.94</b>	<b>96,642.60</b>	<b>5.92</b>	<b>2.77</b>	<b>97,614.80</b>
<b>Total (tons/construction project)</b>	<b>0.52</b>	<b>4.50</b>	<b>8.34</b>	<b>0.67</b>	<b>0.34</b>	<b>0.33</b>	<b>0.30</b>	<b>0.23</b>	<b>0.07</b>	<b>0.03</b>	<b>3,189.21</b>	<b>0.20</b>	<b>0.09</b>	<b>3,221.29</b>

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 3  
 Total Project Area (acres) -> 4  
 Maximum Area Disturbed/Day (acres) -> 1  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	2,855	450	18,527	3,000	3,000	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Magpie Creek														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.52	4.50	8.34	0.67	0.34	0.33	0.30	0.23	0.07	0.03	3,189.21	0.20	0.09	2,922.33
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>0.52</b>	<b>4.50</b>	<b>8.34</b>	<b>0.67</b>	<b>0.34</b>	<b>0.33</b>	<b>0.30</b>	<b>0.23</b>	<b>0.07</b>	<b>0.03</b>	<b>3,189.21</b>	<b>0.20</b>	<b>0.09</b>	<b>2,922.33</b>
<b>Total (tons/construction project)</b>	<b>0.52</b>	<b>4.50</b>	<b>8.34</b>	<b>0.67</b>	<b>0.34</b>	<b>0.33</b>	<b>0.30</b>	<b>0.23</b>	<b>0.07</b>	<b>0.03</b>	<b>3,189.21</b>	<b>0.20</b>	<b>0.09</b>	<b>2,922.33</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Magpie Creek														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	14.41	133.77	165.24	19.98	9.98	10.00	8.55	6.47	2.08	0.92	94,365.11	5.85	2.61	95,290.40
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>14.41</b>	<b>133.77</b>	<b>165.24</b>	<b>19.98</b>	<b>9.98</b>	<b>10.00</b>	<b>8.55</b>	<b>6.47</b>	<b>2.08</b>	<b>0.92</b>	<b>94,365.11</b>	<b>5.85</b>	<b>2.61</b>	<b>95,290.40</b>
<b>Total (tons/construction project)</b>	<b>0.48</b>	<b>4.41</b>	<b>5.45</b>	<b>0.66</b>	<b>0.33</b>	<b>0.33</b>	<b>0.28</b>	<b>0.21</b>	<b>0.07</b>	<b>0.03</b>	<b>3,114.05</b>	<b>0.19</b>	<b>0.09</b>	<b>3,144.58</b>

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 3  
 Total Project Area (acres) -> 4  
 Maximum Area Disturbed/Day (acres) -> 1  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	2,855	450	18,527	3,000	3,000	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Magpie Creek														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.48	4.41	5.45	0.66	0.33	0.33	0.28	0.21	0.07	0.03	3,114.05	0.19	0.09	2,852.75
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>0.48</b>	<b>4.41</b>	<b>5.45</b>	<b>0.66</b>	<b>0.33</b>	<b>0.33</b>	<b>0.28</b>	<b>0.21</b>	<b>0.07</b>	<b>0.03</b>	<b>3,114.05</b>	<b>0.19</b>	<b>0.09</b>	<b>2,852.75</b>
<b>Total (tons/construction project)</b>	<b>0.48</b>	<b>4.41</b>	<b>5.45</b>	<b>0.66</b>	<b>0.33</b>	<b>0.33</b>	<b>0.28</b>	<b>0.21</b>	<b>0.07</b>	<b>0.03</b>	<b>3,114.05</b>	<b>0.19</b>	<b>0.09</b>	<b>2,852.75</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Magpie Creek														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	9.43	150.30	83.82	15.87	5.87	10.00	4.75	2.67	2.08	0.92	94,365.11	5.85	2.61	95,290.40
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	9.43	150.30	83.82	15.87	5.87	10.00	4.75	2.67	2.08	0.92	94,365.11	5.85	2.61	95,290.40
Total (tons/construction project)	0.31	4.96	2.77	0.52	0.19	0.33	0.16	0.09	0.07	0.03	3,114.05	0.19	0.09	3,144.58

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 3  
 Total Project Area (acres) -> 4  
 Maximum Area Disturbed/Day (acres) -> 1  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	2,855	450	18,527	3,000	3,000	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Magpie Creek														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.31	4.96	2.77	0.52	0.19	0.33	0.16	0.09	0.07	0.03	3,114.05	0.19	0.09	2,852.75
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.31	4.96	2.77	0.52	0.19	0.33	0.16	0.09	0.07	0.03	3,114.05	0.19	0.09	2,852.75
Total (tons/construction project)	0.31	4.96	2.77	0.52	0.19	0.33	0.16	0.09	0.07	0.03	3,114.05	0.19	0.09	2,852.75

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

**Road Construction Emissions Model**  
**Data Entry Worksheet**

Note: Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name: Sac River S/S Contract 1: 2020 Berms and Relief Wells

Construction Start Year: 2020  
Enter a Year between 2014 and 2025 (inclusive)

Project Type: 4  
For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data


Project Construction Time: 4.00 months  
Working Days per Month: 22.00 days (assume 22 if unknown)

Predominant Soil/Site Type: Enter 1, 2, or 3  
(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)

Project Length: 0.23 miles  
Total Project Area: 8.00 acres  
Maximum Area Disturbed/Day: 5.00 acres  
Water Trucks Used?: 1  
1. Yes  
2. No

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To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.



Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd <sup>3</sup> /day)	Export Volume (yd <sup>3</sup> /day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	15.00	208.00	54.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation: No Mitigation  
Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer

Off-road Equipment Emissions Mitigation: No Mitigation  
Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<http://www.airquality.org/ceqa/mitigation.shtml>).  
Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	0.40		1/1/2020
Grading/Excavation	4.00	1.80	5/30/2020	1/1/2020
Drainage/Utilities/Sub-Grade	0.00	1.20		5/2/2020
Paving	0.00	0.60		5/2/2020
<b>Totals (Months)</b>		4		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing				0	0.00					
Miles/round trip: Grading/Excavation	34.00			18	612.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.14	0.59	5.57	0.16	0.07	0.02	2,201.55	0.01	0.07	2,223.95
Tons per const. Period - Grading/Excavation	0.01	0.03	0.25	0.01	0.00	0.00	96.87	0.00	0.00	97.85
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.01	0.03	0.25	0.01	0.00	0.00	96.87	0.00	0.00	97.85

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing				0	0.00					
Miles/round trip: Grading/Excavation				0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values							
User Input				Calculated Daily Trips	Calculated Daily VMT						
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing	0			0	0.00						
No. of employees: Grading/Excavation	30			60	1,200.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.02	1.08	0.11	0.05	0.02	0.00	371.46	0.01	0.00	373.08	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/trip)	1.00	2.55	0.20	0.00	0.00	0.00	84.03	0.01	0.01	86.84	
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.19	3.18	0.33	0.12	0.05	0.01	993.94	0.02	0.01	998.48	
Tons per const. Period - Grading/Excavation	0.01	0.14	0.01	0.01	0.00	0.00	43.73	0.00	0.00	43.93	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.01	0.14	0.01	0.01	0.00	0.00	43.73	0.00	0.00	43.93	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Program Estimate of		User Override of Truck		Default Values		Calculated			
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT					
Grubbing/Land Clearing - Exhaust						0.00					
Grading/Excavation - Exhaust	1		40.00			40.00					
Drainage/Utilities/Subgrade						0.00					
Paving						0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.01	0.04	0.36	0.01	0.00	0.00	143.89	0.00	0.00	145.36	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.02	0.00	0.00	0.00	6.33	0.00	0.00	6.40	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.02	0.00	0.00	0.00	6.33	0.00	0.00	6.40	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day					
Fugitive Dust - Grubbing/Land Clearing				0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavation				50.00	2.20	10.40	0.46
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
0.00	Program-estimate		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab					pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	Number of Vehicles		Equipment Tier	Type	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles		Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4.00			Model Default Tier	Bore/Drill Rigs	1.29	9.70	16.42	0.47	0.44	0.04	4,240.28	1.37	0.04	4,286.14	
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2.00			Model Default Tier	Excavators	0.63	8.43	6.22	0.30	0.28	0.01	1,289.86	0.42	0.01	1,303.77	
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Generator Sets	0.50	4.63	4.35	0.25	0.25	0.01	778.79	0.04	0.01	781.64	
4.00			Model Default Tier	Graders	3.59	22.91	34.99	1.95	1.80	0.03	3,024.69	0.98	0.03	3,057.20	
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6.00			Model Default Tier	Rollers	1.58	14.38	15.80	1.01	0.93	0.02	1,929.32	0.62	0.02	1,950.11	
2.00			Model Default Tier	Rough Terrain Forklifts	0.33	5.74	4.32	0.18	0.17	0.01	834.20	0.27	0.01	843.19	
4.00			Model Default Tier	Rubber Tired Dozers	4.81	39.68	50.74	2.33	2.14	0.04	4,315.35	1.40	0.04	4,361.71	
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6.00			Model Default Tier	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73	
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Sweepers/Scrubbers	0.34	2.48	2.91	0.23	0.22	0.00	307.72	0.10	0.00	311.03	
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.53	5.76	5.32	0.34	0.31	0.01	759.67	0.25	0.01	767.85	
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>															
If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Number of Vehicles			Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavation					pounds per day	14.03	115.97	143.77	7.17	6.62	0.19	17,849.74	5.48	0.16	18,034.37
Grading/Excavation					tons per phase	0.62	5.10	6.33	0.32	0.29	0.01	785.39	0.24	0.01	793.51



Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade				pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade				tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
	0.00		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>0.62</b>	<b>5.10</b>	<b>6.33</b>	<b>0.32</b>	<b>0.29</b>	<b>0.01</b>	<b>785.39</b>	<b>0.24</b>	<b>0.01</b>	<b>793.51</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 1: 2020 Berms and Relief Wells														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	14.37	119.78	150.03	57.46	7.46	50.00	17.15	6.75	10.40	0.22	21,189.03	5.52	0.25	21,402.16
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	14.37	119.78	150.03	57.46	7.46	50.00	17.15	6.75	10.40	0.22	21,189.03	5.52	0.25	21,402.16
Total (tons/construction project)	0.63	5.27	6.60	2.53	0.33	2.20	0.75	0.30	0.46	0.01	932.32	0.24	0.01	941.70

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 8  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	262	0	612	0	1,200	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 1: 2020 Berms and Relief Wells														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.63	5.27	6.60	2.53	0.33	2.20	0.75	0.30	0.46	0.01	932.32	0.24	0.01	854.30
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.63	5.27	6.60	2.53	0.33	2.20	0.75	0.30	0.46	0.01	932.32	0.24	0.01	854.30
Total (tons/construction project)	0.63	5.27	6.60	2.53	0.33	2.20	0.75	0.30	0.46	0.01	932.32	0.24	0.01	854.30

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 1: 2020 Berms and Relief Wells														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	14.32	119.68	146.20	57.44	7.44	50.00	17.13	6.73	10.40	0.22	21,102.20	5.51	0.25	21,313.73
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	14.32	119.68	146.20	57.44	7.44	50.00	17.13	6.73	10.40	0.22	21,102.20	5.51	0.25	21,313.73
Total (tons/construction project)	0.63	5.27	6.43	2.53	0.33	2.20	0.75	0.30	0.46	0.01	928.50	0.24	0.01	937.80

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 8  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	262	0	612	0	1,200	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 1: 2020 Berms and Relief Wells														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.63	5.27	6.43	2.53	0.33	2.20	0.75	0.30	0.46	0.01	928.50	0.24	0.01	850.77
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.63	5.27	6.43	2.53	0.33	2.20	0.75	0.30	0.46	0.01	928.50	0.24	0.01	850.77
Total (tons/construction project)	0.63	5.27	6.43	2.53	0.33	2.20	0.75	0.30	0.46	0.01	928.50	0.24	0.01	850.77

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 1: 2020 Berms and Relief Wells														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	5.98	116.15	18.83	51.02	1.02	50.00	11.20	0.80	10.40	0.22	21,102.20	5.51	0.25	21,313.73
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	5.98	116.15	18.83	51.02	1.02	50.00	11.20	0.80	10.40	0.22	21,102.20	5.51	0.25	21,313.73
Total (tons/construction project)	0.26	5.11	0.83	2.24	0.04	2.20	0.49	0.04	0.46	0.01	928.50	0.24	0.01	937.80

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 8  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	262	0	612	0	1,200	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 1: 2020 Berms and Relief Wells														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.26	5.11	0.83	2.24	0.04	2.20	0.49	0.04	0.46	0.01	928.50	0.24	0.01	850.77
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.26	5.11	0.83	2.24	0.04	2.20	0.49	0.04	0.46	0.01	928.50	0.24	0.01	850.77
Total (tons/construction project)	0.26	5.11	0.83	2.24	0.04	2.20	0.49	0.04	0.46	0.01	928.50	0.24	0.01	850.77

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

### Road Construction Emissions Model Data Entry Worksheet

**Note:** Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name: Sac River S/S Contract 1: 2020 Vegetation and Cutoff Wall

Construction Start Year: 2020  
Enter a Year between 2014 and 2025 (inclusive)


Project Type: 4  
For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data

Project Construction Time: 7.80 months  
Working Days per Month: 22.00 days (assume 22 if unknown)

Predominant Soil/Site Type: Enter 1, 2, or 3  
(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)

Project Length: 2.65 miles  
Total Project Area: 64.00 acres  
Maximum Area Disturbed/Day: 5.00 acres  
Water Trucks Used?: 1  
1. Yes  
2. No

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.



Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

#### Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd <sup>3</sup> /day)	Export Volume (yd <sup>3</sup> /day)
Soil	Grubbing/Land Clearing	15.00	0.00	40.00
	Grading/Excavation	15.00	1958.00	54.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

#### Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	<small>Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer</small>
Off-road Equipment Emissions Mitigation	No Mitigation	<small>Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a>). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard</small>

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.80	0.78	4/15/2020	1/1/2020
Grading/Excavation	7.00	3.51	5/10/2020	1/28/2020
Drainage/Utilities/Sub-Grade	0.00	Program		8/28/2020
Paving	0.00	1.17		8/28/2020
<b>Totals (Months)</b>		8		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing	26.00			3	78.00					
Miles/round trip: Grading/Excavation	41.00			135	5535.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31
Grading/Excavation (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.02	0.07	0.71	0.02	0.01	0.00	280.59	0.00	0.01	283.44
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	2.47	0.00	0.00	2.49
Pounds per day - Grading/Excavation	1.29	5.32	50.38	1.43	0.65	0.19	19,911.10	0.06	0.67	20,113.64
Tons per const. Period - Grading/Excavation	0.10	0.41	3.88	0.11	0.05	0.01	1,533.15	0.00	0.05	1,548.75
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.10	0.41	3.89	0.11	0.05	0.01	1,535.62	0.00	0.05	1,551.24

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing				0	0.00					
Miles/round trip: Grading/Excavation				0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31
Grading/Excavation (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values							
User Input				Calculated Daily Trips	Calculated Daily VMT						
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing	14			28	560.00						
No. of employees: Grading/Excavation	100			200	4,000.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.02	1.08	0.11	0.05	0.02	0.00	371.46	0.01	0.00	373.08	
Grading/Excavation (grams/mile)	0.02	1.08	0.11	0.05	0.02	0.00	371.46	0.01	0.00	373.08	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grubbing/Land Clearing (grams/trip)	1.00	2.55	0.20	0.00	0.00	0.00	84.03	0.01	0.01	86.84	
Grading/Excavation (grams/trip)	1.00	2.55	0.20	0.00	0.00	0.00	84.03	0.01	0.01	86.84	
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.09	1.49	0.15	0.06	0.02	0.00	463.79	0.01	0.01	465.96	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	4.08	0.00	0.00	4.10	
Pounds per day - Grading/Excavation	0.62	10.61	1.09	0.41	0.17	0.03	3,312.60	0.08	0.05	3,328.28	
Tons per const. Period - Grading/Excavation	0.05	0.82	0.08	0.03	0.01	0.00	255.09	0.01	0.00	256.28	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.05	0.83	0.09	0.03	0.01	0.00	259.17	0.01	0.00	260.38	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Program Estimate of		User Override of Truck		Default Values		Calculated		
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT				
Grubbing/Land Clearing - Exhaust	1		40.00			40.00				
Grading/Excavation - Exhaust	2		40.00			80.00				
Drainage/Utilities/Subgrade						0.00				
Paving						0.00				
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31
Grading/Excavation (grams/mile)	0.11	0.44	4.13	0.12	0.05	0.02	1,631.71	0.00	0.06	1,648.31
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.01	0.04	0.36	0.01	0.00	0.00	143.89	0.00	0.00	145.36
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.00	0.00	1.28
Pounds per day - Grading/Excavation	0.02	0.08	0.73	0.02	0.01	0.00	287.78	0.00	0.01	290.71
Tons per const. Period - Grading/Excavation	0.00	0.01	0.06	0.00	0.00	0.00	22.16	0.00	0.00	22.36
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.01	0.06	0.00	0.00	0.00	23.43	0.00	0.00	23.66

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day					
Fugitive Dust - Grubbing/Land Clearing				50.00	0.44	10.40	0.09
Fugitive Dust - Grading/Excavation				50.00	3.85	10.40	0.80
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Cranes	1.11	5.17	13.19	0.54	0.50	0.01	1,366.74	0.44	0.01	1,381.47
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.63	8.43	6.22	0.30	0.28	0.01	1,289.86	0.42	0.01	1,303.77
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Signal Boards	0.07	0.38	0.45	0.02	0.02	0.00	61.64	0.01	0.00	61.96
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Sweepers/Scrubbers	0.34	2.48	2.91	0.23	0.22	0.00	307.72	0.10	0.00	311.03
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.53	5.76	5.32	0.34	0.31	0.01	759.67	0.25	0.01	767.85
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing			pounds per day	2.68	22.22	28.09	1.43	1.32	0.04	3,785.64	1.21	0.03	3,826.08
	Grubbing/Land Clearing			tons per phase	0.02	0.20	0.25	0.01	0.01	0.00	33.31	0.01	0.00	33.67

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e					
	Number of Vehicles	Override of	Default																
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier															
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
4.00			Model Default Tier	Bore/Drill Rigs	1.29	9.70	16.42	0.47	0.44	0.04	4,240.28	1.37	0.04	4,286.14					
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
4.00			Model Default Tier	Cranes	2.22	10.35	26.37	1.09	1.00	0.03	2,733.48	0.88	0.02	2,762.94					
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
10.00			Model Default Tier	Excavators	3.16	42.14	31.11	1.51	1.39	0.07	6,449.32	2.09	0.06	6,518.84					
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
1.00			Model Default Tier	Generator Sets	0.50	4.63	4.35	0.25	0.25	0.01	778.79	0.04	0.01	781.64					
4.00			Model Default Tier	Graders	3.59	22.91	34.99	1.95	1.80	0.03	3,024.69	0.98	0.03	3,057.20					
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
16.00			Model Default Tier	Other Material Handling Equipment	5.94	74.72	55.76	2.78	2.56	0.12	11,126.92	3.60	0.10	11,246.88					
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
6.00			Model Default Tier	Rollers	1.58	14.38	15.80	1.01	0.93	0.02	1,929.32	0.62	0.02	1,950.11					
10.00			Model Default Tier	Rough Terrain Forklifts	1.67	28.71	21.62	0.90	0.83	0.04	4,171.01	1.35	0.04	4,215.97					
0.00			Model Default Tier	Rubber Tired Dozers	12.03	99.20	126.85	5.83	5.36	0.11	10,788.37	3.49	0.10	10,904.27					
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
6.00			Model Default Tier	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73					
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
1.00			Model Default Tier	Sweepers/Scrubbers	0.34	2.48	2.91	0.23	0.22	0.00	307.72	0.10	0.00	311.03					
6.00			Model Default Tier	Tractors/Loaders/Backhoes	1.59	17.27	15.95	1.01	0.93	0.02	2,279.02	0.74	0.02	2,303.56					
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
<b>User-Defined Off-road Equipment</b>					<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day					
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
		Grading/Excavation		pounds per day	34.33	328.75	354.84	17.13	15.79	0.50	48,198.77	15.30	0.43	48,710.31					
		Grading/Excavation		tons per phase	2.64	25.31	27.32	1.32	1.22	0.04	3,711.31	1.18	0.03	3,750.69					

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>									
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>2.67</b>	<b>25.51</b>	<b>27.57</b>	<b>1.33</b>	<b>1.23</b>	<b>0.04</b>	<b>3,744.62</b>	<b>1.19</b>	<b>0.03</b>	<b>3,784.36</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Sac River S/S Contract 1: 2020 Vegetation and Cutoff Wall														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.79	23.82	29.31	51.52	1.52	50.00	11.76	1.36	10.40	0.05	4,673.91	1.22	0.05	4,720.84
Grading/Excavation	36.25	344.76	407.03	68.99	18.99	50.00	27.03	16.63	10.40	0.72	71,710.46	15.44	1.16	72,442.94
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>36.25</b>	<b>344.76</b>	<b>407.03</b>	<b>68.99</b>	<b>18.99</b>	<b>50.00</b>	<b>27.03</b>	<b>16.63</b>	<b>10.40</b>	<b>0.72</b>	<b>71,710.46</b>	<b>15.44</b>	<b>1.16</b>	<b>72,442.94</b>
<b>Total (tons/construction project)</b>	<b>2.82</b>	<b>26.76</b>	<b>31.60</b>	<b>5.77</b>	<b>1.48</b>	<b>4.29</b>	<b>2.18</b>	<b>1.29</b>	<b>0.89</b>	<b>0.06</b>	<b>5,562.84</b>	<b>1.20</b>	<b>0.09</b>	<b>5,619.65</b>

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 8  
 Total Project Area (acres) -> 64  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	40	0	78	0	560	40
Grading/Excavation	2,012	0	5,535	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 1: 2020 Vegetation and Cutoff Wall														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.21	0.26	0.45	0.01	0.44	0.10	0.01	0.09	0.00	41.13	0.01	0.00	37.69
Grading/Excavation	2.79	26.55	31.34	5.31	1.46	3.85	2.08	1.28	0.80	0.06	5,521.71	1.19	0.09	5,060.43
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>2.79</b>	<b>26.55</b>	<b>31.34</b>	<b>5.31</b>	<b>1.46</b>	<b>3.85</b>	<b>2.08</b>	<b>1.28</b>	<b>0.80</b>	<b>0.06</b>	<b>5,521.71</b>	<b>1.19</b>	<b>0.09</b>	<b>5,060.43</b>
<b>Total (tons/construction project)</b>	<b>2.82</b>	<b>26.76</b>	<b>31.60</b>	<b>5.77</b>	<b>1.48</b>	<b>4.29</b>	<b>2.18</b>	<b>1.29</b>	<b>0.89</b>	<b>0.06</b>	<b>5,562.84</b>	<b>1.20</b>	<b>0.09</b>	<b>5,098.11</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Sac River S/S Contract 1: 2020 Vegetation and Cutoff Wall														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.78	23.80	28.62	51.52	1.52	50.00	11.75	1.35	10.40	0.05	4,658.20	1.22	0.05	4,704.84
Grading/Excavation	35.78	343.91	374.04	68.82	18.82	50.00	26.86	16.46	10.40	0.72	70,962.71	15.42	1.12	71,681.37
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>35.78</b>	<b>343.91</b>	<b>374.04</b>	<b>68.82</b>	<b>18.82</b>	<b>50.00</b>	<b>26.86</b>	<b>16.46</b>	<b>10.40</b>	<b>0.72</b>	<b>70,962.71</b>	<b>15.42</b>	<b>1.12</b>	<b>71,681.37</b>
<b>Total (tons/construction project)</b>	<b>2.78</b>	<b>26.69</b>	<b>29.05</b>	<b>5.75</b>	<b>1.46</b>	<b>4.29</b>	<b>2.17</b>	<b>1.28</b>	<b>0.89</b>	<b>0.06</b>	<b>5,505.12</b>	<b>1.20</b>	<b>0.09</b>	<b>5,560.87</b>

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 8  
 Total Project Area (acres) -> 64  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	40	0	78	0	560	40
Grading/Excavation	2,012	0	5,535	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 1: 2020 Vegetation and Cutoff Wall														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.21	0.25	0.45	0.01	0.44	0.10	0.01	0.09	0.00	40.99	0.01	0.00	37.56
Grading/Excavation	2.76	26.48	28.80	5.30	1.45	3.85	2.07	1.27	0.80	0.06	5,464.13	1.19	0.09	5,007.23
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>2.76</b>	<b>26.48</b>	<b>28.80</b>	<b>5.30</b>	<b>1.45</b>	<b>3.85</b>	<b>2.07</b>	<b>1.27</b>	<b>0.80</b>	<b>0.06</b>	<b>5464.13</b>	<b>1.19</b>	<b>0.09</b>	<b>5,007.23</b>
<b>Total (tons/construction project)</b>	<b>2.78</b>	<b>26.69</b>	<b>29.05</b>	<b>5.75</b>	<b>1.46</b>	<b>4.29</b>	<b>2.17</b>	<b>1.28</b>	<b>0.89</b>	<b>0.06</b>	<b>5505.12</b>	<b>1.20</b>	<b>0.09</b>	<b>5,044.79</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.



The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Sac River S/S Contract 1: 2020 Vegetation and Cutoff Wall														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.34	28.17	5.43	50.24	0.24	50.00	10.58	0.18	10.40	0.05	4,658.20	1.22	0.05	4,704.84
Grading/Excavation	16.74	343.24	54.81	53.39	3.39	50.00	12.64	2.24	10.40	0.72	70,962.71	15.42	1.12	71,681.37
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	16.74	343.24	54.81	53.39	3.39	50.00	12.64	2.24	10.40	0.72	70,962.71	15.42	1.12	71,681.37
Total (tons/construction project)	1.30	26.68	4.27	4.55	0.26	4.29	1.07	0.17	0.89	0.06	5,505.12	1.20	0.09	5,560.87

Notes:  
 Project Start Year -> 2020  
 Project Length (months) -> 8  
 Total Project Area (acres) -> 64  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	40	0	78	0	560	40
Grading/Excavation	2,012	0	5,535	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, .25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 1: 2020 Vegetation and Cutoff Wall														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.25	0.05	0.44	0.00	0.44	0.09	0.00	0.09	0.00	40.99	0.01	0.00	37.56
Grading/Excavation	1.29	26.43	4.22	4.11	0.26	3.85	0.97	0.17	0.80	0.06	5,464.13	1.19	0.09	5,007.23
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	1.29	26.43	4.22	4.11	0.26	3.85	0.97	0.17	0.80	0.06	5,464.13	1.19	0.09	5,007.23
Total (tons/construction project)	1.30	26.68	4.27	4.55	0.26	4.29	1.07	0.17	0.89	0.06	5,505.12	1.20	0.09	5,044.79

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, .25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.


The CO2e emissions are reported as metric tons per phase.

### Road Construction Emissions Model Data Entry Worksheet

**Note:** Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name	Sac River S/S Contract 2: 2021	Berms and Relief Wells
Construction Start Year	2021	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	4.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.25	miles
Total Project Area	3.00	acres
Maximum Area Disturbed/Day	3.00	acres
Water Trucks Used?	1	1. Yes 2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

#### Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd <sup>3</sup> /day)	Export Volume (yd <sup>3</sup> /day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	15.00	272.00	71.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

#### Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	0.40	8/1/2020	1/1/2021
Grading/Excavation	4.00	1.80	5/30/2021	1/1/2021
Drainage/Utilities/Sub-Grade	0.00	Program	9/22/2020	5/3/2021
Paving	0.00	0.60	10/30/2020	5/3/2021
<b>Totals (Months)</b>		4		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing	0.00			0	0.00					
Miles/round trip: Grading/Excavation	34.00			23	782.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.18	0.75	6.28	0.20	0.09	0.03	2,783.42	0.01	0.09	2,811.74
Tons per const. Period - Grading/Excavation	0.01	0.03	0.28	0.01	0.00	0.00	122.47	0.00	0.00	123.72
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.01	0.03	0.28	0.01	0.00	0.00	122.47	0.00	0.00	123.72

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing				0	0.00					
Miles/round trip: Grading/Excavation				0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker		Default Values		Calculated		Calculated			
User Input	Commute Default Values	Commute Default Values	Default Values	Daily Trips	Daily VMT						
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing	0			0	0.00						
No. of employees: Grading/Excavation	30			60	1,200.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	0.00
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.17	2.92	0.29	0.12	0.05	0.01	963.31	0.02	0.01	967.47	0.00
Tons per const. Period - Grading/Excavation	0.01	0.13	0.01	0.01	0.00	0.00	42.39	0.00	0.00	42.57	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.01	0.13	0.01	0.01	0.00	0.00	42.39	0.00	0.00	42.57	0.00

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Truck		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT						
Grubbing/Land Clearing - Exhaust					0.00						
Grading/Excavation - Exhaust	1		40.00		40.00						
Drainage/Utilities/Subgrade					0.00						
Paving					0.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92	0.00
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.01	0.04	0.32	0.01	0.00	0.00	142.37	0.00	0.00	143.82	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	6.26	0.00	0.00	6.33	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.01	0.00	0.00	0.00	6.26	0.00	0.00	6.33	0.00

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day					
Fugitive Dust - Grubbing/Land Clearing				0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavation				30.00	1.32	6.24	0.27
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
0.00	Program-estimate		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A	Type	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
Type				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.59	8.44	5.55	0.27	0.25	0.01	1,290.05	0.42	0.01	1,303.96
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.45	4.61	3.96	0.21	0.21	0.01	778.79	0.04	0.01	781.53
4.00			Model Default Tier	Graders	3.20	22.52	30.62	1.71	1.57	0.03	3,027.78	0.98	0.03	3,060.33
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tier	Rollers	1.44	14.28	14.61	0.89	0.82	0.02	1,929.49	0.62	0.02	1,950.28
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Rubber Tired Dozers	4.43	36.35	45.70	2.09	1.92	0.04	4,308.42	1.39	0.04	4,354.71
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tier	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Sweepers/Scrubbers	0.29	2.44	2.57	0.19	0.17	0.00	307.72	0.10	0.00	311.03
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.47	5.71	4.79	0.28	0.26	0.01	760.01	0.25	0.01	768.19
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			pounds per day	11.29	96.60	110.50	5.74	5.31	0.13	12,772.12	3.84	0.11	12,901.77
	Grading/Excavation			tons per phase	0.50	4.25	4.86	0.25	0.23	0.01	561.97	0.17	0.00	567.68

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
					If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab									
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
	0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>0.50</b>	<b>4.25</b>	<b>4.86</b>	<b>0.25</b>	<b>0.23</b>	<b>0.01</b>	<b>561.97</b>	<b>0.17</b>	<b>0.00</b>	<b>567.68</b>



Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 2: 2021 Berms and Relief Wells														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	11.65	100.30	117.40	36.08	6.08	30.00	11.70	5.46	6.24	0.17	16,661.23	3.87	0.22	16,824.81
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	11.65	100.30	117.40	36.08	6.08	30.00	11.70	5.46	6.24	0.17	16,661.23	3.87	0.22	16,824.81
Total (tons/construction project)	0.51	4.41	5.17	1.59	0.27	1.32	0.51	0.24	0.27	0.01	733.09	0.17	0.01	740.29

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 3  
 Maximum Area Disturbed/Day (acres) -> 3  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	343	0	782	0	1,200	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 2: 2021 Berms and Relief Wells														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.51	4.41	5.17	1.59	0.27	1.32	0.51	0.24	0.27	0.01	733.09	0.17	0.01	671.59
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.51	4.41	5.17	1.59	0.27	1.32	0.51	0.24	0.27	0.01	733.09	0.17	0.01	671.59
Total (tons/construction project)	0.51	4.41	5.17	1.59	0.27	1.32	0.51	0.24	0.27	0.01	733.09	0.17	0.01	671.59

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 2: 2021 Berms and Relief Wells														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	11.58	100.19	113.38	36.05	6.05	30.00	11.67	5.43	6.24	0.17	16,561.68	3.86	0.22	16,723.34
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	11.58	100.19	113.38	36.05	6.05	30.00	11.67	5.43	6.24	0.17	16,561.68	3.86	0.22	16,723.34
Total (tons/construction project)	0.51	4.41	4.99	1.59	0.27	1.32	0.51	0.24	0.27	0.01	728.71	0.17	0.01	735.83

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 3  
 Maximum Area Disturbed/Day (acres) -> 3  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	343	0	782	0	1,200	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 2: 2021 Berms and Relief Wells														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.51	4.41	4.99	1.59	0.27	1.32	0.51	0.24	0.27	0.01	728.71	0.17	0.01	667.54
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.51	4.41	4.99	1.59	0.27	1.32	0.51	0.24	0.27	0.01	728.71	0.17	0.01	667.54
Total (tons/construction project)	0.51	4.41	4.99	1.59	0.27	1.32	0.51	0.24	0.27	0.01	728.71	0.17	0.01	667.54

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 2: 2021 Berms and Relief Wells														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	4.37	85.89	16.03	30.89	0.89	30.00	6.90	0.66	6.24	0.17	16,561.68	3.86	0.22	16,723.34
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	4.37	85.89	16.03	30.89	0.89	30.00	6.90	0.66	6.24	0.17	16,561.68	3.86	0.22	16,723.34
Total (tons/construction project)	0.19	3.78	0.71	1.36	0.04	1.32	0.30	0.03	0.27	0.01	728.71	0.17	0.01	735.83

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 3  
 Maximum Area Disturbed/Day (acres) -> 3  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	343	0	782	0	1,200	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 2: 2021 Berms and Relief Wells														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.19	3.78	0.71	1.36	0.04	1.32	0.30	0.03	0.27	0.01	728.71	0.17	0.01	667.54
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.19	3.78	0.71	1.36	0.04	1.32	0.30	0.03	0.27	0.01	728.71	0.17	0.01	667.54
Total (tons/construction project)	0.19	3.78	0.71	1.36	0.04	1.32	0.30	0.03	0.27	0.01	728.71	0.17	0.01	667.54

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

**Road Construction Emissions Model**  
**Data Entry Worksheet**

Note: Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name: Sac River S/S Contract 2: 2021 Vegetation and Cutoff Wall


Construction Start Year: 2021  
Enter a Year between 2014 and 2025 (inclusive)

Project Type: 4  
1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway  
2) Road Widening : Project to add a new lane to an existing roadway  
3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane  
4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction

Project Construction Time: 7.20 months  
Working Days per Month: 22.00 days (assume 22 if unknown)

Predominant Soil/Site Type: Enter 1, 2, or 3  
(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)

Project Length: 2.20 miles  
Total Project Area: 69.00 acres  
Maximum Area Disturbed/Day: 5.00 acres  
Water Trucks Used?: 1  
1. Yes  
2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd <sup>3</sup> /day)	Export Volume (yd <sup>3</sup> /day)
Soil	Grubbing/Land Clearing	15.00	0.00	35.00
	Grading/Excavation	15.00	1978.00	37.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation	No Mitigation	<small>Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer</small>
Off-road Equipment Emissions Mitigation	No Mitigation	<small>Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/ceqa/mitigation.shtml). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard</small>

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.80	0.72	4/1/2021	1/1/2021
Grading/Excavation	8.40	3.24	4/15/2021	1/28/2021
Drainage/Utilities/Sub-Grade	0.00	Program	9/22/2021	8/9/2021
Paving	0.00	1.08	10/30/2021	8/9/2021
<b>Totals (Months)</b>		7		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing	26.00			3	78.00					
Miles/round trip: Grading/Excavation	41.00			135	5535.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.02	0.07	0.63	0.02	0.01	0.00	277.63	0.00	0.01	280.45
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	2.44	0.00	0.00	2.47
Pounds per day - Grading/Excavation	1.24	5.28	44.48	1.40	0.63	0.19	19,701.07	0.06	0.67	19,901.52
Tons per const. Period - Grading/Excavation	0.09	0.37	3.13	0.10	0.04	0.01	1,386.96	0.00	0.05	1,401.07
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.09	0.37	3.14	0.10	0.04	0.01	1,389.40	0.00	0.05	1,403.53

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing				0	0.00					
Miles/round trip: Grading/Excavation				0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Grading/Excavation (grams/mile)	0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker		Default Values		Calculated		Calculated		Calculated		Calculated	
User Input		Commute Default Values		Daily Trips	Daily VMT								
Miles/one-way trip		20											
One-way trips/day		2											
No. of employees: Grubbing/Land Clearing		14		28	560.00								
No. of employees: Grading/Excavation		100		200	4,000.00								
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00								
No. of employees: Paving				0	0.00								
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>		
Grubbing/Land Clearing (grams/mile)		0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48		
Grading/Excavation (grams/mile)		0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48		
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Grubbing/Land Clearing (grams/trip)		0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35		
Grading/Excavation (grams/trip)		0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35		
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Paving (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>		
Pounds per day - Grubbing/Land Clearing		0.08	1.36	0.14	0.06	0.02	0.00	449.55	0.01	0.01	451.49		
Tons per const. Period - Grubbing/Land Clearing		0.00	0.01	0.00	0.00	0.00	0.00	3.96	0.00	0.00	3.97		
Pounds per day - Grading/Excavation		0.58	9.74	0.97	0.41	0.17	0.03	3,211.04	0.07	0.04	3,224.91		
Tons per const. Period - Grading/Excavation		0.04	0.69	0.07	0.03	0.01	0.00	226.06	0.01	0.00	227.03		
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Total tons per construction project		0.04	0.70	0.07	0.03	0.01	0.00	230.01	0.01	0.00	231.01		

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of		Program Estimate of		User Override of Truck		Default Values		Calculated		Calculated	
User Input		Default # Water Trucks		Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT					
Grubbing/Land Clearing - Exhaust		1			40.00			40.00					
Grading/Excavation - Exhaust		2			40.00			80.00					
Drainage/Utilities/Subgrade								0.00					
Paving								0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>		
Grubbing/Land Clearing (grams/mile)		0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92		
Grading/Excavation (grams/mile)		0.10	0.43	3.65	0.11	0.05	0.02	1,614.50	0.00	0.05	1,630.92		
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>		
Pounds per day - Grubbing/Land Clearing		0.01	0.04	0.32	0.01	0.00	0.00	142.37	0.00	0.00	143.82		
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00	0.00	1.27		
Pounds per day - Grading/Excavation		0.02	0.08	0.64	0.02	0.01	0.00	284.75	0.00	0.01	287.65		
Tons per const. Period - Grading/Excavation		0.00	0.01	0.05	0.00	0.00	0.00	20.05	0.00	0.00	20.25		
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Total tons per construction project		0.00	0.01	0.05	0.00	0.00	0.00	21.30	0.00	0.00	21.52		

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day					
Fugitive Dust - Grubbing/Land Clearing				50.00	0.44	10.40	0.09
Fugitive Dust - Grading/Excavation				50.00	3.52	10.40	0.73
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions															
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e		
	Number of Vehicles	Override of	Default												
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier												
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2.00			Model Default Tier	Cranes	1.01	4.85	11.86	0.48	0.44	0.01	1,366.61	0.44	0.01	1,381.34	
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2.00			Model Default Tier	Excavators	0.59	8.44	5.55	0.27	0.25	0.01	1,290.05	0.42	0.01	1,303.96	
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1.00			Model Default Tier	Signal Boards	0.07	0.38	0.45	0.02	0.02	0.00	61.64	0.01	0.00	61.96	
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1.00			Model Default Tier	Sweepers/Scrubbers	0.29	2.44	2.57	0.19	0.17	0.00	307.72	0.10	0.00	311.03	
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.47	5.71	4.79	0.28	0.26	0.01	760.01	0.25	0.01	768.19	
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Grubbing/Land Clearing				pounds per day	2.43	21.81	25.22	1.24	1.14	0.04	3,786.04	1.21	0.03	3,826.48
	Grubbing/Land Clearing				tons per phase	0.02	0.19	0.22	0.01	0.01	0.00	33.32	0.01	0.00	33.67



Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
Type				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Bore/Drill Rigs	1.20	9.67	14.09	0.43	0.39	0.04	4,250.79	1.38	0.04	4,296.74
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Cranes	2.02	9.70	23.72	0.96	0.89	0.03	2,733.23	0.88	0.02	2,762.68
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00			Model Default Tier	Excavators	2.96	42.19	27.77	1.35	1.24	0.07	6,450.27	2.09	0.06	6,519.82
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.45	4.61	3.96	0.21	0.21	0.01	778.79	0.04	0.01	781.53
4.00			Model Default Tier	Graders	3.20	22.52	30.62	1.71	1.57	0.03	3,027.78	0.98	0.03	3,060.33
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16.00			Model Default Tier	Other Material Handling Equipment	5.86	75.32	52.93	2.68	2.47	0.12	11,126.92	3.60	0.10	11,246.88
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tier	Rollers	1.44	14.28	14.61	0.89	0.82	0.02	1,929.49	0.62	0.02	1,950.28
10.00			Model Default Tier	Rough Terrain Forklifts	1.54	28.68	20.15	0.78	0.72	0.04	4,172.12	1.35	0.04	4,217.08
10.00			Model Default Tier	Rubber Tired Dozers	11.07	90.87	114.26	5.22	4.80	0.11	10,771.06	3.48	0.10	10,886.78
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tier	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Sweepers/Scrubbers	0.29	2.44	2.57	0.19	0.17	0.00	307.72	0.10	0.00	311.03
6.00			Model Default Tier	Tractors/Loaders/Backhoes	1.42	17.13	14.37	0.85	0.78	0.02	2,280.02	0.74	0.02	2,304.56
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			pounds per day	31.87	319.65	321.74	15.37	14.17	0.50	48,198.03	15.29	0.43	48,709.44
	Grading/Excavation			tons per phase	2.24	22.50	22.65	1.08	1.00	0.04	3,393.14	1.08	0.03	3,429.14

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
	0.00		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>2.26</b>	<b>22.70</b>	<b>22.87</b>	<b>1.09</b>	<b>1.01</b>	<b>0.04</b>	<b>3,426.46</b>	<b>1.09</b>	<b>0.03</b>	<b>3,462.82</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Sac River S/S Contract 2: 2021 Vegetation and Cutoff Wall														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.54	23.29	26.31	51.33	1.33	50.00	11.58	1.18	10.40	0.05	4,655.59	1.22	0.05	4,702.25
Grading/Excavation	33.70	334.75	367.84	67.20	17.20	50.00	25.38	14.98	10.40	0.72	71,394.89	15.42	1.15	72,123.52
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (pounds/day)</b>	<b>36.24</b>	<b>358.03</b>	<b>394.15</b>	<b>118.53</b>	<b>18.53</b>	<b>100.00</b>	<b>36.96</b>	<b>16.16</b>	<b>20.80</b>	<b>0.77</b>	<b>76,050.48</b>	<b>16.65</b>	<b>1.21</b>	<b>76,825.77</b>
<b>Total (tons/construction project)</b>	<b>2.39</b>	<b>23.77</b>	<b>26.13</b>	<b>5.18</b>	<b>1.22</b>	<b>3.96</b>	<b>1.89</b>	<b>1.06</b>	<b>0.82</b>	<b>0.05</b>	<b>5,067.17</b>	<b>1.10</b>	<b>0.08</b>	<b>5,118.88</b>

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 7  
 Total Project Area (acres) -> 69  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	35	0	78	0	560	40
Grading/Excavation	2,015	0	5,535	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, .25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 2: 2021 Vegetation and Cutoff Wall														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.20	0.23	0.45	0.01	0.44	0.10	0.01	0.09	0.00	40.97	0.01	0.00	37.54
Grading/Excavation	2.37	23.57	25.90	4.73	1.21	3.52	1.79	1.05	0.73	0.05	5,026.20	1.09	0.08	4,606.27
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Maximum (tons/phase)</b>	<b>2.37</b>	<b>23.57</b>	<b>25.90</b>	<b>4.73</b>	<b>1.21</b>	<b>3.52</b>	<b>1.79</b>	<b>1.05</b>	<b>0.73</b>	<b>0.05</b>	<b>5,026.20</b>	<b>1.09</b>	<b>0.08</b>	<b>4,606.27</b>
<b>Total (tons/construction project)</b>	<b>2.39</b>	<b>23.77</b>	<b>26.13</b>	<b>5.18</b>	<b>1.22</b>	<b>3.96</b>	<b>1.89</b>	<b>1.06</b>	<b>0.82</b>	<b>0.05</b>	<b>5,067.17</b>	<b>1.10</b>	<b>0.08</b>	<b>4,643.81</b>

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, .25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Sac River S/S Contract 2: 2021 Vegetation and Cutoff Wall													Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)				
Grubbing/Land Clearing	2.53	23.27	25.73	51.32	1.32	50.00	11.58	1.18	10.40	0.05	4,641.30	1.22	0.05	4,687.68				
Grading/Excavation	33.27	333.97	340.40	67.05	17.05	50.00	25.24	14.84	10.40	0.72	70,714.91	15.40	1.11	71,430.41				
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
<b>Maximum (pounds/day)</b>	<b>35.80</b>	<b>357.24</b>	<b>366.13</b>	<b>118.38</b>	<b>18.38</b>	<b>100.00</b>	<b>36.81</b>	<b>16.01</b>	<b>20.80</b>	<b>0.76</b>	<b>75,356.20</b>	<b>16.63</b>	<b>1.16</b>	<b>76,118.09</b>				
<b>Total (tons/construction project)</b>	<b>2.36</b>	<b>23.72</b>	<b>24.19</b>	<b>5.17</b>	<b>1.21</b>	<b>3.96</b>	<b>1.88</b>	<b>1.05</b>	<b>0.82</b>	<b>0.05</b>	<b>5,019.17</b>	<b>1.10</b>	<b>0.08</b>	<b>5,069.95</b>				

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 7  
 Total Project Area (acres) -> 69  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	35	0	78	0	560	40
Grading/Excavation	2,015	0	5,535	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, .25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 2: 2021 Vegetation and Cutoff Wall													Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)				
Grubbing/Land Clearing	0.02	0.20	0.23	0.45	0.01	0.44	0.10	0.01	0.09	0.00	40.84	0.01	0.00	37.42				
Grading/Excavation	2.34	23.51	23.96	4.72	1.20	3.52	1.78	1.04	0.73	0.05	4,978.33	1.08	0.08	4,562.01				
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
<b>Maximum (tons/phase)</b>	<b>2.34</b>	<b>23.51</b>	<b>23.96</b>	<b>4.72</b>	<b>1.20</b>	<b>3.52</b>	<b>1.78</b>	<b>1.04</b>	<b>0.73</b>	<b>0.05</b>	<b>4978.33</b>	<b>1.08</b>	<b>0.08</b>	<b>4,562.01</b>				
<b>Total (tons/construction project)</b>	<b>2.36</b>	<b>23.72</b>	<b>24.19</b>	<b>5.17</b>	<b>1.21</b>	<b>3.96</b>	<b>1.88</b>	<b>1.05</b>	<b>0.82</b>	<b>0.05</b>	<b>5019.17</b>	<b>1.10</b>	<b>0.08</b>	<b>4,599.43</b>				

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, .25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Sac River S/S Contract 2: 2021 Vegetation and Cutoff Wall													Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)				
Grubbing/Land Clearing	1.33	28.05	5.41	50.24	0.24	50.00	10.58	0.18	10.40	0.05	4,641.30	1.22	0.05	4,687.68				
Grading/Excavation	16.69	342.40	54.26	53.39	3.39	50.00	12.64	2.24	10.40	0.72	70,714.91	15.40	1.11	71,430.41				
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
<b>Maximum (pounds/day)</b>	<b>18.03</b>	<b>370.45</b>	<b>59.67</b>	<b>103.63</b>	<b>3.63</b>	<b>100.00</b>	<b>23.22</b>	<b>2.42</b>	<b>20.80</b>	<b>0.76</b>	<b>75,356.20</b>	<b>16.63</b>	<b>1.16</b>	<b>76,118.09</b>				
<b>Total (tons/construction project)</b>	<b>1.19</b>	<b>24.35</b>	<b>3.87</b>	<b>4.20</b>	<b>0.24</b>	<b>3.96</b>	<b>0.98</b>	<b>0.16</b>	<b>0.82</b>	<b>0.05</b>	<b>5,019.17</b>	<b>1.10</b>	<b>0.08</b>	<b>5,069.95</b>				

Notes:  
 Project Start Year -> 2021  
 Project Length (months) -> 7  
 Total Project Area (acres) -> 69  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	35	0	78	0	560	40
Grading/Excavation	2,015	0	5,535	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, .25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 2: 2021 Vegetation and Cutoff Wall													Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)				
Grubbing/Land Clearing	0.01	0.25	0.05	0.44	0.00	0.44	0.09	0.00	0.09	0.00	40.84	0.01	0.00	37.42				
Grading/Excavation	1.18	24.11	3.82	3.76	0.24	3.52	0.89	0.16	0.73	0.05	4,978.33	1.08	0.08	4,562.01				
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
<b>Maximum (tons/phase)</b>	<b>1.18</b>	<b>24.11</b>	<b>3.82</b>	<b>3.76</b>	<b>0.24</b>	<b>3.52</b>	<b>0.89</b>	<b>0.16</b>	<b>0.73</b>	<b>0.05</b>	<b>4,978.33</b>	<b>1.08</b>	<b>0.08</b>	<b>4,562.01</b>				
<b>Total (tons/construction project)</b>	<b>1.19</b>	<b>24.35</b>	<b>3.87</b>	<b>4.20</b>	<b>0.24</b>	<b>3.96</b>	<b>0.98</b>	<b>0.16</b>	<b>0.82</b>	<b>0.05</b>	<b>5,019.17</b>	<b>1.10</b>	<b>0.08</b>	<b>4,599.43</b>				

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, .25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.


The CO2e emissions are reported as metric tons per phase.

### Road Construction Emissions Model Data Entry Worksheet

Note: Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name	Sac River S/S Contract 3: 2022	Vegetation and Cutoff Wall
Construction Start Year	2022	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	7.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	2.30	miles
Total Project Area	28.00	acres
Maximum Area Disturbed/Day	5.00	acres
Water Trucks Used?	1	1. Yes 2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.  
  
[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

#### Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd <sup>3</sup> /day)	Export Volume (yd <sup>3</sup> /day)
Soil	Grubbing/Land Clearing	15.00	0.00	35.00
	Grading/Excavation	15.00	1922.00	36.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

#### Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.



Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	1.20	0.70	4/1/2022	1/1/2022
Grading/Excavation	5.60	3.15	5/8/2022	2/7/2022
Drainage/Utilities/Sub-Grade	0.00	Program		7/28/2022
Paving	0.00	1.05		7/28/2022
<b>Totals (Months)</b>		7		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Please note: You have entered a different number of months than the project length shown in cell D16.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing	26.00			3	78.00					
Miles/round trip: Grading/Excavation	41.00			131	5371.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.02	0.07	0.56	0.02	0.01	0.00	274.55	0.00	0.01	277.35
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	3.62	0.00	0.00	3.66
Pounds per day - Grading/Excavation	1.16	5.08	38.27	1.33	0.59	0.18	18,905.54	0.05	0.64	19,097.92
Tons per const. Period - Grading/Excavation	0.07	0.31	2.36	0.08	0.04	0.01	1,164.58	0.00	0.04	1,176.43
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.07	0.31	2.37	0.08	0.04	0.01	1,168.21	0.00	0.04	1,180.09

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>										
Miles/round trip: Grubbing/Land Clearing				0	0.00					
Miles/round trip: Grading/Excavation				0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade				0	0.00					
Miles/round trip: Paving				0	0.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Grading/Excavation (grams/mile)	0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker		Default Values		Calculated					
User Input		Commute Default Values		Daily Trips	Daily VMT						
Miles/one-way trip		20									
One-way trips/day		2									
No. of employees: Grubbing/Land Clearing		14		28	560.00						
No. of employees: Grading/Excavation		100		200	4,000.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Grading/Excavation (grams/mile)		0.02	0.92	0.09	0.05	0.02	0.00	348.29	0.01	0.00	349.59
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)		0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Grading/Excavation (grams/trip)		0.87	2.06	0.16	0.00	0.00	0.00	79.59	0.01	0.01	81.77
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.07	1.26	0.12	0.06	0.02	0.00	434.90	0.01	0.01	436.65
Tons per const. Period - Grubbing/Land Clearing		0.00	0.02	0.00	0.00	0.00	0.00	5.74	0.00	0.00	5.76
Pounds per day - Grading/Excavation		0.53	9.00	0.88	0.41	0.17	0.03	3,106.46	0.07	0.04	3,116.95
Tons per const. Period - Grading/Excavation		0.03	0.55	0.05	0.03	0.01	0.00	191.36	0.00	0.00	192.13
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.03	0.57	0.06	0.03	0.01	0.00	197.10	0.00	0.00	197.89

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input		Default # Water Trucks		Number of Water Trucks		Miles Traveled/Vehicle/Day		Miles Traveled/Vehicle/Day		Daily VMT	
Grubbing/Land Clearing - Exhaust		1				40.00				40.00	
Grading/Excavation - Exhaust		2				40.00				80.00	
Drainage/Utilities/Subgrade										0.00	
Paving										0.00	
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Grading/Excavation (grams/mile)		0.10	0.43	3.23	0.11	0.05	0.02	1,596.61	0.00	0.05	1,612.86
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.01	0.04	0.29	0.01	0.00	0.00	140.80	0.00	0.00	142.23
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	1.86	0.00	0.00	1.88
Pounds per day - Grading/Excavation		0.02	0.08	0.57	0.02	0.01	0.00	281.59	0.00	0.01	284.46
Tons per const. Period - Grading/Excavation		0.00	0.00	0.04	0.00	0.00	0.00	17.35	0.00	0.00	17.52
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.01	0.04	0.00	0.00	0.00	19.20	0.00	0.00	19.40

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day					
Fugitive Dust - Grubbing/Land Clearing				50.00	0.66	10.40	0.14
Fugitive Dust - Grading/Excavation				50.00	3.08	10.40	0.64
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions															
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e		
	Number of Vehicles	Override of	Default												
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier												
0.00	Program-estimate		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2.00			Model Default Tier	Excavators	0.52	8.40	4.58	0.22	0.20	0.01	1,289.60	0.42	0.01	1,303.50	
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Signal Boards	0.07	0.38	0.45	0.02	0.02	0.00	61.64	0.01	0.00	61.96	
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Sweepers/Scrubbers	0.24	2.40	2.25	0.15	0.14	0.00	307.72	0.10	0.00	311.03	
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.42	5.65	4.23	0.23	0.21	0.01	760.86	0.25	0.01	769.05	
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			N/A	Type	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Grubbing/Land Clearing				pounds per day	1.25	16.82	11.52	0.62	0.57	0.03	2,419.82	0.77	0.02	2,445.54
	Grubbing/Land Clearing				tons per phase	0.02	0.22	0.15	0.01	0.01	0.00	31.94	0.01	0.00	32.28

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Bore/Drill Rigs	1.04	9.51	10.56	0.34	0.31	0.04	4,257.78	1.38	0.04	4,303.77
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Cranes	1.82	9.26	20.47	0.85	0.78	0.03	2,733.67	0.88	0.02	2,763.14
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00			Model Default Tier	Excavators	2.61	41.98	22.92	1.11	1.02	0.07	6,447.99	2.09	0.06	6,517.51
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.41	4.59	3.66	0.18	0.18	0.01	778.79	0.04	0.01	781.46
4.00			Model Default Tier	Graders	2.79	22.10	26.10	1.45	1.33	0.03	3,028.02	0.98	0.03	3,060.56
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16.00			Model Default Tier	Other Material Handling Equipment	5.32	74.84	44.62	2.42	2.23	0.12	11,126.92	3.60	0.10	11,246.88
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tier	Rollers	1.26	14.13	13.11	0.76	0.70	0.02	1,929.60	0.62	0.02	1,950.39
10.00			Model Default Tier	Rough Terrain Forklifts	1.40	28.60	18.50	0.65	0.59	0.04	4,171.93	1.35	0.04	4,216.90
0.00			Model Default Tier	Rubber Tired Dozers	10.68	87.59	108.11	4.94	4.55	0.11	10,778.34	3.49	0.10	10,894.12
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tier	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Sweepers/Scrubbers	0.24	2.40	2.25	0.15	0.14	0.00	307.72	0.10	0.00	311.03
6.00			Model Default Tier	Tractors/Loaders/Backhoes	1.25	16.96	12.70	0.68	0.63	0.02	2,282.59	0.74	0.02	2,307.15
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			pounds per day	29.25	314.21	285.70	13.64	12.57	0.50	48,213.20	15.30	0.43	48,724.65
	Grading/Excavation			tons per phase	1.80	19.36	17.60	0.84	0.77	0.03	2,969.93	0.94	0.03	3,001.44

Default		Mitigation Option												
Drainage/Utilities/Subgrade	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>				<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>										
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
Type				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>1.82</b>	<b>19.58</b>	<b>17.75</b>	<b>0.85</b>	<b>0.78</b>	<b>0.03</b>	<b>3,001.87</b>	<b>0.95</b>	<b>0.03</b>	<b>3,033.72</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Sac River S/S Contract 3: 2022 Vegetation and Cutoff Wall													Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)				
Grubbing/Land Clearing	1.35	18.19	12.48	50.70	0.70	50.00	11.01	0.61	10.40	0.03	3,270.08	0.78	0.04	3,301.77				
Grading/Excavation	30.96	328.37	325.42	65.40	15.40	50.00	23.73	13.33	10.40	0.71	70,506.79	15.42	1.12	71,225.98				
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
<b>Maximum (pounds/day)</b>	<b>30.96</b>	<b>328.37</b>	<b>325.42</b>	<b>65.40</b>	<b>15.40</b>	<b>50.00</b>	<b>23.73</b>	<b>13.33</b>	<b>10.40</b>	<b>0.71</b>	<b>70,506.79</b>	<b>15.42</b>	<b>1.12</b>	<b>71,225.98</b>				
<b>Total (tons/construction project)</b>	<b>1.93</b>	<b>20.47</b>	<b>20.21</b>	<b>4.70</b>	<b>0.96</b>	<b>3.74</b>	<b>1.61</b>	<b>0.83</b>	<b>0.78</b>	<b>0.04</b>	<b>4,386.38</b>	<b>0.96</b>	<b>0.07</b>	<b>4,431.10</b>				

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 7  
 Total Project Area (acres) -> 28  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	35	0	78	0	560	40
Grading/Excavation	1,958	0	5,371	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 3: 2022 Vegetation and Cutoff Wall													Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)				
Grubbing/Land Clearing	0.02	0.24	0.16	0.67	0.01	0.66	0.15	0.01	0.14	0.00	43.17	0.01	0.00	39.54				
Grading/Excavation	1.91	20.23	20.05	4.03	0.95	3.08	1.46	0.82	0.64	0.04	4,343.22	0.95	0.07	3,980.33				
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
<b>Maximum (tons/phase)</b>	<b>1.91</b>	<b>20.23</b>	<b>20.05</b>	<b>4.03</b>	<b>0.95</b>	<b>3.08</b>	<b>1.46</b>	<b>0.82</b>	<b>0.64</b>	<b>0.04</b>	<b>4343.22</b>	<b>0.95</b>	<b>0.07</b>	<b>3,980.33</b>				
<b>Total (tons/construction project)</b>	<b>1.93</b>	<b>20.47</b>	<b>20.21</b>	<b>4.70</b>	<b>0.96</b>	<b>3.74</b>	<b>1.61</b>	<b>0.83</b>	<b>0.78</b>	<b>0.04</b>	<b>4386.38</b>	<b>0.96</b>	<b>0.07</b>	<b>4,019.87</b>				

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.



The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Sac River S/S Contract 3: 2022 Vegetation and Cutoff Wall														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.34	18.18	12.00	50.70	0.70	50.00	11.00	0.60	10.40	0.03	3,257.62	0.78	0.04	3,289.06
Grading/Excavation	30.59	327.68	303.28	65.28	15.28	50.00	23.62	13.22	10.40	0.71	69,931.17	15.40	1.08	70,638.50
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	30.59	327.68	303.28	65.28	15.28	50.00	23.62	13.22	10.40	0.71	69,931.17	15.40	1.08	70,638.50
Total (tons/construction project)	1.90	20.42	18.84	4.69	0.95	3.74	1.60	0.82	0.78	0.04	4,350.76	0.96	0.07	4,394.75

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 7  
 Total Project Area (acres) -> 28  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	35	0	78	0	560	40
Grading/Excavation	1,958	0	5,371	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 3: 2022 Vegetation and Cutoff Wall														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.24	0.16	0.67	0.01	0.66	0.15	0.01	0.14	0.00	43.00	0.01	0.00	39.39
Grading/Excavation	1.88	20.18	18.68	4.02	0.94	3.08	1.46	0.81	0.64	0.04	4,307.76	0.95	0.07	3,947.50
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	1.88	20.18	18.68	4.02	0.94	3.08	1.46	0.81	0.64	0.04	4307.76	0.95	0.07	3,947.50
Total (tons/construction project)	1.90	20.42	18.84	4.69	0.95	3.74	1.60	0.82	0.78	0.04	4350.76	0.96	0.07	3,986.89

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Sac River S/S Contract 3: 2022 Vegetation and Cutoff Wall													Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust				
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)								
Grubbing/Land Clearing	0.89	20.43	4.52	50.19	0.19	50.00	10.54	0.14	10.40	0.03	3,257.62	0.78	0.04	3,289.06								
Grading/Excavation	16.63	341.55	53.19	53.35	3.35	50.00	12.63	2.23	10.40	0.71	69,931.17	15.40	1.08	70,638.50								
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
<b>Maximum (pounds/day)</b>	<b>16.63</b>	<b>341.55</b>	<b>53.19</b>	<b>53.35</b>	<b>3.35</b>	<b>50.00</b>	<b>12.63</b>	<b>2.23</b>	<b>10.40</b>	<b>0.71</b>	<b>69,931.17</b>	<b>15.40</b>	<b>1.08</b>	<b>70,638.50</b>								
<b>Total (tons/construction project)</b>	<b>1.04</b>	<b>21.31</b>	<b>3.34</b>	<b>3.95</b>	<b>0.21</b>	<b>3.74</b>	<b>0.92</b>	<b>0.14</b>	<b>0.78</b>	<b>0.04</b>	<b>4,350.76</b>	<b>0.96</b>	<b>0.07</b>	<b>4,394.75</b>								

Notes:  
 Project Start Year -> 2022  
 Project Length (months) -> 7  
 Total Project Area (acres) -> 28  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	35	0	78	0	560	40
Grading/Excavation	1,958	0	5,371	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 3: 2022 Vegetation and Cutoff Wall													Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust				
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)								
Grubbing/Land Clearing	0.01	0.27	0.06	0.66	0.00	0.66	0.14	0.00	0.14	0.00	43.00	0.01	0.00	39.39								
Grading/Excavation	1.02	21.04	3.28	3.29	0.21	3.08	0.78	0.14	0.64	0.04	4,307.76	0.95	0.07	3,947.50								
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00								
<b>Maximum (tons/phase)</b>	<b>1.02</b>	<b>21.04</b>	<b>3.28</b>	<b>3.29</b>	<b>0.21</b>	<b>3.08</b>	<b>0.78</b>	<b>0.14</b>	<b>0.64</b>	<b>0.04</b>	<b>4307.76</b>	<b>0.95</b>	<b>0.07</b>	<b>3,947.50</b>								
<b>Total (tons/construction project)</b>	<b>1.04</b>	<b>21.31</b>	<b>3.34</b>	<b>3.95</b>	<b>0.21</b>	<b>3.74</b>	<b>0.92</b>	<b>0.14</b>	<b>0.78</b>	<b>0.04</b>	<b>4350.76</b>	<b>0.96</b>	<b>0.07</b>	<b>3,986.89</b>								

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.


**Road Construction Emissions Model**
**Version 8.1.0**

**Data Entry Worksheet**

Note: Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name	Sac River S/S Contract 4: 2023	Berms and Relief Wells
Construction Start Year	2023	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	4.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.25	miles
Total Project Area	9.00	acres
Maximum Area Disturbed/Day	5.00	acres
Water Trucks Used?	1	1. Yes 2. No



**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd <sup>3</sup> /day)	Export Volume (yd <sup>3</sup> /day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	15.00	272.00	71.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Data Entry Worksheet

2

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.00	0.40	8/1/2020	1/1/2023
Grading/Excavation	4.00	1.80	5/30/2023	1/1/2023
Drainage/Utilities/Sub-Grade	0.00	Program	9/22/2020	5/3/2023
Paving	0.00	0.60	10/30/2020	5/3/2023
<b>Totals (Months)</b>		4		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation		34.00			23	782.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Drainage/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.11	0.64	2.26	0.18	0.07	0.03	2,658.27	0.01	0.09	2,685.29
Tons per const. Period - Grading/Excavation		0.00	0.03	0.10	0.01	0.00	0.00	116.96	0.00	0.00	118.15
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.03	0.10	0.01	0.00	0.00	116.96	0.00	0.00	118.15

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Drainage/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker		Default Values							
User Input		Commute Default Values		Calculated Daily Trips	Calculated Daily VMT						
Miles/one-way trip		20									
One-way trips/day		2									
No. of employees: Grubbing/Land Clearing				0	0.00						
No. of employees: Grading/Excavation				60	1,200.00						
No. of employees: Drainage/Utilities/Sub-Grade				0	0.00						
No. of employees: Paving				0	0.00						
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.02	0.85	0.08	0.05	0.02	0.00	336.27	0.01	0.00	337.46
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)		0.81	1.86	0.14	0.00	0.00	0.00	77.20	0.01	0.01	79.12
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.15	2.50	0.24	0.12	0.05	0.01	899.84	0.02	0.01	903.22
Tons per const. Period - Grading/Excavation		0.01	0.11	0.01	0.01	0.00	0.00	39.59	0.00	0.00	39.74
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.01	0.11	0.01	0.01	0.00	0.00	39.59	0.00	0.00	39.74

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Truck		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input		Default # Water Trucks		Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day		Miles Traveled/Vehicle/Day		Daily VMT	
Grubbing/Land Clearing - Exhaust										0.00	
Grading/Excavation - Exhaust		1			40.00					40.00	
Drainage/Utilities/Subgrade										0.00	
Paving										0.00	
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.01	0.03	0.12	0.01	0.00	0.00	135.97	0.00	0.00	137.35
Tons per const. Period - Grading/Excavation		0.00	0.00	0.01	0.00	0.00	0.00	5.98	0.00	0.00	6.04
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.01	0.00	0.00	0.00	5.98	0.00	0.00	6.04

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day					
Fugitive Dust - Grubbing/Land Clearing				0.00	0.00	0.00	0.00
Fugitive Dust - Grading/Excavation				50.00	2.20	10.40	0.46
Fugitive Dust - Drainage/Utilities/Subgrade				0.00	0.00	0.00	0.00

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
0.00	Program-estimate		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A	Type	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing				tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
Type				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Excavators	0.49	8.40	3.99	0.20	0.18	0.01	1,289.83	0.42	0.01	1,303.73
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.38	4.59	3.39	0.16	0.16	0.01	778.79	0.03	0.01	781.40
4.00			Model Default Tier	Graders	2.47	21.83	22.45	1.24	1.14	0.03	3,027.36	0.98	0.03	3,059.89
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tier	Rollers	1.17	14.07	12.23	0.67	0.62	0.02	1,929.63	0.62	0.02	1,950.42
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00			Model Default Tier	Rubber Tired Dozers	4.02	33.16	39.65	1.81	1.67	0.04	4,312.75	1.40	0.04	4,359.08
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6.00			Model Default Tier	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	371.73
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Sweepers/Scrubbers	0.23	2.40	2.13	0.14	0.13	0.00	307.72	0.10	0.00	311.03
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.38	5.64	3.88	0.19	0.18	0.01	761.71	0.25	0.01	769.91
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			pounds per day	9.56	92.33	90.42	4.51	4.17	0.13	12,777.66	3.83	0.11	12,907.21
	Grading/Excavation			tons per phase	0.42	4.06	3.98	0.20	0.18	0.01	562.22	0.17	0.00	567.92

Drainage/Utilities/Subgrade		Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles		Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00				Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00				Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
					If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab									
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
	0.00		Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Bore/Dnll Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>0.42</b>	<b>4.06</b>	<b>3.98</b>	<b>0.20</b>	<b>0.18</b>	<b>0.01</b>	<b>562.22</b>	<b>0.17</b>	<b>0.00</b>	<b>567.92</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 4: 2023 Berms and Relief Wells														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	9.82	95.51	93.03	54.82	4.82	50.00	14.69	4.29	10.40	0.17	16,471.74	3.86	0.22	16,633.07
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	9.82	95.51	93.03	54.82	4.82	50.00	14.69	4.29	10.40	0.17	16,471.74	3.86	0.22	16,633.07
Total (tons/construction project)	0.43	4.20	4.09	2.41	0.21	2.20	0.65	0.19	0.46	0.01	724.76	0.17	0.01	731.86

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 9  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	343	0	782	0	1,200	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 4: 2023 Berms and Relief Wells														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.43	4.20	4.09	2.41	0.21	2.20	0.65	0.19	0.46	0.01	724.76	0.17	0.01	663.93
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.43	4.20	4.09	2.41	0.21	2.20	0.65	0.19	0.46	0.01	724.76	0.17	0.01	663.93
Total (tons/construction project)	0.43	4.20	4.09	2.41	0.21	2.20	0.65	0.19	0.46	0.01	724.76	0.17	0.01	663.93

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 4: 2023 Berms and Relief Wells														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	9.82	95.50	92.83	54.82	4.82	50.00	14.69	4.29	10.40	0.17	16,468.53	3.86	0.21	16,628.96
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	9.82	95.50	92.83	54.82	4.82	50.00	14.69	4.29	10.40	0.17	16,468.53	3.86	0.21	16,628.96
Total (tons/construction project)	0.43	4.20	4.08	2.41	0.21	2.20	0.65	0.19	0.46	0.01	724.62	0.17	0.01	731.67

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 9  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	343	0	782	0	1,200	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 4: 2023 Berms and Relief Wells														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.43	4.20	4.08	2.41	0.21	2.20	0.65	0.19	0.46	0.01	724.62	0.17	0.01	663.77
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.43	4.20	4.08	2.41	0.21	2.20	0.65	0.19	0.46	0.01	724.62	0.17	0.01	663.77
Total (tons/construction project)	0.43	4.20	4.08	2.41	0.21	2.20	0.65	0.19	0.46	0.01	724.62	0.17	0.01	663.77

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 4: 2023 Berms and Relief Wells														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	4.34	85.47	15.56	50.89	0.89	50.00	11.06	0.66	10.40	0.17	16,468.53	3.86	0.21	16,628.96
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	4.34	85.47	15.56	50.89	0.89	50.00	11.06	0.66	10.40	0.17	16,468.53	3.86	0.21	16,628.96
Total (tons/construction project)	0.19	3.76	0.68	2.24	0.04	2.20	0.49	0.03	0.46	0.01	724.62	0.17	0.01	731.67

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 4  
 Total Project Area (acres) -> 9  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	343	0	782	0	1,200	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0


PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 4: 2023 Berms and Relief Wells														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.19	3.76	0.68	2.24	0.04	2.20	0.49	0.03	0.46	0.01	724.62	0.17	0.01	663.77
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.19	3.76	0.68	2.24	0.04	2.20	0.49	0.03	0.46	0.01	724.62	0.17	0.01	663.77
Total (tons/construction project)	0.19	3.76	0.68	2.24	0.04	2.20	0.49	0.03	0.46	0.01	724.62	0.17	0.01	663.77

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

**Road Construction Emissions Model  
Data Entry Worksheet**

**Version 8.1.0**



Note: Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name: Sac River S/S Contract 4: 2023 Vegetation and Cutoff Wall

Construction Start Year: 2023

Project Type: 4

Project Construction Time: 2.00 months  
Working Days per Month: 22.00

Predominant Soil/Site Type: Enter 1, 2, or 3  
(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)

Project Length: 0.50 miles  
Total Project Area: 19.00 acres  
Maximum Area Disturbed/Day: 5.00 acres

Water Trucks Used?: 1

Enter a Year between 2014 and 2025 (inclusive)

1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway  
 2) Road Widening : Project to add a new lane to an existing roadway  
 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane  
 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction

1) Sand Gravel : Use for quaternary deposits (Delta/West County)  
 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta)  
 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)

1. Yes  
2. No

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd <sup>3</sup> /day)	Export Volume (yd <sup>3</sup> /day)
Soil	Grubbing/Land Clearing	15.00	0.00	9.00
	Grading/Excavation	15.00	2034.00	38.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing	0.80	0.20	5/1/2023	1/1/2023
Grading/Excavation	1.20	0.90	5/26/2023	1/26/2023
Drainage/Utilities/Sub-Grade	0.00	0.60		3/4/2023
Paving	0.00	0.30		3/4/2023
<b>Totals (Months)</b>		2		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing		26.00			1	26.00					
Miles/round trip: Grading/Excavation		41.00			139	5699.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.02	0.08	0.01	0.00	0.00	88.38	0.00	0.00	89.28
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.79
Pounds per day - Grading/Excavation		0.80	4.67	16.45	1.29	0.50	0.18	19,372.72	0.04	0.66	19,569.62
Tons per const. Period - Grading/Excavation		0.01	0.06	0.22	0.02	0.01	0.00	255.72	0.00	0.01	258.32
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.01	0.06	0.22	0.02	0.01	0.00	256.50	0.00	0.01	259.10

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving					0	0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values		Calculated Daily Trips		Calculated Daily VMT		
<b>User Input</b>										
Miles/ one-way trip	20									
One-way trips/day	2									
No. of employees: Grubbing/Land Clearing	14			28		560.00				
No. of employees: Grading/Excavation	100			200		4,000.00				
No. of employees: Drainage/Utilities/Sub-Grade				0		0.00				
No. of employees: Paving				0		0.00				
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)	0.02	0.85	0.08	0.05	0.02	0.00	336.27	0.01	0.00	337.46
Grading/Excavation (grams/mile)	0.02	0.85	0.08	0.05	0.02	0.00	336.27	0.01	0.00	337.46
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.81	1.86	0.14	0.00	0.00	0.00	77.20	0.01	0.01	79.12
Grading/Excavation (grams/trip)	0.81	1.86	0.14	0.00	0.00	0.00	77.20	0.01	0.01	79.12
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.07	1.17	0.11	0.06	0.02	0.00	419.93	0.01	0.00	421.50
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	3.70	0.00	0.00	3.71
Pounds per day - Grading/Excavation	0.50	8.34	0.79	0.41	0.17	0.03	2,999.47	0.06	0.03	3,010.73
Tons per const. Period - Grading/Excavation	0.01	0.11	0.01	0.01	0.00	0.00	39.59	0.00	0.00	39.74
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.01	0.12	0.01	0.01	0.00	0.00	43.29	0.00	0.00	43.45

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Vehicle/Day		Default Values Miles Traveled/Vehicle/Day		Calculated Daily VMT	
<b>User Input</b>											
Grubbing/Land Clearing - Exhaust	1			40.00		40.00				40.00	
Grading/Excavation - Exhaust	2			40.00		40.00				80.00	
Drainage/Utilities/Subgrade										0.00	
Paving										0.00	
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58	
Grading/Excavation (grams/mile)	0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58	
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Paving (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.01	0.03	0.12	0.01	0.00	0.00	135.97	0.00	0.00	137.35	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.00	0.00	1.21	
Pounds per day - Grading/Excavation	0.01	0.07	0.23	0.02	0.01	0.00	271.95	0.00	0.01	274.71	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	3.59	0.00	0.00	3.63	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	4.79	0.00	0.00	4.83	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust		User Override of Max Acreage Disturbed/Day		Default Maximum Acreage/Day		PM10 pounds/day		PM10 tons/per period		PM2.5 pounds/day		PM2.5 tons/per period	
Fugitive Dust - Grubbing/Land Clearing						50.00		0.44		10.40		0.09	
Fugitive Dust - Grading/Excavation						50.00		0.66		10.40		0.14	
Fugitive Dust - Drainage/Utilities/Subgrade						0.00		0.00		0.00		0.00	



Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default											Equipment Tier
Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2.00			Model Default Tier	Cranes	0.86	4.49	9.33	0.39	0.36	0.01	1,366.81	0.44	0.01	1,381.54
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2.00			Model Default Tier	Excavators	0.49	8.40	3.99	0.20	0.18	0.01	1,289.83	0.42	0.01	1,303.73
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Signal Boards	0.07	0.38	0.45	0.02	0.02	0.00	61.64	0.01	0.00	61.96
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Sweepers/Scrubbers	0.23	2.40	2.13	0.14	0.13	0.00	307.72	0.10	0.00	311.03
2.00			Model Default Tier	Tractors/Loaders/Backhoes	0.38	5.64	3.88	0.19	0.18	0.01	761.71	0.25	0.01	769.91
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Grubbing/Land Clearing		pounds per day	2.03	21.30	19.79	0.93	0.86	0.04	3,787.72	1.21	0.03	3,828.18	
	Grubbing/Land Clearing		tons per phase	0.02	0.19	0.17	0.01	0.01	0.00	33.33	0.01	0.00	33.69	

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of Default Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
	0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	4.00			Model Default Tier	Bore/Drill Rigs	1.00	9.47	9.51	0.31	0.28	0.04	4,266.36	1.38	0.04	
	0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	4.00			Model Default Tier	Cranes	1.72	8.97	18.66	0.78	0.72	0.03	2,733.62	0.88	0.02	
	0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	10.00			Model Default Tier	Excavators	2.43	42.01	19.97	0.98	0.90	0.07	6,449.15	2.09	0.06	
	0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1.00			Model Default Tier	Generator Sets	0.38	4.59	3.39	0.16	0.16	0.01	778.79	0.03	0.01	
	4.00			Model Default Tier	Graders	2.47	21.83	22.45	1.24	1.14	0.03	3,027.36	0.98	0.03	
	0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	16.00			Model Default Tier	Other Material Handling Equipment	5.11	74.71	41.68	2.26	2.08	0.12	11,126.92	3.60	0.10	
	0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	6.00			Model Default Tier	Rollers	1.17	14.07	12.23	0.67	0.62	0.02	1,929.63	0.62	0.02	
	10.00			Model Default Tier	Rough Terrain Forklifts	1.32	28.59	17.49	0.56	0.52	0.04	4,172.55	1.35	0.04	
	10.00			Model Default Tier	Rubber Tired Dozers	10.04	82.89	99.13	4.53	4.17	0.11	10,781.87	3.49	0.10	
	0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	6.00			Model Default Tier	Signal Boards	0.43	2.26	2.70	0.10	0.10	0.01	369.85	0.04	0.00	
	0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1.00			Model Default Tier	Sweepers/Scrubbers	0.23	2.40	2.13	0.14	0.13	0.00	307.72	0.10	0.00	
	6.00			Model Default Tier	Tractors/Loaders/Backhoes	1.15	16.91	11.64	0.57	0.53	0.02	2,285.14	0.74	0.02	
	0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>	If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Grading/Excavation		pounds per day	27.45	308.70	260.98	12.30	11.34	0.50	48,228.98	15.30	0.43	48,740.49	
		Grading/Excavation		tons per phase	0.36	4.07	3.44	0.16	0.15	0.01	636.62	0.20	0.01	643.37	

Default		Mitigation Option												
Drainage/Utilities/Subgrade	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>				<i>If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab</i>										
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Drainage/Utilities/Sub-Grade		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
	0.00			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in "Non-default Off-road Equipment" tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>0.38</b>	<b>4.26</b>	<b>3.62</b>	<b>0.17</b>	<b>0.16</b>	<b>0.01</b>	<b>669.95</b>	<b>0.21</b>	<b>0.01</b>	<b>677.06</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	10.00	8
Air Compressors		78	10.00	8
Bore/Drill Rigs		206	10.00	8
Cement and Mortar Mixers		9	10.00	8
Concrete/Industrial Saws		81	10.00	8
Cranes		226	10.00	8
Crawler Tractors		208	10.00	8
Crushing/Proc. Equipment		85	10.00	8
Excavators		163	10.00	8
Forklifts		89	10.00	8
Generator Sets		84	10.00	8
Graders		175	10.00	8
Off-Highway Tractors		123	10.00	8
Off-Highway Trucks		400	10.00	8
Other Construction Equipment		172	10.00	8
Other General Industrial Equipment		88	10.00	8
Other Material Handling Equipment		167	10.00	8
Pavers		126	10.00	8
Paving Equipment		131	10.00	8
Plate Compactors		8	10.00	8
Pressure Washers		13	10.00	8
Pumps		84	10.00	8
Rollers		81	10.00	8
Rough Terrain Forklifts		100	10.00	8
Rubber Tired Dozers		255	10.00	8
Rubber Tired Loaders		200	10.00	8
Scrapers		362	10.00	8
Signal Boards		6	10.00	8
Skid Steer Loaders		65	10.00	8
Surfacing Equipment		254	10.00	8
Sweepers/Scrubbers		64	10.00	8
Tractors/Loaders/Backhoes		98	10.00	8
Trenchers		81	10.00	8
Welders		46	10.00	8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 4: 2023 Vegetation and Cutoff Wall														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.11	22.52	20.09	51.00	1.00	50.00	11.29	0.89	10.40	0.05	4,432.00	1.22	0.05	4,476.32
Grading/Excavation	28.76	321.77	278.45	64.02	14.02	50.00	22.42	12.02	10.40	0.72	70,873.11	15.40	1.13	71,595.56
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	28.76	321.77	278.45	64.02	14.02	50.00	22.42	12.02	10.40	0.72	70,873.11	15.40	1.13	71,595.56
Total (tons/construction project)	0.40	4.45	3.85	1.29	0.19	1.10	0.40	0.17	0.23	0.01	974.53	0.21	0.02	984.45

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 2  
 Total Project Area (acres) -> 19  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	9	0	26	0	560	40
Grading/Excavation	2,072	0	5,699	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 4: 2023 Vegetation and Cutoff Wall														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.20	0.18	0.45	0.01	0.44	0.10	0.01	0.09	0.00	39.00	0.01	0.00	35.74
Grading/Excavation	0.38	4.25	3.68	0.85	0.19	0.66	0.30	0.16	0.14	0.01	935.53	0.20	0.01	857.35
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.38	4.25	3.68	0.85	0.19	0.66	0.30	0.16	0.14	0.01	935.53	0.20	0.01	857.35
Total (tons/construction project)	0.40	4.45	3.85	1.29	0.19	1.10	0.40	0.17	0.23	0.01	974.53	0.21	0.02	893.09

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 4: 2023 Vegetation and Cutoff Wall														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.11	22.52	20.07	51.00	1.00	50.00	11.29	0.89	10.40	0.05	4,431.74	1.22	0.05	4,475.99
Grading/Excavation	28.75	321.75	277.06	64.01	14.01	50.00	22.41	12.01	10.40	0.72	70,850.57	15.39	1.11	71,566.64
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	28.75	321.75	277.06	64.01	14.01	50.00	22.41	12.01	10.40	0.72	70,850.57	15.39	1.11	71,566.64
Total (tons/construction project)	0.40	4.45	3.83	1.29	0.19	1.10	0.40	0.17	0.23	0.01	974.23	0.21	0.02	984.07

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 2  
 Total Project Area (acres) -> 19  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	9	0	26	0	560	40
Grading/Excavation	2,072	0	5,699	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 4: 2023 Vegetation and Cutoff Wall														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.02	0.20	0.18	0.45	0.01	0.44	0.10	0.01	0.09	0.00	39.00	0.01	0.00	35.73
Grading/Excavation	0.38	4.25	3.66	0.84	0.18	0.66	0.30	0.16	0.14	0.01	935.23	0.20	0.01	857.01
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.38	4.25	3.66	0.84	0.18	0.66	0.30	0.16	0.14	0.01	935.23	0.20	0.01	857.01
Total (tons/construction project)	0.40	4.45	3.83	1.29	0.19	1.10	0.40	0.17	0.23	0.01	974.23	0.21	0.02	984.07

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Sac River S/S Contract 4: 2023 Vegetation and Cutoff Wall														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.31	27.81	5.19	50.23	0.23	50.00	10.57	0.17	10.40	0.05	4,431.74	1.22	0.05	4,475.99
Grading/Excavation	16.58	341.14	51.69	53.42	3.42	50.00	12.65	2.25	10.40	0.72	70,850.57	15.39	1.11	71,566.64
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	16.58	341.14	51.69	53.42	3.42	50.00	12.65	2.25	10.40	0.72	70,850.57	15.39	1.11	71,566.64
Total (tons/construction project)	0.23	4.75	0.73	1.15	0.05	1.10	0.26	0.03	0.23	0.01	974.23	0.21	0.02	984.07

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 2  
 Total Project Area (acres) -> 19  
 Maximum Area Disturbed/Day (acres) -> 5  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	9	0	26	0	560	40
Grading/Excavation	2,072	0	5,699	0	4,000	80
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, .25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Sac River S/S Contract 4: 2023 Vegetation and Cutoff Wall														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.24	0.05	0.44	0.00	0.44	0.09	0.00	0.09	0.00	39.00	0.01	0.00	35.73
Grading/Excavation	0.22	4.50	0.68	0.71	0.05	0.66	0.17	0.03	0.14	0.01	935.23	0.20	0.01	857.01
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.22	4.50	0.68	0.71	0.05	0.66	0.17	0.03	0.14	0.01	935.23	0.20	0.01	857.01
Total (tons/construction project)	0.23	4.75	0.73	1.15	0.05	1.10	0.26	0.03	0.23	0.01	974.23	0.21	0.02	892.74

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, .25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.



*Mitigation Sites*


**Road Construction Emissions Model**
**Version 8.1.0**

**Data Entry Worksheet**

Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project type. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new proje

**Input Type**

Project Name	Mitigation	
Construction Start Year	2023	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construct
Project Construction Time	6.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 <small>(for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)</small>	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	0.47	miles
Total Project Area	50.00	acres
Maximum Area Disturbed/Day	50.00	acres
Water Trucks Used?	1	1. Yes 2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (yd <sup>3</sup> ) (assume 20 if unknown)	Import Volume (yd/day)	Export Volume (yd/day)
Soil	Grubbing/Land Clearing	15.00	0.00	6.00
	Grading/Excavator	15.00	0.00	91.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavator			
	Drainage/Utilities/Sub-Grade			
	Paving			

**Mitigation Options**

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Stand:

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selecte

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	m		m	
	User Override of Construction Months	Calculated Months	User Override of Phase Starting Date	Default Phase Starting Date
Grubbing/Land Clearing	0.60	0.60	4/15/2023	1/1/2023
Grading/Excavation	5.40	2.70	5/4/2023	1/20/2023
Drainage/Utilities/Sub-Grade	0.00	1.80	Program	7/4/2023
Paving	0.00	0.90	Program	7/4/2023
<b>Totals (Months)</b>		<b>6</b>		

Note: You have entered a non-default starting date. Please provide starting date for all phases, or default values for other phases will be used.

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emission:		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip - Grubbing/Land Clearing		20.00			1	20.00					
Miles/round trip - Grading/Excavation		20.00			7	140.00					
Miles/round trip - Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip - Paving					0	0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Drainage/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Hauling Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.02	0.06	0.00	0.00	0.00	67.99	0.00	0.00	68.68
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.45
Pounds per day - Grading/Excavation		0.02	0.11	0.40	0.03	0.01	0.00	475.90	0.00	0.02	480.74
Tons per const. Period - Grading/Excavation		0.00	0.01	0.02	0.00	0.00	0.00	28.27	0.00	0.00	28.56
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</b>		<b>0.00</b>	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>28.72</b>	<b>0.00</b>	<b>0.00</b>	<b>29.01</b>

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emission:		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip - Grubbing/Land Clearing					0	0.00					
Miles/round trip - Grading/Excavation					0	0.00					
Miles/round trip - Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip - Paving					0	0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Drainage/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total tons per construction project</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>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Note: Worker commute default values can be overridden in cells D113 through D11

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values		Calculated Daily Trips		Calculated Daily VMT			
User Input		Default Values		Calculated Daily Trips		Calculated Daily VMT					
Miles/one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearin	40			80		1,600.00					
No. of employees: Grading/Excavatio	75			150		3,000.00					
No. of employees: Drainage/Utilities/Sub-Grad				0		0.00					
No. of employees: Paving				0		0.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.02	0.85	0.08	0.05	0.02	0.00	336.27	0.01	0.00	337.46
Grading/Excavation (grams/mile)		0.02	0.85	0.08	0.05	0.02	0.00	336.27	0.01	0.00	337.46
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grubbing/Land Clearing (grams/trip)	0.81	1.86	0.14	0.00	0.00	0.00	0.00	77.20	0.01	0.01	79.12
Grading/Excavation (grams/trip)	0.81	1.86	0.14	0.00	0.00	0.00	0.00	77.20	0.01	0.01	79.12
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.20	3.34	0.32	0.16	0.07	0.01	1,199.79	0.02	0.01	1,204.29	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.02	0.00	0.00	0.00	0.00	7.92	0.00	0.00	7.95	
Pounds per day - Grading/Excavatio	0.37	6.26	0.59	0.31	0.13	0.02	2,249.60	0.04	0.02	2,258.05	
Tons per const. Period - Grading/Excavatio	0.02	0.37	0.04	0.02	0.01	0.00	133.63	0.00	0.00	134.13	
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Total tons per construction projec	0.02	0.39	0.04	0.02	0.01	0.00	141.55	0.00	0.00	142.08	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Vehicle/Day		Default Values Miles Traveled/Vehicle/Day		Calculated Daily VMT	
User Input		Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Vehicle/Day		Default Values Miles Traveled/Vehicle/Day		Calculated Daily VMT	
Grubbing/Land Clearing - Exhaust	1					40.00				40.00	
Grading/Excavation - Exhaust	1					40.00				40.00	
Drainage/Utilities/Subgrade										0.00	
Paving										0.00	
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Grading/Excavation (grams/mile)		0.06	0.37	1.31	0.10	0.04	0.01	1,541.90	0.00	0.05	1,557.58
Draining/Utilities/Sub-Grade (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/mile)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing	0.01	0.03	0.12	0.01	0.00	0.00	0.00	135.97	0.00	0.00	137.35
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.00	0.00	0.91
Pounds per day - Grading/Excavatio	0.01	0.03	0.12	0.01	0.00	0.00	0.00	135.97	0.00	0.00	137.35
Tons per const. Period - Grading/Excavatio	0.00	0.00	0.01	0.00	0.00	0.00	0.00	8.08	0.00	0.00	8.16
Pounds per day - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grad	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction projec	0.00	0.00	0.01	0.00	0.00	0.00	0.00	8.97	0.00	0.00	9.07

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust		User Override of Maximum Acreage Disturbed/Day		Default Maximum Acreage/Day		PM10 pounds/day		PM10 tons/period		PM2.5 pounds/day		PM2.5 tons/period	
Fugitive Dust - Grubbing/Land Clearing						500.00		3.30		104.00		0.69	
Fugitive Dust - Grading/Excavatio						500.00		29.70		104.00		6.16	
Fugitive Dust - Drainage/Utilities/Subgrad						0.00		0.00		0.00		0.00	

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is select

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default											
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tie	Excavators	0.58	10.08	4.79	0.23	0.22	0.02	1,547.80	0.50	0.01	1,564.48
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tie	Sweepers/Scrubbers	0.18	1.92	1.71	0.11	0.10	0.00	246.18	0.08	0.00	248.83
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing			pounds per day	0.77	12.00	6.50	0.34	0.32	0.02	1,793.97	0.58	0.02	1,813.31
	Grubbing/Land Clearing			tons per phase	0.01	0.08	0.04	0.00	0.00	0.00	11.84	0.00	0.00	11.97

Grading/Excavator	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier											
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2.00			Model Default Tie	Excavators	0.39	6.72	3.20	0.16	0.14	0.01	1,031.86	0.33	0.01	1,042.99	
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tie	Generator Sets	0.31	3.67	2.72	0.13	0.13	0.01	623.04	0.03	0.00	625.12	
1.00			Model Default Tie	Graders	0.49	4.37	4.49	0.25	0.23	0.01	605.47	0.20	0.01	611.98	
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2.00			Model Default Tie	Other Construction Equipmen	0.70	8.01	6.88	0.36	0.33	0.01	1,196.52	0.39	0.01	1,209.45	
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tie	Rubber Tired Dozers	0.80	6.63	7.93	0.36	0.33	0.01	862.55	0.28	0.01	871.82	
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tie	Sweepers/Scrubbers	0.18	1.92	1.71	0.11	0.10	0.00	246.18	0.08	0.00	248.83	
2.00			Model Default Tie	Tractors/Loaders/Backhoes	0.31	4.51	3.10	0.15	0.14	0.01	609.37	0.20	0.01	615.93	
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Number of Vehicles					pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00	Equipment Tier				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00	Type				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00	N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00	N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00	N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00	N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00	N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00	N/A				0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grading/Excavator					pounds per day	3.18	35.82	30.02	1.51	1.40	0.05	5,174.99	1.50	0.05	5,226.10
Grading/Excavator					tons per phase	0.19	2.13	1.78	0.09	0.08	0.00	307.39	0.09	0.00	310.43



Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default	Equipment Tier										
	Override of Default Number of Vehicles	Program-estimate		Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			Model Default Tie	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Construction Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other General Industrial Equipmen	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Other Material Handling Equipmer	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			Model Default Tie	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' t</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			pounds per day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving			tons per phase	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Emissions all Phases (tons per construction period) =</b>					<b>0.19</b>	<b>2.21</b>	<b>1.83</b>	<b>0.09</b>	<b>0.09</b>	<b>0.00</b>	<b>319.23</b>	<b>0.09</b>	<b>0.00</b>	<b>322.40</b>



Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F4

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Mitigation														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.97	15.39	6.99	500.52	0.52	500.00	104.39	0.39	104.00	0.03	3,197.72	0.60	0.04	3,223.64
Grading/Excavation	3.57	42.22	31.13	501.86	1.86	500.00	105.55	1.55	104.00	0.08	8,036.48	1.55	0.09	8,102.25
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	3.57	42.22	31.13	501.86	1.86	500.00	105.55	1.55	104.00	0.08	8,036.48	1.55	0.09	8,102.25
Total (tons/construction project)	0.22	2.61	1.90	33.11	0.11	33.00	6.96	0.09	6.86	0.01	498.47	0.10	0.01	502.55

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 6  
 Total Project Area (acres) -> 50  
 Maximum Area Disturbed/Day (acres) -> 50  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	6	0	20	0	1,600	40
Grading/Excavation	91	0	140	0	3,000	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> Mitigation														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.05	3.30	0.00	3.30	0.69	0.00	0.69	0.00	21.10	0.00	0.00	19.30
Grading/Excavation	0.21	2.51	1.85	29.81	0.11	29.70	6.27	0.09	6.18	0.00	477.37	0.09	0.01	436.61
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.21	2.51	1.85	29.81	0.11	29.70	6.27	0.09	6.18	0.00	477.37	0.09	0.01	436.61
Total (tons/construction project)	0.22	2.61	1.90	33.11	0.11	33.00	6.96	0.09	6.86	0.01	498.47	0.10	0.01	455.91

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Mitigation														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.97	15.39	6.97	500.52	0.52	500.00	104.39	0.39	104.00	0.03	3,197.49	0.60	0.04	3,223.34
Grading/Excavation	3.57	42.22	31.08	501.86	1.86	500.00	105.55	1.55	104.00	0.08	8,035.77	1.55	0.09	8,101.35
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	3.57	42.22	31.08	501.86	1.86	500.00	105.55	1.55	104.00	0.08	8,035.77	1.55	0.09	8,101.35
Total (tons/construction project)	0.22	2.61	1.89	33.11	0.11	33.00	6.96	0.09	6.86	0.01	498.43	0.10	0.01	502.49

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 6  
 Total Project Area (acres) -> 50  
 Maximum Area Disturbed/Day (acres) -> 50  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	6	0	20	0	1,600	40
Grading/Excavation	91	0	140	0	3,000	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> Mitigation														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.10	0.05	3.30	0.00	3.30	0.69	0.00	0.69	0.00	21.10	0.00	0.00	19.30
Grading/Excavation	0.21	2.51	1.85	29.81	0.11	29.70	6.27	0.09	6.18	0.00	477.32	0.09	0.01	436.56
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.21	2.51	1.85	29.81	0.11	29.70	6.27	0.09	6.18	0.00	477.32	0.09	0.01	436.56
Total (tons/construction project)	0.22	2.61	1.89	33.11	0.11	33.00	6.96	0.09	6.86	0.01	498.43	0.10	0.01	455.86

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

**Road Construction Emissions Model, Version 8.1.0**

Daily Emission Estimates for -> Mitigation														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.79	17.43	3.18	500.24	0.24	500.00	104.13	0.13	104.00	0.03	3,197.49	0.60	0.04	3,223.34
Grading/Excavation	2.02	42.59	5.85	500.51	0.51	500.00	104.30	0.30	104.00	0.08	8,035.77	1.55	0.09	8,101.35
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	2.02	42.59	5.85	500.51	0.51	500.00	104.30	0.30	104.00	0.08	8,035.77	1.55	0.09	8,101.35
Total (tons/construction project)	0.13	2.65	0.37	33.03	0.03	33.00	6.88	0.02	6.86	0.01	498.43	0.10	0.01	502.49

Notes:  
 Project Start Year -> 2023  
 Project Length (months) -> 6  
 Total Project Area (acres) -> 50  
 Maximum Area Disturbed/Day (acres) -> 50  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	6	0	20	0	1,600	40
Grading/Excavation	91	0	140	0	3,000	40
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates byphase for -> Mitigation														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.12	0.02	3.30	0.00	3.30	0.69	0.00	0.69	0.00	21.10	0.00	0.00	19.30
Grading/Excavation	0.12	2.53	0.35	29.73	0.03	29.70	6.20	0.02	6.18	0.00	477.32	0.09	0.01	436.56
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.12	2.53	0.35	29.73	0.03	29.70	6.20	0.02	6.18	0.00	477.32	0.09	0.01	436.56
Total (tons/construction project)	0.13	2.65	0.37	33.03	0.03	33.00	6.88	0.02	6.86	0.01	498.43	0.10	0.01	455.86

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.