

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> Hartley Street Pedestrian Improvement Project													Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
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)	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	1.49	11.43	21.19	3.30	0.80	2.50	1.17	0.65	0.52	0.04	4,478.38	0.60	0.10	4,522.89									
Grading/Excavation	7.30	56.54	83.58	6.44	3.94	2.50	4.02	3.50	0.52	0.12	12,091.14	2.86	0.17	12,213.11									
Drainage/Utilities/Sub-Grade	4.39	35.13	47.51	4.90	2.40	2.68	2.68	2.16	0.52	0.08	7,960.64	1.22	0.13	8,029.53									
Paving	2.04	18.91	24.77	1.29	1.29	0.00	1.09	1.09	0.00	0.05	5,140.80	0.76	0.11	5,191.35									
Maximum (pounds/day)	7.30	56.54	83.58	6.44	3.94	2.50	4.02	3.50	0.52	0.12	12,091.14	2.86	0.17	12,213.11									
Total (tons/construction project)	0.16	1.28	1.84	0.16	0.09	0.07	0.09	0.08	0.01	0.00	291.77	0.06	0.00	294.58									

Notes:  
 Project Start Year -> 2019  
 Project Length (months) -> 3  
 Total Project Area (acres) -> 3  
 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	200	200	300	300	280	40
Grading/Excavation	200	200	300	300	880	40
Drainage/Utilities/Sub-Grade	200	200	300	300	600	40
Paving	200	200	300	300	480	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.

Total Emission Estimates by Phase for -> Hartley Street Pedestrian Improvement Project													Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
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)	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	0.00	0.04	0.07	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.78	0.00	0.00	13.54						
Grading/Excavation	0.10	0.75	1.10	0.08	0.05	0.03	0.05	0.05	0.01	0.00	159.60	0.04	0.00	146.25									
Drainage/Utilities/Sub-Grade	0.05	0.41	0.55	0.06	0.03	0.03	0.03	0.02	0.01	0.00	91.95	0.01	0.00	84.13									
Paving	0.01	0.09	0.12	0.01	0.01	0.00	0.01	0.01	0.00	0.00	25.45	0.00	0.00	23.31									
Maximum (tons/phase)	0.10	0.75	1.10	0.08	0.05	0.03	0.05	0.05	0.01	0.00	159.60	0.04	0.00	146.25									
Total (tons/construction project)	0.16	1.28	1.84	0.16	0.09	0.07	0.09	0.08	0.01	0.00	291.77	0.06	0.00	294.58									

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: Hartley Street Pedestrian Improvement Project

Construction Start Year: 2019  
Enter a Year between 2014 and 2025 (inclusive)

Project Type: 2  
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 Working Days per Month: 3.00 months, 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: 0.57 miles

Total Project Area: 3.00 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	20.00	100.00	100.00
	Grading/Excavation	20.00	100.00	100.00
	Drainage/Utilities/Sub-Grade	20.00	100.00	100.00
	Paving	20.00	100.00	100.00
Asphalt	Grubbing/Land Clearing	20.00	100.00	100.00
	Grading/Excavation	20.00	100.00	100.00
	Drainage/Utilities/Sub-Grade	20.00	100.00	100.00
	Paving	20.00	100.00	100.00

**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 can be modified by the user, although those modifications are optional.

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		0.30		1/1/2019
Grading/Excavation		1.20		1/11/2019
Drainage/Utilities/Sub-Grade		1.05		2/17/2019
Paving		0.45		3/21/2019
<b>Totals (Months)</b>		3		

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		30.00		10	300.00					
Miles/round trip: Grading/Excavation		30.00		10	300.00					
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		10	300.00					
Miles/round trip: Paving		30.00		10	300.00					
<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)	0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
Grading/Excavation (grams/mile)	0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
Drainage/Utilities/Sub-Grade (grams/mile)	0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
Paving (grams/mile)	0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
<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	0.09	0.35	3.29	0.09	0.04	0.01	1,089.50	0.00	0.04	1,100.57
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	3.60	0.00	0.00	3.63
Pounds per day - Grading/Excavation	0.09	0.35	3.29	0.09	0.04	0.01	1,089.50	0.00	0.04	1,100.57
Tons per const. Period - Grading/Excavation	0.00	0.00	0.04	0.00	0.00	0.00	14.38	0.00	0.00	14.53
Pounds per day - Drainage/Utilities/Sub-Grade	0.09	0.35	3.29	0.09	0.04	0.01	1,089.50	0.00	0.04	1,100.57
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.04	0.00	0.00	0.00	12.58	0.00	0.00	12.71
Pounds per day - Paving	0.09	0.35	3.29	0.09	0.04	0.01	1,089.50	0.00	0.04	1,100.57
Tons per const. Period - Paving	0.00	0.00	0.02	0.00	0.00	0.00	5.39	0.00	0.00	5.45
Total tons per construction project	0.00	0.01	0.11	0.00	0.00	0.00	35.95	0.00	0.00	36.32

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		30.00		10	300.00					
Miles/round trip: Grading/Excavation		30.00		10	300.00					
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		10	300.00					
Miles/round trip: Paving		30.00		10	300.00					
<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)	0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
Grading/Excavation (grams/mile)	0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
Drainage/Utilities/Sub-Grade (grams/mile)	0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
Paving (grams/mile)	0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
<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	0.35	3.29	0.09	0.04	0.01	1,089.50	0.00	0.04	1,100.57
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	3.60	0.00	0.00	3.63
Pounds per day - Grading/Excavation	0.09	0.35	3.29	0.09	0.04	0.01	1,089.50	0.00	0.04	1,100.57
Tons per const. Period - Grading/Excavation	0.00	0.00	0.04	0.00	0.00	0.00	14.38	0.00	0.00	14.53
Pounds per day - Drainage/Utilities/Sub-Grade	0.09	0.35	3.29	0.09	0.04	0.01	1,089.50	0.00	0.04	1,100.57
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.04	0.00	0.00	0.00	12.58	0.00	0.00	12.71
Pounds per day - Paving	0.09	0.35	3.29	0.09	0.04	0.01	1,089.50	0.00	0.04	1,100.57
Tons per const. Period - Paving	0.00	0.00	0.02	0.00	0.00	0.00	5.39	0.00	0.00	5.45
Total tons per construction project	0.00	0.01	0.11	0.00	0.00	0.00	35.95	0.00	0.00	36.32

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			7		14		280.00				
No. of employees: Grading/Excavation			22		44		880.00				
No. of employees: Drainage/Utilities/Sub-Grade			15		30		600.00				
No. of employees: Paving			12		24		480.00				
<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	1.19	0.13	0.05	0.02	0.00	381.71	0.01	0.01	383.53
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)		0.02	1.19	0.13	0.05	0.02	0.00	381.71	0.01	0.01	383.53
Paving (grams/mile)		0.02	1.19	0.13	0.05	0.02	0.00	381.71	0.01	0.01	383.53
Grubbing/Land Clearing (grams/trip)		1.08	2.86	0.23	0.00	0.00	0.00	85.97	0.01	0.01	89.17
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)		1.08	2.86	0.23	0.00	0.00	0.00	85.97	0.01	0.01	89.17
Paving (grams/trip)		1.08	2.86	0.23	0.00	0.00	0.00	85.97	0.01	0.01	89.17
<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		0.05	0.82	0.09	0.03	0.01	0.00	238.28	0.01	0.00	239.50
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.79
Pounds per day - Grading/Excavation		0.15	2.59	0.27	0.09	0.04	0.01	748.88	0.02	0.01	752.72
Tons per const. Period - Grading/Excavation		0.00	0.03	0.00	0.00	0.00	0.00	9.89	0.00	0.00	9.94
Pounds per day - Drainage/Utilities/Sub-Grade		0.10	1.76	0.18	0.06	0.03	0.01	510.60	0.01	0.01	513.22
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.02	0.00	0.00	0.00	0.00	5.90	0.00	0.00	5.69
Pounds per day - Paving		0.08	1.41	0.15	0.05	0.02	0.00	408.48	0.01	0.01	410.58
Tons per const. Period - Paving		0.00	0.01	0.00	0.00	0.00	0.00	2.02	0.00	0.00	2.03
Total tons per construction project		0.00	0.06	0.01	0.00	0.00	0.00	18.59	0.00	0.00	18.69

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			
<b>User Input</b>		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			1			40.00	40.00				
Drainage/Utilities/Subgrade			1			40.00	40.00				
Paving			1			40.00	40.00				
<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)		0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
Grading/Excavation (grams/mile)		0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
Draining/Utilities/Sub-Grade (grams/mile)		0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
Paving (grams/mile)		0.13	0.52	4.97	0.13	0.07	0.02	1,647.29	0.01	0.06	1,664.03
<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	0.05	0.44	0.01	0.01	0.00	145.27	0.00	0.00	146.74
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.48
Pounds per day - Grading/Excavation		0.01	0.05	0.44	0.01	0.01	0.00	145.27	0.00	0.00	146.74
Tons per const. Period - Grading/Excavation		0.00	0.00	0.01	0.00	0.00	0.00	1.92	0.00	0.00	1.94
Pounds per day - Drainage/Utilities/Sub-Grade		0.01	0.05	0.44	0.01	0.01	0.00	145.27	0.00	0.00	146.74
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.01	0.00	0.00	0.00	1.68	0.00	0.00	1.69
Pounds per day - Paving		0.01	0.05	0.44	0.01	0.01	0.00	145.27	0.00	0.00	146.74
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.00	0.00	0.73
Total tons per construction project		0.00	0.00	0.01	0.00	0.00	0.00	4.79	0.00	0.00	4.84

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				0.25	2.50	0.01	0.52	0.00
Fugitive Dust - Grading/Excavation				0.25	2.50	0.03	0.52	0.01
Fugitive Dust - Drainage/Utilities/Subgrade				0.25	2.50	0.03	0.52	0.01



Grading/Excavation	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)												Equipment Tier
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	
	0			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1			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	
	3			Model Default Tier	Excavators	0.81	10.10	8.30	0.40	0.37	0.02	1,581.90	0.50	0.01	1,598.59
				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	
	2			Model Default Tier	Graders	1.54	9.25	15.22	0.85	0.78	0.01	1,237.72	0.39	0.01	1,250.73
				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	
	2			Model Default Tier	Rollers	0.46	3.86	4.54	0.30	0.27	0.01	525.86	0.17	0.00	531.40
				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	
	1			Model Default Tier	Rubber Tired Loaders	0.39	1.65	4.76	0.16	0.15	0.01	609.66	0.19	0.01	616.10
	2			Model Default Tier	Scrapers	2.10	15.90	25.48	1.00	0.92	0.03	2,958.76	0.94	0.03	2,989.97
	2			Model Default Tier	Signal Boards	0.11	0.60	0.72	0.03	0.03	0.00	98.63	0.01	0.00	99.13
				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	
	4			Model Default Tier	Tractors/Loaders/Backhoes	0.94	9.31	9.45	0.63	0.58	0.01	1,242.85	0.39	0.01	1,255.94
				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>					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	6.96	53.21	76.30	3.66	3.37	0.09	9,018.00	2.83	0.08	9,112.52
	Grading/Excavation				tons per phase	0.09	0.70	1.01	0.05	0.04	0.00	119.04	0.04	0.00	120.29

Drainage/Utilities/Subgrade	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)												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	
	1		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	0.36	2.46	2.45	0.17	0.17	0.00	375.26	0.03	0.00	376.90
			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	
	1		Model Default Tier	Generator Sets	0.44	3.72	3.78	0.23	0.23	0.01	623.04	0.04	0.00	625.42
	1		Model Default Tier	Graders	0.77	4.63	7.61	0.43	0.39	0.01	618.86	0.20	0.01	625.37
			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	
	1		Model Default Tier	Plate Compactors	0.04	0.21	0.25	0.01	0.01	0.00	34.48	0.00	0.00	34.65
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1		Model Default Tier	Pumps	0.47	3.78	3.83	0.24	0.24	0.01	623.04	0.04	0.00	625.47
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1		Model Default Tier	Rough Terrain Forklifts	0.14	2.30	1.85	0.08	0.08	0.00	340.97	0.11	0.00	344.56
			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	
	1		Model Default Tier	Scrapers	1.05	7.95	12.74	0.50	0.46	0.02	1,479.38	0.47	0.01	1,494.98
			Model Default Tier	Signal Boards	0.11	0.60	0.72	0.03	0.03	0.00	98.63	0.01	0.00	99.13
	2		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	
	3		Model Default Tier	Tractors/Loaders/Backhoes	0.71	6.98	7.08	0.47	0.44	0.01	932.14	0.29	0.01	941.95
			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>				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	4.09	32.63	40.31	2.15	2.03	0.05	5,125.79	1.19	0.04	5,168.44
	Drainage/Utilities/Sub-Grade			tons per phase	0.05	0.38	0.47	0.02	0.02	0.00	59.20	0.01	0.00	59.70

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										
			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
	1		Model Default Tier	Pavers	0.28	2.81	3.03	0.15	0.14	0.00	451.18	0.14	0.00	455.93
	1		Model Default Tier	Paving Equipment	0.21	2.50	2.24	0.11	0.10	0.00	400.26	0.13	0.00	404.49
			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
	2		Model Default Tier	Rollers	0.46	3.86	4.54	0.30	0.27	0.01	525.86	0.17	0.00	531.40
			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
	2		Model Default Tier	Signal Boards	0.11	0.60	0.72	0.03	0.03	0.00	98.63	0.01	0.00	99.13
			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
	3		Model Default Tier	Tractors/Loaders/Backhoes	0.71	6.98	7.08	0.47	0.44	0.01	932.14	0.29	0.01	941.95
			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>														
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
	Paving			pounds per day	1.77	16.76	17.61	1.06	0.98	0.02	2,408.06	0.74	0.02	2,432.91
	Paving			tons per phase	0.01	0.08	0.09	0.01	0.00	0.00	11.92	0.00	0.00	12.04
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					0.15	1.19	1.61	0.08	0.07	0.00	196.48	0.06	0.00	198.41



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		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