

Road Construction Emissions Model

Version 9.0.0

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: Long Valley Rd/Hidden Hills

Construction Start Year: 2020

Project Type: 2

Project Construction Time: 6.00 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): 1

Project Length: 0.20 miles

Total Project Area: 1.00 acre

Maximum Area Disturbed/Day: 0.25 acres

Water Trucks Used?: 1

Enter a Year between 2014 and 2040 (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

months

days (assume 22 if unknown)

- 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)

miles

acre

acres

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

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd ³) (assume 20 if unknown)	Import Volume (yd ³ /day)	Export Volume (yd ³ /day)
Soil	Grubbing/Land Clearing	8.00	0.00	160.00
	Grading/Excavation	8.00	24.00	36.00
	Drainage/Utilities/Sub-Grade	8.00	0.00	0.00
	Paving	8.00	40.00	0.00
Asphalt	Grubbing/Land Clearing	8.00	0.00	0.00
	Grading/Excavation	8.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	8.00	0.00	0.00
	Paving	8.00	36.00	40.00

Mitigation Options

On-road Fleet Emissions Mitigation: 2010 and Newer On-road Vehicles Fleet

Off-road Equipment Emissions Mitigation: Tier 4 Equipment

Will all off-road equipment be tier 4?: Tier 4 equipment for limited equipment types

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/Businesses/CEQA-Land-Use-Planning/Mitigation>).

Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

If "Tier 4 equipment for limited equipment types" is selected, please provide tier information for each equipment type in cells from E183 to E379 below.

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		0.60	5/4/2020
Grading/Excavation		2.40	5/23/2020	1/20/2020
Drainage/Utilities/Sub-Grade		2.10	8/4/2020	4/2/2020
Paving		0.90	10/7/2020	6/5/2020
Totals (Months)		6		

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					
User Input											
Miles/round trip: Grubbing/Land Clearing		30.00			20	600.00					
Miles/round trip: Grading/Excavation		30.00			8	240.00					
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00			0	0.00					
Miles/round trip: Paving		30.00			5	150.00					
2010+ Model Year Mitigation Option Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Grading/Excavation (grams/mile)		0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Draining/Utilities/Sub-Grade (grams/mile)		0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Paving (grams/mile)		0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Grubbing/Land Clearing (grams/trip)		0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)		0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Pounds per day - Grubbing/Land Clearing		0.06	0.56	4.15	0.15	0.06	0.02	2,383.32	0.00	0.57	2,495.02
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.03	0.00	0.00	0.00	15.73	0.00	0.00	16.47
Pounds per day - Grading/Excavation		0.02	0.22	1.66	0.06	0.03	0.01	953.33	0.00	0.15	998.01
Tons per const. Period - Grading/Excavation		0.00	0.01	0.04	0.00	0.00	0.00	25.17	0.00	0.00	26.35
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		0.01	0.14	1.04	0.04	0.02	0.01	595.83	0.00	0.09	623.75
Tons per const. Period - Paving		0.00	0.00	0.01	0.00	0.00	0.00	5.90	0.00	0.00	6.18
Total tons per construction project		0.00	0.01	0.08	0.00	0.00	0.00	46.80	0.00	0.01	48.99

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

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					
User Input											
Miles/round trip: Grubbing/Land Clearing		30.00			0	0.00					
Miles/round trip: Grading/Excavation		30.00			0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00			0	0.00					
Miles/round trip: Paving		30.00			10	300.00					
2010+ Model Year Mitigation Option Emission Rates		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)		0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Grading/Excavation (grams/mile)		0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Draining/Utilities/Sub-Grade (grams/mile)		0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Paving (grams/mile)		0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20
Grubbing/Land Clearing (grams/trip)		0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)		0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)		0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)		0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
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		0.03	0.28	2.08	0.07	0.03	0.01	1,191.66	0.00	0.19	1,247.51
Tons per const. Period - Paving		0.00	0.00	0.02	0.00	0.00	0.00	11.80	0.00	0.00	12.35
Total tons per construction project		0.00	0.00	0.02	0.00	0.00	0.00	11.80	0.00	0.00	12.35

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values		Calculated					
User Input				Daily Trips	Daily VMT						
Miles/one-way trip		20									
One-way trips/day		2		10	200.00						
No. of employees: Grubbing/Land Clearing		5									
No. of employees: Grading/Excavation		20		40	800.00						
No. of employees: Drainage/Utilities/Sub-Grade		14		28	560.00						
No. of employees: Paving		10		20	400.00						
Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Grubbing/Land Clearing (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67	
Grading/Excavation (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67	
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67	
Paving (grams/mile)	0.02	1.22	0.11	0.05	0.02	0.00	350.90	0.01	0.01	353.67	
Grubbing/Land Clearing (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34	
Grading/Excavation (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34	
Draining/Utilities/Sub-Grade (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34	
Paving (grams/trip)	1.25	3.05	0.37	0.00	0.00	0.00	75.08	0.09	0.04	88.34	
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Pounds per day - Grubbing/Land Clearing	0.04	0.61	0.06	0.02	0.01	0.00	156.38	0.00	0.00	157.89	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.00	0.00	1.04	
Pounds per day - Grading/Excavation	0.15	2.42	0.23	0.08	0.03	0.01	625.51	0.02	0.02	631.56	
Tons per const. Period - Grading/Excavation	0.00	0.06	0.01	0.00	0.00	0.00	16.51	0.00	0.00	16.67	
Pounds per day - Drainage/Utilities/Sub-Grade	0.11	1.70	0.16	0.06	0.02	0.00	437.85	0.01	0.01	442.09	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.04	0.00	0.00	0.00	0.00	10.11	0.00	0.00	10.21	
Pounds per day - Paving	0.08	1.21	0.12	0.04	0.02	0.00	312.75	0.01	0.01	315.78	
Tons per const. Period - Paving	0.00	0.01	0.00	0.00	0.00	0.00	3.10	0.00	0.00	3.13	
Total tons per construction project	0.01	0.12	0.01	0.00	0.00	0.00	30.76	0.00	0.00	31.05	

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions		User Override of Program Estimate of		User Override of Truck		Default Values		Calculated		User Override of		Default Values		Calculated	
User Input		Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT	Miles/Round Trip	Miles/Round Trip	Daily VMT			
Grubbing/Land Clearing - Exhaust		1			5	5		8.00	40.00						
Grading/Excavation - Exhaust		1			5	5		8.00	40.00						
Drainage/Utilities/Subgrade		1			5	5		8.00	40.00						
Paving		1			5	5		8.00	40.00						
2010+ Model Year Mitigation Option Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e					
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20					
Grading/Excavation (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20					
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20					
Paving (grams/mile)	0.04	0.42	3.03	0.11	0.05	0.02	1,801.75	0.00	0.28	1,886.20					
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Grading/Excavation (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Paving (grams/trip)	0.00	0.00	3.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00					
Emissions	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e					
Pounds per day - Grubbing/Land Clearing	0.00	0.04	0.30	0.01	0.00	0.00	158.89	0.00	0.02	166.33					
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.00	0.00	1.10					
Pounds per day - Grading/Excavation	0.00	0.04	0.30	0.01	0.00	0.00	158.89	0.00	0.02	166.33					
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	4.19	0.00	0.00	4.39					
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.04	0.30	0.01	0.00	0.00	158.89	0.00	0.02	166.33					
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	3.67	0.00	0.00	3.84					
Pounds per day - Paving	0.00	0.04	0.30	0.01	0.00	0.00	158.89	0.00	0.02	166.33					
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	1.57	0.00	0.00	1.65					
Total tons per construction project	0.00	0.00	0.02	0.00	0.00	0.00	10.49	0.00	0.00	10.98					

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust		User Override of Max		Default		PM10		PM2.5	
		Acres/Disturbed/Day	Maximum Acres/Day	pounds/day	tons/period	pounds/day	tons/period		
Fugitive Dust - Grubbing/Land Clearing			0.25	2.50	0.02	0.52	0.00		
Fugitive Dust - Grading/Excavation			0.25	2.50	0.07	0.52	0.01		
Fugitive Dust - Drainage/Utilities/Subgrade			0.25	2.50	0.06	0.52	0.01		

Values in cells E232 through E236, E283 through E287, E334 through E338, and E385 through E389 are required when non-default Equipment are used and they are not all Tier 4

Off-Road Equipment Emissions													
Grubbing/Land Clearing	Default		Mitigation Option		Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
	Number of Vehicles	Override of Default Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Current Equipment Tier									
			Model Default Tier	Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Tier 4	Crawler Tractors	0.24	4.18	0.48	0.02	0.02	0.01	760.39	0.25
			Model Default Tier	Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Tier 4	Tier 4	Excavators	0.32	7.84	0.64	0.03	0.03	0.01	1,000.24	0.32
			Model Default Tier	Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Tier 4	Tier 4	Signal Boards	0.03	0.52	0.46	0.03	0.02	0.00	49.31	0.01
			Model Default Tier	Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Welders	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												
	Number of Vehicles		Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Grubbing/Land Clearing			pounds per day	0.58	12.54	1.58	0.08	0.08	0.02	1,809.94	0.57	
	Grubbing/Land Clearing			tons per phase	0.00	0.08	0.01	0.00	0.00	0.00	11.95	0.00	

Grading/Excavation	Default		Mitigation Option		Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Current Equipment Tier	Current Equipment Tier									
Override of Default Number of Vehicles	Program-estimate												
		Model Default Tier	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	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	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	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	Model Default Tier	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	Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1	Tier 4	Tier 4	Crawler Tractors	0.24	4.18	0.48	0.02	0.02	0.01	760.39	0.25	0.00
		Model Default Tier	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	Tier 4	Tier 4	Excavators	0.48	11.75	0.95	0.05	0.04	0.02	1,500.36	0.49	0.00
		Model Default Tier	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	Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tier 4	Tier 4	Graders	0.41	7.03	0.81	0.04	0.04	0.01	1,285.44	0.42	0.00
		Model Default Tier	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	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	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	Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Model Default Tier	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	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	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	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	Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tier 4	Tier 4	Rollers	0.16	3.97	0.32	0.02	0.01	0.01	508.13	0.16	0.00
		Model Default Tier	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	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	Tier 4	Tier 4	Rubber Tired Loaders	0.19	3.35	0.39	0.02	0.02	0.01	605.16	0.20	0.00
		Tier 4	Tier 4	Scrapers	0.93	16.16	1.86	0.09	0.09	0.03	2,934.03	0.95	0.00
	1	Tier 4	Tier 4	Signal Boards	0.03	0.52	0.46	0.03	0.02	0.00	49.31	0.01	0.00
		Model Default Tier	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	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	Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4	Tier 4	Tier 4	Tractors/Loaders/Backhoes	0.38	9.37	0.76	0.04	0.03	0.01	1,203.08	0.39	0.00
		Model Default Tier	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	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
Number of Vehicles		Equipment Tier		Type	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		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Grading/Excavation			pounds per day	2.81	56.33	6.04	0.30	0.28	0.09	8,845.90	2.85	
	Grading/Excavation			tons per phase	0.07	1.49	0.16	0.01	0.01	0.00	233.53	0.08	

Drainage/Utilities/Subgrade	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	
	Number of Vehicles	Override of Default Number of Vehicles	Default Equipment Tier	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)									Current Equipment Tier
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1		Tier 4	Tier 4	0.10	2.44	0.20	0.01	0.01	0.00	375.26	0.03	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1		Tier 4	Tier 4	0.16	4.06	0.33	0.02	0.02	0.01	623.04	0.04	
	1		Tier 4	Tier 4	0.20	3.52	0.41	0.02	0.02	0.01	642.72	0.21	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1		Tier 4	Tier 4	0.02	0.36	0.32	0.02	0.02	0.00	34.48	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1		Tier 4	Tier 4	0.16	4.06	0.33	0.02	0.02	0.01	623.04	0.04	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1		Tier 4	Tier 4	0.11	2.61	0.21	0.01	0.01	0.00	333.68	0.11	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1		Tier 4	Tier 4	0.47	8.08	0.93	0.05	0.04	0.02	1,467.02	0.47	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	1		Tier 4	Tier 4	0.03	0.52	0.46	0.03	0.02	0.00	49.31	0.01	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	3		Tier 4	Tier 4	0.28	7.03	0.57	0.03	0.03	0.01	902.31	0.29	
			Model Default Tier	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Model Default Tier	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													
Number of Vehicles		Equipment Tier		Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	
0.00		N/A			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0.00		N/A			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Drainage/Utilities/Sub-Grade					pounds per day	1.53	32.67	3.76	0.19	0.18	0.05	5,050.85	1.19
Drainage/Utilities/Sub-Grade					tons per phase	0.04	0.75	0.09	0.00	0.00	0.00	116.67	0.03

Paving	Default		Mitigation Option		Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day
	Number of Vehicles	Override of Default Number of Vehicles	Default Equipment Tier	Override of Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)									
			Model Default Tier	Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		1	Tier 4	Tier 4	Pavers	0.14	3.56	0.29	0.01	0.01	0.00	455.27	0.15
		1	Tier 4	Tier 4	Paving Equipment	0.13	3.10	0.25	0.01	0.01	0.00	394.53	0.13
			Model Default Tier	Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2	Tier 4	Tier 4	Rollers	0.16	3.97	0.32	0.02	0.01	0.01	508.13	0.16
			Model Default Tier	Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		1	Tier 4	Tier 4	Signal Boards	0.03	0.52	0.46	0.03	0.02	0.00	49.31	0.01
			Model Default Tier	Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		3	Tier 4	Tier 4	Tractors/Loaders/Backhoes	0.28	7.03	0.57	0.03	0.03	0.01	902.31	0.29
			Model Default Tier	Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Model Default Tier	Welders	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
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
0.00		Equipment Tier	Type		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A			0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Paving		pounds per day			0.74	18.18	1.89	0.10	0.09	0.02	2,309.55	0.74
	Paving		tons per phase			0.01	0.18	0.02	0.00	0.00	0.00	22.86	0.01
Total Emissions all Phases (tons per construction period) =>						0.12	2.50	0.28	0.01	0.01	0.00	385.02	0.11

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.01	768.59
0.00	0.00
0.01	1,516.53
0.00	0.00
0.00	0.00
0.01	1,299.27
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	513.61
0.00	0.00
0.00	0.00
0.01	611.69
0.03	2,965.67
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	1,216.03
0.00	0.00
0.00	0.00
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N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.08	8,940.96
0.00	236.04

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	376.83
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	625.31
0.01	649.64
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	34.65
0.00	0.00
0.00	625.36
0.00	0.00
0.00	337.28
0.00	0.00
0.00	0.00
0.01	1,482.83
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	912.02
0.00	0.00
0.00	0.00
<hr/>	
N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.04	5,093.49
0.00	117.66

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	460.18
0.00	398.78
0.00	0.00
0.00	0.00
0.00	0.00
0.00	513.61
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	49.56
0.00	0.00
0.00	0.00
0.00	0.00
0.01	912.02
0.00	0.00
0.00	0.00
<hr/>	
N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.02	2,334.16
0.00	23.11
<hr/>	
0.00	368.88

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

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		221		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		231		8
Crawler Tractors		212		8
Crushing/Proc. Equipment		85		8
Excavators		158		8
Forklifts		89		8
Generator Sets		84		8
Graders		187		8
Off-Highway Tractors		124		8
Off-Highway Trucks		402		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		168		8
Pavers		130		8
Paving Equipment		132		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		80		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		247		8
Rubber Tired Loaders		203		8
Scrapers		367		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		263		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		97		8
Trenchers		78		8
Welders		46		8

END OF DATA ENTRY SHEET