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August 31, 2021 03243.00001.01

Ross Duenas, Project Manager
CR Associates
3900 5th Avenue, Suite 310
San Diego, CA 92103

Subject: Air Quality and Greenhouse Gas Emissions Technical Analysis for the Murrieta Creek Multi-Use Trail Project

Dear Mr. Duenas:

This letter summarizes the air quality and greenhouse gas (GHG) emissions analysis for the proposed Murrieta Creek Multi-Use Trail Project (project). The City of Lake Elsinore (City) is proposing to design and develop the proposed Murrieta Creek Multi-Use Trail within the City. The trail is envisioned as a non-motorized, regional multi-use trail along the San Jacinto River, linking the cities of Temecula, Murrieta, Wildomar, and Lake Elsinore. The portion of the trail that is located in the City of Lake Elsinore lies within the East Lake District and extends from the City's southern boundary with the City of Wildomar at Corydon Road to the Lake Levee Trail. The project would extend from the Levee Trail on the southwest, continue southeast and northeast to Stoneman Street, and then southwest and southeast to Skylark Drive; refer to Figure 1, *Regional Location*, and Figure 2, *Project Location*.

The proposed multi-use trail would be an 8- to 12-foot-wide paved trail and would include safety features such as safety fences, retaining walls, pedestrian lights, and removable bollards at entry points. The project also includes the construction of a bridge located across the drainage area near the terminus of Ontario Way. The proposed trail would extend approximately 1.25 mile in length and would include a project area of approximately 3 acres.

Construction of the project is estimated to begin in 2022 and take approximately 10 months to complete. Project construction would require a total of approximately 3,144 cubic yards of cut and equal amounts of fill to be distributed throughout the project limits. Additionally, approximately 240 cubic yards of hot mix asphalt, 480 cubic yards of class II aggregate base, and 280 cubic yards of decomposed granite would be imported to the site.

METHODOLOGY AND ASSUMPTIONS

Criteria air pollutant and GHG emissions resulting from construction of the proposed project were quantified using the Roadway Construction Emissions Model (Roadway Model) Version, 9.0.0, developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD). The Roadway Model contains OFFROAD2011 emission factors and EMFAC2017 emission factors from the California Air Resources Board's (CARB's) models for off-road equipment and on-road vehicles (SMAQMD 2018). Because the proposed project is a non-motorized trail that would support walking and biking, it would not increase long-term air pollutant or GHG emissions in the project area, and therefore operational emissions were not modeled. By supporting walking and biking, the proposed project would contribute to lower air pollutant and GHG emissions by decreasing passenger vehicle use and vehicle miles traveled.

The analysis assumes that total construction duration would be approximately 10 months, and would require a total of approximately 1,000 cubic yards of asphalt (consisting of 240 cubic yards of hot mix asphalt, 480 cubic yards of class II aggregate base, and 280 cubic yards of decomposed granite) imported to the site. For purposes of calculating air and GHG emissions during construction of the proposed project, construction is divided into the following types of construction activities: grubbing/land clearing, grading/excavation, drainage/utilities/sub-grade/retaining wall, and paving. Sources of construction air pollutant and GHG emissions include: off-road diesel equipment exhaust, construction worker commuting and soil hauling vehicle exhaust, re-entrained paved road dust, and fugitive dust from land clearing.

Table 1, *Construction Equipment Assumptions by Phase*, presents the type and amount of construction equipment and vehicles that would be used during each type of construction activity for project construction. A complete listing of the assumptions used in the analysis and the model outputs are provided in Attachment A.

Table 1
CONSTRUCTION EQUIPMENT ASSUMPTIONS BY PHASE

Construction Activity and Equipment/Vehicle Type	Number of Pieces[1]	Horsepower[2]
Grubbing/Land Clearing		
Crane	1	231
Crawler Tractors	1	212
Excavators	2	158
Signal Boards	5	6
Grading/Excavation		
Crawler Tractors	1	212
Excavators	3	158
Graders	2	187
Rollers	2	80
Rubber Tired Loaders	1	203
Scrapers	2	367
Signal Boards	5	6
Tractors/Loaders/Backhoes	4	97

Construction Activity and Equipment/Vehicle Type	Number of Pieces[1]	Horsepower[2]
Drainage/Utilities/Sub-grade/Retaining Wall		
Air Compressors	1	78
Generator Sets	1	84
Grader	1	187
Plate Compactors	1	8
Pumps	1	84
Rough Terrain Forklifts	1	100
Scraper	1	367
Signal Boards	5	6
Tractors/Loaders/Backhoes	3	97
Paving		
Pavers	1	130
Paving Equipment	1	132
Rollers	2	80
Signal Boards	5	6
Tractors/Loaders/Backhoes	3	97

Notes:
[1] Amount of equipment was received from CR Associates (pers. comm. 2021).
[2] Equipment horsepower contained in Roadway Model.

CRITERIA AIR POLLUTANT EMISSIONS

The project is located within the South Coast Air Basin (SCAB), and for air quality regulation and permitting, the site is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The SCAQMD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary. It is directly responsible for reducing emissions from stationary (area and point), mobile, and indirect sources and has prepared an Air Quality Management Plans (AQMP) that establishes a program of rules and regulations directed at attaining the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS).

The main purpose of an AQMP is to bring an area into compliance with the requirements of federal and State air quality standards. For a project to be consistent with the AQMP, the pollutants emitted from the project should not (1) exceed the SCAQMD CEQA air quality significance thresholds or (2) conflict with or exceed the assumptions in the AQMP. The SCAQMD has adopted significance thresholds, referred to as mass emissions thresholds, to assess the regional impact of air pollutant emissions in the SCAB. The SCAQMD significance thresholds adopted to assess the regional impact of air pollutant emissions are provided in Table 2, *SCAQMD Regional Pollutant Significance Thresholds*. The SCAQMD's mass emissions thresholds are presented for both short-term construction and long-term operational emissions. A project with emissions rates below these thresholds is considered to have a less than significant effect on air quality.

Table 2
SCAQMD REGIONAL POLLUTANT SIGNIFICANCE THRESHOLDS
(LBS/DAY)

Criteria Pollutant	Construction	Operation
VOC	75	55
NO_X	100	55
CO	550	550
SO_X	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55

SCAQMD: South Coast Air Quality Management District; lbs./day: pounds per day; VOC: volatile organic compounds; NO_X: oxides of nitrogen; CO: carbon monoxide; SO_X: oxides of sulfur; PM_{10}: respirable particulate matter with a diameter of 10 microns or less; $PM_{2.5}$: fine particulate matter with a diameter of 2.5 microns or less.
Source: SCAQMD 2019.

Construction of the proposed project would generate short-term criteria air pollutant emissions. An estimate of the maximum daily emissions of each criteria air pollutant during each proposed project construction phase is presented in Table 3, *Estimated Maximum Daily Regional Construction Emissions.* As shown therein, criteria pollutant emissions associated with project construction would be below SCAQMD thresholds for all pollutants.

Table 3
ESTIMATED MAXIMUM DAILY REGIONAL CONSTRUCTION EMISSIONS

Construction Activity	Pollutant Emissions (pounds per day)					
	ROG	NOx	CO	SO_X	PM_{10}	$PM_{2.5}$
Grubbing/Land Clearing	1.6	16.0	13.1	<0.1	8.2	2.2
Grading/Excavation	5.3	55.3	47.0	0.1	9.9	3.7
Drainage/Utilities/Sub-Grade/Retaining Wall	3.3	31.0	30.7	<0.1	8.9	2.9
Paving	1.6	15.0	18.5	<0.1	0.8	0.7
Maximum Daily Emissions	**5.3**	**55.3**	**47.0**	**0.1**	**9.9**	**3.7**
SCAQMD Regional Thresholds	*75*	*100*	*550*	*150*	*150*	*55*

Source: Roadway Model emissions modeling completed by HELIX in 2021 (output data is provided in Attachment A).

SCAQMD has also developed a localized significance threshold (LST) methodology and mass rate look-up tables by source receptor area (SRA) that can be used by public agencies to determine whether a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard; they are developed based on the ambient concentrations of that pollutant for each SRA (SCAQMD 2009). The LST methodology translates the concentration standards into emissions thresholds that are a function of project site area, source to receptor distance (specifically, within 25, 50, 100, 200, or 500 meters), and the location within the SCAB. The LST methodology is recommended to be limited to projects of 5 acres or less and to avoid the need for complex dispersion modeling. If a project exceeds the LST look up values, then the SCAQMD recommends that project-specific localized air quality modeling be performed.

The project is within SRA 25, Lake Elsinore. The closest sensitive receptors are the single-family residences located adjacent to the southernmost trail alignments. Using the LST methodology, the project would have a maximum disturbance footprint of 3.5 acres per day. Therefore, the LSTs in the SRA 25 for receptors located within 82 feet (25 meters) are used for project sites 5 acres or less.

Localized emissions associated with construction of the proposed project were compared to SCAQMD's mass emissions thresholds and SCAQMD LSTs at 82 feet (25 meters). As shown in Table 4, *Estimated Maximum Daily Localized Construction Emissions*, on-site criteria pollutant emissions associated with project construction would be below these levels.

Table 4
ESTIMATED MAXIMUM DAILY LOCALIZED CONSTRUCTION EMISSIONS

Construction Activity	Pollutant Emissions (pounds per day)					
	ROG	NOx	CO	SO_X	PM_{10}	$PM_{2.5}$
Grubbing/Land Clearing	1.6	15.5	12.2	<0.1	8.1	2.2
Grading/Excavation	5.1	54.7	44.0	<0.1	9.8	3.6
Drainage/Utilities/Sub-Grade/Retaining Wall	3.1	30.5	28.6	<0.1	8.8	2.8
Paving	1.5	14.1	17.4	<0.1	0.7	0.7
Maximum Daily Emissions	**5.1**	**54.7**	**44.0**	**<0.1**	**9.8**	**3.6**
SCAQMD LST Thresholds (25 meters)	--	*371*	*1,965*	--	*13*	*8*

Source: Roadway Model emissions modeling completed by HELIX in 2021 (output data is provided in Attachment A).

As shown in Tables 3 and 4, construction period emissions would not exceed SCAQMD thresholds for regional or localized emissions. As discussed previously, because the proposed project is a non-motorized trail that would support walking and biking, it would not increase long-term air pollutant emissions in the project area, and therefore operational emissions were not modeled.

Greenhouse Gas Emissions

In addition to criteria air pollutants, proposed project construction also would generate GHG emissions associated with off-road diesel equipment exhaust, and from worker and truck trips to and from the project site. The primary emissions would be carbon dioxide (CO_2) from gasoline and diesel combustion, with more limited vehicle tailpipe emissions of nitrous oxide (N_2O) and methane (CH_4). Emissions of GHG are presented in carbon dioxide equivalents (CO_2e), which is a metric used to compare the emissions from various GHGs based on their global warming potential. The CO_2e of a gas is determined by multiplying the tons of that gas by its global warming potential.

The City of Lake Elsinore has prepared and adopted a Climate Action Plan (CAP; City 2011). The CAP is the City's long-range plan to reduce local GHG emissions in accordance with State law. The CAP is intended to be a reference document, and its implementation mitigates the City's GHG emissions resulting from new development and redevelopment. It is accepted as unlikely that any individual development project such as the size and character of the proposed project would have GHG emissions of a magnitude to directly impact global climate change; therefore, any impact would be considered on a cumulative basis. The analysis of the project's impacts is based on consistency with applicable GHG reduction plans, regulations, and programs.

GHG emissions generated from construction activities are finite and occur for a relatively short-term period. Unlike the numerous opportunities available to reduce a project's long-term GHG emissions through design features, operational restrictions, use of green-building materials, or other methods, GHG-reduction measures for construction equipment are relatively limited. Therefore, SCAQMD staff recommends that construction emissions be amortized over a 30-year project lifetime so that GHG-reduction measures will address construction GHG emissions as part of the operational GHG-reduction strategies. Therefore, total GHG emissions during project construction and the 30-year amortized construction emissions are presented in Table 5, *Construction GHG Emissions*.

Table 5
CONSTRUCTION GHG EMISSIONS (MT/yr)

Construction Activity	CO_2e
Grubbing/Land Clearing	29.8
Grading/Excavation	457.7
Drainage/Utilities/Sub-Grade/Retaining Wall	181.0
Paving	48.4
TOTAL	**716.9**
Amortized Emissions[1]	*23.9*

MT/yr: metric tons per year; CO_2e: carbon dioxide equivalent.
[1] Combined total amortized over 30 years.
Source: Roadway Model emissions modeling completed by HELIX in 2021 (output data is provided in Attachment A).

The project involves the construction of a non-motorized trail; therefore, operational GHG emissions would be negligible. As such, operational emissions were not modeled, and are assumed to largely consist of the 30-year amortized construction emissions of 23.9 MT CO_2e per year.

The SCAQMD established a working group to develop an interim significance threshold for GHG emissions under CEQA. The SCAQMD's recommended interim GHG significance threshold proposal uses a tiered approach to determining significance (SCAQMD 2008). At their September 28, 2010, meeting, the Working Group suggested a Tier 3 threshold of 3,000 MT CO_2e per year for all land use types. It is noted that the use of the Tier 3 threshold is selected for the proposed project because it is located in the SCAB and these thresholds are based on the best available information and data at the time of preparation of this document. As discussed above, operational emissions for the project are anticipated to be 23.9 MT CO_2e per year, which is well below the SCAQMD threshold of 3,000 MT CO_2e. Additionally, the project involves the construction of a non-motorized trail, which supports the measures within the City's CAP related to pedestrian and bicycle pathways. The project would result in less than significant impacts related to GHG emissions.

Sincerely,

Victor Ortiz
Senior Air Quality Specialist
HELIX Environmental Planning, Inc.

Attachments

Figure 1: Regional Location
Figure 2: Project Location
Attachment A: Roadway Model Emissions

REFERENCES

City of Lake Elsinore (City). 2011. City of Lake Elsinore Climate Action Plan. December 13.

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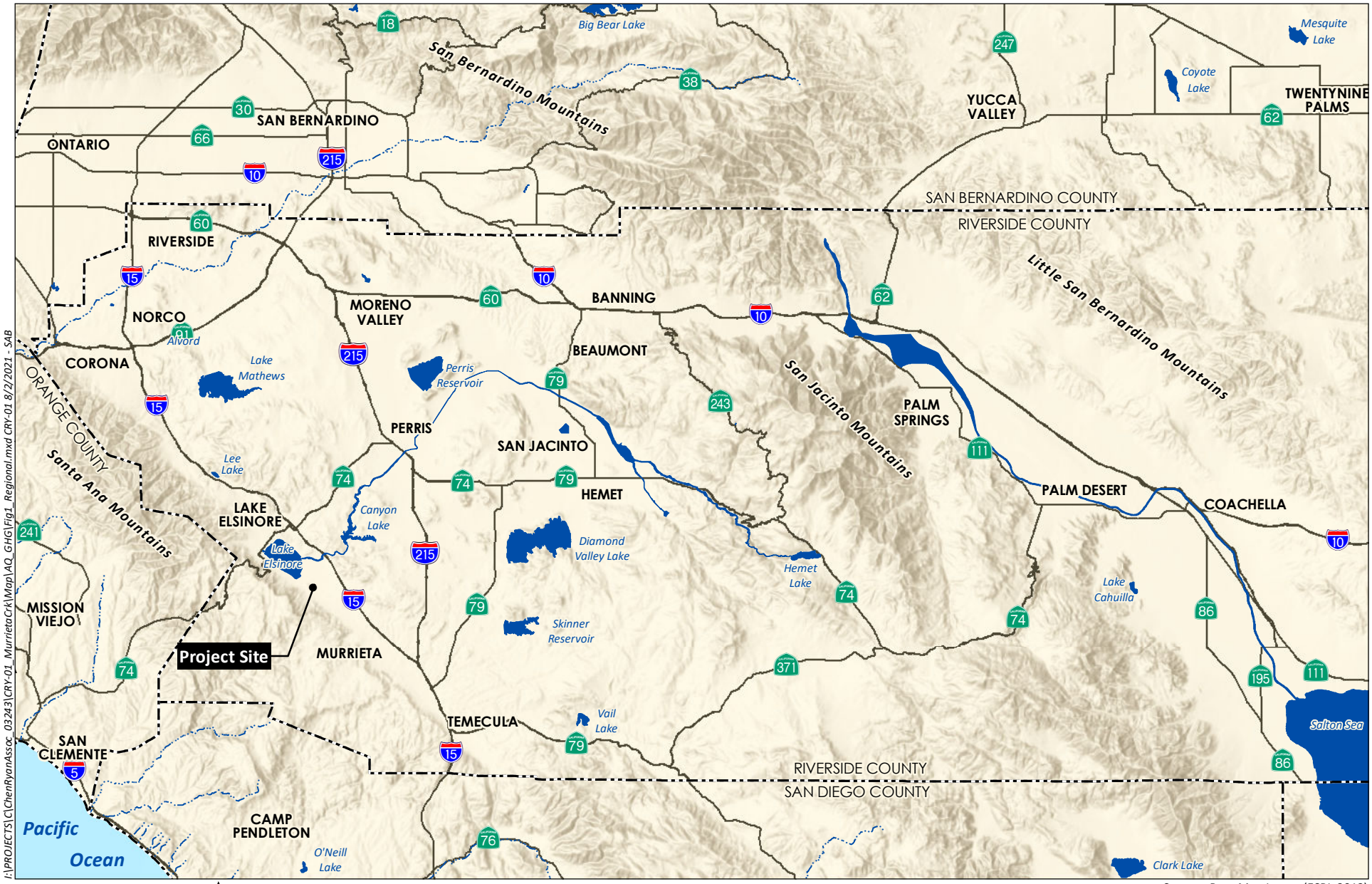
Sacramento Metropolitan Air Quality Management District (SMAQMD). 2018. Road Construction Emissions Model, Version 9.0.0. Available at: http://www.airquality.org/Residents/CEQA-Land-Use-Planning/CEQA-Guidance-Tools. May.

South Coast Air Quality Management District (SCAQMD). 2009. Mass Rate Localized Significance Thresholds Look-up Tables. October. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2.

2008. Greenhouse Gas (GHG) CEQA Significance Thresholds. December 5, 2008.



Source: Base Map Layers (ESRI, 2013)

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Regional Location

Figure 1

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0 2,000 Feet

Source: Aerial (Riverside County 2019)

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Project Location

Figure 2

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Murrieta Creek Multi-Use Trail

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	1.61	13.07	15.93	8.18	0.68	7.50	2.17	0.61	1.56	0.03	2,953.06	0.78	0.05	2,988.53
Grading/Excavation	5.33	47.04	55.30	9.88	2.38	7.50	3.69	2.13	1.56	0.10	10,080.80	2.89	0.13	10,191.63
Drainage/Utilities/Sub-Grade	3.25	30.69	31.02	8.92	1.42	7.50	2.86	1.30	1.56	0.06	5,991.61	1.21	0.08	6,047.12
Paving	1.57	18.47	14.94	0.79	0.79	0.00	0.70	0.70	0.00	0.03	3,186.71	0.76	0.09	3,232.89
Maximum (pounds/day)	5.33	47.04	55.30	9.88	2.38	7.50	3.69	2.13	1.56	0.10	10,080.80	2.89	0.13	10,191.63
Total (tons/construction project)	0.42	3.79	4.18	0.89	0.19	0.70	0.31	0.17	0.15	0.01	781.79	0.20	0.01	790.26

Notes:

Project Start Year ->	2022
Project Length (months) ->	10
Total Project Area (acres) ->	3
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	320	40
Grading/Excavation	0	0	0	0	1,200	40
Drainage/Utilities/Sub-Grade	0	0	0	0	800	40
Paving	0	30	0	60	400	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 -> Murrieta Creek Multi-Use Trail

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	0.02	0.14	0.18	0.09	0.01	0.08	0.02	0.01	0.02	0.00	32.48	0.01	0.00	29.82
Grading/Excavation	0.26	2.33	2.74	0.49	0.12	0.37	0.18	0.11	0.08	0.01	499.00	0.14	0.01	457.67
Drainage/Utilities/Sub-Grade	0.11	1.01	1.02	0.29	0.05	0.25	0.09	0.04	0.05	0.00	197.72	0.04	0.00	181.04
Paving	0.03	0.30	0.25	0.01	0.01	0.00	0.01	0.01	0.00	0.00	52.58	0.01	0.00	48.39
Maximum (tons/phase)	0.26	2.33	2.74	0.49	0.12	0.37	0.18	0.11	0.08	0.01	499.00	0.14	0.01	457.67
Total (tons/construction project)	0.42	3.79	4.18	0.89	0.19	0.70	0.31	0.17	0.15	0.01	781.79	0.20	0.01	716.92

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 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.

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.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Murrieta Creek Multi-Use Trail	
Construction Start Year	2022	Enter a Year between 2014 and 2040 (inclusive)
Project Type For 4: Other Linear Project Type, please provide project specific off-road equipment population and vehicle trip data	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 Ione 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	1.25	miles
Total Project Area	3.00	acres
Maximum Area Disturbed/Day	0.75	acres
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

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	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	0.00	0.00
Asphalt	Grubbing/Land Clearing	20.00	0.00	0.00
	Grading/Excavation	20.00	0.00	0.00
	Drainage/Utilities/Sub-Grade	20.00	0.00	0.00
	Paving	20.00	30.30	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/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

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		1.00	1/1/2022	1/1/2022
Grading/Excavation	4.50	4.00	2/1/2022	2/1/2022
Drainage/Utilities/Sub-Grade	3.00	3.50	6/18/2022	6/18/2022
Paving		1.50	9/18/2022	9/18/2022
Totals (Months)	10			

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

Soil Hauling Emissions User Input	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
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			0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grading/Excavation (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Paving (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	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	0.00	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 D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	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
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			2	60.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grading/Excavation (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Paving (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	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	0.01	0.06	0.42	0.01	0.01	0.00	231.30	0.00	0.04	242.14
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	3.82	0.00	0.00	4.00
Total tons per construction project	0.00	0.00	0.01	0.00	0.00	0.00	3.82	0.00	0.00	4.00

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

Worker Commute Emissions User Input	User Override of Worker 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	8		16	320.00
No. of employees: Grading/Excavation	30		60	1,200.00
No. of employees: Drainage/Utilities/Sub-Grade	20		40	800.00
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	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grading/Excavation (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Draining/Utilities/Sub-Grade (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Paving (grams/mile)	0.02	1.00	0.08	0.05	0.02	0.00	328.72	0.00	0.01	330.96
Grubbing/Land Clearing (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Grading/Excavation (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Draining/Utilities/Sub-Grade (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Paving (grams/trip)	1.11	2.85	0.32	0.00	0.00	0.00	70.54	0.08	0.03	82.43
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.05	0.81	0.07	0.03	0.01	0.00	234.39	0.01	0.01	236.39
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	2.58	0.00	0.00	2.60
Pounds per day - Grading/Excavation	0.19	3.02	0.26	0.12	0.05	0.01	878.98	0.02	0.02	886.47
Tons per const. Period - Grading/Excavation	0.01	0.15	0.01	0.01	0.00	0.00	43.51	0.00	0.00	43.88
Pounds per day - Drainage/Utilities/Sub-Grade	0.13	2.02	0.18	0.08	0.03	0.01	585.99	0.01	0.02	590.98
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.07	0.01	0.00	0.00	0.00	19.34	0.00	0.00	19.50
Pounds per day - Paving	0.06	1.01	0.09	0.04	0.02	0.00	292.99	0.01	0.01	295.49
Tons per const. Period - Paving	0.00	0.02	0.00	0.00	0.00	0.00	4.83	0.00	0.00	4.88
Total tons per construction project	0.02	0.24	0.02	0.01	0.00	0.00	70.26	0.00	0.00	70.86

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

Water Truck Emissions User Input	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
Grubbing/Land Clearing - Exhaust	1		5.00			8.00		40.00
Grading/Excavation - Exhaust	1		5.00			8.00		40.00
Drainage/Utilities/Subgrade	1		5.00			8.00		40.00
Paving	1		5.00			8.00		40.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grading/Excavation (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Paving (grams/mile)	0.04	0.42	3.08	0.11	0.05	0.02	1,748.57	0.00	0.27	1,830.52
Grubbing/Land Clearing (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	3.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	3.99	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	0.32	0.01	0.00	0.00	154.20	0.00	0.02	161.42
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.70	0.00	0.00	1.78
Pounds per day - Grading/Excavation	0.00	0.04	0.32	0.01	0.00	0.00	154.20	0.00	0.02	161.42
Tons per const. Period - Grading/Excavation	0.00	0.00	0.02	0.00	0.00	0.00	7.63	0.00	0.00	7.99
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.04	0.32	0.01	0.00	0.00	154.20	0.00	0.02	161.42
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	5.09	0.00	0.00	5.33
Pounds per day - Paving	0.00	0.04	0.32	0.01	0.00	0.00	154.20	0.00	0.02	161.42
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	2.54	0.00	0.00	2.66
Total tons per construction project	0.00	0.00	0.03	0.00	0.00	0.00	16.96	0.00	0.00	17.76

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

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	0.75		7.50	0.08	1.56	0.02
Fugitive Dust - Grading/Excavation	0.75		7.50	0.37	1.56	0.08
Fugitive Dust - Drainage/Utilities/Subgrade	0.75		7.50	0.25	1.56	0.05

Values in cells D195 through D228, D246 through D279, D297 through D330, and D348 through D381 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions

Grubbing/Land Clearing Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default 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	N2O pounds/day	CO2e 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	0.00	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
1.00			Model Default Tier	Cranes	0.37	1.89	4.18	0.17	0.16	0.01	558.83	0.18	0.01	564.85
1.00			Model Default Tier	Crawler Tractors	0.49	2.31	6.01	0.23	0.21	0.01	759.03	0.25	0.01	767.22
			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	0.40	6.51	3.55	0.17	0.16	0.01	1,000.03	0.32	0.01	1,010.81
			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 Equipm	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 Equipm	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
5.00			Model Default Tier	Signal Boards	0.29	1.51	1.80	0.07	0.07	0.00	246.57	0.03	0.00	247.82
			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

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	N2O pounds/day	CO2e 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

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing	pounds per day	1.56	12.22	15.54	0.64	0.60	0.03	2,564.46	0.78	0.02	2,590.71
Grubbing/Land Clearing	tons per phase	0.02	0.13	0.17	0.01	0.01	0.00	28.21	0.01	0.00	28.50

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	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	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
1.00			Model Default Tier	Crawler Tractors	0.49	2.31	6.01	0.23	0.21	0.01	759.03	0.25	0.01	767.22
			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	0.61	9.77	5.33	0.26	0.24	0.02	1,500.05	0.49	0.01	1,516.22
			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
2.00			Model Default Tier	Graders	0.83	3.44	10.52	0.33	0.31	0.01	1,282.56	0.41	0.01	1,296.37
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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 Equipm	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 Equipm	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
2.00			Model Default Tier	Rollers	0.33	3.72	3.45	0.20	0.18	0.01	508.21	0.16	0.00	513.68
			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
1.00			Model Default Tier	Rubber Tired Loaders	0.29	1.53	3.02	0.10	0.09	0.01	605.66	0.20	0.01	612.20
2.00			Model Default Tier	Scrapers	1.64	12.75	17.89	0.70	0.64	0.03	2,940.59	0.95	0.03	2,972.29
5.00			Model Default Tier	Signal Boards	0.29	1.51	1.80	0.07	0.07	0.00	246.57	0.03	0.00	247.82
			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
4.00			Model Default Tier	Tractors/Loaders/Backhoes	0.66	8.95	6.70	0.36	0.33	0.01	1,204.96	0.39	0.01	1,217.92
			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

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	N2O	CO2e
				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

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Grading/Excavation	pounds per day	5.14	43.98	54.72	2.25	2.07	0.09	9,047.63	2.87	0.08	9,143.74
	Grading/Excavation	tons per phase	0.25	2.18	2.71	0.11	0.10	0.00	447.86	0.14	0.00	452.61

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		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	N2O pounds/day	CO2e 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
1.00			Model Default Tier	Air Compressors	0.27	2.42	1.88	0.11	0.11	0.00	375.26	0.02	0.00	376.72
			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
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	0.41	1.72	5.26	0.17	0.15	0.01	641.28	0.21	0.01	648.19
			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 Equipm	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 Equipm	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
1.00			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	0.00
1.00			Model Default Tier	Pumps	0.35	3.73	2.97	0.16	0.16	0.01	623.04	0.03	0.00	625.23
			Model Default Tier	Rollers	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	Rough Terrain Forklifts	0.11	2.29	1.48	0.05	0.05	0.00	333.75	0.11	0.00	337.35
			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
1.00			Model Default Tier	Scrapers	0.82	6.38	8.94	0.35	0.32	0.02	1,470.30	0.48	0.01	1,486.14
5.00			Model Default Tier	Signal Boards	0.29	1.51	1.80	0.07	0.07	0.00	246.57	0.03	0.00	247.82
			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
3.00			Model Default Tier	Tractors/Loaders/Backhoes	0.49	6.71	5.03	0.27	0.25	0.01	903.72	0.29	0.01	913.44
			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

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	N2O pounds/day	CO2e 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

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Drainage/Utilities/Sub-Grade	pounds per day	3.12	28.64	30.53	1.33	1.26	0.06	5,251.43	1.20	0.04	5,294.72
Drainage/Utilities/Sub-Grade	tons per phase	0.10	0.95	1.01	0.04	0.04	0.00	173.30	0.04	0.00	174.73

Paving Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default 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	N2O pounds/day	CO2e 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	0.00	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 Equipm	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 Equipm	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	Pavers	0.21	2.88	2.10	0.10	0.09	0.00	455.26	0.15	0.00	460.17
1.00			Model Default Tier	Paving Equipment	0.18	2.55	1.74	0.08	0.08	0.00	394.47	0.13	0.00	398.73
			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
2.00			Model Default Tier	Rollers	0.33	3.72	3.45	0.20	0.18	0.01	508.21	0.16	0.00	513.68
			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
5.00			Model Default Tier	Signal Boards	0.29	1.51	1.80	0.07	0.07	0.00	246.57	0.03	0.00	247.82
			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
3.00			Model Default Tier	Tractors/Loaders/Backhoes	0.49	6.71	5.03	0.27	0.25	0.01	903.72	0.29	0.01	913.44
			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

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	N2O pounds/day	CO2e 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

		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Paving	pounds per day	1.50	17.37	14.11	0.72	0.67	0.03	2,508.22	0.76	0.02	2,533.84
Paving	tons per phase	0.02	0.29	0.23	0.01	0.01	0.00	41.39	0.01	0.00	41.81
Total Emissions all Phases (tons per construction period) =>		0.40	3.54	4.12	0.17	0.16	0.01	690.75	0.20	0.01	697.65

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