

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Fairview Street Bridge Replacement														
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	1.23	10.12	14.07	3.10	0.60	2.50	1.06	0.54	0.52	0.02	2,168.39	0.58	0.05	2,196.72
Grading/Excavation	10.64	75.89	124.43	7.70	5.20	2.50	5.24	4.72	0.52	0.16	15,845.58	4.69	0.18	16,018.04
Drainage/Utilities/Sub-Grade	7.28	55.27	81.39	6.02	3.52	2.50	3.77	3.25	0.52	0.11	10,679.82	2.75	0.13	10,787.20
Paving	1.23	13.30	12.83	0.73	0.73	0.00	0.64	0.64	0.00	0.03	2,640.47	0.56	0.12	2,691.31
Maximum (pounds/day)	10.64	75.89	124.43	7.70	5.20	2.50	5.24	4.72	0.52	0.16	15,845.58	4.69	0.18	16,018.04
Total (tons/construction project)	1.18	9.23	13.27	0.95	0.59	0.36	0.61	0.53	0.08	0.02	1,844.26	0.49	0.03	1,866.38

Notes:		Project Start Year ->	2019
		Project Length (months) ->	24
		Total Project Area (acres) ->	1
		Maximum Area Disturbed/Day (acres) ->	0
		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 0 200 40
Grading/Excavation	0	0	0 0 1,120 40
Drainage/Utilities/Sub-Grade	0	0	0 0 720 40
Paving	0	80	0 120 320 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 -> Fairview Street Bridge Replacement														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.03	0.27	0.37	0.08	0.02	0.07	0.03	0.01	0.01	0.00	57.25	0.02	0.00	52.61
Grading/Excavation	0.42	3.01	4.93	0.30	0.21	0.10	0.21	0.19	0.02	0.01	627.48	0.19	0.01	575.45
Drainage/Utilities/Sub-Grade	0.58	4.38	6.45	0.48	0.28	0.20	0.30	0.26	0.04	0.01	845.84	0.22	0.01	775.06
Paving	0.15	1.58	1.52	0.09	0.09	0.00	0.08	0.08	0.00	0.00	313.69	0.07	0.01	290.05
Maximum (tons/phase)	0.58	4.38	6.45	0.48	0.28	0.20	0.30	0.26	0.04	0.01	845.84	0.22	0.01	775.06
Total (tons/construction project)	1.18	9.23	13.27	0.95	0.59	0.36	0.61	0.53	0.08	0.02	1844.26	0.49	0.03	1,693.17

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.

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Daily Emission Estimates for -> Fairview Street Widening														
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	1.23	10.12	14.07	5.60	0.60	5.00	1.58	0.54	1.04	0.02	2,168.39	0.58	0.05	2,196.72
Grading/Excavation	6.46	49.70	73.92	8.28	3.28	5.00	4.01	2.97	1.04	0.10	9,821.59	2.87	0.13	9,930.72
Drainage/Utilities/Sub-Grade	3.59	30.59	36.66	6.78	1.78	5.00	2.69	1.65	1.04	0.06	5,766.76	1.20	0.10	5,826.67
Paving	1.66	17.72	17.04	1.00	1.00	0.00	0.88	0.88	0.00	0.03	3,257.86	0.75	0.13	3,315.28
Maximum (pounds/day)	6.46	49.70	73.92	8.28	3.28	5.00	4.01	2.97	1.04	0.10	9,821.59	2.87	0.13	9,930.72
Total (tons/construction project)	1.15	9.30	12.73	1.71	0.59	1.12	0.77	0.53	0.23	0.02	1,809.79	0.48	0.03	1,830.52

Notes:		Project Start Year ->	2019
		Project Length (months) ->	24
		Total Project Area (acres) ->	1
		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 0 200 40
Grading/Excavation	0	0	0 0 800 40
Drainage/Utilities/Sub-Grade	0	16	0 30 560 40
Paving	0	64	0 120 400 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 -> Fairview Street Widening														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.03	0.27	0.37	0.15	0.02	0.13	0.04	0.01	0.03	0.00	57.25	0.02	0.00	52.61
Grading/Excavation	0.77	5.90	8.78	0.98	0.39	0.59	0.48	0.35	0.12	0.01	1,166.81	0.34	0.01	1,070.28
Drainage/Utilities/Sub-Grade	0.28	2.42	2.90	0.54	0.14	0.40	0.21	0.13	0.08	0.00	456.73	0.10	0.01	418.64
Paving	0.07	0.70	0.67	0.04	0.04	0.00	0.04	0.04	0.00	0.00	129.01	0.03	0.01	119.10
Maximum (tons/phase)	0.77	5.90	8.78	0.98	0.39	0.59	0.48	0.35	0.12	0.01	1166.81	0.34	0.01	1,070.28
Total (tons/construction project)	1.15	9.30	12.73	1.71	0.59	1.12	0.77	0.53	0.23	0.02	1809.79	0.48	0.03	1,660.64

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

Daily Emission Estimates for -> Fairview Street Bridge Replacement - Mitigated														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.70	13.37	2.47	2.63	0.13	2.50	0.63	0.11	0.52	0.02	2,178.49	0.58	0.05	2,207.37
Grading/Excavation	4.90	91.58	10.81	3.13	0.63	2.50	1.04	0.52	0.52	0.16	15,855.68	4.70	0.19	16,028.69
Drainage/Utilities/Sub-Grade	3.25	60.61	7.81	2.94	0.44	2.50	0.89	0.37	0.52	0.11	10,689.54	2.76	0.13	10,797.45
Paving	0.81	15.28	4.37	0.20	0.20	0.00	0.15	0.15	0.00	0.03	2,672.32	0.57	0.13	2,724.85
Maximum (pounds/day)	4.90	91.58	10.81	3.13	0.63	2.50	1.04	0.52	0.52	0.16	15,855.68	4.70	0.19	16,028.69
Total (tons/construction project)	0.57	10.60	1.63	0.45	0.09	0.36	0.15	0.07	0.08	0.02	1,849.48	0.49	0.03	1,871.88

Notes: Project Start Year -> 2019
 Project Length (months) -> 24
 Total Project Area (acres) -> 1
 Maximum Area Disturbed/Day (acres) -> 0
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd³/day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	200	40
Grading/Excavation	0	0	0	0	1,120	40
Drainage/Utilities/Sub-Grade	0	0	0	0	720	40
Paving	0	80	0	120	320	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 -> Fairview Street Bridge Replacement - Mitigated														
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	0.35	0.07	0.07	0.00	0.07	0.02	0.00	0.01	0.00	57.51	0.02	0.00	52.87
Grading/Excavation	0.19	3.63	0.43	0.12	0.02	0.10	0.04	0.02	0.02	0.01	627.88	0.19	0.01	575.83
Drainage/Utilities/Sub-Grade	0.26	4.80	0.62	0.23	0.04	0.20	0.07	0.03	0.04	0.01	846.61	0.22	0.01	775.79
Paving	0.10	1.82	0.52	0.02	0.02	0.00	0.02	0.02	0.00	0.00	317.47	0.07	0.02	293.67
Maximum (tons/phase)	0.26	4.80	0.62	0.23	0.04	0.20	0.07	0.03	0.04	0.01	846.61	0.22	0.02	775.79
Total (tons/construction project)	0.57	10.60	1.63	0.45	0.09	0.36	0.15	0.07	0.08	0.02	1849.48	0.49	0.03	1,698.16

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

Daily Emission Estimates for -> Fairview Street Widening - Mitigated														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.70	13.37	2.47	5.13	0.13	5.00	1.15	0.11	1.04	0.02	2,178.49	0.58	0.05	2,207.37
Grading/Excavation	3.04	59.14	7.11	5.42	0.42	5.00	1.38	0.34	1.04	0.10	9,831.45	2.87	0.13	9,941.11
Drainage/Utilities/Sub-Grade	1.72	34.57	5.13	5.29	0.29	5.00	1.27	0.23	1.04	0.06	5,780.69	1.21	0.10	5,841.34
Paving	1.00	19.85	4.74	0.22	0.22	0.00	0.17	0.17	0.00	0.03	3,289.71	0.75	0.14	3,348.82
Maximum (pounds/day)	3.04	59.14	7.11	5.42	0.42	5.00	1.38	0.34	1.04	0.10	9,831.45	2.87	0.14	9,941.11
Total (tons/construction project)	0.56	10.90	1.50	1.21	0.08	1.12	0.30	0.07	0.23	0.02	1,813.59	0.48	0.03	1,834.53

Notes: Project Start Year -> 2019
 Project Length (months) -> 24
 Total Project Area (acres) -> 1
 Maximum Area Disturbed/Day (acres) -> 1
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd³/day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	200	40
Grading/Excavation	0	0	0	0	800	40
Drainage/Utilities/Sub-Grade	0	16	0	30	560	40
Paving	0	64	0	120	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 -> Fairview Street Widening - Mitigated														
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	0.35	0.07	0.14	0.00	0.13	0.03	0.00	0.03	0.00	57.51	0.02	0.00	52.87
Grading/Excavation	0.36	7.03	0.84	0.64	0.05	0.59	0.16	0.04	0.12	0.01	1,167.98	0.34	0.02	1,071.40
Drainage/Utilities/Sub-Grade	0.14	2.74	0.41	0.42	0.02	0.40	0.10	0.02	0.08	0.00	457.83	0.10	0.01	419.70
Paving	0.04	0.79	0.19	0.01	0.01	0.00	0.01	0.01	0.00	0.00	130.27	0.03	0.01	120.31
Maximum (tons/phase)	0.36	7.03	0.84	0.64	0.05	0.59	0.16	0.04	0.12	0.01	1,167.98	0.34	0.02	1,071.40
Total (tons/construction project)	0.56	10.90	1.50	1.21	0.08	1.12	0.30	0.07	0.23	0.02	1,813.59	0.48	0.03	1,664.27

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.

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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.