Appendix B

Air Quality/Greenhouse Gas Modeling Data

Road Construction Emissions Model

Version 7.1.2

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 C10 through C25.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type		
Project Name	James Donlon Boulevard Extension	
Construction Start Year	2015	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	24.0	months
Predominant Soil/Site Type: Enter 1, 2, or 3	2	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	1.71	miles
Total Project Area	92.2	acres
Maximum Area Disturbed/Day	5.0	acres
Water Trucks Used?	1	1. Yes 2. No
Soil Imported		yd^3/day
Soil Exported		yd^3/day
Average Truck Capacity	20.0	yd^3 (assume 20 if unknown)

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.

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 C34 through C37.

Construction Periods	User Override of Construction Months	Program Calculated Months
Grubbing/Land Clearing		2.40
Grading/Excavation		10.80
Drainage/Utilities/Sub-Grade		7.20
Paving		3.60
Totals	0.00	24.00

2005	%	2006	%	2007	%
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions	User Override of Soil Hauling Defaults	Default Values
User Input		
Miles/round trip		30
Round trips/day		0
Vehicle miles traveled/day (calculated)		0

Hauling Emissions	**ROG**	**NOx**	**CO**	**PM10**	**PM2.5**	**CO2**
Emission rate (grams/mile)	0.24	9.28	1.04	0.22	0.15	1693.03
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
Tons per contruction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values
Miles/ one-way trip		20
One-way trips/day		2
No. of employees: Grubbing/Land Clearing	16.00	8
No. of employees: Grading/Excavation	22.00	11
No. of employees: Drainage/Utilities/Sub-Grade	18.00	9
No. of employees: Paving	18.00	9

	ROG	**NOx**	**CO**	**PM10**	**PM2.5**	**CO2**
Emission rate - Grubbing/Land Clearing (grams/mile)	0.164	0.219	1.956	0.047	0.020	443.518
Emission rate - Grading/Excavation (grams/mile)	0.162	0.216	1.933	0.047	0.020	443.533
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Paving (grams/mile)	0.147	0.194	1.744	0.047	0.020	443.650
Emission rate - Grubbing/Land Clearing (grams/trip)	0.558	0.363	4.666	0.004	0.003	95.528
Emission rate - Grading/Excavation (grams/trip)	0.552	0.359	4.614	0.004	0.003	95.535
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Emission rate - Paving (grams/trip)	0.505	0.323	4.200	0.004	0.003	95.592
Pounds per day - Grubbing/Land Clearing	0.309	0.360	3.415	0.067	0.028	638.690
Tons per const. Period - Grub/Land Clear	0.008	0.010	0.090	0.002	0.001	16.861
Pounds per day - Grading/Excavation	0.306	0.356	3.375	0.067	0.028	638.712
Tons per const. Period - Grading/Excavation	0.036	0.042	0.401	0.008	0.003	75.879
Pounds per day - Drainage/Utilities/Sub-Grade	0.279	0.319	3.050	0.067	0.028	638.885
Tons per const. Period - Drain/Util/Sub-Grade	0.022	0.025	0.242	0.005	0.002	50.600
Pounds per day - Paving	0.305	0.319	3.050	0.067	0.028	717.062
Tons per const. Period - Paving	0.012	0.013	0.121	0.003	0.001	28.396
tons per construction period	0.079	0.090	0.853	0.018	0.008	171.736

Water truck default values can be overriden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Miles Traveled/Day	Default Values Miles Traveled/Day
Grubbing/Land Clearing - Exhaust	2.00	1		40
Grading/Excavation - Exhaust	2.00	1		40
Drainage/Utilities/Subgrade	2.00	1		40

	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.25	9.41	1.09	0.22	0.15	1694.67
Emission rate - Grading/Excavation (grams/mile)	0.24	9.28	1.04	0.22	0.15	1693.03
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.16	8.25	0.70	0.17	0.10	1679.86
Pounds per day - Grubbing/Land Clearing	0.04	1.66	0.19	0.04	0.03	298.62
Tons per const. Period - Grub/Land Clear	0.01	0.20	0.02	0.00	0.00	35.48
Pound per day - Grading/Excavation	0.04	1.63	0.18	0.04	0.03	298.33
Tons per const. Period - Grading/Excavation	0.00	0.19	0.02	0.00	0.00	35.44
Pound per day - Drainage/Utilities/Subgrade	0.03	1.45	0.12	0.03	0.02	296.01
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.12	0.01	0.00	0.00	23.44

Fugitive dust default values can be overridden in cells C110 through C112.

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		5	50.0	1.3	10.4	0.3
Fugitive Dust - Grading/Excavation		5	50.0	5.9	10.4	1.2
Fugitive Dust - Drainage/Utilities/Subgrade		5	50.0	4.0	10.4	0.8

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1	Rubber Tired Dozers	2.64	8.84	28.46	1.33	1.22	1889.26
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	3.04	14.52	37.41	1.51	1.39	3218.24
	3	Signal Boards	1.39	4.81	4.68	0.36	0.33	538.42
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Tractors/Loaders/Backhoes	0.38	1.58	3.45	0.27	0.25	336.39
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day	7.4	29.7	74.0	3.5	3.2	5982.3
	Grubbing/Land Clearing	tons per phase	0.2	0.8	2.0	0.1	0.1	157.9

Grading/Excavation	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	2	Excavators	0.87	5.58	9.71	0.48	0.44	1145.62
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1	Graders	2.21	6.97	21.63	1.22	1.12	1343.74
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
	1	Other Construction Equipment	0.36	1.80	3.89	0.20	0.19	327.16
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.54	3.12	6.80	0.23	0.21	662.67
	1	Scrapers	1.51	7.26	18.59	0.75	0.69	1609.00
	3	Signal Boards	1.37	4.79	4.67	0.36	0.33	538.42
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	6.9	29.5	65.3	3.2	3.0	5626.6
	Grading	tons per phase	0.8	3.5	7.8	0.4	0.4	668.4

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	CO2 pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	1.07	3.48	10.38	0.58	0.54	671.02
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Plate Compactors	0.04	0.21	0.25	0.01	0.01	34.45
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	1	Scrapers	1.46	7.25	17.70	0.71	0.66	1608.02
	3	Signal Boards	1.24	4.67	4.51	0.33	0.30	538.42
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Trenchers	0.59	2.10	4.94	0.39	0.36	376.85
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	4.4	17.7	37.8	2.0	1.9	3228.8
	Drainage	tons per phase	0.3	1.4	3.0	0.2	0.1	255.7

Paving	Default Number of Vehicles		ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	*Program-estimate*	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.42	2.84	4.49	0.22	0.21	481.68
	1	Paving Equipment	0.32	2.69	3.53	0.18	0.16	426.30
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.70	3.02	6.18	0.46	0.42	559.07
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	3	Signal Boards	1.24	4.67	4.51	0.33	0.30	538.42
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	2.7	13.2	18.7	1.2	1.1	2005.5
	Paving	tons per phase	0.1	0.5	0.7	0.0	0.0	79.4
Total Emissions all Phases (tons per construction period) =>			1.5	6.2	13.4	0.7	0.6	1161.5

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment		Default Values Horsepower		Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		106		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		10		8
Concrete/Industrial Saws		64		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		142		8
Excavators		163		8
Forklifts		89		8
Generator Sets		66		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		26		8
Pumps		53		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		20		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		45		8

0

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 7.1.2

Emission Estimates for -> James Donlon Boulevard Extension Project Phases (English Units)	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)	CO2 (lbs/day)
Grubbing/Land Clearing	7.8	33.3	76.0	53.6	3.6	50.0	13.6	3.2	10.4	6,919.6
Grading/Excavation	7.2	33.1	67.3	53.3	3.3	50.0	13.4	3.0	10.4	6,563.7
Drainage/Utilities/Sub-Grade	4.7	20.9	39.6	52.1	2.1	50.0	12.3	1.9	10.4	4,163.7
Paving	3.0	16.3	19.0	1.2	1.2	-	1.1	1.1	-	2,722.5
Maximum (pounds/day)	7.8	33.3	76.0	53.6	3.6	50.0	13.6	3.2	10.4	6,919.6
Total (tons/construction project)	1.6	7.1	14.0	11.9	0.7	11.2	3.0	0.6	2.3	1,427.6

Notes:		
	Project Start Year ->	2015
	Project Length (months) ->	24
	Total Project Area (acres) ->	92
	Maximum Area Disturbed/Day (acres) ->	5
	Total Soil Imported/Exported (yd^3/day)->	0

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

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

Emission Estimates for -> James Donlon Boulevard Extension Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	3.5	15.2	34.6	24.4	1.6	22.7	6.2	1.5	4.7	3,145.3
Grading/Excavation	3.3	15.0	30.6	24.2	1.5	22.7	6.1	1.4	4.7	2,983.5
Drainage/Utilities/Sub-Grade	2.1	9.5	18.0	23.7	1.0	22.7	5.6	0.9	4.7	1,892.6
Paving	1.4	7.4	8.7	0.6	0.6	-	0.5	0.5	-	1,237.5
Maximum (kilograms/day)	3.5	15.2	34.6	24.4	1.6	22.7	6.2	1.5	4.7	3,145.3
Total (megagrams/construction project)	1.4	6.5	12.7	10.8	0.6	10.2	2.7	0.6	2.1	1,294.9

Notes:		
	Project Start Year ->	2015
	Project Length (months) ->	24
	Total Project Area (hectares) ->	37
	Maximum Area Disturbed/Day (hectares) ->	2
	Total Soil Imported/Exported (meters^3/day)->	0

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

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

AERSCREEN 11126 / AERMOD 1110 10/17/12
13:06:50

TITLE: Donlon Roadway Extension

********** VOLUME PARAMETERS **********

SOURCE EMISSION RATE:	0.0200 g/s	0.159 lb/hr
VOLUME HEIGHT:	3.00 meters	9.84 feet
INITIAL LATERAL DIMENSION:	143.00 meters	469.16 feet
INITIAL VERTICAL DIMENSION:	143.00 meters	469.16 feet
RURAL OR URBAN:	URBAN	
POPULATION:	64294	

INITIAL PROBE DISTANCE = 5000. meters 16404. feet

********** BUILDING DOWNWASH PARAMETERS **********

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

********** PROBE ANALYSIS **********
25 meter receptor spacing: 308. meters - 5000. meters

Zo SECTOR	ROUGHNESS LENGTH	1-HR CONC (ug/m3)	DIST (m)	TEMPORAL PERIOD
1*	1.000	0.2878	308.5	ANN

* = worst case flow sector

********** MAKEMET METEOROLOGY PARAMETERS **********

MIN/MAX TEMPERATURE: 277.0 / 306.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: USER ENTERED

ALBEDO:	0.21
BOWEN RATIO:	1.50
ROUGHNESS LENGTH:	1.000 (meters)

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR	MO	DY	JDY	HR

10 01 16 16 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-0.40	0.043	-9.000	0.020	-999.	21.	19.1	1.000	1.50	0.21	0.50

HT	REF TA	HT
10.0	306.0	2.0

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR MO DY JDY HR
10 01 16 16 01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-0.40	0.043	-9.000	0.020	-999.	21.	19.1	1.000	1.50	0.21	0.50

HT	REF TA	HT
10.0	306.0	2.0

********** AERSCREEN AUTOMATED DISTANCES **********
OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
308.45	0.2878	2675.00	0.1000
325.00	0.2797	2700.00	0.9945E-01
350.00	0.2687	2725.00	0.9887E-01
375.00	0.2590	2750.00	0.9831E-01
400.00	0.2503	2775.00	0.9775E-01
425.00	0.2426	2800.00	0.9719E-01
450.00	0.2356	2825.00	0.9664E-01
475.00	0.2292	2850.00	0.9610E-01
500.00	0.2233	2875.00	0.9557E-01
525.00	0.2179	2900.00	0.9504E-01
550.00	0.2129	2925.00	0.9452E-01
575.00	0.2083	2950.00	0.9401E-01
600.00	0.2039	2975.00	0.9350E-01
625.00	0.1999	3000.00	0.9299E-01
650.00	0.1960	3025.00	0.9250E-01
675.00	0.1924	3050.00	0.9201E-01
700.00	0.1890	3075.00	0.9152E-01
725.00	0.1861	3100.00	0.9104E-01
750.00	0.1842	3125.00	0.9056E-01
775.00	0.1823	3150.00	0.9009E-01
800.00	0.1805	3175.00	0.8963E-01
825.00	0.1787	3200.00	0.8917E-01
850.00	0.1769	3225.00	0.8872E-01
875.00	0.1752	3250.00	0.8827E-01
900.00	0.1736	3275.00	0.8782E-01

925.00	0.1719	3300.00	0.8738E-01
950.00	0.1703	3325.00	0.8695E-01
975.00	0.1688	3350.00	0.8652E-01
1000.00	0.1672	3375.00	0.8610E-01
1025.00	0.1657	3400.00	0.8567E-01
1050.00	0.1642	3425.00	0.8526E-01
1075.00	0.1628	3450.00	0.8485E-01
1100.00	0.1613	3475.00	0.8444E-01
1125.00	0.1599	3500.00	0.8403E-01
1150.00	0.1585	3525.00	0.8364E-01
1175.00	0.1571	3550.00	0.8324E-01
1200.00	0.1556	3575.00	0.8285E-01
1225.00	0.1541	3600.00	0.8246E-01
1250.00	0.1526	3625.00	0.8208E-01
1275.00	0.1512	3650.00	0.8170E-01
1300.00	0.1498	3675.00	0.8132E-01
1325.00	0.1484	3700.00	0.8095E-01
1350.00	0.1470	3725.00	0.8058E-01
1375.00	0.1457	3750.00	0.8022E-01
1400.00	0.1444	3775.00	0.7986E-01
1425.00	0.1431	3800.00	0.7950E-01
1450.00	0.1419	3825.00	0.7914E-01
1475.00	0.1406	3850.00	0.7879E-01
1500.00	0.1394	3875.00	0.7845E-01
1525.00	0.1382	3900.00	0.7810E-01
1550.00	0.1371	3925.00	0.7776E-01
1575.00	0.1359	3950.00	0.7742E-01
1600.00	0.1348	3975.00	0.7709E-01
1625.00	0.1337	4000.00	0.7676E-01
1650.00	0.1326	4025.00	0.7643E-01
1675.00	0.1315	4050.00	0.7610E-01
1700.00	0.1305	4075.00	0.7578E-01
1725.00	0.1295	4100.00	0.7546E-01
1750.00	0.1284	4125.00	0.7515E-01
1775.00	0.1274	4150.00	0.7483E-01
1800.00	0.1265	4175.00	0.7452E-01
1825.00	0.1255	4200.00	0.7421E-01
1850.00	0.1245	4225.00	0.7391E-01
1875.00	0.1236	4250.00	0.7360E-01
1900.00	0.1227	4275.00	0.7330E-01
1925.00	0.1218	4300.00	0.7301E-01
1950.00	0.1209	4325.00	0.7271E-01
1975.00	0.1200	4350.00	0.7242E-01
2000.00	0.1192	4375.00	0.7213E-01
2025.00	0.1183	4400.00	0.7184E-01
2050.00	0.1175	4425.00	0.7156E-01
2075.00	0.1166	4450.00	0.7128E-01
2100.00	0.1158	4475.00	0.7099E-01
2125.00	0.1150	4500.00	0.7072E-01
2150.00	0.1142	4525.00	0.7044E-01
2175.00	0.1135	4550.00	0.7017E-01
2200.00	0.1127	4575.00	0.6990E-01
2225.00	0.1120	4600.00	0.6963E-01
2250.00	0.1112	4625.00	0.6936E-01
2275.00	0.1105	4650.00	0.6910E-01
2300.00	0.1098	4675.00	0.6884E-01
2325.00	0.1090	4700.00	0.6858E-01
2350.00	0.1083	4725.00	0.6832E-01
2375.00	0.1076	4750.00	0.6806E-01
2400.00	0.1070	4775.00	0.6781E-01
2425.00	0.1063	4800.00	0.6756E-01
2450.00	0.1056	4825.00	0.6731E-01
2475.00	0.1050	4850.00	0.6706E-01

2500.00	0.1043	4875.00	0.6681E-01
2525.00	0.1037	4900.00	0.6657E-01
2550.00	0.1031	4925.00	0.6633E-01
2575.00	0.1024	4950.00	0.6609E-01
2600.00	0.1018	4975.00	0.6585E-01
2625.00	0.1012	5000.00	0.6561E-01
2650.00	0.1006		

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	0.2878	0.2878	0.2590	0.1727	0.2878E-01

DISTANCE FROM SOURCE 308.45 meters

IMPACT AT THE AMBIENT BOUNDARY	0.2878	0.2878	0.2590	0.1727	0.2878E-01

DISTANCE FROM SOURCE 308.45 meters

Project Construction
Risk Calculations

Maximum 1-Hour Conc: 2.88E-01
Annual Average Conc: 2.88E-02

Cancer Risk
Cancer Risk: 0.258461
Threshold: 10 in one million

Cancer Risk = Slope * Inhalation Dose

Inhalation Dose = (Cair*DBR*A*EF*ED*10^{-6})/AT

	1.7		Cancer Risk Adjustment Factor
Slope	1.1	$(mg/kg/day)^{-1}$	Cancer Potency Factor
Inhalation Dose			Dose through inhalation (mg/kg-d)
10^{-6}			Micrograms to milligrams conversions, liters to cubic meters conversion
Cair			Concentration in air (ug/m^3), modeled annual average concentration
DBR	303	L/kg-day	Daily breathing Rate (l/kg body weight-day) (80%ile)
A	1		Inhalation absorption factor
EF	245	days/year	Exposure frequency (days/year)
ED	2	years	Exposure duration (years)
AT	25550	days	Averaging time period over which exposure is averaged, in days (70 years*365 = 25,550 days)

Chronic Noncancer Hazard
Threshold: 1

Hazard Quotient = C_i/REL_i

HQ = 5.76E-03

C_i	2.88E-02	Concentration (annual average)
REL_i	5	Reference Exposure Level

Acute NonCancer Hazard
Threshold: 1

Acute HQ = Maximum Hourly Concentration/Acute REL

Acute HQ = 0.005302

Max Hourly	0.2878
Acute REL (Acrolein)	0.19

Traffic Data and GHG Emissions

	Scenario			Delta		
	Existing	2025 No Project	2025 With Project	2025 NP - Existing	2025 WP - Existing	2025 WP - 2025 NP
VMT (miles)	136,035,200	184,124,200	184,055,200	48,089,000	48,020,000	-69,000
VHT (hours)	4,049,000	7,145,900	7,140,500	3,096,900	3,091,500	-5,400

			Tons Per Day		Metric Tons Per Year	
	VMT	VHT	CO_2	CO_2 (Pavley I+LCFS)	CO_2	CO_2 (Pavley I+LCFS)
Factor	--	--	5.27E-04	4.46E-04	--	--
Existing	136,035,200	4,049,000	71,659	60,648	23,727,829	20,082,067
2025 No Project	184,124,200	7,145,900	96,990	82,088	32,115,714	27,181,160
2025 With Project	184,055,200	7,140,500	96,954	82,057	32,103,678	27,170,973
Net Chagne	-69,000	-5,400	-36	-31	-12,035	-10,186