

# Appendix C

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Health Risk Assessment Calculations  
(Due to the large files, modeling outputs are only available upon request)

REC	GRP	NETID	Description	X	Y	RISK_SU M	MERV-13		
							Filtration I-5	MAX NChronic	MAX NAcute
401	SENSITIV	SR	R SR-1 Floor 1	376431	3779890	7.56E-06	2.53	0.01	0.03
402	SENSITIV	SR	R SR-1 Floor 2	376431	3779890	7.37E-06	2.46	0.01	0.03
403	SENSITIV	SR	R SR-1 Floor 3	376431	3779890	6.09E-06	2.04	0.01	0.03
404	SENSITIV	SR	R SR-1 Floor 4	376431	3779890	4.29E-06	1.43	0.00	0.02
405	SENSITIV	SR	R SR-1 Floor 5	376431	3779890	2.65E-06	0.89	0.00	0.02
406	SENSITIV	SR	R SR-1 Floor 6	376431	3779890	1.53E-06	0.51	0.00	0.01
407	SENSITIV	SR	R SR-1 Floor 7	376431	3779890	8.96E-07	0.30	0.00	0.01
408	SENSITIV	SR	R SR-2 Floor 1	376462	3779901	8.59E-06	2.87	0.01	0.03
409	SENSITIV	SR	R SR-2 Floor 2	376462	3779901	8.38E-06	2.80	0.01	0.03
410	SENSITIV	SR	R SR-2 Floor 3	376462	3779901	6.81E-06	2.27	0.01	0.03
411	SENSITIV	SR	R SR-2 Floor 4	376462	3779901	4.65E-06	1.56	0.01	0.02
412	SENSITIV	SR	R SR-2 Floor 5	376462	3779901	2.78E-06	0.93	0.00	0.02
413	SENSITIV	SR	R SR-2 Floor 6	376462	3779901	1.58E-06	0.53	0.00	0.01
414	SENSITIV	SR	R SR-2 Floor 7	376462	3779901	9.29E-07	0.31	0.00	0.01
415	SENSITIV	SR	R SR-3 Floor 1	376484	3779902	8.87E-06	2.97	0.01	0.03
416	SENSITIV	SR	R SR-3 Floor 2	376484	3779902	8.67E-06	2.90	0.01	0.03
417	SENSITIV	SR	R SR-3 Floor 3	376484	3779902	7.02E-06	2.35	0.01	0.03
418	SENSITIV	SR	R SR-3 Floor 4	376484	3779902	4.77E-06	1.59	0.01	0.02
419	SENSITIV	SR	R SR-3 Floor 5	376484	3779902	2.83E-06	0.94	0.00	0.02
420	SENSITIV	SR	R SR-3 Floor 6	376484	3779902	1.60E-06	0.54	0.00	0.01
421	SENSITIV	SR	R SR-3 Floor 7	376484	3779902	9.42E-07	0.31	0.00	0.01
422	SENSITIV	SR	R SR-4 Floor 1	376490	3779887	7.87E-06	2.63	0.01	0.03
423	SENSITIV	SR	R SR-4 Floor 2	376490	3779887	7.71E-06	2.58	0.01	0.03
424	SENSITIV	SR	R SR-4 Floor 3	376490	3779887	6.41E-06	2.14	0.01	0.03
425	SENSITIV	SR	R SR-4 Floor 4	376490	3779887	4.51E-06	1.51	0.01	0.02
426	SENSITIV	SR	R SR-4 Floor 5	376490	3779887	2.76E-06	0.92	0.00	0.02
427	SENSITIV	SR	R SR-4 Floor 6	376490	3779887	1.58E-06	0.53	0.00	0.01
428	SENSITIV	SR	R SR-4 Floor 7	376490	3779887	9.22E-07	0.31	0.00	0.01
429	SENSITIV	SR	R SR-5 Floor 1	376477	3779874	7.03E-06	2.35	0.01	0.03
430	SENSITIV	SR	R SR-5 Floor 2	376477	3779874	6.89E-06	2.30	0.01	0.03
431	SENSITIV	SR	R SR-5 Floor 3	376477	3779874	5.85E-06	1.95	0.01	0.03
432	SENSITIV	SR	R SR-5 Floor 4	376477	3779874	4.23E-06	1.42	0.00	0.02
433	SENSITIV	SR	R SR-5 Floor 5	376477	3779874	2.66E-06	0.89	0.00	0.02
434	SENSITIV	SR	R SR-5 Floor 6	376477	3779874	1.54E-06	0.52	0.00	0.01
435	SENSITIV	SR	R SR-5 Floor 7	376477	3779874	8.99E-07	0.30	0.00	0.01
436	SENSITIV	SR	R SR-6 Floor 1	376455	3779865	6.44E-06	2.15	0.01	0.02
437	SENSITIV	SR	R SR-6 Floor 2	376455	3779865	6.32E-06	2.11	0.01	0.02
438	SENSITIV	SR	R SR-6 Floor 3	376455	3779865	5.44E-06	1.82	0.01	0.03
439	SENSITIV	SR	R SR-6 Floor 4	376455	3779865	4.02E-06	1.34	0.00	0.02
440	SENSITIV	SR	R SR-6 Floor 5	376455	3779865	1.52E-06	0.51	0.00	0.01
441	SENSITIV	SR	R SR-6 Floor 6	376455	3779865	8.85E-07	0.30	0.00	0.01
442	SENSITIV	SR	R SR-6 Floor 7	376455	3779865	6.44E-06	2.15	0.01	0.02
443	SENSITIV	SR	R SR-7 Floor 1	376433	3779865	6.16E-06	2.06	0.01	0.02
444	SENSITIV	SR	R SR-7 Floor 2	376433	3779865	5.29E-06	1.77	0.01	0.03
445	SENSITIV	SR	R SR-7 Floor 3	376433	3779865	3.92E-06	1.31	0.00	0.02
446	SENSITIV	SR	R SR-7 Floor 4	376433	3779865	2.54E-06	0.85	0.00	0.02
447	SENSITIV	SR	R SR-7 Floor 5	376433	3779865	1.50E-06	0.50	0.00	0.01
448	SENSITIV	SR	R SR-7 Floor 6	376433	3779865	8.74E-07	0.29	0.00	0.01
449	SENSITIV	SR	R SR-7 Floor 7	376433	3779865	6.27E-06	2.10	0.01	0.02
450	SENSITIV	SR	R SR-8 Floor 1	376427	3779881	6.83E-06	2.28	0.01	0.02
451	SENSITIV	SR	R SR-8 Floor 2	376427	3779881	5.74E-06	1.92	0.01	0.03
452	SENSITIV	SR	R SR-8 Floor 3	376427	3779881	4.13E-06	1.38	0.00	0.02
453	SENSITIV	SR	R SR-8 Floor 4	376427	3779881	2.59E-06	0.87	0.00	0.02
454	SENSITIV	SR	R SR-8 Floor 5	376427	3779881	1.51E-06	0.50	0.00	0.01
455	SENSITIV	SR	R SR-8 Floor 6	376427	3779881	8.82E-07	0.29	0.00	0.01
456	SENSITIV	SR	R SR-8 Floor 7	376427	3779881	7.00E-06	2.34	0.01	0.03

GRP	NETID	X	Y	Description	MERV-13 Filtration										TOTAL		MAX		MAX	
					I-5	I-5	BWP_Iv1	BWP_Iv2	BWP_Iv3	BWP_Iv4	BWP_Iv5	BWP_Iv6	BWP_Iv7	BWP_Iv8	SUM	CANCER	MAX NChronic	MAX I-5	MAX NAcute	MAX I-5
SENSITIV	SR	378572.5	3783633	TOD3 SR-1 Floor 1	1.17E-05	3.90	0.89	0.89	0.90	0.90	0.90	0.90	0.91	0.91	4.80	0.011	0.032	0.001	0.002	
SENSITIV	SR	378593	3783654	TOD3 SR-2 Floor 1	8.94E-06	2.99	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.93	3.90	0.008	0.030	0.001	0.002	
SENSITIV	SR	378610.2	3783671	TOD3 SR-3 Floor 1	7.37E-06	2.46	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.94	3.38	0.007	0.028	0.001	0.002	
SENSITIV	SR	378661.5	3783628	TOD3 SR-4 Floor 1	7.32E-06	2.45	1.01	1.01	1.01	1.02	1.02	1.03	1.03	1.04	3.45	0.007	0.030	0.001	0.002	
SENSITIV	SR	378701.1	3783591	TOD3 SR-5 Floor 1	7.35E-06	2.46	1.08	1.08	1.08	1.09	1.10	1.10	1.11	1.12	3.53	0.007	0.031	0.001	0.003	
SENSITIV	SR	378678.1	3783572	TOD3 SR-6 Floor 1	9.61E-06	3.21	1.08	1.08	1.09	1.09	1.10	1.11	1.11	1.12	4.29	0.009	0.032	0.001	0.003	
SENSITIV	SR	378649.3	3783560	TOD3 SR-7 Floor 1	9.57E-06	3.20	1.06	1.06	1.07	1.07	1.08	1.08	1.09	1.10	4.25	0.009	0.031	0.001	0.003	
SENSITIV	SR	378641.2	3783579	TOD3 SR-8 Floor 1	8.85E-06	2.96	1.03	1.03	1.04	1.04	1.05	1.05	1.06	1.07	3.99	0.009	0.030	0.001	0.003	
SENSITIV	SR	378631.7	3783604	TOD3 SR-9 Floor 1	1.07E-05	3.59	1.00	1.00	1.00	1.01	1.01	1.02	1.02	1.03	4.59	0.010	0.032	0.001	0.003	
SENSITIV	SR	378614.2	3783626	TOD3 SR-10 Floor 1	1.01E-05	3.37	0.96	0.96	0.96	0.96	0.97	0.97	0.98	0.98	4.32	0.010	0.031	0.001	0.003	
SENSITIV	SR	378808.1	3783487	TOD4 SR-1 Floor 1	6.85E-06	2.29	1.16	1.17	1.18	1.19	1.20	1.21	1.22	1.24	3.45	0.006	0.030	0.001	0.003	
SENSITIV	SR	378853	3783449	TOD4 SR-2 Floor 1	6.32E-06	2.11	1.11	1.12	1.13	1.14	1.15	1.16	1.18	1.19	3.22	0.006	0.030	0.001	0.003	
SENSITIV	SR	378881.8	3783408	TOD4 SR-3 Floor 1	6.57E-06	2.19	1.05	1.06	1.07	1.08	1.10	1.11	1.13	1.14	3.25	0.006	0.029	0.001	0.003	
SENSITIV	SR	378924.8	3783385	TOD4 SR-4 Floor 1	5.76E-06	1.92	0.91	0.91	0.92	0.93	0.94	0.96	0.97	0.98	2.83	0.005	0.028	0.001	0.004	
SENSITIV	SR	378896.2	3783345	TOD4 SR-5 Floor 1	7.69E-06	2.57	1.02	1.03	1.04	1.06	1.08	1.09	1.11	1.13	3.59	0.007	0.030	0.001	0.004	
SENSITIV	SR	378870.3	3783316	TOD4 SR-6 Floor 1	1.02E-05	3.42	1.13	1.14	1.16	1.18	1.20	1.23	1.25	1.28	4.55	0.010	0.032	0.001	0.004	
SENSITIV	SR	378830	3783284	TOD4 SR-7 Floor 1	1.19E-05	3.99	1.28	1.30	1.32	1.35	1.38	1.41	1.45	1.49	5.27	0.011	0.030	0.001	0.004	
SENSITIV	SR	378812.8	3783325	TOD4 SR-8 Floor 1	1.52E-05	5.08	1.31	1.33	1.34	1.37	1.39	1.42	1.45	1.49	6.39	0.014	0.035	0.001	0.004	
SENSITIV	SR	378793.7	3783373	TOD4 SR-9 Floor 1	1.06E-05	3.53	1.31	1.32	1.33	1.35	1.37	1.39	1.42	1.44	4.84	0.010	0.031	0.001	0.004	
SENSITIV	SR	378775.6	3783426	TOD4 SR-10 Floor 1	9.17E-06	3.06	1.27	1.28	1.29	1.31	1.32	1.34	1.36	1.38	4.33	0.009	0.031	0.001	0.003	
SENSITIV	SR	378785.3	3783463	TOD4 SR-11 Floor 1	9.44E-06	3.16	1.22	1.23	1.24	1.25	1.26	1.28	1.29	1.31	4.38	0.009	0.032	0.001	0.003	
SENSITIV	SR	378846	3783181	TOD5 SR-1 Floor 1	1.16E-05	3.88	1.16	1.19	1.22	1.26	1.31	1.37	1.43	1.50	5.04	0.011	0.027	0.001	0.005	
SENSITIV	SR	378829	3783223	TOD5 SR-2 Floor 1	1.56E-05	5.22	1.27	1.30	1.33	1.36	1.41	1.46	1.51	1.57	6.49	0.015	0.031	0.001	0.005	
SENSITIV	SR	378849	3783222	TOD5 SR-3 Floor 1	1.30E-05	4.36	1.19	1.21	1.24	1.27	1.31	1.36	1.41	1.46	5.55	0.012	0.030	0.001	0.005	
SENSITIV	SR	378876	3783197	TOD5 SR-4 Floor 1	1.19E-05	3.97	1.04	1.06	1.08	1.12	1.15	1.20	1.25	1.30	5.01	0.011	0.029	0.001	0.005	
SENSITIV	SR	378902	3783173	TOD5 SR-5 Floor 1	1.52E-05	5.08	0.87	0.88	0.91	0.93	0.97	1.01	1.05	1.10	5.95	0.014	0.033	0.001	0.004	
SENSITIV	SR	378930	3783142	TOD5 SR-6 Floor 1	1.43E-05	4.77	0.67	0.68	0.70	0.72	0.75	0.78	0.82	0.86	5.44	0.013	0.032	0.001	0.005	
SENSITIV	SR	378957	3783118	TOD5 SR-7 Floor 1	9.99E-06	3.34	0.52	0.53	0.54	0.56	0.58	0.60	0.63	0.66	3.86	0.009	0.028	0.001	0.004	
SENSITIV	SR	378962	3783080	TOD5 SR-8 Floor 1	1.09E-05	3.63	0.44	0.45	0.46	0.48	0.50	0.52	0.54	0.57	4.08	0.010	0.029	0.000	0.005	
SENSITIV	SR	378937	3783053	TOD5 SR-9 Floor 1	1.45E-05	4.84	0.47	0.47	0.49	0.51	0.53	0.56	0.59	0.63	5.30	0.013	0.031	0.001	0.005	
SENSITIV	SR	378917	3783050	TOD5 SR-10 Floor 1	1.19E-05	3.98	0.52	0.53	0.55	0.58	0.61	0.65	0.69	0.75	4.51	0.011	0.027	0.001	0.005	
SENSITIV	SR	378900	3783073	TOD5 SR-11 Floor 1	1.75E-05	5.85	0.65	0.66	0.69	0.72	0.76	0.81	0.87	0.94	6.50	0.016	0.031	0.001	0.005	
SENSITIV	SR	378884	3783095	TOD5 SR-12 Floor 1	1.22E-05	4.09	0.79	0.80	0.83	0.87	0.92	0.98	1.05	1.13	4.88	0.011	0.027	0.001	0.005	
SENSITIV	SR	378867	3783127	TOD5 SR-13 Floor 1	1.39E-05	4.66	0.96	0.98	1.01	1.06	1.11	1.17	1.25	1.33	5.62	0.013	0.028	0.001	0.005	
SENSITIV	SR	378856	3783154	TOD5 SR-14 Floor 1	1.75E-05	5.84	1.07	1.10	1.13	1.17	1.23	1.29	1.36	1.43	6.91	0.016	0.032	0.001	0.005	
SENSITIV	SR	378841.4	3783279	TOD6 SR-1 Floor 1	1.11E-05	3.72	1.24	1.26	1.28	1.31	1.34	1.38	1.41	1.45	4.97	0.010	0.030	0.001	0.004	
SENSITIV	SR	378931.6	3783377	TOD6 SR-2 Floor 1	5.74E-06	1.92	0.88	0.89	0.90	0.90	0.92	0.93	0.94	0.96	2.80	0.005	0.028	0.001	0.004	
SENSITIV	SR	378819.4	3783491	TOD6 SR-3 Floor 1	6.29E-06	2.10	1.14	1.15	1.16	1.17	1.18	1.19	1.20	1.21	3.24	0.006	0.030	0.001	0.003	
SENSITIV	SR	378884.2	3783456	TOD6 SR-4 Floor 1	5.34E-06	1.78	1.02	1.03	1.03	1.04	1.05	1.06	1.07	1.09	2.80	0.005	0.028	0.001	0.003	
SENSITIV	SR	378963.8	3783411	TOD6 SR-5 Floor 1	4.51E-06	1.51	0.77	0.77	0.78	0.78	0.79	0.80	0.81	0.82	2.27	0.004	0.026	0.001	0.003	
SENSITIV	SR	379050.2	3783500	TOD6 SR-6 Floor 1	2.68E-06	0.90	0.53	0.53	0.53	0.53	0.54	0.54	0.54	0.54	1.42	0.002	0.022	0.000	0.003	
SENSITIV	SR	379002.7	3783424	TOD6 SR-7 Floor 1	3.82E-06	1.28	0.64	0.64	0.65	0.65	0.66	0.66	0.67	0.68	1.92	0.004	0.026	0.001	0.003	
SENSITIV	SR	379079.6	3783354	TOD6 SR-8 Floor 1	3.63E-06	1.21	0.41	0.42	0.42	0.42	0.43	0.43	0.43	0.44	1.63	0.003	0.025	0.000	0.003	
SENSITIV	SR	379148.6	3783422	TOD6 SR-9 Floor 1	2.50E-06	0.84	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.34	1.16	0.002	0.021	0.000	0.003	
SENSITIV	SR	379070.3	3783325	TOD6 SR-10 Floor 1	4.00E-06	1.34	0.42	0.42	0.43	0.43	0.43	0.44	0.44	0.45	1.76	0.004	0.025	0.000	0.003	
SENSITIV	SR	379012.6	3783327	TOD6 SR-11 Floor 1	4.77E-06	1.59	0.57	0.57	0.58	0.58	0.59	0.60	0.61	0.62	2.16	0.004	0.026	0.001	0.004	
SENSITIV	SR	379022	3783271	TOD6 SR-12 Floor 1	5.42E-06	1.81	0.50	0.51	0.51	0.52	0.53	0.53	0.54	0.55	2.31	0.005	0.027	0.000	0.004	
SENSITIV	SR	378981.7	3783227	TOD6 SR-13 Floor 1	7.30E-06	2.44	0.59	0.60	0.61	0.62	0.63	0.64	0.66	0.68	3.03	0.007	0.029	0.001	0.004	
SENSITIV	SR	379046.9	3783168	TOD6 SR-14 Floor 1	6.55E-06	2.19	0.36	0.37	0.37	0.38	0.38	0.39	0.40	0.41	2.55	0.006	0.029	0.000	0.004	
SENSITIV	SR	378997.4	3783125	TOD6 SR-15 Floor 1	9.80E-06	3.28	0.42	0.43	0.44	0.45	0.46	0.47	0.49	0.51	3.70	0.009	0.031	0.000	0.005	
SENSITIV	SR	378959.1	3783155	TOD6 SR-16 Floor 1	1.10E-05	3.67	0.58	0.59	0.60	0.61	0.63	0.66	0.68	0.71	4.24	0.010	0.031	0.001	0.004	
SENSITIV	SR	378909.6	3783200	TOD6 SR-17 Floor 1	1.30E-05	4.33	0.87	0.88	0.90	0.93	0.96	0.99	1.03	1.07	5.20	0.012	0.032	0.001	0.004	
SENSITIV	SR	378844.5	3783260	TOD6 SR-18 Floor 1	1.15E-05	3.85	1.23	1.25	1.27	1.30	1.34	1.37	1.42	1.46	5.08	0.011	0.030	0.001	0.004	
SENSITIV	SR	379232	3782792	TOD10a SR-1 Floor 1	1.17E-05	3.92	0.25	0.25	0.25	0.25	0.25	0.26	0.26	0.27	4.16	0.011	0.028	0.000	0.005	
SENSITIV	SR	379256	3782818	TOD10a SR-2 Floor 1	8.79E-06	2.94	0.24	0.24	0.24	0.24	0.25	0.25	0.25	0.26	3.18	0.008	0.027	0.000	0.004	
SENSITIV	SR	379289	3782823	TOD10a SR-3 Floor 1	1.02E-05	3.42	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.25	3.65	0.010	0.029	0.000	0.004	
SENSITIV	SR	379314	3782801	TOD10a SR-4 Floor 1	1.01E-05	3.39	0.22	0.23	0.23	0.23	0.23	0.23	0.24	0.24	3.61	0.009	0.029	0.000	0.004	
SENSITIV	SR	379342	3782777	TOD10a SR-5 Floor 1	1.03E-05	3.43	0.22	0.22	0.22	0.22	0.22	0.22	0.23	0.23	3.64	0.010	0.029	0.000	0.004	
SENSITIV	SR	379344	3782748	TOD10a SR-6 Floor 1	1.31E-05	4.39	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.23	4.61	0.012	0.030	0.000	0.004	
SENSITIV	SR	379325	3782727	TOD10a SR-7 Floor 1	1.18E-05	3.95	0.22	0.22	0.22	0.22	0.22	0.22	0.23	0.23	4.17	0.011	0.027	0.000	0.004	
SENSITIV	SR	379289	3782727	TOD10a SR-8 Floor 1	1.49E-05	4.99	0.23													

## Adjusted Potential Carcinogenic Health Risks Within the Project Site Calculation

	<u>Factor</u>	
EF = Exposure frequency in days per year	350	
EFa = Exp. Freq adjusted outside; only 2.1 hours/day outside	30.6	<a href="#">USEPA Exposure Factors Handbook</a>
EFai = Exp. Freq adjusted inside; 16.4 hours/day inside	239.2	<a href="#">USEPA Exposure Factors Handbook</a>
FE = Filter Efficiency	90%	
DPM = Percent of risk associated with DPM	71%	
Equation =	$\text{Mitigated Risk} = ([\text{Unmitigated Risk}]/\text{EF}*\text{Efa}) + ((1 - (\text{FE}*\text{DPM})) * ([\text{Unmitigated Risk}]/\text{EF}*\text{Efa}))$	

### Time Spent Indoors

#### Time Spent Outdoors

Age Group	Mean (min/day)
Birth to	0
1 to 2 years	36
2 to 3 years	76
3 to 6 years	107
6 to 11 years	132
11 to 16 years	100
16 to 21 years	102
18 to 64 years	281
>64 years	298
Average	126
Hours Per Day	<b>2.1</b>

#### Time Spent Indoors at Residence

Age Group	Mean (min/day)
Birth to 1 year	1,108
1 to 2 years	1,065
2 to 3 years	979
3 to 6 years	957
6 to 11 years	893
11 to 16 years	889
16 to 21 years	833
18 to 64 years	948
>64 years	1,175
Average	983
Hours Per Day	<b>16.4</b>

## Emissions Calculations - SR 134

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
214,500	107,250	4.70%	5,041	552	4,489	102,209	201	106,497

Source: Caltrans Traffic Data E Source: Caltrans Traffic Data Branch, 2018 AADT and Truck Traffic 2018

\*\* Light Duty Diesel proportion based on vehicle miles traveled for LDA, LDT1, and LDT2 for Year 2024, South Coast AQMD, EMFAC2017.

**Diesel Proportion:** 11.0%

**Non-Diesel Proportion:** 89.0%

Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
50 mph for trucks (TOG), 65 mph for trucks (PM), 50 mph for light duty (TOG), 65 mph for light duty (PM), 65 for gas (TOG)	0.0248	0.0248	0.0061	0.0124	0.0157

Source: EMFAC2021 Emissions Database

Analysis Year	Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG									
	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.12	0.04	0.56	0.00	1.34	57.61	3.83	15.11	1.00	23.75

Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).

### Derivation of Emission Rates for SR 134 Sources

Freeway width, one way		76.8 feet	23.4 m			
Each direction segment at		393.7 feet long	120 m			
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	14.9	57.73	3.86	15.66	1.00	25.09
lbs/hour/segment	0.000102	0.000395	0.000026	0.000107	0.000007	0.000172
lbs/day/segment	0.002448	0.009489	0.000635	0.002575	0.0001651	0.004124
lbs/year/segment ***	0.893528	3.463627	0.231893	0.939733	0.060258	1.505154
Segment 14		76.8 feet	23.4 m			
Each direction segment at		198.8 feet long	60.6 m			
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	14.9	57.73	3.86	15.66	1.00	25.09
lbs/hour/segment	0.000052	0.00020	0.000013	0.00005	0.000003	0.00009
lbs/day/segment	0.0012	0.0048	0.0003	0.0013	0.0001	0.0021
lbs/year/segment ***	0.451232	1.749132	0.117106	0.474565	0.030430	0.760103

\*\* Total emissions per mile calculated using the above speciation factors.

\*\*\* Based on 365 day/year

HARP ID:                      9901                      71432                      106990                      75070                      107028                      50000

### Emissions Calculations - I-5

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
219,500	109,750	6.57%	7,205	789	6,416	102,545	169	108,792

Source: Caltrans Traffic Data Branch, 2019 AADT and 2019 Truck Traffic . Traffic and truck percentage represent average of back and ahead counts.

\*\* Light Duty Diesel proportion based on vehicle miles traveled for LDA, LDT1, and LDT2 for Year 2024, South Coast AQMD, EMFAC2017.

Diesel Proportion: 10.9%  
 Non-Diesel Proportion: 89.1%

Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
50 mph for trucks (TOG), 65 mph for trucks (PM), 50 mph for light duty (TOG), 65 mph for light duty (PM), 65 for gas (TOG)	0.0248	0.0248	0.0057	0.0124	0.0157

Source: EMFAC2021 Emissions Database

#### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion of VOC

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.16	0.05	0.75	0.00	1.79	58.85	3.91	15.43	1.03	24.26

Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).

#### Derivation of Emission Rates for I-5 Sources

##### NORTHBOUND SEGMENTS

Freeway width, one way	80.7 feet		24.6 m			
Each direction segment at	656.2 feet long		200 m			
	<b>Emissions</b>					
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	20.5	59.01	3.96	16.18	1.03	26.05
lbs/hour/segment	0.000234	0.000674	0.000045	0.000185	0.000012	0.000297
lbs/day/segment	0.005617	0.016167	0.001085	0.004432	0.0002811	0.007137
lbs/year/segment ***	2.050302	5.900872	0.395993	1.617613	0.102594	2.605063
Freeway width, one way	69.9 feet		21.3 m			
Each direction segment at	656.2 feet long		200 m			
	<b>Emissions</b>					
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	20.5	59.01	3.96	16.18	1.03	26.05
lbs/hour/segment	0.000234	0.00067	0.000045	0.00018	0.000012	0.00030
lbs/day/segment	0.0056	0.0162	0.0011	0.0044	0.0003	0.0071
lbs/year/segment ***	2.050302	5.900872	0.395993	1.617613	0.102594	2.605063
Freeway width, one way	86 feet		26.1 m			
Each direction segment at	656.2 feet long		200 m			
	<b>Emissions</b>					
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	20.5	59.01	3.96	16.2	1.03	26.05

lbs/hour/segment	0.000234	0.000674	0.000045	0.000185	0.000012	0.000297
lbs/day/segment	0.005617	0.016167	0.0011	0.0044	0.0003	0.0071
lbs/year/segment ***	2.050302	5.900872	0.395993	1.617613	0.102594	2.605063

**SOUTHBOUND SEGMENTS**

Freeway width, one way	81 feet	24.6 m				
Each direction segment at	328.1 feet long	100 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	20.5	59.01	3.96	16.2	1.03	26.05
lbs/hour/segment	0.000117	0.000337	0.000023	0.000092	0.000006	0.000149
lbs/day/segment	0.002809	0.008083	0.0005	0.0022	0.0001	0.0036
lbs/year/segment ***	1.025151	2.950436	0.197996	0.808807	0.051297	1.302531

Freeway width, one way	70 feet	21.3 m				
Each direction segment at	328.1 feet long	100 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	20.5	59.01	3.96	16.2	1.03	26.05
lbs/hour/segment	0.000117	0.000337	0.000023	0.000092	0.000006	0.000149
lbs/day/segment	0.002809	0.008083	0.0005	0.0022	0.0001	0.0036
lbs/year/segment ***	1.025151	2.950436	0.197996	0.808807	0.051297	1.302531

Freeway width, one way	86 feet	26.1 m				
Each direction segment at	328.1 feet long	100 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	20.5	59.01	3.96	16.2	1.03	26.05
lbs/hour/segment	0.000117	0.000337	0.000023	0.000092	0.000006	0.000149
lbs/day/segment	0.002809	0.008083	0.0005	0.0022	0.0001	0.0036
lbs/year/segment ***	1.025151	2.950436	0.197996	0.808807	0.051297	1.302531

\*\* Total emissions per mile calculated using the above speciation factors.

\*\*\* Based on 365 day/year

<b>HARP ID:</b>	<b>9901</b>	<b>71432</b>	<b>106990</b>	<b>75070</b>	<b>107028</b>	<b>50000</b>
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## Emissions Calculations - Ramp #1 (Seg 5 NB off to EB Burbank Blvd.)

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
5,600	5,600	6.93%	388	42	346	5,212	43	5,515

*Source: Caltrans Traffic Data Branch, 2014 Ramp AADT and Truck Traffic 2017 (Percentage from I-10 west of I-110)*

\* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

**Diesel Proportion:** 10.9%

**Non-Diesel Proportion:** 89.1%

*Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT*

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
35	0.0104	0.0441	0.0068	0.0185	0.0164

*Source: EMFAC2021 Emissions Database*

### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.02	0.01	0.09	0.00	0.22	3.12	0.21	0.82	0.05	1.29

*Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).*

### Derivation of Emission Rates for Sources: Ramp #1 (Seg 5 NB off to EB Burbank Blvd.)

Ramp width, one way	42.3 feet	12.9 m	2 lanes			
Each direction segment at	295.3 feet long	90 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	0.7	3.14	0.21	0.91	0.05	1.51
lbs/hour/segment	0.000004	0.00002	0.000001	0.000005	0.0000003	0.000008
lbs/day/segment	0.0001	0.0004	0.0000	0.0001	0.0000	0.0002
lbs/year/segment ***	0.032873	0.141278	0.009602	0.040913	0.002448	0.067730



### Emissions Calculations - Ramp #2 (Seg 5 NB off to WB Burbank Blvd.)

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
7,260	7,260	3.46%	251	27	224	7,009	58	7,175

*Source: Caltrans Traffic Data Branch, 2008 Ramp AADT and Truck Traffic 2017 (Percentage from I-10 east of I-110)*

\* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

**Diesel Proportion:** 10.9%  
**Non-Diesel Proportion:** 89.1%

*Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT*

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
35	0.0104	0.0441	0.0068	0.0185	0.0164

*Source: EMFAC2021 Emissions Database*

#### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.02	0.01	0.08	0.00	0.19	4.06	0.27	1.06	0.07	1.67

*Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).*

#### Derivation of Emission Rates for Sources: Ramp #2 (Seg 5 NB off to WB Burbank Blvd.)

Ramp width, one way	44.9 feet	13.7 m	2 lanes			
Each direction segment at	328.1 feet long	100 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	0.7	4.08	0.27	1.14	0.07	1.86
lbs/hour/segment	0.000004	0.00002	0.000002	0.000007	0.0000004	0.00001
lbs/day/segment	0.0001	0.0006	0.0000	0.0002	0.0000	0.0003
lbs/year/segment ***	0.03380	0.203796	0.013745	0.057107	0.003538	0.093012

### Emissions Calculations - Ramp #3 (Seg 5 SB off to Burbank Blvd.)

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
6,859	6,859	8.01%	549	60	489	6,310	52	6,747

*Source: Caltrans Traffic Data Branch, 2014 Ramp AADT and Truck Traffic 2017 (Percentage from weighted average of I-10 east of I-110 and west of I-110 based on WB and EB contribution)*

\* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

**Diesel Proportion:** 10.9%  
**Non-Diesel Proportion:** 89.1%

*Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT*

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
35	0.0104	0.0441	0.0068	0.0185	0.0164

*Source: EMFAC2021 Emissions Database*

#### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.03	0.01	0.12	0.00	0.30	3.82	0.25	1.00	0.07	1.57

*Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).*

#### Derivation of Emission Rates for Sources: Ramp #3 (Seg 5 SB off to Burbank Blvd.)

Ramp width, one way	64.6 feet	19.7 m	3 lane			
Each direction segment at	262.5 feet long	80 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	1.0	3.84	0.26	1.12	0.07	1.87
lbs/hour/segment	0.00000	0.00002	0.000001	0.000005	0.0000003	0.00001
lbs/day/segment	0.0001	0.0004	0.0000	0.0001	0.0000	0.0002
lbs/year/segment ***	0.039181	0.153741	0.010476	0.045000	0.002662	0.074876

## Emissions Calculations - Ramp #4 (SB on from EB Burbank Blvd.)

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
15,468	15,468	6.93%	1,072	117	955	14,396	119	15,232

*Source: Caltrans Traffic Data Branch, 2014 Ramp AADT and Truck Traffic 2017 (Percentage from I-110 north of I-10)*

\* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

**Diesel Proportion:** 10.9%  
**Non-Diesel Proportion:** 89.1%

*Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT*

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
50	0.0133	0.0248	0.0057	0.0124	0.0128

*Source: EMFAC2021 Emissions Database*

### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.03	0.01	0.15	0.00	0.36	6.75	0.45	1.77	0.12	2.78

*Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).*

### Derivation of Emission Rates for Sources: Ramp #4 (SB on from EB Burbank Blvd.)

Ramp width, one way	37.7 feet	11.5 m	2 lane			
Each direction segment at	131.2 feet long	40 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	2.2	6.78	0.46	1.92	0.12	3.15
lbs/hour/segment	0.000005	0.00002	0.000001	0.00000	0.0000003	0.00001
lbs/day/segment	0.0001	0.0004	0.0000	0.0001	0.0000	0.0002
lbs/year/segment ***	0.044736	0.135672	0.009173	0.038418	0.002354	0.062903

### Emissions Calculations - Ramp #5 (SB on from WB Burbank Blvd.)

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
7,882	7,882	6.93%	546	60	486	7,336	61	7,761

*Source: Caltrans Traffic Data Branch, 2014 Ramp AADT and Truck Traffic 2017 (Percentage from I-110 south of I-10)*

\* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

**Diesel Proportion:** 10.9%  
**Non-Diesel Proportion:** 89.1%

*Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT*

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
50	0.0133	0.0248	0.0057	0.0124	0.0128

*Source: EMFAC2021 Emissions Database*

#### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.02	0.01	0.08	0.00	0.19	3.44	0.23	0.90	0.06	1.42

*Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).*

#### Derivation of Emission Rates for Sources: Ramp #5 (SB on from WB Burbank Blvd.)

Ramp width, one way	48.2 feet	14.7 m	2 lane			
Each direction segment at	328.1 feet long	100 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	1.1	3.46	0.23	0.98	0.06	1.60
lbs/hour/segment	0.00001	0.00002	0.000001	0.000006	0.0000003	0.00001
lbs/day/segment	0.0002	0.0005	0.0000	0.0001	0.0000	0.0002
lbs/year/segment ***	0.057455	0.172817	0.011686	0.048967	0.002998	0.080200

### Emissions Calculations - Ramp #6 (Seg 5 NB on from Olive Ave.)

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
8,619	8,619	6.93%	597	65	532	8,022	67	8,487

*Source: Caltrans Traffic Data Branch, 2014 Ramp AADT and Truck Traffic 2017 (Percentage from I-110 south of I-10)*

\* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

**Diesel Proportion:** 10.9%  
**Non-Diesel Proportion:** 89.1%

*Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT*

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
50	0.0133	0.0248	0.0057	0.0124	0.0128

*Source: EMFAC2021 Emissions Database*

#### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.02	0.01	0.08	0.00	0.20	3.76	0.25	0.99	0.07	1.55

*Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).*

#### Derivation of Emission Rates for Sources: Ramp #6 (Seg 5 NB on from Olive Ave.)

Ramp width, one way	40.0 feet	12.2 m	1 lane			
Each direction segment at	262.5 feet long	80 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	1.2	3.78	0.26	1.07	0.07	1.75
lbs/hour/segment	0.000006	0.00002	0.000001	0.000005	0.0000003	0.00001
lbs/day/segment	0.0001	0.0004	0.0000	0.0001	0.0000	0.0002
lbs/year/segment ***	0.049937	0.151188	0.010222	0.042818	0.002623	0.070114

### Emissions Calculations - Ramp #7 (Seg 5 SB off to Verdugo Ave.)

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
3,880	3,880	6.93%	269	29	240	3,611	30	3,821

*Source: Caltrans Traffic Data Branch, 2014 Ramp AADT and Truck Traffic 2017 (Percentage from I-110 south of I-10)*

\* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

**Diesel Proportion:** 10.9%  
**Non-Diesel Proportion:** 89.1%

*Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT*

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
35	0.0104	0.0441	0.0068	0.0185	0.0164

*Source: EMFAC2021 Emissions Database*

#### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.01	0.00	0.06	0.00	0.15	2.16	0.14	0.57	0.04	0.89

*Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).*

#### Derivation of Emission Rates for Sources: Ramp #7 (Seg 5 NB off to Verdugo Ave.)

Ramp width, one way	39.4 feet	12 m	1 lane			
Each direction segment at	328.1 feet long	100 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	0.5	2.18	0.15	0.63	0.04	1.04
lbs/hour/segment	0.000003	0.00001	0.0000008	0.000004	0.0000002	0.000006
lbs/day/segment	0.0001	0.0003	0.0000	0.0001	0.0000	0.0001
lbs/year/segment ***	0.025379	0.108755	0.007392	0.031499	0.001884	0.052147

### Emissions Calculations - Ramp #8 (Seg 5 SB on from Verdugo Ave.)

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
8,619	8,619	6.93%	597	65	532	8,022	67	8,487

*Source: Caltrans Traffic Data Branch, 2014 Ramp AADT and Truck Traffic 2017 (Percentage from I-110 south of I-10)*

\* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

**Diesel Proportion:** 10.9%  
**Non-Diesel Proportion:** 89.1%

*Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT*

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
50	0.0133	0.0248	0.0057	0.0124	0.0128

*Source: EMFAC2021 Emissions Database*

#### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.02	0.01	0.08	0.00	0.20	3.76	0.25	0.99	0.07	1.55

*Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).*

#### Derivation of Emission Rates for Sources: Ramp #8 (Seg 5 NB on from Verdugo Ave.)

Ramp width, one way	49.5 feet	15.1 m	1 lane			
Each direction segment at	98.4 feet long	30 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	1.2	3.78	0.26	1.07	0.07	1.75
lbs/hour/segment	0.000002	0.000006	0.000004	0.000002	0.000001	0.000003
lbs/day/segment	0.0001	0.0002	0.0000	0.0000	0.0000	0.0001
lbs/year/segment ***	0.018726	0.056695	0.003833	0.016057	0.000984	0.026293

## Emissions Calculations - Ramp #9 (Seg 5 NB off to Olive Ave.)

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
10,913	10,913	6.93%	756	83	673	10,157	85	10,745

*Source: Caltrans Traffic Data Branch, 2014 Ramp AADT and Truck Traffic 2017 (Percentage from I-110 south of I-10)*

\* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

**Diesel Proportion:** 10.9%  
**Non-Diesel Proportion:** 89.1%

*Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT*

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
35	0.0104	0.0441	0.0068	0.0185	0.0164

*Source: EMFAC2021 Emissions Database*

### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.04	0.01	0.18	0.00	0.43	6.08	0.40	1.59	0.11	2.51

*Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).*

### Derivation of Emission Rates for Sources: Ramp #9 (Seg 5 NB off to Olive Ave.)

Ramp width, one way	33.8 feet	10.3 m	1 lane			
Each direction segment at	98.4 feet long	30 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	1.4	6.12	0.42	1.77	0.11	2.94
lbs/hour/segment	0.000002	0.00001	0.0000007	0.000003	0.0000002	0.000005
lbs/day/segment	0.0001	0.0003	0.0000	0.0001	0.0000	0.0001
lbs/year/segment ***	0.021639	0.091761	0.006239	0.026608	0.001590	0.044075



### Emissions Calculations - Ramp #10 (Seg 134 WB on from W Alameda Dr.)

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
1,001	1,001	6.93%	69	18	51	932	8	975

*Source: Caltrans Traffic Data Branch, 2014 Ramp AADT and Truck Traffic 2017 (Percentage from I-110 south of I-10)*

\* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

**Diesel Proportion:** 25.8%  
**Non-Diesel Proportion:** 74.2%

*Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT*

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
50	0.0133	0.0248	0.0057	0.0124	0.0128

*Source: EMFAC2021 Emissions Database*

#### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.00	0.00	0.02	0.00	0.04	0.43	0.03	0.11	0.01	0.18

*Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).*

#### Derivation of Emission Rates for Sources: Ramp #10 (Seg 134 WB on from W Alameda Dr.)

Ramp width, one way	60.7 feet	18.5 m	2 lanes			
Each direction segment at	98.4 feet long	30 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	0.3	0.44	0.03	0.13	0.01	0.22
lbs/hour/segment	0.0000005	0.000001	0.00000005	0.0000002	0.00000001	0.0000004
lbs/day/segment	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
lbs/year/segment ***	0.004266	0.006543	0.000449	0.001980	0.000113	0.003346

### Emissions Calculations - Ramp #11 (Seg 134 EB on from Riverside Dr.)

AADT	AADT per direction	Caltrans Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
7,821	7,821	6.93%	542	140	402	7,279	61	7,620

Source: Caltrans Traffic Data Branch, 2014 Ramp AADT and Truck Traffic 2017 (Percentage from I-110 south of I-10)

\* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

**Diesel Proportion:** 25.8%

**Non-Diesel Proportion:** 74.2%

Source: Portion of Diesel Truck Vehicles vs. Non-Diesel Truck Vehicles based on EMFAC2021 aggregate VMT

Speed (miles/hour)	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust PM (grams/mile)	hot stabilized exhaust TOG (grams/mile)	hot stabilized exhaust TOG (grams/mile)
50	0.0133	0.0248	0.0057	0.0124	0.0128

Source: EMFAC2021 Emissions Database

#### Mobile Source Air Toxics (MSAT) Speciation Factors Based on Proportion In TOG

Analysis Year	Diesel					Non-Diesel				
	Hot Stabilized Exhaust					Hot Stabilized Exhaust				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2029	0.007320	0.002292	0.034383	0.006088	0.082668	0.034539	0.002295	0.009056	0.000602	0.014238
Total Daily Emissions, g/mi	0.03	0.01	0.15	0.00	0.35	3.38	0.22	0.89	0.06	1.39

Speciation Source: U.S. Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES2014).

#### Derivation of Emission Rates for Sources: Ramp #11 (Seg 134 EB on from Riverside Dr.)

Ramp width, one way	45.9 feet	14 m	1 lane			
Each direction segment at	98.4 feet long	30 m				
<b>Emissions</b>						
	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day **	2.2	3.41	0.23	1.03	0.06	1.74
lbs/hour/segment	0.000004	0.000006	0.0000004	0.000002	0.0000001	0.000003
lbs/day/segment	0.0001	0.0001	0.0000	0.0000	0.0000	0.0001
lbs/year/segment ***	0.033203	0.051128	0.003512	0.015465	0.000883	0.026127