

# **APPENDIX C**

## **Air Quality Appendices**

**Appendix C1**  
**Criteria Pollutant and GHG Emission Calculations**

**Appendix C1.1**  
**Construction Emission Calculations**

## Table Of Contents - Appendix C1.1 Construction Emission Calculations

TABLE	DESCRIPTION
Table C1.1-1	Unmitigated Construction Equipment Emission Factors Derived from OFFROAD 2007 for 2013 South Coast Air Basin Diesel Construction Equipment
Table C1.1-2	Unmitigated Construction Equipment Emission Factors Derived from OFFROAD 2007 for 2014 South Coast Air Basin Diesel Construction Equipment
Table C1.1-3	Mitigated Construction Equipment Emission Factors for 2013 South Coast Air Basin Diesel Construction Equipment
Table C1.1-4	Mitigated Construction Equipment Emission Factors for 2013 South Coast Air Basin Diesel Construction Equipment
Table C1.1-5	Unmitigated Emission Factors for Construction Activities not Included in the OFFROAD Model
Table C1.1-6	Mitigated Emission Factors for Construction Activities not Included in the OFFROAD Model
Table C1.1-7	Unmitigated Case: Emission Factors for On-road Diesel Trucks from EMFAC2007 Model
Table C1.1-8	Mitigated Case: Emission Factors for On-road Diesel Trucks
Table C1.1-9	Equipment Type, Size and Activity for Site Construction and Sepulveda Bridge
Table C1.1-10	Equipment Type, Size and Activity for Lead & Storage Track and Dominguez Channel
Table C1.1-11	Equipment Type, Size and Activity for PCH Grade Separation
Table C1.1-12	Emission Factors of Equipment Used at Site Construction and Sepulveda Bridge
Table C1.1-13	Emission Factors of Equipment Used at Lead & Storage Track and Dominguez Channel
Table C1.1-14	Emission Factors of Equipment Used at PCH Grade Separation
Table C1.1-15	Mitigated Emission Factors of Equipment Used at Site Construction and Sepulveda Bridge per POLA Construction Guidelines
Table C1.1-16	Mitigated Emission Factors of Equipment Used at Lead & Storage Track and Dominguez Channel per POLA Construction Guidelines
Table C1.1-17	Mitigated Emission Factors of Equipment Used at PCH Grade Separation per POLA Construction Guidelines
Table C1.1-18	Summary of Daily Emissions of Offroad Construction Equipment at Site Construction and Sepulveda Bridge
Table C1.1-19	Summary of Daily Emissions of Offroad Construction Equipment at Lead & Storage Track and Dominguez Channel
Table C1.1-20	Summary of Daily Emissions of Offroad Construction Equipment at PCH Grade Separation
Table C1.1-21	Summary of Mitigated Daily Emissions of Offroad Construction Equipment at Site Construction and Sepulveda Bridge
Table C1.1-22	Summary of Mitigated Daily Emissions of Offroad Construction Equipment at Lead & Storage Track and Dominguez Channel.
Table C1.1-23	Summary of Mitigated Daily Emissions of Offroad Construction Equipment at PCH Grade Separation.
Table C1.1-24	On-Road Trucks Activities - Site Construction
Table C1.1-25	On-Road Trucks Activities - Sepulveda Bridge
Table C1.1-26	On-Road Trucks Activities - Lead & Storage Track
Table C1.1-27	On-Road Trucks Activities - Dominguez Channel
Table C1.1-28	On-Road Trucks Activities - PCH Grade Separation
Table C1.1-29	Unmitigated Emission Factors for On-Road Trucks - Site Construction
Table C1.1-30	Unmitigated Emission Factors for On-Road Trucks - Sepulveda Bridge
Table C1.1-31	Unmitigated Emission Factors for On-Road Trucks - Lead & Storage Tracks
Table C1.1-32	Unmitigated Emission Factors for On-Road Trucks - Dominguez Channel
Table C1.1-33	Unmitigated Emission Factors for On-Road Trucks - PCH Grade Separation
Table C1.1-34	Mitigated Emission Factors for On-Road Trucks - Site Construction
Table C1.1-35	Mitigated Emission Factors for On-Road Trucks - Sepulveda Bridge
Table C1.1-36	Mitigated Emission Factors for On-Road Trucks - Lead & Storage Tracks
Table C1.1-37	Mitigated Emission Factors for On-Road Trucks - Dominguez Channel
Table C1.1-38	Mitigated Emission Factors for On-Road Trucks - PCH Grade Separation
Table C1.1-39	Summary of Unmitigated Daily On-Site Emissions of On-Road Trucks at Site Construction and Sepulveda Bridge.
Table C1.1-40	Summary of Unmitigated Daily On-Site Emissions of On-Road Trucks at Lead & Storage Track and Dominguez Channel.
Table C1.1-41	Summary of Unmitigated Daily On-Site Emissions of On-Road Trucks at PCH Grade Separation.
Table C1.1-42	Summary of Mitigated Daily On-Site Emissions of On-Road Trucks at Site Construction and Sepulveda Bridge.
Table C1.1-43	Summary of Mitigated Daily On-Site Emissions of On-Road Trucks at Lead & Storage Track and Dominguez Channel.
Table C1.1-44	Summary of Mitigated Daily On-Site Emissions of On-Road Trucks at PCH Grade Separation.
Table C1.1-45	Summary of Unmitigated Daily Off-Site Emissions of On-Road Trucks at Site Construction and Sepulveda Bridge.
Table C1.1-46	Summary of Unmitigated Daily Off-Site Emissions of On-Road Trucks at Lead & Storage Track and Dominguez Channel.
Table C1.1-47	Summary of Unmitigated Daily Off-Site Emissions of On-Road Trucks at PCH Grade Separation.
Table C1.1-48	Summary of Mitigated Daily Off-Site Emissions of On-Road Trucks at Site Construction and Sepulveda Bridge.
Table C1.1-49	Summary of Mitigated Daily Off-Site Emissions of On-Road Trucks at Lead & Storage Track and Dominguez Channel.
Table C1.1-50	Summary of Mitigated Daily Off-Site Emissions of On-Road Trucks at PCH Grade Separation.
Table C1.1-51	Equipment Type, Size and Activity for Sound Wall Construction
Table C1.1-52	Unmitigated Emission Factors of Equipment Used at Sound Wall Construction
Table C1.1-53	Mitigated Emission Factors of Equipment Used at Sound Wall Construction
Table C1.1-54	Summary of Unmitigated Daily Emissions of Equipment Used at Sound Wall Construction
Table C1.1-55	Summary of Mitigated Daily Emissions of Equipment Used at Sound Wall Construction
Table C1.1-56	On-road Trucks Activities for Construction of Sound Wall

Table C1.1-57	Unmitigated Emission Factors for On-road Trucks for Sound Wall Construction
Table C1.1-58	Mitigated Emission Factors for On-road Trucks for Sound Wall Construction
Table C1.1-59	Summary of Unmitigated Daily Emissions of On-Road Trucks at Sound Wall Construction.
Table C1.1-60	Summary of Mitigated Daily Emissions of On-Road Trucks at Sound Wall Construction.
Table C1.1-61	Truck and Ship Activities for Crane Delivery and Assembly
Table C1.1-62	Rail Activities for Crane Delivery
Table C1.1-63	Off-road Equipment Type, Size, and Activities for Crane Assembly
Table C1.1-64	Unmitigated Emission Factors for Crane Delivery and Assembly Activities
Table C1.1-65	Mitigated Emission Factors for Crane Delivery and Assembly Activities
Table C1.1-66	Summary of Unmitigated Peak Daily Emissions for Crane Delivery and Assembly Activities
Table C1.1-67	Summary of Mitigated Daily Emissions for Crane Delivery and Assembly Activities
Table C1.1-68	Equipment Type, Size and Activity for SCE Tower Relocation
Table C1.1-69	Emission Factors of Equipment Used at SCE Tower Relocation
Table C1.1-70	Summary of Daily Emissions of Equipment Used at SCE Tower Relocation
Table C1.1-71	On-road Trucks Activities for SCE Tower Relocation
Table C1.1-72	Emission Factors for On-road Trucks for SCE Tower Relocation
Table C1.1-73	Total Daily Criteria Pollutant Construction Emissions by Phase
Table C1.1-74	Offroad Construction Equipment Type, Size, and Activities for Relocated Tenants
Table C1.1-75	On-road Vehicle Type and Activities for Relocated Tenants Construction
Table C1.1-76	Unmitigated Annual Emissions for Relocated Tenants Construction
Table C1.1-77	Mitigated Annual Emissions for Relocated Tenants Construction
Table C1.1-78	Unmitigated Peak Daily Emissions for SCIG and Relocation Tenant Construction Activities by Year
Table C1.1-79	Mitigated Peak Daily Emissions for SCIG and Relocation Tenant Construction Activities by Year

**Table C1.1-1. Unmitigated Construction Equipment Emission Factors Derived from OFFROAD 2007 for 2013 South Coast Air Basin Diesel Construction Equipment**

Construction Equipment	Type	HP	Size-hp	Emission Factor (g/bhp-hr)					
				TOG	CO	NOx	SO2	PM10	PM2.5
<b>Construction Year 2013</b>									
14 T Rough Terrain Crane	Offroad	175	155	0.830	3.410	5.100	0.006	0.260	0.239
14 T Rough Terrain Crane	Offroad	175	175	0.830	3.410	5.100	0.006	0.260	0.239
300 scfm Air Compressor	Offroad	175	125	0.774	3.246	5.385	0.006	0.300	0.276
Auger	Offroad	250	177	0.273	1.036	2.306	0.006	0.067	0.061
Auger	Offroad	250	190	0.273	1.036	2.306	0.006	0.067	0.061
Backhoe	Offroad	120	101	0.868	3.877	5.015	0.007	0.421	0.387
Backhoe	Offroad	500	500	0.430	1.227	3.405	0.006	0.115	0.106
Cat 572 Pipe Layer	Offroad	250	230	0.600	1.494	4.900	0.006	0.160	0.147
Concrete Power Saw	Offroad	25	10	0.781	2.340	4.336	0.007	0.168	0.155
Concrete Pump	Offroad	250	177	0.407	1.188	4.555	0.006	0.129	0.119
Crane	Offroad	175	173	0.830	3.410	5.100	0.006	0.260	0.239
Crane	Offroad	175	175	0.830	3.410	5.100	0.006	0.260	0.239
Crushers	Offroad	500	270	0.452	1.290	4.121	0.006	0.134	0.124
Diesel Hammer	Offroad	50	44	1.740	5.386	5.100	0.007	0.390	0.359
Dozer	Offroad	500	310	0.784	3.053	4.700	0.006	0.140	0.129
Dozers	Offroad	500	310	0.784	3.053	4.700	0.006	0.140	0.129
Excavator	Offroad	175	168	0.696	3.377	4.523	0.006	0.259	0.239
Excavator	Offroad	500	321	0.480	1.282	3.589	0.006	0.125	0.115
Foot Roller	Offroad	175	143	0.746	3.258	5.100	0.006	0.260	0.239
Fork Lift	Offroad	175	125	0.661	3.353	4.320	0.006	0.249	0.229
Front End Loader	Offroad	250	197	0.454	1.213	3.858	0.006	0.122	0.113
Front End Loader	Offroad	500	262	0.430	1.227	3.405	0.006	0.115	0.106
Front End Loader	Offroad	500	500	0.430	1.227	3.405	0.006	0.115	0.106
Front End Loader/Backhoe	Offroad	120	101	0.868	3.877	5.015	0.007	0.421	0.387
Front End Loader/Backhoe	Offroad	500	500	0.430	1.227	3.405	0.006	0.115	0.106
Grader	Offroad	175	145	0.766	3.369	5.100	0.006	0.260	0.239
Large Crane	Offroad	250	230	0.600	1.494	4.900	0.006	0.160	0.147
Large Crane	Offroad	500	450	0.557	1.670	4.490	0.006	0.140	0.129
Motor Grader	Offroad	175	145	0.766	3.369	5.100	0.006	0.260	0.239
P.D Crane	Offroad	175	175	0.830	3.410	5.100	0.006	0.260	0.239
P.D Crane	Offroad	250	230	0.600	1.494	4.900	0.006	0.160	0.147
Paving Machine	Offroad	175	170	0.888	3.420	5.100	0.006	0.260	0.239
Paving Machine	Offroad	175	175	0.888	3.420	5.100	0.006	0.260	0.239
Pile driver Crane	Offroad	250	230	0.600	1.494	4.900	0.006	0.160	0.147
Pumps	Offroad	120	60	0.953	3.633	5.618	0.007	0.300	0.276
Self Loading Scrapers	Offroad	500	365	0.641	2.142	4.700	0.006	0.140	0.129
Sheep's Foot Roller	Offroad	175	143	0.746	3.258	5.100	0.006	0.260	0.239
Slip Form Machine	Offroad	500	250	0.369	1.170	3.395	0.006	0.110	0.101
Speed Swing	Offroad	175	170	0.630	3.285	4.314	0.006	0.240	0.221
Striping Machines	Offroad	120	60	0.768	3.355	5.219	0.007	0.346	0.319
Sweeper	Offroad	175	160	0.670	3.270	4.581	0.006	0.260	0.239
Track Hoe	Offroad	500	321	0.480	1.282	3.589	0.006	0.125	0.115
Vibratory Roller	Offroad	175	142	0.746	3.258	5.100	0.006	0.260	0.239
Vibratory Roller	Offroad	250	240	0.533	1.443	4.872	0.006	0.160	0.147
Vibratory rollers	Offroad	175	138	0.746	3.258	5.100	0.006	0.260	0.239
Vibratory Rollers	Offroad	175	142	0.746	3.258	5.100	0.006	0.260	0.239
Vibratory Rollers	Offroad	175	143	0.746	3.258	5.100	0.006	0.260	0.239
Vibratory Rollers	Offroad	250	240	0.533	1.443	4.872	0.006	0.160	0.147
Vibratory Trench Rollers	Offroad	50	50	2.551	6.367	5.100	0.007	0.390	0.359
Welding Unit	Offroad	50	50	2.441	6.028	5.549	0.007	0.525	0.483

**Table C1.1-2. Unmitigated Construction Equipment Emission Factors Derived from OFFROAD 2007 for 2014 South Coast Air Basin Diesel Construction Equipment**

Construction Equipment	Type	HP	Size-hp	Emission Factor (g/bhp-hr)					
				TOG	CO	NOx	SO2	PM10	PM2.5
<b>Construction Year 2014</b>									
14 T Rough Terrain Crane	Offroad	175	155	0.787	3.400	4.700	0.006	0.180	0.166
14 T Rough Terrain Crane	Offroad	175	175	0.787	3.400	4.700	0.006	0.180	0.166
300 scfm Air Compressor	Offroad	175	125	0.719	3.234	5.034	0.006	0.277	0.254
Auger	Offroad	250	177	0.253	1.035	1.855	0.006	0.054	0.050
Auger	Offroad	250	190	0.253	1.035	1.855	0.006	0.054	0.050
Backhoe	Offroad	120	101	0.793	3.848	4.671	0.007	0.230	0.212
Backhoe	Offroad	500	500	0.410	1.194	2.700	0.006	0.103	0.095
Cat 572 Pipe Layer	Offroad	250	230	0.565	1.427	2.800	0.006	0.110	0.101
Concrete Power Saw	Offroad	25	10	0.780	2.340	4.332	0.007	0.165	0.151
Concrete Pump	Offroad	250	177	0.377	1.156	4.145	0.006	0.117	0.108
Crane	Offroad	175	173	0.787	3.400	4.700	0.006	0.180	0.166
Crane	Offroad	175	175	0.787	3.400	4.700	0.006	0.180	0.166
Crushers	Offroad	500	270	0.429	1.231	3.702	0.006	0.122	0.112
Diesel Hammer	Offroad	50	44	1.548	5.223	4.900	0.007	0.290	0.267
Dozer	Offroad	500	310	0.750	2.855	2.700	0.006	0.110	0.101
Dozers	Offroad	500	310	0.750	2.855	2.700	0.006	0.110	0.101
Excavator	Offroad	175	168	0.654	3.373	4.215	0.006	0.180	0.166
Excavator	Offroad	500	321	0.458	1.241	2.700	0.006	0.110	0.101
Foot Roller	Offroad	175	143	0.704	3.248	4.700	0.006	0.180	0.166
Fork Lift	Offroad	175	125	0.605	3.357	3.937	0.006	0.180	0.166
Front End Loader	Offroad	250	197	0.430	1.194	2.800	0.006	0.109	0.100
Front End Loader	Offroad	500	262	0.410	1.194	2.700	0.006	0.103	0.095
Front End Loader	Offroad	500	500	0.410	1.194	2.700	0.006	0.103	0.095
Front End Loader/Backhoe	Offroad	120	101	0.793	3.848	4.671	0.007	0.230	0.212
Front End Loader/Backhoe	Offroad	500	500	0.410	1.194	2.700	0.006	0.103	0.095
Grader	Offroad	175	145	0.724	3.362	4.700	0.006	0.180	0.166
Large Crane	Offroad	250	230	0.565	1.427	2.800	0.006	0.110	0.101
Large Crane	Offroad	500	450	0.527	1.561	2.700	0.006	0.110	0.101
Motor Grader	Offroad	175	145	0.724	3.362	4.700	0.006	0.180	0.166
P.D Crane	Offroad	175	175	0.787	3.400	4.700	0.006	0.180	0.166
P.D Crane	Offroad	250	230	0.565	1.427	2.800	0.006	0.110	0.101
Paving Machine	Offroad	175	170	0.847	3.403	4.700	0.006	0.180	0.166
Paving Machine	Offroad	175	175	0.847	3.403	4.700	0.006	0.180	0.166
Pile driver Crane	Offroad	250	230	0.565	1.427	2.800	0.006	0.110	0.101
Pumps	Offroad	120	60	0.870	3.597	5.279	0.007	0.300	0.276
Self Loading Scrapers	Offroad	500	365	0.610	2.008	2.700	0.006	0.110	0.101
Sheep's Foot Roller	Offroad	175	143	0.704	3.248	4.700	0.006	0.180	0.166
Slip Form Machine	Offroad	500	250	0.351	1.136	2.700	0.006	0.099	0.091
Speed Swing	Offroad	175	170	0.590	3.283	4.014	0.006	0.180	0.166
Striping Machines	Offroad	120	60	0.694	3.323	4.905	0.007	0.240	0.221
Sweeper	Offroad	175	160	0.613	3.269	4.203	0.006	0.180	0.166
Track Hoe	Offroad	500	321	0.458	1.241	2.700	0.006	0.110	0.101
Vibratory Roller	Offroad	175	142	0.704	3.248	4.700	0.006	0.180	0.166
Vibratory Roller	Offroad	250	240	0.499	1.380	2.800	0.006	0.110	0.101
Vibratory rollers	Offroad	175	138	0.704	3.248	4.700	0.006	0.180	0.166
Vibratory Rollers	Offroad	175	142	0.704	3.248	4.700	0.006	0.180	0.166
Vibratory Rollers	Offroad	175	143	0.704	3.248	4.700	0.006	0.180	0.166
Vibratory Rollers	Offroad	250	240	0.499	1.380	2.800	0.006	0.110	0.101
Vibratory Trench Rollers	Offroad	50	50	2.357	6.192	4.900	0.007	0.290	0.267
Welding Unit	Offroad	50	50	2.209	5.805	5.331	0.007	0.480	0.442

**Table C1.1-3. Mitigated Construction Equipment Emission Factors for 2013 South Coast Air Basin Diesel Construction Equipment**

Construction Equipment	Type	HP	Size-hp	Emission Factor (g/bhp-hr)					
				TOG	CO	NOX	SO2	PM10	PM2.5
<b>Construction Year 2013</b>									
14 T Rough Terrain Crane	Offroad	175	155	0.308	3.400	4.195	0.006	0.068	0.063
14 T Rough Terrain Crane	Offroad	175	175	0.308	3.400	4.195	0.006	0.068	0.063
300 scfm Air Compressor	Offroad	175	125	0.308	3.234	4.195	0.006	0.068	0.063
Auger	Offroad	250	177	0.253	1.035	1.855	0.006	0.048	0.044
Auger	Offroad	250	190	0.253	1.035	1.855	0.006	0.048	0.044
Backhoe	Offroad	120	101	0.393	3.731	4.634	0.007	0.075	0.069
Backhoe	Offroad	500	500	0.410	1.194	2.700	0.006	0.048	0.044
Cat 572 Pipe Layer	Offroad	250	230	0.565	1.427	2.800	0.006	0.048	0.044
Concrete Power Saw	Offroad	25	10	0.319	2.340	4.332	0.007	0.109	0.100
Concrete Pump	Offroad	250	177	0.377	1.156	4.145	0.006	0.048	0.044
Crane	Offroad	175	173	0.308	3.400	4.195	0.006	0.068	0.063
Crane	Offroad	175	175	0.308	3.400	4.195	0.006	0.068	0.063
Crushers	Offroad	500	270	0.429	1.231	3.702	0.006	0.048	0.044
Diesel Hammer	Offroad	50	44	0.319	4.104	4.900	0.007	0.091	0.084
Dozer	Offroad	500	310	0.657	2.855	2.700	0.006	0.048	0.044
Dozers	Offroad	500	310	0.657	2.855	2.700	0.006	0.048	0.044
Excavator	Offroad	175	168	0.308	3.373	4.195	0.006	0.068	0.063
Excavator	Offroad	500	321	0.458	1.241	2.700	0.006	0.048	0.044
Foot Roller	Offroad	175	143	0.308	3.248	4.195	0.006	0.068	0.063
Fork Lift	Offroad	175	125	0.308	3.357	3.937	0.006	0.068	0.063
Front End Loader	Offroad	250	197	0.430	1.194	2.800	0.006	0.048	0.044
Front End Loader	Offroad	500	262	0.410	1.194	2.700	0.006	0.048	0.044
Front End Loader	Offroad	500	500	0.410	1.194	2.700	0.006	0.048	0.044
Front End Loader/Backhoe	Offroad	120	101	0.393	3.731	4.634	0.007	0.075	0.069
Front End Loader/Backhoe	Offroad	500	500	0.410	1.194	2.700	0.006	0.048	0.044
Grader	Offroad	175	145	0.308	3.362	4.195	0.006	0.068	0.063
Large Crane	Offroad	250	230	0.565	1.427	2.800	0.006	0.048	0.044
Large Crane	Offroad	500	450	0.527	1.561	2.700	0.006	0.048	0.044
Motor Grader	Offroad	175	145	0.308	3.362	4.195	0.006	0.068	0.063
P.D Crane	Offroad	175	175	0.308	3.400	4.195	0.006	0.068	0.063
P.D Crane	Offroad	250	230	0.565	1.427	2.800	0.006	0.048	0.044
Paving Machine	Offroad	175	170	0.308	3.403	4.195	0.006	0.068	0.063
Paving Machine	Offroad	175	175	0.308	3.403	4.195	0.006	0.068	0.063
Pile driver Crane	Offroad	250	230	0.565	1.427	2.800	0.006	0.048	0.044
Pumps	Offroad	120	60	0.393	3.597	4.634	0.007	0.075	0.069
Self Loading Scrappers	Offroad	500	365	0.610	2.008	2.700	0.006	0.048	0.044
Sheep's Foot Roller	Offroad	175	143	0.308	3.248	4.195	0.006	0.068	0.063
Slip Form Machine	Offroad	500	250	0.351	1.136	2.700	0.006	0.048	0.044
Speed Swing	Offroad	175	170	0.308	3.283	4.014	0.006	0.068	0.063
Striping Machines	Offroad	120	60	0.393	3.323	4.634	0.007	0.075	0.069
Sweeper	Offroad	175	160	0.308	3.269	4.195	0.006	0.068	0.063
Track Hoe	Offroad	500	321	0.458	1.241	2.700	0.006	0.048	0.044
Vibratory Roller	Offroad	175	142	0.308	3.248	4.195	0.006	0.068	0.063
Vibratory Roller	Offroad	250	240	0.499	1.380	2.800	0.006	0.048	0.044
Vibratory rollers	Offroad	175	138	0.308	3.248	4.195	0.006	0.068	0.063
Vibratory Rollers	Offroad	175	142	0.308	3.248	4.195	0.006	0.068	0.063
Vibratory Rollers	Offroad	175	143	0.308	3.248	4.195	0.006	0.068	0.063
Vibratory Rollers	Offroad	250	240	0.499	1.380	2.800	0.006	0.048	0.044
Vibratory Trench Rollers	Offroad	50	50	0.319	4.104	4.900	0.007	0.091	0.084
Welding Unit	Offroad	50	50	0.319	4.104	5.331	0.007	0.091	0.084



**Table C1.1-4. Mitigated Construction Equipment Emission Factors for 2014 South Coast Air Basin Diesel Construction Equipment**

Construction Equipment	Type	HP	Size-hp	Emission Factor (g/bhp-hr)					
				TOG	CO	NOX	SO2	PM10	PM2.5
<b>Construction Year 2014</b>									
14 T Rough Terrain Crane	Offroad	175	155	0.308	3.400	4.195	0.006	0.068	0.063
14 T Rough Terrain Crane	Offroad	175	175	0.308	3.400	4.195	0.006	0.068	0.063
300 scfm Air Compressor	Offroad	175	125	0.308	3.234	4.195	0.006	0.068	0.063
Auger	Offroad	250	177	0.253	1.035	1.855	0.006	0.048	0.044
Auger	Offroad	250	190	0.253	1.035	1.855	0.006	0.048	0.044
Backhoe	Offroad	120	101	0.393	3.731	4.634	0.007	0.075	0.069
Backhoe	Offroad	500	500	0.410	1.194	2.700	0.006	0.048	0.044
Cat 572 Pipe Layer	Offroad	250	230	0.565	1.427	2.800	0.006	0.048	0.044
Concrete Power Saw	Offroad	25	10	0.319	2.340	4.332	0.007	0.109	0.100
Concrete Pump	Offroad	250	177	0.377	1.156	4.145	0.006	0.048	0.044
Crane	Offroad	175	173	0.308	3.400	4.195	0.006	0.068	0.063
Crane	Offroad	175	175	0.308	3.400	4.195	0.006	0.068	0.063
Crushers	Offroad	500	270	0.429	1.231	3.702	0.006	0.048	0.044
Diesel Hammer	Offroad	50	44	0.319	4.104	4.900	0.007	0.091	0.084
Dozer	Offroad	500	310	0.657	2.855	2.700	0.006	0.048	0.044
Dozers	Offroad	500	310	0.657	2.855	2.700	0.006	0.048	0.044
Excavator	Offroad	175	168	0.308	3.373	4.195	0.006	0.068	0.063
Excavator	Offroad	500	321	0.458	1.241	2.700	0.006	0.048	0.044
Foot Roller	Offroad	175	143	0.308	3.248	4.195	0.006	0.068	0.063
Fork Lift	Offroad	175	125	0.308	3.357	3.937	0.006	0.068	0.063
Front End Loader	Offroad	250	197	0.430	1.194	2.800	0.006	0.048	0.044
Front End Loader	Offroad	500	262	0.410	1.194	2.700	0.006	0.048	0.044
Front End Loader	Offroad	500	500	0.410	1.194	2.700	0.006	0.048	0.044
Front End Loader/Backhoe	Offroad	120	101	0.393	3.731	4.634	0.007	0.075	0.069
Front End Loader/Backhoe	Offroad	500	500	0.410	1.194	2.700	0.006	0.048	0.044
Grader	Offroad	175	145	0.308	3.362	4.195	0.006	0.068	0.063
Large Crane	Offroad	250	230	0.565	1.427	2.800	0.006	0.048	0.044
Large Crane	Offroad	500	450	0.527	1.561	2.700	0.006	0.048	0.044
Motor Grader	Offroad	175	145	0.308	3.362	4.195	0.006	0.068	0.063
P.D Crane	Offroad	175	175	0.308	3.400	4.195	0.006	0.068	0.063
P.D Crane	Offroad	250	230	0.565	1.427	2.800	0.006	0.048	0.044
Paving Machine	Offroad	175	170	0.308	3.403	4.195	0.006	0.068	0.063
Paving Machine	Offroad	175	175	0.308	3.403	4.195	0.006	0.068	0.063
Pile driver Crane	Offroad	250	230	0.565	1.427	2.800	0.006	0.048	0.044
Pumps	Offroad	120	60	0.393	3.597	4.634	0.007	0.075	0.069
Self Loading Scrappers	Offroad	500	365	0.610	2.008	2.700	0.006	0.048	0.044
Sheep's Foot Roller	Offroad	175	143	0.308	3.248	4.195	0.006	0.068	0.063
Slip Form Machine	Offroad	500	250	0.351	1.136	2.700	0.006	0.048	0.044
Speed Swing	Offroad	175	170	0.308	3.283	4.014	0.006	0.068	0.063
Striping Machines	Offroad	120	60	0.393	3.323	4.634	0.007	0.075	0.069
Sweeper	Offroad	175	160	0.308	3.269	4.195	0.006	0.068	0.063
Track Hoe	Offroad	500	321	0.458	1.241	2.700	0.006	0.048	0.044
Vibratory Roller	Offroad	175	142	0.308	3.248	4.195	0.006	0.068	0.063
Vibratory Roller	Offroad	250	240	0.499	1.380	2.800	0.006	0.048	0.044
Vibratory rollers	Offroad	175	138	0.308	3.248	4.195	0.006	0.068	0.063
Vibratory Rollers	Offroad	175	142	0.308	3.248	4.195	0.006	0.068	0.063
Vibratory Rollers	Offroad	175	143	0.308	3.248	4.195	0.006	0.068	0.063
Vibratory Rollers	Offroad	250	240	0.499	1.380	2.800	0.006	0.048	0.044
Vibratory Trench Rollers	Offroad	50	50	0.319	4.104	4.900	0.007	0.091	0.084
Welding Unit	Offroad	50	50	0.319	4.104	5.331	0.007	0.091	0.084

**Table C1.1-5. Unmitigated Emission Factors for Construction Activities not Included in the OFFROAD Model**

Construction Equipment	Type	Average HP	EF Units	Emission Factors						Notes
				VOC	CO	NOx	SO2	PM10	PM2.5	
<b>Construction Year 2013</b>										
Tie Tamper	Off-road	125	g/bhp-hr	0.88	3.76	5.78	0.01	0.67	0.62	(1)
Switch Tamper	Off-road	250	g/bhp-hr	0.80	3.28	5.50	0.01	0.57	0.53	(1)
Ballast Track Regulator	Off-road	185	g/bhp-hr	0.80	3.28	5.50	0.01	0.57	0.53	(1)
Production Tamper	Off-road	250	g/bhp-hr	0.80	3.28	5.50	0.01	0.57	0.53	(1)
Shoulder Compactor	Off-road	300	g/bhp-hr	0.71	3.79	5.67	0.01	0.52	0.48	(1)
Construction (except demolition)	Fugitive dust	N/A	lb/acre-day	--	--	--	--	4.17	0.87	(2)
Building Demolition	Fugitive dust	N/A	lb/1000 cubic ft	--	--	--	--	0.24	0.05	(3)
<b>Construction Year 2014</b>										
Tie Tamper	Off-road	125	g/bhp-hr	0.82	3.47	5.39	0.01	0.63	0.58	(1)
Switch Tamper	Off-road	250	g/bhp-hr	0.74	3.01	5.12	0.01	0.53	0.49	(1)
Ballast Track Regulator	Off-road	185	g/bhp-hr	0.74	3.01	5.12	0.01	0.53	0.49	(1)
Production Tamper	Off-road	250	g/bhp-hr	0.74	3.01	5.12	0.01	0.53	0.49	(1)
Shoulder Compactor	Off-road	300	g/bhp-hr	0.66	3.52	5.30	0.01	0.49	0.45	(1)
Construction (except demolition)	Fugitive dust	N/A	lb/acre-day	--	--	--	--	4.17	0.87	(2)
Building Demolition	Fugitive dust	N/A	lb/1000 cubic ft	--	--	--	--	0.24	0.05	(3)

Notes:

(1) Source: EPA NONROAD model with default assumptions for track maintenance equipment.

(2) Compilation of Air Pollutant Emission Factors, AP-42, Volume 1, Section 13.2.3 (EPA 1995). The EPA emission factor is reduced by 69% to reflect site watering in compliance with SCAQMD Rule 403.

(3) CEQA Air Quality Handbook, Table A9-9-H (SCAQMD 1993). Units in lbs/1000 cubic feet (cf) of demolished building. The emissions factor is applied with control efficiency of 36% by applying water every 4 hours to the area within 100 feet of a structure being demolished, to reduce vehicle trackout and 10% by applying water to disturbed soils after demolition is completed or at the end of each day of cleanup.

**Table C1.1-6. Mitigated Emission Factors for Construction Activities not Included in the OFFROAD Model**

Construction Equipment	Type	Average HP	EF Units	Emission Factors						Notes
				VOC	CO	NOX	SO2	PM10	PM2.5	
<b>Construction Year 2013</b>										
Tie Tamper	Off-road	125	g/bhp-hr	0.27	3.73	4.19	0.01	0.07	0.06	(1)
Switch Tamper	Off-road	250	g/bhp-hr	0.58	3.28	4.24	0.01	0.05	0.04	(1)
Ballast Track Regulator	Off-road	185	g/bhp-hr	0.58	3.28	4.24	0.01	0.05	0.04	(1)
Production Tamper	Off-road	250	g/bhp-hr	0.58	3.28	4.24	0.01	0.05	0.04	(1)
Shoulder Compactor	Off-road	300	g/bhp-hr	0.58	3.79	4.24	0.01	0.05	0.04	(1)
Construction (except demolition)	Fugitive dust	N/A	lb/acre-day	--	--	--	--	0.42	0.09	(2)
Building Demolition	Fugitive dust	N/A	lb/1000 cubic ft	--	--	--	--	0.02	0.01	(3)
<b>Construction Year 2014</b>										
Tie Tamper	Off-road	125	g/bhp-hr	0.27	3.73	4.19	0.01	0.07	0.06	(1)
Switch Tamper	Off-road	250	g/bhp-hr	0.58	3.28	4.24	0.01	0.05	0.04	(1)
Ballast Track Regulator	Off-road	185	g/bhp-hr	0.58	3.28	4.24	0.01	0.05	0.04	(1)
Production Tamper	Off-road	250	g/bhp-hr	0.58	3.28	4.24	0.01	0.05	0.04	(1)
Shoulder Compactor	Off-road	300	g/bhp-hr	0.58	3.79	4.24	0.01	0.05	0.04	(1)
Construction (except demolition)	Fugitive dust	N/A	lb/acre-day	--	--	--	--	0.42	0.09	(2)
Building Demolition	Fugitive dust	N/A	lb/1000 cubic ft	--	--	--	--	0.02	0.01	(3)
Notes:										
(1) Source: EPA NONROAD model with default assumptions for track maintenance equipment. The Port's Construction Guidelines on off-road equipment emission standards are applied where appropriate.										
(2) Compilation of Air Pollutant Emission Factors, AP-42, Volume 1, Section 13.2.3 (EPA 1995). The EPA emission factor is reduced by 69% to reflect site watering in compliance with SCAQMD Rule 403. For the mitigation case, emissions are further reduced by 90% per the Port's Construction Guidelines.										
(3) CEQA Air Quality Handbook, Table A9-9-H (SCAQMD 1993). Units in lbs/1000 cubic feet (cf) of demolished building. Control efficiency factors of 36% and 10% are applied to the emission factors to reflect applying water every 4 hours to the area within 100 feet of a structure being demolished to reduce vehicle trackout and applying water to disturbed soils after demolition is completed or at the end of each day of cleanup, respectively. For the mitigation case, emissions are further reduced by 90%.										

Table C1.1-7. Unmitigated Case: Emission Factors for On-road Diesel Trucks from EMFAC2007 Model

Construction Equipment	Type	Emission Factor (g/mile movement or g/hour idling)										Notes
		VOC	CO	NOX	SO2	PM10 On-Site (inc. paved road dust) <sup>(3)</sup>	PM2.5 On-Site (inc. paved road dust) <sup>(3)</sup>	PM10 On-Site (inc. unpaved road dust) <sup>(4)</sup>	PM2.5 On-Site (inc. unpaved road dust) <sup>(4)</sup>	PM10 Off-Site (inc. paved road dust) <sup>(3) (5)</sup>	PM2.5 Off-Site (inc. paved road dust) <sup>(3) (5)</sup>	
<b>Construction Year 2013</b>												
On-road Truck - idle	Onroad - MHDT	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49	0.53	0.49	(1)
On-road Truck - 10 mph	Onroad - MHDT	0.39	4.62	7.31	0.01	1.88	0.37	2.41	0.47	1.19	0.32	(1)
On-road Truck - 25 mph	Onroad - MHDT	0.22	1.99	5.16	0.01	1.75	0.26	2.28	0.36	1.07	0.21	(1)
On-road Truck - 55 mph	Onroad - MHDT	0.12	1.26	6.72	0.01	1.68	0.19	2.21	0.30	1.00	0.14	(1)
On-road Truck - Composite	Onroad - MHDT	0.20	1.96	6.00	0.01	1.74	0.24	2.27	0.35	1.05	0.19	(2)
On-road Truck - idle	Onroad - HHDT	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70	0.76	0.70	(1)
On-road Truck - 10 mph	Onroad - HHDT	4.83	10.14	19.56	0.03	2.30	0.74	2.83	0.84	1.62	0.69	(1)
On-road Truck - 25 mph	Onroad - HHDT	1.01	4.49	11.41	0.02	1.90	0.37	2.43	0.47	1.22	0.32	(1)
On-road Truck - 55 mph	Onroad - HHDT	0.59	2.64	10.15	0.02	1.90	0.37	2.43	0.47	1.21	0.32	(1)
On-road Truck - Composite	Onroad - HHDT	1.22	4.32	11.72	0.02	1.94	0.41	2.47	0.51	1.25	0.36	(2)
<b>Construction Year 2014</b>												
On-road Truck - idle	Onroad - MHDT	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19	0.21	0.19	(1)
On-road Truck - 10 mph	Onroad - MHDT	0.38	4.49	6.21	0.01	1.70	0.21	2.23	0.31	1.02	0.16	(1)
On-road Truck - 25 mph	Onroad - MHDT	0.21	1.93	4.39	0.01	1.65	0.17	2.19	0.27	0.97	0.12	(1)
On-road Truck - 55 mph	Onroad - MHDT	0.11	1.23	5.72	0.01	1.63	0.14	2.16	0.25	0.95	0.09	(1)
On-road Truck - Composite	Onroad - MHDT	0.19	1.91	5.10	0.01	1.65	0.16	2.18	0.27	0.97	0.11	(2)
On-road Truck - idle	Onroad - HHDT	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24	0.27	0.24	(1)
On-road Truck - 10 mph	Onroad - HHDT	4.28	9.00	16.28	0.03	1.85	0.33	2.39	0.43	1.17	0.28	(1)
On-road Truck - 25 mph	Onroad - HHDT	0.91	3.92	9.46	0.02	1.72	0.21	2.26	0.31	1.04	0.16	(1)
On-road Truck - 55 mph	Onroad - HHDT	0.52	2.44	8.28	0.02	1.73	0.21	2.26	0.32	1.04	0.16	(1)
On-road Truck - Composite	Onroad - HHDT	1.09	3.84	9.67	0.02	1.74	0.22	2.27	0.33	1.05	0.17	(2)

Notes:

- (1) From EMFAC2007 (CARB 2007). Units in grams/mile or grams/hour.
- (2) Composite EF derived using EMFAC2007 assuming SCAB default fleet age distributions, composite EFs produced assuming 40% at 55mph, 50% at 25mph, 10% at 10mph.
- (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.
- (4) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.
- (5) Assume 4-county average travel fraction on major and collector streets is representative of truck travel on surface streets, and 4-county average travel fraction on freeways is representative of truck travel on freeways.

Table C1.1-8. Mitigated Case: Emission Factors for On-road Diesel Trucks

Construction Equipment	Type	Emission Factor (g/mile movement or g/hour idling)										Notes
		VOC	CO	NOX	SO2	PM10 On-Site (inc. paved road dust) <sup>(3)</sup>	PM2.5 On-Site (inc. paved road dust) <sup>(3)</sup>	PM10 On-Site (inc. unpaved road dust) <sup>(4)</sup>	PM2.5 On-Site (inc. unpaved road dust) <sup>(4)</sup>	PM10 Off-Site (inc. paved road dust) <sup>(5) (6)</sup>	PM2.5 Off-Site (inc. paved road dust) <sup>(5) (6)</sup>	
<b>Construction Year 2013</b>												
Water - idle	Onroad - MHDT	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49	0.53	0.49	(1)
Water - 10 mph	Onroad - MHDT	0.39	4.62	2.22	0.01	1.62	0.13	2.15	0.24	0.93	0.08	(1)
Water - 25 mph	Onroad - MHDT	0.22	1.99	2.22	0.01	1.62	0.13	2.15	0.24	0.93	0.08	(1)
Water - 55 mph	Onroad - MHDT	0.12	1.26	2.22	0.01	1.62	0.13	2.15	0.24	0.93	0.08	(1)
Water - Composite	Onroad - MHDT	0.20	1.96	2.22	0.01	1.62	0.13	2.15	0.24	0.93	0.08	(2)
Concrete Truck - idle	Onroad - HHDT	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70	0.76	0.70	(1)
Concrete Truck - 10 mph	Onroad - HHDT	4.83	10.14	3.60	0.03	1.67	0.16	2.20	0.26	0.98	0.11	(1)
Concrete Truck - 25 mph	Onroad - HHDT	1.01	4.49	3.60	0.02	1.67	0.16	2.20	0.26	0.98	0.11	(1)
Concrete Truck - 55 mph	Onroad - HHDT	0.59	2.64	3.60	0.02	1.67	0.16	2.20	0.26	0.98	0.11	(1)
Concrete Truck - Composite	Onroad - HHDT	1.22	4.32	3.60	0.02	1.67	0.16	2.20	0.26	0.98	0.11	(2)
Other Trucks - idle	Onroad - MHDT	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49	0.53	0.49	(1)
Other Trucks - 10 mph	Onroad - MHDT	0.39	4.62	3.70	0.01	1.78	0.29	2.31	0.39	1.10	0.23	(1)
Other Trucks - 25 mph	Onroad - MHDT	0.22	1.99	3.70	0.01	1.75	0.26	2.28	0.36	1.07	0.21	(1)
Other Trucks - 55 mph	Onroad - MHDT	0.12	1.26	3.70	0.01	1.68	0.19	2.21	0.30	1.00	0.14	(1)
Other Trucks - Composite	Onroad - MHDT	0.20	1.96	3.70	0.01	1.73	0.23	2.26	0.34	1.04	0.18	(2)
Other Trucks - idle	Onroad - HHDT	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70	0.76	0.70	(1)
Other Trucks - 10 mph	Onroad - HHDT	4.83	10.14	6.00	0.03	1.94	0.40	2.47	0.51	1.25	0.35	(1)
Other Trucks - 25 mph	Onroad - HHDT	1.01	4.49	6.00	0.02	1.90	0.37	2.43	0.47	1.22	0.32	(1)
Other Trucks - 55 mph	Onroad - HHDT	0.59	2.64	6.00	0.02	1.90	0.37	2.43	0.47	1.21	0.32	(1)
Other Trucks - Composite	Onroad - HHDT	1.22	4.32	6.00	0.02	1.90	0.37	2.43	0.48	1.22	0.32	(2)
<b>Construction Year 2014</b>												
Water - idle	Onroad - MHDT	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19	0.21	0.19	(1)
Water - 10 mph	Onroad - MHDT	0.38	4.49	2.22	0.01	1.62	0.13	2.15	0.24	0.93	0.08	(1)
Water - 25 mph	Onroad - MHDT	0.21	1.93	2.22	0.01	1.62	0.13	2.15	0.24	0.93	0.08	(1)
Water - 55 mph	Onroad - MHDT	0.11	1.23	2.22	0.01	1.62	0.13	2.15	0.24	0.93	0.08	(1)
Water - Composite	Onroad - MHDT	0.19	1.91	2.22	0.01	1.62	0.13	2.15	0.24	0.93	0.08	(2)
Concrete Truck - idle	Onroad - HHDT	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24	0.27	0.24	(1)
Concrete Truck - 10 mph	Onroad - HHDT	4.28	9.00	3.60	0.03	1.67	0.16	2.20	0.26	0.98	0.11	(1)
Concrete Truck - 25 mph	Onroad - HHDT	0.91	3.92	3.60	0.02	1.67	0.16	2.20	0.26	0.98	0.11	(1)
Concrete Truck - 55 mph	Onroad - HHDT	0.52	2.44	3.60	0.02	1.67	0.16	2.20	0.26	0.98	0.11	(1)
Concrete Truck - Composite	Onroad - HHDT	1.09	3.84	3.60	0.02	1.67	0.16	2.20	0.26	0.98	0.11	(2)
Other Trucks - idle	Onroad - MHDT	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19	0.21	0.19	(1)
Other Trucks - 10 mph	Onroad - MHDT	0.38	4.49	3.70	0.01	1.70	0.21	2.23	0.31	1.02	0.16	(1)
Other Trucks - 25 mph	Onroad - MHDT	0.21	1.93	3.70	0.01	1.65	0.17	2.19	0.27	0.97	0.12	(1)
Other Trucks - 55 mph	Onroad - MHDT	0.11	1.23	3.70	0.01	1.63	0.14	2.16	0.25	0.95	0.09	(1)
Other Trucks - Composite	Onroad - MHDT	0.19	1.91	3.70	0.01	1.65	0.16	2.18	0.27	0.97	0.11	(2)
Other Trucks - idle	Onroad - HHDT	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24	0.27	0.24	(1)
Other Trucks - 10 mph	Onroad - HHDT	4.28	9.00	6.00	0.03	1.85	0.33	2.39	0.43	1.17	0.28	(1)
Other Trucks - 25 mph	Onroad - HHDT	0.91	3.92	6.00	0.02	1.72	0.21	2.26	0.31	1.04	0.16	(1)
Other Trucks - 55 mph	Onroad - HHDT	0.52	2.44	6.00	0.02	1.73	0.21	2.26	0.32	1.04	0.16	(1)
Other Trucks - Composite	Onroad - HHDT	1.09	3.84	6.00	0.02	1.74	0.22	2.27	0.33	1.05	0.17	(2)

Notes:  
 (1) From EMFAC2007 (CARB 2007). Units in grams/mile or grams/hour.  
 (2) Composite em derived using EMFAC2007 assuming SCAB default fleet age distributions, composite EFs produced assuming 40% at 55mph, 50% at 25mph, 10% at 10mph.  
 (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.  
 (4) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.  
 (5) Assume 4-county average travel fraction on major and collector streets is representative of truck travel on surface streets, and 4-county average travel fraction on freeways is representative of truck travel on freeways.

**Table C1.1-9. Equipment Type, Size and Activity for Site Construction and Sepulveda Bridge**

Construction Sub-Element	Equipment	Number	Size-hp	Fuel	Ave. Load Factor (%)	Construction Start Year	Ave. Daily Hours	Months on Site	Days Per Unit
<b>Site Construction</b>									
Demolition	Crane	1	173	D	43.0	2013	10	2	52
	Excavator	4	321	D	58.0	2013	10	2	52
	Crushers	2	270	D	78.0	2013	10	4	104
	Dozers	2	310	D	59.0	2013	10	4	104
	Front End Loader	5	262	D	54.0	2013	10	4	104
Utility Relocation	14 T Rough Terrain Crane	2	155	D	43.0	2013	10	4	104
	Front End Loader/Backhoe	2	101	D	54.0	2013	10	4	104
	Cat 572 Pipe Layer	2	230	D	62.0	2013	10	4	104
	300 scfm Air Compressor	2	125	D	48.0	2013	10	4	104
	Welding Unit	4	50	D	45.0	2013	10	4	104
Buildings	Crane	1	175	D	43.0	2013	10	3	78
	Fork Lift	1	125	D	30.0	2013	10	9	234
	Concrete Pump	1	177	D	71.3	2013	10	9	39
	Auger	2	177	D	62.0	2013	10	2	52
	Pile driver Crane	1	230	D	62.0	2013	10	2	52
Rough Grade	Diesel Hammer	1	44	D	43.0	2013	10	2	52
	Self Loading Scrappers	6	365	D	66.0	2013	10	9	234
	Dozers	2	310	D	59.0	2013	10	9	234
	Vibratory Rollers	2	143	D	57.5	2013	10	6	156
	Motor Grader	2	145	D	57.5	2013	10	9	234
New Utility	14 T Rough Terrain Crane	2	175	D	43.0	2013	10	6	156
	Cat 572 Pipe Layer	1	230	D	62.0	2013	10	6	156
	Vibratory Rollers	2	142	D	57.5	2013	10	2	52
	Front End Loader/Backhoe	2	101	D	54.0	2013	10	6	156
	Concrete Pump	1	177	D	71.3	2013	10	2	9
Final Grade	Front End Loader/Backhoe	1	101	D	54.0	2014	10	2	52
	Vibratory Rollers	2	142	D	57.5	2014	10	2	52
	Motor Grader	2	145	D	57.5	2014	10	2	52
Track Work	Front End Loader	4	262	D	54.0	2014	10	3	78
	Backhoe	1	500	D	54.0	2014	10	1	26
	Vibratory Rollers	1	142	D	57.5	2014	10	3	78
	Ballast Regulator	1	185	D	21.0	2014	10	3	78
	Tie Tamper	1	125	D	21.0	2014	10	3	78
Concrete	Switch Tamper	1	300	D	21.0	2014	10	3	78
	Front End Loader	1	500	D	54.0	2014	10	1	13
	Vibratory Rollers	1	142	D	57.5	2014	10	1	26
	Slip Form Machine	1	250	D	62.0	2014	10	2	52
	Motor Grader	1	145	D	57.5	2014	10	2	52
Asphalt	Motor Grader	1	145	D	57.5	2014	10	3	78
	Front End Loader	1	262	D	54.0	2014	10	1	13
	Vibratory Rollers	1	138	D	57.5	2014	10	2	52
	Paving Machine	2	170	D	62.0	2014	10	3	78
Delination	Backhoe	1	101	D	54.0	2014	10	3	78
	Crane	1	175	D	43.0	2014	10	1	5
	Fork Lift	1	125	D	30.0	2014	10	1	5
	Striping Machines	2	60	G	62.0	2014	10	1	26
<b>Sepulveda Bridge</b>									
Demolition	Excavator	2	168	D	58.0	2013	10	2	52
	Dozers	2	310	D	59.0	2013	10	2	52
	Front End Loader	2	262	D	46.5	2013	10	2	52
Preparatory	Front End Loader	2	262	D	46.5	2013	10	1	26
	Crane	1	173	D	43.0	2013	10	1	26
	Backhoe	2	500	D	46.5	2013	10	1	26
	P.D Crane	1	230	D	43.0	2013	10	1	26
Foundation	Crane	1	173	D	43.0	2013	10	1	26
	P.D Crane	1	230	D	43.0	2013	10	1	26
East Track Prep	Excavator	1	168	D	58.0	2013	10	4	104
	Crane	1	173	D	43.0	2013	10	3	78
	Auger	2	177	D	62.0	2013	10	4	104
	Backhoe	4	101	D	46.5	2013	10	4	104
	Vibratory Rollers	2	142	D	57.5	2013	10	4	104
Pile Prep	Auger	2	177	D	62.0	2013	10	2	52
	Vibratory Trench Rollers	2	50	D	57.5	2013	10	2	52
	Pile driver Crane	1	230	D	43.0	2013	10	2	52
	Diesel Hammer	1	44	D	43.0	2013	10	2	52
North End Prep	Backhoe	2	101	D	46.5	2013	10	2	52
	Front End Loader	1	262	D	46.5	2013	10	3	78
	Backhoe	1	101	D	46.5	2013	10	3	78
	Vibratory Rollers	2	142	D	57.5	2013	10	2	52
	Grader	2	145	D	57.5	2013	10	3	78
	Pile driver Crane	2	230	D	43.0	2013	10	2	52
Wing Wall & Track	Diesel Hammer	1	44	D	43.0	2013	10	2	52
	Front End Loader	1	262	D	46.5	2014	10	3	78
	Vibratory Rollers	1	142	D	57.5	2014	10	1	26
	Backhoe	1	101	D	46.5	2014	10	3	78
	Ballast Regulator	1	185	D	21.0	2014	10	1	26
Bridge Widening	Tie Tamper	1	125	D	21.0	2014	10	1	26
	Switch Tamper	1	250	D	21.0	2014	10	1	26
	Front End Loader	1	500	D	46.5	2014	10	2	52
	Vibratory Rollers	1	142	D	57.5	2014	10	2	52
	Dozers	1	310	D	59.0	2014	10	2	52

**Table C1.1-10. Equipment Type, Size and Activity for Lead & Storage Track and Dominguez Channel.**

Construction Sub-Element	Equipment	No.	Size-(hp)	Fuel	Ave. Load Factor (%)	Construction Start Year	Ave Daily Hours	Months on Site	Days Per Unit
<b>Lead &amp; Storage Track</b>									
Utility Relocation	Front End Loader/Backhoe	2	101	D	46.5	2013	10	3	78
	14 T Rough Terrain Crane	2	155	D	43.0	2013	10	3	78
	Cat 572 Pipe Layer	4	230	D	62.0	2013	10	3	78
	300 scfm Air Compressor	2	125	D	48.0	2013	10	3	78
	Welding Unit	4	50	D	45.0	2013	10	3	78
Demolition	Front End Loader/Backhoe	1	500	D	46.5	2013	10	2	52
	Concrete Power Saw	1	10	G	73.0	2013	3	2	52
	Track Hoe	1	321	D	46.5	2013	10	2	52
Rough Grading	Front End Loader/Backhoe	1	101	D	46.5	2013	10	2	52
	Self Loading Scrappers	2	365	D	66.0	2013	10	3	78
	Excavator	1	168	D	58.0	2013	10	3	78
	Sheep's Foot Roller	3	143	D	57.5	2013	10	3	78
	Motor Grader	1	145	D	57.5	2013	10	3	78
Civil Construction	Front End Loader/Backhoe	2	101	D	46.5	2013	10	3	78
	Vibratory Roller	2	142	D	57.5	2013	10	4	104
	Motor Grader	2	145	D	57.5	2013	10	4	104
Track Work Materials	Front End Loader/Backhoe	2	101	D	46.5	2013	10	2	52
	Speed Swing	2	170	D	62.0	2013	10	4	104
Track Work Assembly	Tie Tamper	1	125	D	21.0	2013	10	3	78
	Switch Tamper	1	250	D	21.0	2013	10	3	78
	Production Tamper	1	250	D	21.0	2013	10	3	78
	Shoulder Compactor	1	300	D	21.0	2013	10	3	78
	Ballast Track Regulator	1	185	D	21.0	2014	10	3	78
<b>Dominguez Channel</b>									
Utilities	Front End Loader	2	197	D	46.5	2013	10	1.5	39
	Backhoe	2	101	D	46.5	2013	10	3	78
	14 T Rough Terrain Crane	2	155	D	43.0	2013	10	1.5	39
	Cat 572 Pipe Layer	2	230	D	43.7	2013	10	1.5	39
	300 scfm Air Compressor	2	125	D	48.0	2013	10	3	78
	Welding Unit	2	50	D	45.0	2013	10	3	78
Demolition	Front End Loader	2	197	D	46.5	2013	10	1	26
	14 T Rough Terrain Crane	1	155	D	43.0	2013	10	1	26
	300 scfm Air Compressor	2	125	D	48.0	2013	10	3	78
	Pile driver Crane	1	230	D	62.0	2013	10	1	26
	Vibratory Roller	1	240	D	57.5	2013	10	1	26
	Excavator	1	321	D	58.0	2013	10	2	52
	Pumps	2	60	D	48.0	2013	10	3	78
	Dozer	1	310	D	59.0	2013	10	2	52
	Backhoe	1	101	D	46.5	2013	10	2	52
Excavation	Front End Loader	1	197	D	46.5	2013	10	1	26
	Backhoe	1	101	D	46.5	2013	10	1	26
	Auger	1	177	D	62.0	2013	10	1	26
CISS Piles	Front End Loader	1	197	D	46.5	2013	10	2	52
	Pile driver Crane	1	230	D	62.0	2013	10	2	52
	Diesel Hammer	1	44	D	43.0	2013	4	2	52
	Concrete Pump	1	177	D	41.0	2013	10	2	9
Concrete	Front End Loader	1	197	D	46.5	2013	10	2	52
	Concrete Pump	1	177	D	41.0	2013	10	2	9
	Crane	1	173	D	43.0	2013	10	2	52
Backfill Cofferdam Piling	Front End Loader	1	197	D	46.5	2013	10	1	26
	Vibratory Roller	1	142	D	57.5	2013	10	1	26
	Foot Roller	1	143	D	57.5	2013	10	1	26
	Motor Grader	1	145	D	57.5	2013	10	1	26
	Large Crane	1	230	D	43.0	2013	10	1	26
Bearing & Structural Steel Beams	300 scfm Air Compressor	1	125	D	48.0	2013	10	1	26
	Welding Unit	1	50	D	45.0	2013	10	1	26
	Large Crane	1	450	D	43.0	2013	10	1	26
	Fork Lift	1	125	D	30.0	2013	10	1	26
Bridge Deck Plate, Waterproffing, Misc. Steel	300 scfm Air Compressor	1	125	D	48.0	2013	10	1	26
	Welding Unit	1	50	D	45.0	2013	10	1	26
	Crane	1	175	D	43.0	2013	10	1	26
Bridge Deck Ballast	Fork Lift	1	125	D	30.0	2013	10	1	26
	Front End Loader	1	197	D	46.5	2013	10	1	26
Concrete Ties & Track	Balast Compactor	1	185	D	21.0	2013	10	1	26
	Front End Loader	1	262	D	46.5	2013	10	0.5	13
	Ballast Regulator	1	185	D	21.0	2013	10	1	26
	Tie Tamper	1	125	D	21.0	2013	10	1	26
	Switch Tamper	1	250	D	21.0	2013	10	1	26
Painting & Reparis	Speed Swing	2	170	D	62.0	2013	10	1	26
	Front End Loader	1	197	D	46.5	2013	10	1	26
	Backhoe	1	101	D	46.5	2013	10	1	26
	Large Crane	1	230	D	43.0	2013	10	1	26
	Sweeper	1	160	D	68.0	2013	10	1	26

Table C1.1-11. Equipment Type, Size and Activity for PCH Grade Separation.

Construction Sub-Element	Equipment	No.	Size-hp	Fuel	Ave. Load Factor (%)	Construction Start Year	Ave. Daily Hours	Months on Site	Days Per Unit
<b>PCH Grade Separation</b>									
Demolition - North Side	P.D Crane	1	230	D	43	2013	10	3	78
	Vibratory Rollers	1	240	D	56	2013	10	5	130
	Excavator	2	321	D	58	2013	10	5	130
	Dozers	2	310	D	64	2013	10	5	130
	Front End Loader	2	262	D	54	2013	10	3	78
Preparatory Work North Side	Front End Loader	2	262	D	54	2013	10	3	78
	Crane	2	173	D	43	2013	10	3	78
	P.D Crane	1	230	D	43	2013	10	3	78
	Backhoe	2	101	D	54	2013	10	3	78
	Vibratory Rollers	1	142	D	56	2013	10	3	78
	Motor Grader	1	145	D	61	2013	10	3	78
	Paving Machine	1	170	D	62	2013	10	3	78
	Auger	1	177	D	75	2013	10	6	156
North Bridge	Pile driver Crane	1	230	D	43	2013	10	4	104
	Diesel Hammer	1	44	D	43	2013	5	6	156
	Crane	2	173	D	43	2013	10	2	52
	Backhoe	2	101	D	54	2013	10	6	156
	Motor Grader	1	145	D	61	2013	10	2	52
Pave N/S Bridge And Reroute Traffic	Front End Loader	1	262	D	54	2013	10	2	52
	Vibratory rollers	1	138	D	56	2013	10	2	52
	Slip Form Machine	1	250	D	62	2013	10	2	52
	Paving Machine	1	170	D	62	2013	10	2	52
	Backhoe	1	101	D	54	2013	10	2	52
Demolition - South Side	P.D Crane	1	230	D	43	2014	10	1	26
	Vibratory Rollers	1	240	D	56	2014	10	2	52
	Excavator	2	321	D	58	2014	10	2	52
	Dozers	2	310	D	64	2014	10	2	52
	Front End Loader	2	262	D	54	2014	10	1	26
Preparatory Work South Side	Front End Loader	2	262	D	54	2014	10	1	26
	Crane	2	173	D	43	2014	10	2	52
	P.D Crane	1	175	D	43	2014	10	1	26
	Backhoe	2	101	D	54	2014	10	2	52
	Vibratory Rollers	1	142	D	56	2014	10	2	52
	Motor Grader	1	145	D	61	2014	10	2	52
	Paving Machine	1	175	D	62	2014	10	2	52
South Bridge	Auger	1	190	D	75	2014	10	7	182
	Pile driver Crane	1	230	D	43	2014	10	7	182
	Diesel Hammer	1	44	D	43	2014	5	7	182
	Crane	2	173	D	43	2014	10	7	182
	Backhoe	2	101	D	54	2014	10	3	78
Pave S/S Bridge And Yard Access Roads	Motor Grader	1	145	D	61	2014	10	2	52
	Front End Loader	1	262	D	54	2014	10	2	52
	Vibratory rollers	1	138	D	56	2014	10	2	52
	Slip Form Machine	1	250	D	62	2014	10	2	52
	Paving Machine	1	170	D	62	2014	10	2	52
	Backhoe	1	101	D	54	2014	10	2	52



Table C1.1-12. Emission Factors of Equipment Used at Site Construction and Sepulveda Bridge

Construction Sub-Element	Equipment	Number	Size-hp	Fuel	Emission Factor (g/bhp-hr)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>Site Construction</b>										
Demolition	Crane	1	173	D	0.72	3.41	4.95	0.01	0.23	0.21
	Excavator	4	321	D	0.41	1.27	3.26	0.01	0.12	0.11
	Crushers	2	270	D	0.39	1.27	3.97	0.01	0.13	0.12
	Dozers	2	310	D	0.68	2.98	3.96	0.01	0.13	0.12
	Front End Loader	5	262	D	0.37	1.21	3.14	0.01	0.11	0.10
Utility Relocation	14 T Rough Terrain Crane	2	155	D	0.72	3.41	4.95	0.01	0.23	0.21
	Front End Loader/Backhoe	2	101	D	0.74	3.87	4.89	0.01	0.35	0.32
	Cat 572 Pipe Layer	2	230	D	0.52	1.47	4.13	0.01	0.14	0.13
	300 scfm Air Compressor	2	125	D	0.66	3.24	5.26	0.01	0.29	0.27
	Welding Unit	4	50	D	2.07	5.95	5.47	0.01	0.51	0.47
Buildings	Crane	1	175	D	0.72	3.41	4.95	0.01	0.23	0.21
	Fork Lift	1	125	D	0.56	3.35	4.18	0.01	0.22	0.21
	Concrete Pump	1	177	D	0.35	1.18	4.40	0.01	0.12	0.11
	Auger	2	177	D	0.23	1.04	2.14	0.01	0.06	0.06
	Pile driver Crane	1	230	D	0.52	1.47	4.13	0.01	0.14	0.13
Rough Grade	Diesel Hammer	1	44	D	1.47	5.33	5.03	0.01	0.35	0.32
	Self Loading Scrappers	6	365	D	0.55	2.09	3.96	0.01	0.13	0.12
	Dozers	2	310	D	0.68	2.98	3.96	0.01	0.13	0.12
	Vibratory Rollers	2	143	D	0.64	3.25	4.95	0.01	0.23	0.21
	Motor Grader	2	145	D	0.66	3.37	4.95	0.01	0.23	0.21
New Utility	14 T Rough Terrain Crane	2	175	D	0.72	3.41	4.95	0.01	0.23	0.21
	Cat 572 Pipe Layer	1	230	D	0.52	1.47	4.13	0.01	0.14	0.13
	Vibratory Rollers	2	142	D	0.64	3.25	4.95	0.01	0.23	0.21
	Front End Loader/Backhoe	2	101	D	0.74	3.87	4.89	0.01	0.35	0.32
	Concrete Pump	1	177	D	0.35	1.18	4.40	0.01	0.12	0.11
Final Grade	Front End Loader/Backhoe	1	101	D	0.74	3.87	4.89	0.01	0.35	0.32
	Vibratory Rollers	2	142	D	0.64	3.25	4.95	0.01	0.23	0.21
	Motor Grader	2	145	D	0.66	3.37	4.95	0.01	0.23	0.21
Track Work	Front End Loader	4	262	D	0.37	1.21	3.14	0.01	0.11	0.10
	Backhoe	1	500	D	0.37	1.21	3.14	0.01	0.11	0.10
	Vibratory Rollers	1	142	D	0.64	3.25	4.95	0.01	0.23	0.21
	Ballast Regulator	1	185	D	0.74	3.01	5.12	0.01	0.53	0.49
	Tie Tamper	1	125	D	0.82	3.47	5.39	0.01	0.63	0.58
Concrete	Switch Tamper	1	300	D	0.66	3.52	5.30	0.01	0.49	0.45
	Front End Loader	1	500	D	0.37	1.21	3.14	0.01	0.11	0.10
	Vibratory Rollers	1	142	D	0.64	3.25	4.95	0.01	0.23	0.21
	Slip Form Machine	1	250	D	0.32	1.16	3.14	0.01	0.11	0.10
	Motor Grader	1	145	D	0.66	3.37	4.95	0.01	0.23	0.21
Asphalt	Motor Grader	1	145	D	0.66	3.37	4.95	0.01	0.23	0.21
	Front End Loader	1	262	D	0.37	1.21	3.14	0.01	0.11	0.10
	Vibratory Rollers	1	138	D	0.64	3.25	4.95	0.01	0.23	0.21
	Paving Machine	2	170	D	0.77	3.41	4.95	0.01	0.23	0.21
	Backhoe	1	101	D	0.74	3.87	4.89	0.01	0.35	0.32
Delination	Crane	1	175	D	0.72	3.41	4.95	0.01	0.23	0.21
	Fork Lift	1	125	D	0.56	3.35	4.18	0.01	0.22	0.21
	Striping Machines	2	60	G	1.65	30.34	6.66	0.01	0.06	0.06
<b>Sepulveda Bridge</b>										
Demolition	Excavator	2	168	D	0.60	3.38	4.45	0.01	0.24	0.22
	Dozers	2	310	D	0.68	3.00	4.20	0.01	0.13	0.12
	Front End Loader	2	262	D	0.37	1.22	3.23	0.01	0.11	0.10
Preparatory	Front End Loader	2	262	D	0.37	1.22	3.23	0.01	0.11	0.10
	Crane	1	173	D	0.72	3.41	5.00	0.01	0.24	0.22
	Backhoe	2	500	D	0.37	1.22	3.23	0.01	0.11	0.10
Foundation	P.D Crane	1	230	D	0.52	1.48	4.38	0.01	0.15	0.14
	Crane	1	173	D	0.72	3.41	5.00	0.01	0.24	0.22
East Track Prep	P.D Crane	1	230	D	0.52	1.48	4.38	0.01	0.15	0.14
	Excavator	1	168	D	0.60	3.38	4.45	0.01	0.24	0.22
	Crane	1	173	D	0.72	3.41	5.00	0.01	0.24	0.22
	Auger	2	177	D	0.24	1.04	2.19	0.01	0.06	0.06
	Backhoe	4	101	D	0.75	3.87	4.93	0.01	0.37	0.34
Pile Prep	Vibratory Rollers	2	142	D	0.65	3.26	5.00	0.01	0.24	0.22
	Auger	2	177	D	0.24	1.04	2.19	0.01	0.06	0.06
	Vibratory Trench Rollers	2	50	D	2.20	6.32	5.05	0.01	0.37	0.34
	Pile driver Crane	1	230	D	0.52	1.48	4.38	0.01	0.15	0.14
	Diesel Hammer	1	44	D	1.49	5.35	5.05	0.01	0.37	0.34
North End Prep	Backhoe	2	101	D	0.75	3.87	4.93	0.01	0.37	0.34
	Front End Loader	1	262	D	0.37	1.22	3.23	0.01	0.11	0.10
	Backhoe	1	101	D	0.75	3.87	4.93	0.01	0.37	0.34
	Vibratory Rollers	2	142	D	0.65	3.26	5.00	0.01	0.24	0.22
	Grader	2	145	D	0.66	3.37	5.00	0.01	0.24	0.22
Wing Wall & Track	Pile driver Crane	2	230	D	0.52	1.48	4.38	0.01	0.15	0.14
	Diesel Hammer	1	44	D	1.49	5.35	5.05	0.01	0.37	0.34
	Front End Loader	1	262	D	0.37	1.22	3.23	0.01	0.11	0.10
	Vibratory Rollers	1	142	D	0.65	3.26	5.00	0.01	0.24	0.22
	Backhoe	1	101	D	0.75	3.87	4.93	0.01	0.37	0.34
Bridge Widening	Ballast Regulator	1	185	D	0.74	3.01	5.12	0.01	0.53	0.49
	Tie Tamper	1	125	D	0.74	3.01	5.12	0.01	0.53	0.49
	Switch Tamper	1	250	D	0.74	3.01	5.12	0.01	0.53	0.49
	Front End Loader	1	500	D	0.37	1.22	3.23	0.01	0.11	0.10
	Vibratory Rollers	1	142	D	0.65	3.26	5.00	0.01	0.24	0.22
Dozers	1	310	D	0.68	3.00	4.20	0.01	0.13	0.12	

Table C1.1-13. Emission Factors of Equipment Used at Lead & Storage Track and Dominguez Channel.

Construction Sub-Element	Equipment	No.	Size (hp)	Fuel	Emission Factor (g/bhp-hr)					
					VOC	CO	NOx	SO2	PM10	PM2.5
<b>Lead &amp; Storage Track</b>										
Utility Relocation	Front End Loader/Backhoe	2	101	D	0.75	3.87	4.97	0.01	0.39	0.36
	14 T Rough Terrain Crane	2	155	D	0.72	3.41	5.04	0.01	0.25	0.23
	Cat 572 Pipe Layer	4	230	D	0.52	1.48	4.60	0.01	0.15	0.14
	300 scfm Air Compressor	2	125	D	0.67	3.24	5.34	0.01	0.30	0.27
	Welding Unit	4	50	D	2.11	6.00	5.52	0.01	0.52	0.48
Demolition	Front End Loader/Backhoe	1	500	D	0.37	1.22	3.30	0.01	0.11	0.10
	Concrete Power Saw	1	10	G	6.94	266.75	4.49	0.01	3.60	3.31
	Track Hoe	1	321	D	0.42	1.28	3.46	0.01	0.12	0.11
Rough Grading	Front End Loader/Backhoe	1	101	D	0.75	3.87	4.97	0.01	0.39	0.36
	Self Loading Scrappers	2	365	D	0.56	2.12	4.41	0.01	0.14	0.12
	Excavator	1	168	D	0.61	3.38	4.48	0.01	0.25	0.23
	Sheep's Foot Roller	3	143	D	0.65	3.26	5.04	0.01	0.25	0.23
	Motor Grader	1	145	D	0.67	3.37	5.04	0.01	0.25	0.23
Civil Construction	Front End Loader/Backhoe	2	101	D	0.75	3.87	4.97	0.01	0.39	0.36
	Vibratory Roller	2	142	D	0.65	3.26	5.04	0.01	0.25	0.23
	Motor Grader	2	145	D	0.67	3.37	5.04	0.01	0.25	0.23
Track Work Materials	Front End Loader/Backhoe	2	101	D	0.75	3.87	4.97	0.01	0.39	0.36
	Speed Swing	2	170	D	0.55	3.28	4.27	0.01	0.23	0.21
Track Work Assembly	Tie Tamper	1	125	D	0.86	3.66	5.65	0.01	0.66	0.61
	Switch Tamper	1	250	D	0.78	3.19	5.37	0.01	0.56	0.51
	Production Tamper	1	250	D	0.78	3.19	5.37	0.01	0.56	0.51
	Shoulder Compactor	1	300	D	0.69	3.70	5.54	0.01	0.51	0.47
	Ballast Track Regulator	1	185	D	0.78	3.19	5.37	0.01	0.56	0.51
<b>Dominguez Channel</b>										
Utilities	Front End Loader	2	197	D	0.40	1.21	3.86	0.01	0.12	0.11
	Backhoe	2	101	D	0.76	3.88	5.01	0.01	0.42	0.39
	14 T Rough Terrain Crane	2	155	D	0.73	3.41	5.10	0.01	0.26	0.24
	Cat 572 Pipe Layer	2	230	D	0.53	1.49	4.90	0.01	0.16	0.15
	300 scfm Air Compressor	2	125	D	0.68	3.25	5.39	0.01	0.30	0.28
	Welding Unit	2	50	D	2.14	6.03	5.55	0.01	0.52	0.48
Demolition	Front End Loader	2	197	D	0.40	1.21	3.86	0.01	0.12	0.11
	14 T Rough Terrain Crane	1	155	D	0.73	3.41	5.10	0.01	0.26	0.24
	300 scfm Air Compressor	2	125	D	0.68	3.25	5.39	0.01	0.30	0.28
	Pile driver Crane	1	230	D	0.53	1.49	4.90	0.01	0.16	0.15
	Vibratory Roller	1	240	D	0.47	1.44	4.87	0.01	0.16	0.15
	Excavator	1	321	D	0.42	1.28	3.59	0.01	0.13	0.12
	Pumps	2	60	D	0.84	3.63	5.62	0.01	0.30	0.28
	Dozer	1	310	D	0.69	3.05	4.70	0.01	0.14	0.13
Excavation	Backhoe	1	101	D	0.76	3.88	5.01	0.01	0.42	0.39
	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.12	0.11
	Backhoe	1	101	D	0.76	3.88	5.01	0.01	0.42	0.39
CISS Piles	Auger	1	177	D	0.24	1.04	2.31	0.01	0.07	0.06
	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.12	0.11
	Pile driver Crane	1	230	D	0.53	1.49	4.90	0.01	0.16	0.15
	Diesel Hammer	1	44	D	1.53	5.39	5.10	0.01	0.39	0.36
Concrete	Concrete Pump	1	177	D	0.36	1.19	4.56	0.01	0.13	0.12
	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.12	0.11
	Concrete Pump	1	177	D	0.36	1.19	4.56	0.01	0.13	0.12
Backfill Cofferdam Piling	Crane	1	173	D	0.73	3.41	5.10	0.01	0.26	0.24
	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.12	0.11
	Vibratory Roller	1	142	D	0.66	3.26	5.10	0.01	0.26	0.24
	Foot Roller	1	143	D	0.66	3.26	5.10	0.01	0.26	0.24
	Motor Grader	1	145	D	0.67	3.37	5.10	0.01	0.26	0.24
Bearing & Structural Steel Beams	Large Crane	1	230	D	0.53	1.49	4.90	0.01	0.16	0.15
	300 scfm Air Compressor	1	125	D	0.68	3.25	5.39	0.01	0.30	0.28
	Welding Unit	1	50	D	2.14	6.03	5.55	0.01	0.52	0.48
	Large Crane	1	450	D	0.49	1.67	4.49	0.01	0.14	0.13
Bridge Deck Plate, Waterproffing, Misc. Steel	Fork Lift	1	125	D	0.58	3.35	4.32	0.01	0.25	0.23
	300 scfm Air Compressor	1	125	D	0.68	3.25	5.39	0.01	0.30	0.28
	Welding Unit	1	50	D	2.14	6.03	5.55	0.01	0.52	0.48
Bridge Deck Ballast	Crane	1	175	D	0.73	3.41	5.10	0.01	0.26	0.24
	Fork Lift	1	125	D	0.58	3.35	4.32	0.01	0.25	0.23
Concrete Ties & Track	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.12	0.11
	Balast Compactor	1	185	D	0.80	3.28	5.50	0.01	0.57	0.53
	Front End Loader	1	262	D	0.38	1.23	3.40	0.01	0.12	0.11
	Ballast Regulator	1	185	D	0.80	3.28	5.50	0.01	0.57	0.53
	Tie Tamper	1	125	D	0.88	3.76	5.78	0.01	0.67	0.62
Painting & Reparis	Switch Tamper	1	250	D	0.80	3.28	5.50	0.01	0.57	0.53
	Speed Swing	2	170	D	0.55	3.29	4.31	0.01	0.24	0.22
	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.12	0.11
	Backhoe	1	101	D	0.76	3.88	5.01	0.01	0.42	0.39
	Large Crane	1	230	D	0.53	1.49	4.90	0.01	0.16	0.15
	Sweeper	1	160	D	0.59	3.27	4.58	0.01	0.26	0.24

**Table C1.1-14. Emission Factors of Equipment Used at PCH Grade Separation.**

Construction Sub-Element	Equipment	No.	Size-hp	Fuel	Emission Factor (g/bhp-hr)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>PCH Grade Separation</b>										
Demolition - North Side	P.D Crane	1	230	D	0.51	1.46	3.95	0.01	0.14	0.13
	Vibratory Rollers	1	240	D	0.45	1.41	3.93	0.01	0.14	0.13
	Excavator	2	321	D	0.41	1.26	3.19	0.01	0.12	0.11
	Dozers	2	310	D	0.68	2.96	3.79	0.01	0.13	0.12
	Front End Loader	2	262	D	0.37	1.21	3.08	0.01	0.11	0.10
Preparatory Work -North Side	Front End Loader	2	262	D	0.37	1.21	3.08	0.01	0.11	0.10
	Crane	2	173	D	0.71	3.41	4.92	0.01	0.22	0.21
	P.D Crane	1	230	D	0.51	1.46	3.95	0.01	0.14	0.13
	Backhoe	2	101	D	0.73	3.86	4.86	0.01	0.33	0.31
	Vibratory Rollers	1	142	D	0.64	3.25	4.92	0.01	0.22	0.21
	Motor Grader	1	145	D	0.66	3.37	4.92	0.01	0.22	0.21
	Paving Machine	1	170	D	0.76	3.41	4.92	0.01	0.22	0.21
North Bridge	Auger	1	177	D	0.23	1.04	2.10	0.01	0.06	0.06
	Pile driver Crane	1	230	D	0.51	1.46	3.95	0.01	0.14	0.13
	Diesel Hammer	1	44	D	1.45	5.31	5.01	0.01	0.34	0.32
	Crane	2	173	D	0.71	3.41	4.92	0.01	0.22	0.21
	Backhoe	2	101	D	0.73	3.86	4.86	0.01	0.33	0.31
Pave N/S Bridge And Reroute Traffic	Motor Grader	1	145	D	0.66	3.37	4.92	0.01	0.22	0.21
	Front End Loader	1	262	D	0.37	1.21	3.08	0.01	0.11	0.10
	Vibratory rollers	1	138	D	0.64	3.25	4.92	0.01	0.22	0.21
	Slip Form Machine	1	250	D	0.32	1.15	3.08	0.01	0.10	0.10
	Paving Machine	1	170	D	0.76	3.41	4.92	0.01	0.22	0.21
	Backhoe	1	101	D	0.73	3.86	4.86	0.01	0.33	0.31
Demolition - South Side	P.D Crane	1	230	D	0.51	1.46	3.95	0.01	0.14	0.13
	Vibratory Rollers	1	240	D	0.45	1.41	3.93	0.01	0.14	0.13
	Excavator	2	321	D	0.41	1.26	3.19	0.01	0.12	0.11
	Dozers	2	310	D	0.68	2.96	3.79	0.01	0.13	0.12
	Front End Loader	2	262	D	0.37	1.21	3.08	0.01	0.11	0.10
Preparatory Work -South Side	Front End Loader	2	262	D	0.37	1.21	3.08	0.01	0.11	0.10
	Crane	2	173	D	0.71	3.41	4.92	0.01	0.22	0.21
	P.D Crane	1	175	D	0.71	3.41	4.92	0.01	0.22	0.21
	Backhoe	2	101	D	0.73	3.86	4.86	0.01	0.33	0.31
	Vibratory Rollers	1	142	D	0.64	3.25	4.92	0.01	0.22	0.21
	Motor Grader	1	145	D	0.66	3.37	4.92	0.01	0.22	0.21
	Paving Machine	1	175	D	0.76	3.41	4.92	0.01	0.22	0.21
South Bridge	Auger	1	190	D	0.23	1.04	2.10	0.01	0.06	0.06
	Pile driver Crane	1	230	D	0.51	1.46	3.95	0.01	0.14	0.13
	Diesel Hammer	1	44	D	1.45	5.31	5.01	0.01	0.34	0.32
	Crane	2	173	D	0.71	3.41	4.92	0.01	0.22	0.21
	Backhoe	2	101	D	0.73	3.86	4.86	0.01	0.33	0.31
Pave S/S Bridge And Yard Access Roads	Motor Grader	1	145	D	0.66	3.37	4.92	0.01	0.22	0.21
	Front End Loader	1	262	D	0.37	1.21	3.08	0.01	0.11	0.10
	Vibratory rollers	1	138	D	0.64	3.25	4.92	0.01	0.22	0.21
	Slip Form Machine	1	250	D	0.32	1.15	3.08	0.01	0.10	0.10
	Paving Machine	1	170	D	0.76	3.41	4.92	0.01	0.22	0.21
	Backhoe	1	101	D	0.73	3.86	4.86	0.01	0.33	0.31

**Table C1.1-15. Mitigated Emission Factors of Equipment Used at Site Construction and Sepulveda Bridge per POLA Construction Guidelines**

Construction Sub-Element	Equipment	Number	Size-hp	Fuel	Emission Factor (g/bhp-hr)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>Site Construction</b>										
Demolition	Crane	1	173	D	0.27	3.41	4.19	0.01	0.07	0.06
	Excavator	4	321	D	0.41	1.27	3.26	0.01	0.05	0.04
	Crushers	2	270	D	0.39	1.27	3.97	0.01	0.05	0.04
	Dozers	2	310	D	0.58	2.98	3.67	0.01	0.05	0.04
	Front End Loader	5	262	D	0.37	1.21	3.14	0.01	0.05	0.04
Utility Relocation	14 T Rough Terrain Crane	2	155	D	0.27	3.41	4.19	0.01	0.07	0.06
	Front End Loader/Backhoe	2	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Cat 572 Pipe Layer	2	230	D	0.52	1.47	3.71	0.01	0.05	0.04
	300 scfm Air Compressor	2	125	D	0.27	3.24	4.19	0.01	0.07	0.06
	Welding Unit	4	50	D	0.28	4.10	5.47	0.01	0.09	0.08
Buildings	Crane	1	175	D	0.27	3.41	4.19	0.01	0.07	0.06
	Fork Lift	1	125	D	0.27	3.35	4.10	0.01	0.07	0.06
	Concrete Pump	1	177	D	0.35	1.18	4.21	0.01	0.05	0.04
	Auger	2	177	D	0.23	1.04	2.14	0.01	0.05	0.04
	Pile driver Crane	1	230	D	0.52	1.47	3.71	0.01	0.05	0.04
Rough Grade	Diesel Hammer	1	44	D	0.28	4.10	5.03	0.01	0.09	0.08
	Self Loading Scrappers	6	365	D	0.55	2.09	3.67	0.01	0.05	0.04
	Dozers	2	310	D	0.58	2.98	3.67	0.01	0.05	0.04
	Vibratory Rollers	2	143	D	0.27	3.25	4.19	0.01	0.07	0.06
	Motor Grader	2	145	D	0.27	3.37	4.19	0.01	0.07	0.06
New Utility	14 T Rough Terrain Crane	2	175	D	0.27	3.41	4.19	0.01	0.07	0.06
	Cat 572 Pipe Layer	1	230	D	0.52	1.47	3.71	0.01	0.05	0.04
	Vibratory Rollers	2	142	D	0.27	3.25	4.19	0.01	0.07	0.06
	Front End Loader/Backhoe	2	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Concrete Pump	1	177	D	0.35	1.18	4.21	0.01	0.05	0.04
Final Grade	Front End Loader/Backhoe	1	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Vibratory Rollers	2	142	D	0.27	3.25	4.19	0.01	0.07	0.06
	Motor Grader	2	145	D	0.27	3.37	4.19	0.01	0.07	0.06
Track Work	Front End Loader	4	262	D	0.37	1.21	3.14	0.01	0.05	0.04
	Backhoe	1	500	D	0.37	1.21	3.14	0.01	0.05	0.04
	Vibratory Rollers	1	142	D	0.27	3.25	4.19	0.01	0.07	0.06
	Ballast Regulator	1	185	D	0.58	3.01	4.24	0.01	0.58	0.53
	Tie Tamper	1	125	D	0.27	3.47	4.19	0.01	0.27	0.25
Concrete	Switch Tamper	1	300	D	0.58	3.52	4.24	0.01	0.58	0.53
	Front End Loader	1	500	D	0.37	1.21	3.14	0.01	0.05	0.04
	Vibratory Rollers	1	142	D	0.27	3.25	4.19	0.01	0.07	0.06
	Slip Form Machine	1	250	D	0.32	1.16	3.14	0.01	0.05	0.04
	Motor Grader	1	145	D	0.27	3.37	4.19	0.01	0.07	0.06
Asphalt	Motor Grader	1	145	D	0.27	3.37	4.19	0.01	0.07	0.06
	Front End Loader	1	262	D	0.37	1.21	3.14	0.01	0.05	0.04
	Vibratory Rollers	1	138	D	0.27	3.25	4.19	0.01	0.07	0.06
	Paving Machine	2	170	D	0.27	3.41	4.19	0.01	0.07	0.06
	Backhoe	1	101	D	0.35	3.73	4.63	0.01	0.08	0.07
Delineation	Crane	1	175	D	0.27	3.41	4.19	0.01	0.07	0.06
	Fork Lift	1	125	D	0.27	3.35	4.10	0.01	0.07	0.06
	Striping Machines	2	60	G	1.65	30.34	6.66	0.01	0.06	0.06
<b>Sepulveda Bridge</b>										
Demolition	Excavator	2	168	D	0.27	3.38	4.19	0.01	0.07	0.06
	Dozers	2	310	D	0.58	3.00	3.86	0.01	0.05	0.04
	Front End Loader	2	262	D	0.37	1.22	3.23	0.01	0.05	0.04
Preparatory	Front End Loader	2	262	D	0.37	1.22	3.23	0.01	0.05	0.04
	Crane	1	173	D	0.27	3.41	4.19	0.01	0.07	0.06
	Backhoe	2	500	D	0.37	1.22	3.23	0.01	0.05	0.04
Foundation	P.D Crane	1	230	D	0.52	1.48	3.88	0.01	0.05	0.04
	Crane	1	173	D	0.27	3.41	4.19	0.01	0.07	0.06
East Track Prep	P.D Crane	1	230	D	0.52	1.48	3.88	0.01	0.05	0.04
	Excavator	1	168	D	0.27	3.38	4.19	0.01	0.07	0.06
	Crane	1	173	D	0.27	3.41	4.19	0.01	0.07	0.06
	Auger	2	177	D	0.24	1.04	2.19	0.01	0.05	0.04
	Backhoe	4	101	D	0.35	3.73	4.63	0.01	0.08	0.07
Pile Prep	Vibratory Rollers	2	142	D	0.27	3.26	4.19	0.01	0.07	0.06
	Auger	2	177	D	0.24	1.04	2.19	0.01	0.05	0.04
	Vibratory Trench Rollers	2	50	D	0.28	4.10	5.05	0.01	0.09	0.08
	Pile driver Crane	1	230	D	0.52	1.48	3.88	0.01	0.05	0.04
	Diesel Hammer	1	44	D	0.28	4.10	5.05	0.01	0.09	0.08
North End Prep	Backhoe	2	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Front End Loader	1	262	D	0.37	1.22	3.23	0.01	0.05	0.04
	Backhoe	1	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Vibratory Rollers	2	142	D	0.27	3.26	4.19	0.01	0.07	0.06
	Grader	2	145	D	0.27	3.37	4.19	0.01	0.07	0.06
Wing Wall & Track	Pile driver Crane	2	230	D	0.52	1.48	3.88	0.01	0.05	0.04
	Diesel Hammer	1	44	D	0.28	4.10	5.05	0.01	0.09	0.08
	Front End Loader	1	262	D	0.37	1.22	3.23	0.01	0.05	0.04
	Vibratory Rollers	1	142	D	0.27	3.26	4.19	0.01	0.07	0.06
	Backhoe	1	101	D	0.35	3.73	4.63	0.01	0.08	0.07
Bridge Widening	Ballast Regulator	1	185	D	0.58	3.01	4.24	0.01	0.05	0.04
	Tie Tamper	1	125	D	0.58	3.01	4.24	0.01	0.05	0.04
	Switch Tamper	1	250	D	0.58	3.01	4.24	0.01	0.05	0.04
	Front End Loader	1	500	D	0.37	1.22	3.23	0.01	0.05	0.04
	Vibratory Rollers	1	142	D	0.27	3.26	4.19	0.01	0.07	0.06
Dozers	1	310	D	0.58	3.00	3.86	0.01	0.05	0.04	

**Table C1.1-16. Mitigated Emission Factors of Equipment Used at Lead & Storage Track and Dominguez Channel per POLA Construction Guidelines.**

Construction Sub-Element	Equipment	No.	Size (hp)	Fuel	Emission Factor (g/bhp-hr)					
					VOC	CO	NOx	SO2	PM10	PM2.5
<b>Lead &amp; Storage Track</b>										
Utility Relocation	Front End Loader/Backhoe	2	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	14 T Rough Terrain Crane	2	155	D	0.27	3.41	4.19	0.01	0.07	0.06
	Cat 572 Pipe Layer	4	230	D	0.52	1.48	4.03	0.01	0.05	0.04
	300 scfm Air Compressor	2	125	D	0.27	3.24	4.19	0.01	0.07	0.06
	Welding Unit	4	50	D	0.28	4.10	5.52	0.01	0.09	0.08
Demolition	Front End Loader/Backhoe	1	500	D	0.37	1.22	3.30	0.01	0.05	0.04
	Concrete Power Saw	1	10	G	6.94	266.75	4.49	0.01	3.60	3.31
	Track Hoe	1	321	D	0.42	1.28	3.46	0.01	0.05	0.04
Rough Grading	Front End Loader/Backhoe	1	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Self Loading Scrappers	2	365	D	0.56	2.12	4.02	0.01	0.05	0.04
	Excavator	1	168	D	0.27	3.38	4.19	0.01	0.07	0.06
	Sheep's Foot Roller	3	143	D	0.27	3.26	4.19	0.01	0.07	0.06
	Motor Grader	1	145	D	0.27	3.37	4.19	0.01	0.07	0.06
Civil Construction	Front End Loader/Backhoe	2	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Vibratory Roller	2	142	D	0.27	3.26	4.19	0.01	0.07	0.06
	Motor Grader	2	145	D	0.27	3.37	4.19	0.01	0.07	0.06
Track Work Materials	Front End Loader/Backhoe	2	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Speed Swing	2	170	D	0.27	3.28	4.17	0.01	0.07	0.06
Track Work Assembly	Tie Tamper	1	125	D	0.27	3.65	4.19	0.01	0.07	0.06
	Switch Tamper	1	250	D	0.58	3.19	4.24	0.01	0.05	0.04
	Production Tamper	1	250	D	0.58	3.19	4.24	0.01	0.05	0.04
	Shoulder Compactor	1	300	D	0.58	3.70	4.24	0.01	0.05	0.04
<b>Dominguez Channel</b>										
Utilities	Front End Loader	2	197	D	0.40	1.21	3.86	0.01	0.05	0.04
	Backhoe	2	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	14 T Rough Terrain Crane	2	155	D	0.27	3.41	4.19	0.01	0.07	0.06
	Cat 572 Pipe Layer	2	230	D	0.53	1.49	4.24	0.01	0.05	0.04
	300 scfm Air Compressor	2	125	D	0.27	3.25	4.19	0.01	0.07	0.06
	Welding Unit	2	50	D	0.28	4.10	5.55	0.01	0.09	0.08
Demolition	Front End Loader	2	197	D	0.40	1.21	3.86	0.01	0.05	0.04
	14 T Rough Terrain Crane	1	155	D	0.27	3.41	4.19	0.01	0.07	0.06
	300 scfm Air Compressor	2	125	D	0.27	3.25	4.19	0.01	0.07	0.06
	Pile driver Crane	1	230	D	0.53	1.49	4.24	0.01	0.05	0.04
	Vibratory Roller	1	240	D	0.47	1.44	4.24	0.01	0.05	0.04
	Excavator	1	321	D	0.42	1.28	3.59	0.01	0.05	0.04
	Pumps	2	60	D	0.35	3.63	4.63	0.01	0.08	0.07
	Dozer	1	310	D	0.58	3.05	4.24	0.01	0.05	0.04
Excavation	Backhoe	1	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.05	0.04
	Auger	1	177	D	0.24	1.04	2.31	0.01	0.05	0.04
CISS Piles	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.05	0.04
	Pile driver Crane	1	230	D	0.53	1.49	4.24	0.01	0.05	0.04
	Diesel Hammer	1	44	D	0.28	4.10	5.10	0.01	0.09	0.08
Concrete	Concrete Pump	1	177	D	0.36	1.19	4.24	0.01	0.05	0.04
	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.05	0.04
	Crane	1	173	D	0.27	3.41	4.19	0.01	0.07	0.06
Backfill Cofferdam Piling	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.05	0.04
	Vibratory Roller	1	142	D	0.27	3.26	4.19	0.01	0.07	0.06
	Foot Roller	1	143	D	0.27	3.26	4.19	0.01	0.07	0.06
	Motor Grader	1	145	D	0.27	3.37	4.19	0.01	0.07	0.06
	Large Crane	1	230	D	0.53	1.49	4.24	0.01	0.05	0.04
Bearing & Structural Steel Beams	300 scfm Air Compressor	1	125	D	0.27	3.25	4.19	0.01	0.07	0.06
	Welding Unit	1	50	D	0.28	4.10	5.55	0.01	0.09	0.08
	Large Crane	1	450	D	0.49	1.67	4.24	0.01	0.05	0.04
	Fork Lift	1	125	D	0.27	3.35	4.19	0.01	0.07	0.06
Bridge Deck Plate, Waterproffing, Misc. Steel	300 scfm Air Compressor	1	125	D	0.27	3.25	4.19	0.01	0.07	0.06
	Welding Unit	1	50	D	0.28	4.10	5.55	0.01	0.09	0.08
	Crane	1	175	D	0.27	3.41	4.19	0.01	0.07	0.06
	Fork Lift	1	125	D	0.27	3.35	4.19	0.01	0.07	0.06
Bridge Deck Ballast	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.05	0.04
	Balast Compactor	1	185	D	0.58	3.28	4.24	0.01	0.05	0.04
Concrete Ties & Track	Front End Loader	1	262	D	0.38	1.23	3.40	0.01	0.05	0.04
	Ballast Regulator	1	185	D	0.58	3.28	4.24	0.01	0.05	0.04
	Tie Tamper	1	125	D	0.27	3.73	4.19	0.01	0.07	0.06
	Switch Tamper	1	250	D	0.58	3.28	4.24	0.01	0.05	0.04
	Speed Swing	2	170	D	0.27	3.29	4.19	0.01	0.07	0.06
Painting & Reparis	Front End Loader	1	197	D	0.40	1.21	3.86	0.01	0.05	0.04
	Backhoe	1	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Large Crane	1	230	D	0.53	1.49	4.24	0.01	0.05	0.04
	Sweeper	1	160	D	0.27	3.27	4.19	0.01	0.07	0.06

**Table C1.1-17. Mitigated Emission Factors of Equipment Used at PCH Grade Separation per POLA Construction Guidelines.**

Construction Sub-Element	Equipment	No.	Size-hp	Fuel	Emission Factor (g/bhp-hr)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>PCH Grade Separation</b>										
Demolition - North Side	P.D Crane	1	230	D	0.51	1.46	3.59	0.01	0.05	0.04
	Vibratory Rollers	1	240	D	0.45	1.41	3.59	0.01	0.05	0.04
	Excavator	2	321	D	0.41	1.26	3.19	0.01	0.05	0.04
	Dozers	2	310	D	0.58	2.96	3.54	0.01	0.05	0.04
	Front End Loader	2	262	D	0.37	1.21	3.08	0.01	0.05	0.04
Preparatory Work -North Side	Front End Loader	2	262	D	0.37	1.21	3.08	0.01	0.05	0.04
	Crane	2	173	D	0.27	3.41	4.19	0.01	0.07	0.06
	P.D Crane	1	230	D	0.51	1.46	3.59	0.01	0.05	0.04
	Backhoe	2	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Vibratory Rollers	1	142	D	0.27	3.25	4.19	0.01	0.07	0.06
	Motor Grader	1	145	D	0.27	3.37	4.19	0.01	0.07	0.06
	Paving Machine	1	170	D	0.27	3.41	4.19	0.01	0.07	0.06
North Bridge	Auger	1	177	D	0.23	1.04	2.10	0.01	0.05	0.04
	Pile driver Crane	1	230	D	0.51	1.46	3.59	0.01	0.05	0.04
	Diesel Hammer	1	44	D	0.28	4.10	5.01	0.01	0.09	0.08
	Crane	2	173	D	0.27	3.41	4.19	0.01	0.07	0.06
	Backhoe	2	101	D	0.35	3.73	4.63	0.01	0.08	0.07
Pave N/S Bridge And Reroute Traffic	Motor Grader	1	145	D	0.27	3.37	4.19	0.01	0.07	0.06
	Front End Loader	1	262	D	0.37	1.21	3.08	0.01	0.05	0.04
	Vibratory rollers	1	138	D	0.27	3.25	4.19	0.01	0.07	0.06
	Slip Form Machine	1	250	D	0.32	1.15	3.08	0.01	0.05	0.04
	Paving Machine	1	170	D	0.27	3.41	4.19	0.01	0.07	0.06
	Backhoe	1	101	D	0.35	3.73	4.63	0.01	0.08	0.07
Demolition - South Side	P.D Crane	1	230	D	0.51	1.46	3.59	0.01	0.05	0.04
	Vibratory Rollers	1	240	D	0.45	1.41	3.59	0.01	0.05	0.04
	Excavator	2	321	D	0.41	1.26	3.19	0.01	0.05	0.04
	Dozers	2	310	D	0.58	2.96	3.54	0.01	0.05	0.04
	Front End Loader	2	262	D	0.37	1.21	3.08	0.01	0.05	0.04
Preparatory Work -South Side	Front End Loader	2	262	D	0.37	1.21	3.08	0.01	0.05	0.04
	Crane	2	173	D	0.27	3.41	4.19	0.01	0.07	0.06
	P.D Crane	1	175	D	0.27	3.41	4.19	0.01	0.07	0.06
	Backhoe	2	101	D	0.35	3.73	4.63	0.01	0.08	0.07
	Vibratory Rollers	1	142	D	0.27	3.25	4.19	0.01	0.07	0.06
	Motor Grader	1	145	D	0.27	3.37	4.19	0.01	0.07	0.06
	Paving Machine	1	175	D	0.27	3.41	4.19	0.01	0.07	0.06
South Bridge	Auger	1	190	D	0.23	1.04	2.10	0.01	0.05	0.04
	Pile driver Crane	1	230	D	0.51	1.46	3.59	0.01	0.05	0.04
	Diesel Hammer	1	44	D	0.28	4.10	5.01	0.01	0.09	0.08
	Crane	2	173	D	0.27	3.41	4.19	0.01	0.07	0.06
	Backhoe	2	101	D	0.35	3.73	4.63	0.01	0.08	0.07
Pave S/S Bridge And Yard Access Roads	Motor Grader	1	145	D	0.27	3.37	4.19	0.01	0.07	0.06
	Front End Loader	1	262	D	0.37	1.21	3.08	0.01	0.05	0.04
	Vibratory rollers	1	138	D	0.27	3.25	4.19	0.01	0.07	0.06
	Slip Form Machine	1	250	D	0.32	1.15	3.08	0.01	0.05	0.04
	Paving Machine	1	170	D	0.27	3.41	4.19	0.01	0.07	0.06
	Backhoe	1	101	D	0.35	3.73	4.63	0.01	0.08	0.07

**Table C1.1-18. Summary of Daily Emissions of Offroad Construction Equipment at Site Construction and Sepulveda Bridge**

Construction Sub-Element	Equipment	Number	Size-hp	Fuel	Emissions (lb/day)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>Site Construction</b>										
Demolition	Crane	1	173	D	1.17	5.59	8.12	0.01	0.38	0.35
	Excavator	4	321	D	6.81	20.79	53.55	0.09	1.97	1.81
	Crushers	2	270	D	3.62	11.77	36.84	0.05	1.20	1.11
	Dozers	2	310	D	5.47	24.03	31.96	0.04	1.04	0.96
	Front End Loader	5	262	D	5.79	18.94	49.05	0.10	1.73	1.59
Utility Relocation	14 T Rough Terrain Crane	2	155	D	2.10	10.01	14.55	0.02	0.68	0.62
	Front End Loader/Backhoe	2	101	D	1.78	9.30	11.76	0.02	0.84	0.78
	Cat 572 Pipe Layer	2	230	D	3.24	9.24	25.94	0.04	0.89	0.82
	300 scfm Air Compressor	2	125	D	1.75	8.58	13.90	0.02	0.77	0.71
	Welding Unit	4	50	D	4.11	11.80	10.85	0.01	1.01	0.93
Buildings	Crane	1	175	D	1.19	5.65	8.22	0.01	0.38	0.35
	Fork Lift	1	125	D	0.46	2.77	3.45	0.01	0.18	0.17
	Concrete Pump	1	177	D	0.97	3.27	12.25	0.02	0.35	0.32
	Auger	2	177	D	1.13	5.01	10.35	0.03	0.30	0.28
	Pile driver Crane	1	230	D	1.62	4.62	12.97	0.02	0.45	0.41
	Diesel Hammer	1	44	D	0.61	2.22	2.10	0.00	0.15	0.14
Rough Grade	Self Loading Scrappers	6	365	D	17.63	66.67	126.29	0.18	4.11	3.78
	Dozers	2	310	D	5.47	24.03	31.96	0.04	1.04	0.96
	Vibratory Rollers	2	143	D	2.33	11.80	17.96	0.02	0.84	0.77
	Motor Grader	2	145	D	2.42	12.37	18.21	0.02	0.85	0.78
New Utility	14 T Rough Terrain Crane	2	175	D	2.37	11.30	16.43	0.02	0.76	0.70
	Cat 572 Pipe Layer	1	230	D	1.62	4.62	12.97	0.02	0.45	0.41
	Vibratory Rollers	2	142	D	2.31	11.72	17.83	0.02	0.83	0.76
	Front End Loader/Backhoe	2	101	D	1.78	9.30	11.76	0.02	0.84	0.78
	Concrete Pump	1	177	D	0.97	3.27	12.25	0.02	0.35	0.32
Final Grade	Front End Loader/Backhoe	1	101	D	0.89	4.65	5.88	0.01	0.42	0.39
	Vibratory Rollers	2	142	D	2.31	11.72	17.83	0.02	0.83	0.76
	Motor Grader	2	145	D	2.42	12.37	18.21	0.02	0.85	0.78
Track Work	Front End Loader	4	262	D	4.63	15.15	39.24	0.08	1.38	1.27
	Backhoe	1	500	D	2.21	7.23	18.72	0.04	0.66	0.61
	Vibratory Rollers	1	142	D	1.16	5.86	8.91	0.01	0.41	0.38
	Ballast Regulator	1	185	D	0.62	2.50	4.26	0.00	0.44	0.51
	Tie Tamper	1	125	D	0.46	1.95	3.03	0.00	0.35	0.26
	Switch Tamper	1	300	D	0.89	4.75	7.15	0.01	0.66	1.20
Concrete	Front End Loader	1	500	D	2.21	7.23	18.72	0.04	0.66	0.61
	Vibratory Rollers	1	142	D	1.16	5.86	8.91	0.01	0.41	0.38
	Slip Form Machine	1	250	D	1.09	3.95	10.73	0.02	0.36	0.33
	Motor Grader	1	145	D	1.21	6.19	9.10	0.01	0.42	0.39
Asphalt	Motor Grader	1	145	D	1.21	6.19	9.10	0.01	0.42	0.39
	Front End Loader	1	262	D	1.16	3.79	9.81	0.02	0.35	0.32
	Vibratory Rollers	1	138	D	1.12	5.69	8.66	0.01	0.40	0.37
	Paving Machine	2	170	D	3.56	15.86	23.02	0.03	1.07	0.99
Delination	Backhoe	1	101	D	0.89	4.65	5.88	0.01	0.42	0.39
	Crane	1	175	D	1.19	5.65	8.22	0.01	0.38	0.35
	Fork Lift	1	125	D	0.46	2.77	3.45	0.01	0.18	0.17
	Striping Machines	2	60	G	2.70	49.77	10.93	0.01	0.10	0.09
Total Emissions					112.26	492.46	821.29	1.25	33.58	31.53
<b>Sepulveda Bridge</b>										
Demolition	Excavator	2	168	D	2.59	14.50	19.10	0.03	1.03	0.95
	Dozers	2	310	D	5.50	24.22	33.87	0.04	1.07	0.98
	Front End Loader	2	262	D	2.00	6.55	17.34	0.03	0.60	0.56
Preparatory	Front End Loader	2	262	D	2.00	6.55	17.34	0.03	0.60	0.56
	Crane	1	173	D	1.18	5.59	8.20	0.01	0.39	0.36
	Backhoe	2	500	D	3.82	12.49	33.10	0.07	1.15	1.06
Foundation	P.D Crane	1	230	D	1.13	3.22	9.54	0.01	0.32	0.30
	Crane	1	173	D	1.18	5.59	8.20	0.01	0.39	0.36
	P.D Crane	1	230	D	1.13	3.22	9.54	0.01	0.32	0.30
East Track Prep	Excavator	1	168	D	1.29	7.25	9.55	0.01	0.51	0.47
	Crane	1	173	D	1.18	5.59	8.20	0.01	0.39	0.36
	Auger	2	177	D	1.14	5.01	10.61	0.03	0.31	0.28
	Backhoe	4	101	D	3.09	16.03	20.41	0.03	1.54	1.42
	Vibratory Rollers	2	142	D	2.33	11.72	18.00	0.02	0.86	0.79
Pile Prep	Auger	2	177	D	1.14	5.01	10.61	0.03	0.31	0.28
	Vibratory Trench Rollers	2	50	D	2.79	8.02	6.40	0.01	0.46	0.43
	Pile driver Crane	1	230	D	1.13	3.22	9.54	0.01	0.32	0.30
	Diesel Hammer	1	44	D	0.62	2.23	2.11	0.00	0.15	0.14
	Backhoe	2	101	D	1.55	8.01	10.21	0.01	0.77	0.71
North End Prep	Front End Loader	1	262	D	1.00	3.27	8.67	0.02	0.30	0.28
	Backhoe	1	101	D	0.77	4.01	5.10	0.01	0.39	0.36
	Vibratory Rollers	2	142	D	2.33	11.72	18.00	0.02	0.86	0.79
	Grader	2	145	D	2.44	12.38	18.38	0.02	0.88	0.81
	Pile driver Crane	2	230	D	2.27	6.44	19.08	0.03	0.64	0.59
	Diesel Hammer	1	44	D	0.62	2.23	2.11	0.00	0.15	0.14
Wing Wall & Track	Front End Loader	1	262	D	1.00	3.27	8.67	0.02	0.30	0.28
	Vibratory Rollers	1	142	D	1.16	5.86	9.00	0.01	0.43	0.40
	Backhoe	1	101	D	0.77	4.01	5.10	0.01	0.39	0.36
	Ballast Regulator	1	185	D	0.04	0.16	0.27	0.00	0.03	0.00
	Tie Tamper	1	125	D	0.03	0.11	0.19	0.00	0.02	0.00
Bridge Widening	Switch Tamper	1	250	D	0.05	0.22	0.37	0.00	0.04	0.00
	Front End Loader	1	500	D	1.91	6.25	16.55	0.03	0.58	0.53
	Vibratory Rollers	1	142	D	1.16	5.86	9.00	0.01	0.43	0.40
Total Emissions					55.11	231.90	399.30	0.64	17.51	16.04

Table C1.1-19. Summary of Daily Emissions of Offroad Construction Equipment at Lead & Storage Track and Dominguez Channel.

Construction Sub-Element	Equipment	No.	Size (hp)	Fuel	Emissions (lb/day)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>Lead &amp; Storage Track</b>										
Utility Relocation	Front End Loader/Backhoe	2	101	D	1.56	8.02	10.28	0.01	0.81	0.75
	14 T Rough Terrain Crane	2	155	D	2.13	10.02	14.82	0.02	0.73	0.67
	Cat 572 Pipe Layer	4	230	D	6.57	18.66	57.84	0.08	1.92	1.77
	300 scfm Air Compressor	2	125	D	1.78	8.58	14.11	0.02	0.78	0.72
	Welding Unit	4	50	D	4.20	11.90	10.95	0.01	1.03	0.95
Demolition	Front End Loader/Backhoe	1	500	D	1.92	6.26	16.93	0.03	0.58	0.54
	Concrete Power Saw	1	10	G	0.34	12.88	0.22	0.00	0.17	0.16
	Track Hoe	1	321	D	1.38	4.20	11.39	0.02	0.41	0.37
Rough Grading	Front End Loader/Backhoe	1	101	D	0.78	4.01	5.14	0.01	0.41	0.37
	Self Loading Scrappers	2	365	D	5.94	22.54	46.89	0.06	1.44	1.33
	Excavator	1	168	D	1.30	7.25	9.62	0.01	0.53	0.49
	Sheep's Foot Roller	3	143	D	3.54	17.71	27.42	0.03	1.35	1.24
	Motor Grader	1	145	D	1.23	6.19	9.27	0.01	0.46	0.42
Civil Construction	Front End Loader/Backhoe	2	101	D	1.56	8.02	10.28	0.01	0.81	0.75
	Vibratory Roller	2	142	D	2.34	11.72	18.15	0.02	0.89	0.82
	Motor Grader	2	145	D	2.45	12.38	18.54	0.02	0.91	0.84
Track Work Materials	Front End Loader/Backhoe	2	101	D	1.56	8.02	10.28	0.01	0.81	0.75
	Speed Swing	2	170	D	2.55	15.27	19.85	0.03	1.07	0.99
Track Work Assembly	Tie Tamper	1	125	D	0.40	1.72	2.66	0.00	0.31	0.29
	Switch Tamper	1	250	D	0.73	3.00	5.05	0.01	0.52	0.48
	Production Tamper	1	250	D	0.73	3.00	5.05	0.01	0.52	0.48
	Shoulder Compactor	1	300	D	0.78	4.18	6.26	0.01	0.58	0.53
	Ballast Track Regulator	1	185	D	0.54	2.22	3.74	0.00	0.39	0.36
Total Emissions					46.32	207.76	334.77	0.45	17.47	16.07
<b>Dominguez Channel</b>										
Utilities	Front End Loader	2	197	D	1.61	4.90	15.58	0.03	0.49	0.45
	Backhoe	2	101	D	1.58	8.03	10.38	0.01	0.87	0.80
	14 T Rough Terrain Crane	2	155	D	2.14	10.02	14.99	0.02	0.76	0.70
	Cat 572 Pipe Layer	2	230	D	2.34	6.62	21.72	0.03	0.71	0.65
	300 scfm Air Compressor	2	125	D	1.80	8.59	14.25	0.02	0.79	0.73
	Welding Unit	2	50	D	2.13	5.98	5.51	0.01	0.52	0.48
Demolition	Front End Loader	2	197	D	1.61	4.90	15.58	0.03	0.49	0.45
	14 T Rough Terrain Crane	1	155	D	1.07	5.01	7.49	0.01	0.38	0.35
	300 scfm Air Compressor	2	125	D	1.80	8.59	14.25	0.02	0.79	0.73
	Pile driver Crane	1	230	D	1.66	4.70	15.40	0.02	0.50	0.46
	Vibratory Roller	1	240	D	1.43	4.39	14.82	0.02	0.49	0.45
	Excavator	1	321	D	1.73	5.26	14.73	0.02	0.52	0.47
	Pumps	2	60	D	1.06	4.61	7.13	0.01	0.38	0.35
	Dozer	1	310	D	2.78	12.31	18.95	0.02	0.56	0.52
	Backhoe	1	101	D	0.79	4.01	5.19	0.01	0.44	0.40
	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.25	0.23
Excavation	Backhoe	1	101	D	0.79	4.01	5.19	0.01	0.44	0.40
	Auger	1	177	D	0.58	2.51	5.58	0.02	0.16	0.15
CISS Piles	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.25	0.23
	Pile driver Crane	1	230	D	1.66	4.70	15.40	0.02	0.50	0.46
	Diesel Hammer	1	44	D	0.26	0.90	0.85	0.00	0.07	0.06
Concrete	Concrete Pump	1	177	D	0.57	1.90	7.29	0.01	0.21	0.19
	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.25	0.23
	Concrete Pump	1	177	D	0.57	1.90	7.29	0.01	0.21	0.19
Backfill Cofferdam Piling	Crane	1	173	D	1.20	5.59	8.36	0.01	0.43	0.39
	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.25	0.23
	Vibratory Roller	1	142	D	1.18	5.86	9.18	0.01	0.47	0.43
	Foot Roller	1	143	D	1.19	5.91	9.24	0.01	0.47	0.43
	Motor Grader	1	145	D	1.24	6.19	9.37	0.01	0.48	0.44
Bearing & Structural Steel Beams	Large Crane	1	230	D	1.15	3.26	10.68	0.01	0.35	0.32
	300 scfm Air Compressor	1	125	D	0.90	4.29	7.12	0.01	0.40	0.37
	Welding Unit	1	50	D	1.06	2.99	2.75	0.00	0.26	0.24
	Large Crane	1	450	D	2.09	7.12	19.16	0.02	0.60	0.55
Bridge Deck Plate, Waterproffing, Misc. Steel	Fork Lift	1	125	D	0.48	2.77	3.57	0.01	0.21	0.19
	300 scfm Air Compressor	1	125	D	0.90	4.29	7.12	0.01	0.40	0.37
	Welding Unit	1	50	D	1.06	2.99	2.75	0.00	0.26	0.24
Bridge Deck Ballast	Crane	1	175	D	1.21	5.66	8.46	0.01	0.43	0.40
	Fork Lift	1	125	D	0.48	2.77	3.57	0.01	0.21	0.19
Concrete Ties & Track	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.25	0.23
	Balast Compactor	1	185	D	0.68	2.81	4.71	0.00	0.49	0.45
	Front End Loader	1	262	D	1.01	3.29	9.14	0.02	0.31	0.29
	Ballast Regulator	1	185	D	0.02	0.07	0.12	0.00	0.01	0.01
	Tie Tamper	1	125	D	0.01	0.06	0.09	0.00	0.01	0.01
Painting & Reparis	Switch Tamper	1	250	D	0.02	0.10	0.17	0.00	0.02	0.02
	Speed Swing	2	170	D	2.57	15.27	20.05	0.03	1.11	1.03
	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.25	0.23
	Backhoe	1	101	D	0.79	4.01	5.19	0.01	0.44	0.40
	Large Crane	1	230	D	1.15	3.26	10.68	0.01	0.35	0.32
Total Emissions					56.58	224.94	446.83	0.62	20.08	18.47



Table C1.1-20. Summary of Daily Emissions of Offroad Construction Equipment at PCH Grade Separation.

Construction Sub-Element	Equipment	No.	Size-hp	Fuel	Emissions (lb/day)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>PCH Grade Separation</b>										
Demolition - North Side	P.D Crane	1	230	D	1.12	3.19	8.60	0.01	0.30	0.28
	Vibratory Rollers	1	240	D	1.35	4.19	11.65	0.02	0.41	0.37
	Excavator	2	321	D	3.39	10.37	26.15	0.05	0.97	0.89
	Dozers	2	310	D	5.91	25.92	33.16	0.05	1.11	1.02
	Front End Loader	2	262	D	2.31	7.56	19.24	0.04	0.69	0.63
Preparatory Work -North Side	Front End Loader	2	262	D	2.31	7.56	19.24	0.04	0.69	0.63
	Crane	2	173	D	2.34	11.17	16.13	0.02	0.73	0.67
	P.D Crane	1	230	D	1.12	3.19	8.60	0.01	0.30	0.28
	Backhoe	2	101	D	1.76	9.29	11.68	0.02	0.80	0.74
	Vibratory Rollers	1	142	D	1.12	5.70	8.62	0.01	0.39	0.36
	Motor Grader	1	145	D	1.28	6.56	9.59	0.01	0.44	0.40
	Paving Machine	1	170	D	1.77	7.93	11.43	0.01	0.52	0.48
North Bridge	Auger	1	177	D	0.68	3.03	6.15	0.02	0.18	0.16
	Pile driver Crane	1	230	D	1.12	3.19	8.60	0.01	0.30	0.28
	Diesel Hammer	1	44	D	0.30	1.11	1.04	0.00	0.07	0.07
	Crane	2	173	D	2.34	11.17	16.13	0.02	0.73	0.67
	Backhoe	2	101	D	1.76	9.29	11.68	0.02	0.80	0.74
Pave N/S Bridge And Reroute Traffic	Motor Grader	1	145	D	1.28	6.56	9.59	0.01	0.44	0.40
	Front End Loader	1	262	D	1.15	3.78	9.62	0.02	0.34	0.32
	Vibratory rollers	1	138	D	1.09	5.54	8.38	0.01	0.38	0.35
	Slip Form Machine	1	250	D	1.08	3.94	10.52	0.02	0.36	0.33
	Paving Machine	1	170	D	1.77	7.93	11.43	0.01	0.52	0.48
	Backhoe	1	101	D	0.88	4.65	5.84	0.01	0.40	0.37
Demolition - South Side	P.D Crane	1	230	D	1.12	3.19	8.60	0.01	0.30	0.28
	Vibratory Rollers	1	240	D	1.35	4.19	11.65	0.02	0.41	0.37
	Excavator	2	321	D	3.39	10.37	26.15	0.05	0.97	0.89
	Dozers	2	310	D	5.91	25.92	33.16	0.05	1.11	1.02
	Front End Loader	2	262	D	2.31	7.56	19.24	0.04	0.69	0.63
Preparatory Work -South Side	Front End Loader	2	262	D	2.31	7.56	19.24	0.04	0.69	0.63
	Crane	2	173	D	2.34	11.17	16.13	0.02	0.73	0.67
	P.D Crane	1	175	D	1.18	5.65	8.16	0.01	0.37	0.34
	Backhoe	2	101	D	1.76	9.29	11.68	0.02	0.80	0.74
	Vibratory Rollers	1	142	D	1.12	5.70	8.62	0.01	0.39	0.36
	Motor Grader	1	145	D	1.28	6.56	9.59	0.01	0.44	0.40
	Paving Machine	1	175	D	1.83	8.16	11.76	0.02	0.53	0.49
South Bridge	Auger	1	190	D	0.73	3.25	6.60	0.02	0.19	0.18
	Pile driver Crane	1	230	D	1.12	3.19	8.60	0.01	0.30	0.28
	Diesel Hammer	1	44	D	0.30	1.11	1.04	0.00	0.07	0.07
	Crane	2	173	D	2.34	11.17	16.13	0.02	0.73	0.67
	Backhoe	2	101	D	1.76	9.29	11.68	0.02	0.80	0.74
Pave S/S Bridge And Yard Access Roads	Motor Grader	1	145	D	1.28	6.56	9.59	0.01	0.44	0.40
	Front End Loader	1	262	D	1.15	3.78	9.62	0.02	0.34	0.32
	Vibratory rollers	1	138	D	1.09	5.54	8.38	0.01	0.38	0.35
	Slip Form Machine	1	250	D	1.08	3.94	10.52	0.02	0.36	0.33
	Paving Machine	1	170	D	1.77	7.93	11.43	0.01	0.52	0.48
	Backhoe	1	101	D	0.88	4.65	5.84	0.01	0.40	0.37
Total Emissions					78.62	328.57	566.52	0.90	23.83	21.92

**Table C1.1-21. Summary of Mitigated Daily Emissions of Offroad Construction Equipment at Site Construction and Sepulveda Bridge**

Construction Sub-Element	Equipment	Number	Size-hp	Fuel	Emissions (lb/day)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>Site Construction</b>										
Demolition	Crane	1	173	D	0.44	5.59	6.88	0.01	0.11	0.10
	Excavator	4	321	D	6.81	20.79	53.55	0.09	0.79	0.73
	Crushers	2	270	D	3.62	11.77	36.84	0.05	0.45	0.41
	Dozers	2	310	D	4.65	24.03	29.62	0.04	0.39	0.36
	Front End Loader	5	262	D	5.79	18.94	49.05	0.10	0.75	0.69
Utility Relocation	14 T Rough Terrain Crane	2	155	D	0.80	10.01	12.33	0.02	0.20	0.18
	Front End Loader/Backhoe	2	101	D	0.83	8.97	11.14	0.02	0.18	0.17
	Cat 572 Pipe Layer	2	230	D	3.24	9.24	23.32	0.04	0.30	0.28
	300 scfm Air Compressor	2	125	D	0.72	8.58	11.10	0.02	0.18	0.17
	Welding Unit	4	50	D	0.56	8.14	10.85	0.01	0.18	0.17
Buildings	Crane	1	175	D	0.45	5.65	6.96	0.01	0.11	0.10
	Fork Lift	1	125	D	0.22	2.77	3.39	0.01	0.06	0.05
	Concrete Pump	1	177	D	0.97	3.27	11.70	0.02	0.13	0.12
	Auger	2	177	D	1.13	5.01	10.35	0.03	0.23	0.21
	Pile driver Crane	1	230	D	1.62	4.62	11.66	0.02	0.15	0.14
	Diesel Hammer	1	44	D	0.12	1.71	2.10	0.00	0.04	0.04
Rough Grade	Self Loading Scrappers	6	365	D	17.63	66.67	117.03	0.18	1.53	1.41
	Dozers	2	310	D	4.65	24.03	29.62	0.04	0.39	0.36
	Vibratory Rollers	2	143	D	0.98	11.80	15.21	0.02	0.25	0.23
	Motor Grader	2	145	D	1.00	12.37	15.42	0.02	0.25	0.23
New Utility	14 T Rough Terrain Crane	2	175	D	0.90	11.30	13.92	0.02	0.23	0.21
	Cat 572 Pipe Layer	1	230	D	1.62	4.62	11.66	0.02	0.15	0.14
	Vibratory Rollers	2	142	D	0.98	11.72	15.10	0.02	0.25	0.23
	Front End Loader/Backhoe	2	101	D	0.83	8.97	11.14	0.02	0.18	0.17
	Concrete Pump	1	177	D	0.97	3.27	11.70	0.02	0.13	0.12
Final Grade	Front End Loader/Backhoe	1	101	D	0.42	4.49	5.57	0.01	0.09	0.08
	Vibratory Rollers	2	142	D	0.98	11.72	15.10	0.02	0.25	0.23
	Motor Grader	2	145	D	1.00	12.37	15.42	0.02	0.25	0.23
Track Work	Front End Loader	4	262	D	4.63	15.15	39.24	0.08	0.60	0.55
	Backhoe	1	500	D	2.21	7.23	18.72	0.04	0.29	0.26
	Vibratory Rollers	1	142	D	0.49	5.86	7.55	0.01	0.12	0.11
	Ballast Regulator	1	185	D	0.48	2.50	3.53	0.00	0.48	0.40
	Tie Tamper	1	125	D	0.15	1.95	2.36	0.00	0.15	0.09
	Switch Tamper	1	300	D	0.78	4.75	5.72	0.01	0.78	1.05
Concrete	Front End Loader	1	500	D	2.21	7.23	18.72	0.04	0.29	0.26
	Vibratory Rollers	1	142	D	0.49	5.86	7.55	0.01	0.12	0.11
	Slip Form Machine	1	250	D	1.09	3.95	10.73	0.02	0.16	0.15
	Motor Grader	1	145	D	0.50	6.19	7.71	0.01	0.13	0.12
Asphalt	Motor Grader	1	145	D	0.50	6.19	7.71	0.01	0.13	0.12
	Front End Loader	1	262	D	1.16	3.79	9.81	0.02	0.15	0.14
	Vibratory Rollers	1	138	D	0.47	5.69	7.34	0.01	0.12	0.11
	Paving Machine	2	170	D	1.26	15.86	19.49	0.03	0.32	0.29
	Backhoe	1	101	D	0.42	4.49	5.57	0.01	0.09	0.08
Delination	Crane	1	175	D	0.45	5.65	6.96	0.01	0.11	0.10
	Fork Lift	1	125	D	0.22	2.77	3.39	0.01	0.06	0.05
	Striping Machines	2	60	G	2.70	49.77	10.93	0.01	0.10	0.09
Total Emissions					84.12	487.33	760.76	1.25	12.38	11.63
<b>Sepulveda Bridge</b>										
Demolition	Excavator	2	168	D	1.16	14.50	18.02	0.03	0.29	0.27
	Dozers	2	310	D	4.65	24.22	31.09	0.04	0.39	0.36
	Front End Loader	2	262	D	2.00	6.55	17.34	0.03	0.26	0.24
Preparatory	Front End Loader	2	262	D	2.00	6.55	17.34	0.03	0.26	0.24
	Crane	1	173	D	0.44	5.59	6.88	0.01	0.11	0.10
	Backhoe	2	500	D	3.82	12.49	33.10	0.07	0.49	0.45
	P.D Crane	1	230	D	1.13	3.22	8.46	0.01	0.10	0.10
Foundation	Crane	1	173	D	0.44	5.59	6.88	0.01	0.11	0.10
	P.D Crane	1	230	D	1.13	3.22	8.46	0.01	0.10	0.10
East Track Prep	Excavator	1	168	D	0.58	7.25	9.01	0.01	0.15	0.13
	Crane	1	173	D	0.44	5.59	6.88	0.01	0.11	0.10
	Auger	2	177	D	1.14	5.01	10.61	0.03	0.23	0.21
	Backhoe	4	101	D	1.43	15.45	19.19	0.03	0.31	0.29
	Vibratory Rollers	2	142	D	0.98	11.72	15.10	0.02	0.25	0.23
Pile Prep	Auger	2	177	D	1.14	5.01	10.61	0.03	0.23	0.21
	Vibratory Trench Rollers	2	50	D	0.36	5.20	6.40	0.01	0.12	0.11
	Pile driver Crane	1	230	D	1.13	3.22	8.46	0.01	0.10	0.10
	Diesel Hammer	1	44	D	0.12	1.71	2.11	0.00	0.04	0.04
North End Prep	Backhoe	2	101	D	0.72	7.73	9.60	0.01	0.16	0.14
	Front End Loader	1	262	D	1.00	3.27	8.67	0.02	0.13	0.12
	Backhoe	1	101	D	0.36	3.86	4.80	0.01	0.08	0.07
	Vibratory Rollers	2	142	D	0.98	11.72	15.10	0.02	0.25	0.23
	Grader	2	145	D	1.00	12.38	15.42	0.02	0.25	0.23
	Pile driver Crane	2	230	D	2.27	6.44	16.92	0.03	0.21	0.19
	Diesel Hammer	1	44	D	0.12	1.71	2.11	0.00	0.04	0.04
Wing Wall & Track	Front End Loader	1	262	D	1.00	3.27	8.67	0.02	0.13	0.12
	Vibratory Rollers	1	142	D	0.49	5.86	7.55	0.01	0.12	0.11
	Backhoe	1	101	D	0.36	3.86	4.80	0.01	0.08	0.07
	Ballast Regulator	1	185	D	0.03	0.16	0.23	0.00	0.00	0.00
	Tie Tamper	1	125	D	0.02	0.11	0.15	0.00	0.00	0.00
Bridge Widening	Switch Tamper	1	250	D	0.04	0.22	0.31	0.00	0.00	0.00
	Front End Loader	1	500	D	1.91	6.25	16.55	0.03	0.25	0.23
	Vibratory Rollers	1	142	D	0.49	5.86	7.55	0.01	0.12	0.11
Total Emissions					37.22	226.90	369.91	0.64	5.67	5.21

**Table C1.1-22. Summary of Mitigated Daily Emissions of Offroad Construction Equipment at Lead & Storage Track and Dominguez Channel.**

Construction Sub-Element	Equipment	No.	Size (hp)	Fuel	Emissions (lb/day)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>Lead &amp; Storage Track</b>										
Utility Relocation	Front End Loader/Backhoe	2	101	D	0.72	7.73	9.60	0.01	0.16	0.14
	14 T Rough Terrain Crane	2	155	D	0.80	10.02	12.33	0.02	0.20	0.18
	Cat 572 Pipe Layer	4	230	D	6.57	18.66	50.73	0.08	0.60	0.56
	300 scfm Air Compressor	2	125	D	0.72	8.58	11.10	0.02	0.18	0.17
	Welding Unit	4	50	D	0.56	8.14	10.95	0.01	0.18	0.17
Demolition	Front End Loader/Backhoe	1	500	D	1.92	6.26	16.93	0.03	0.25	0.23
	Concrete Power Saw	1	10	G	0.34	12.88	0.22	0.00	0.17	0.16
	Track Hoe	1	321	D	1.38	4.20	11.39	0.02	0.16	0.15
Rough Grading	Front End Loader/Backhoe	1	101	D	0.36	3.86	4.80	0.01	0.08	0.07
	Self Loading Scrappers	2	365	D	5.94	22.54	42.70	0.06	0.51	0.47
	Excavator	1	168	D	0.58	7.25	9.01	0.01	0.15	0.13
	Sheep's Foot Roller	3	143	D	1.47	17.71	22.81	0.03	0.37	0.34
	Motor Grader	1	145	D	0.50	6.19	7.71	0.01	0.13	0.12
Civil Construction	Front End Loader/Backhoe	2	101	D	0.72	7.73	9.60	0.01	0.16	0.14
	Vibratory Roller	2	142	D	0.98	11.72	15.10	0.02	0.25	0.23
	Motor Grader	2	145	D	1.00	12.38	15.42	0.02	0.25	0.23
Track Work Materials	Front End Loader/Backhoe	2	101	D	0.72	7.73	9.60	0.01	0.16	0.14
	Speed Swing	2	170	D	1.26	15.27	19.37	0.03	0.32	0.29
Track Work Assembly	Tie Tamper	1	125	D	0.13	1.71	1.97	0.00	0.03	0.03
	Switch Tamper	1	250	D	0.55	3.00	3.99	0.01	0.05	0.04
	Production Tamper	1	250	D	0.55	3.00	3.99	0.01	0.05	0.04
	Shoulder Compactor	1	300	D	0.65	4.18	4.79	0.01	0.05	0.05
	Ballast Track Regulator	1	185	D	0.40	2.22	2.95	0.00	0.03	0.03
Total Emissions					28.79	202.97	297.06	0.45	4.46	4.11
<b>Dominguez Channel</b>										
Utilities	Front End Loader	2	197	D	1.61	4.90	15.58	0.03	0.19	0.18
	Backhoe	2	101	D	0.72	7.73	9.60	0.01	0.16	0.14
	14 T Rough Terrain Crane	2	155	D	0.80	10.02	12.33	0.02	0.20	0.18
	Cat 572 Pipe Layer	2	230	D	2.34	6.62	18.79	0.03	0.21	0.20
	300 scfm Air Compressor	2	125	D	0.72	8.59	11.10	0.02	0.18	0.17
	Welding Unit	2	50	D	0.28	4.07	5.51	0.01	0.09	0.08
Demolition	Front End Loader	2	197	D	1.61	4.90	15.58	0.03	0.19	0.18
	14 T Rough Terrain Crane	1	155	D	0.40	5.01	6.16	0.01	0.10	0.09
	300 scfm Air Compressor	2	125	D	0.72	8.59	11.10	0.02	0.18	0.17
	Pile driver Crane	1	230	D	1.66	4.70	13.33	0.02	0.15	0.14
	Vibratory Roller	1	240	D	1.43	4.39	12.90	0.02	0.15	0.13
	Excavator	1	321	D	1.73	5.26	14.73	0.02	0.20	0.18
	Pumps	2	60	D	0.44	4.61	5.88	0.01	0.10	0.09
	Dozer	1	310	D	2.33	12.31	17.10	0.02	0.19	0.18
	Backhoe	1	101	D	0.36	3.86	4.80	0.01	0.08	0.07
Excavation	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.10	0.09
	Backhoe	1	101	D	0.36	3.86	4.80	0.01	0.08	0.07
	Auger	1	177	D	0.58	2.51	5.58	0.02	0.12	0.11
CISS Piles	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.10	0.09
	Pile driver Crane	1	230	D	1.66	4.70	13.33	0.02	0.15	0.14
	Diesel Hammer	1	44	D	0.05	0.68	0.85	0.00	0.02	0.01
Concrete	Concrete Pump	1	177	D	0.57	1.90	6.78	0.01	0.08	0.07
	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.10	0.09
	Concrete Pump	1	177	D	0.57	1.90	6.78	0.01	0.08	0.07
Backfill Cofferdam Piling	Crane	1	173	D	0.44	5.59	6.88	0.01	0.11	0.10
	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.10	0.09
	Vibratory Roller	1	142	D	0.49	5.86	7.55	0.01	0.12	0.11
	Foot Roller	1	143	D	0.49	5.91	7.60	0.01	0.12	0.11
	Motor Grader	1	145	D	0.50	6.19	7.71	0.01	0.13	0.12
Bearing & Structural Steel Beams	Large Crane	1	230	D	1.15	3.26	9.24	0.01	0.10	0.10
	300 scfm Air Compressor	1	125	D	0.36	4.29	5.55	0.01	0.09	0.08
	Welding Unit	1	50	D	0.14	2.04	2.75	0.00	0.05	0.04
	Large Crane	1	450	D	2.09	7.12	18.09	0.02	0.20	0.19
Bridge Deck Plate, Waterproffing, Misc. Steel	Fork Lift	1	125	D	0.22	2.77	3.47	0.01	0.06	0.05
	300 scfm Air Compressor	1	125	D	0.36	4.29	5.55	0.01	0.09	0.08
	Welding Unit	1	50	D	0.14	2.04	2.75	0.00	0.05	0.04
Bridge Deck Ballast	Crane	1	175	D	0.45	5.66	6.96	0.01	0.11	0.10
	Fork Lift	1	125	D	0.22	2.77	3.47	0.01	0.06	0.05
Concrete Ties & Track	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.10	0.09
	Balast Compactor	1	185	D	0.50	2.81	3.63	0.00	0.04	0.04
	Front End Loader	1	262	D	1.01	3.29	9.14	0.02	0.13	0.12
	Ballast Regulator	1	185	D	0.01	0.07	0.10	0.00	0.00	0.00
	Tie Tamper	1	125	D	0.00	0.06	0.06	0.00	0.00	0.00
Painting & Reparis	Switch Tamper	1	250	D	0.02	0.10	0.13	0.00	0.00	0.00
	Speed Swing	2	170	D	1.26	15.27	19.49	0.03	0.32	0.29
	Front End Loader	1	197	D	0.80	2.45	7.79	0.01	0.10	0.09
	Backhoe	1	101	D	0.36	3.86	4.80	0.01	0.08	0.07
	Large Crane	1	230	D	1.15	3.26	9.24	0.01	0.10	0.10
Total Emissions					37.74	220.16	403.59	0.62	5.59	5.14

Table C1.1-23. Summary of Mitigated Daily Emissions of Offroad Construction Equipment at PCH Grade Separation.

Construction Sub-Element	Equipment	No.	Size-hp	Fuel	Emissions (lb/day)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>PCH Grade Separation</b>										
Demolition - North Side	P.D Crane	1	230	D	1.12	3.19	7.82	0.01	0.10	0.10
	Vibratory Rollers	1	240	D	1.35	4.19	10.62	0.02	0.14	0.13
	Excavator	2	321	D	3.39	10.37	26.15	0.05	0.39	0.36
	Dozers	2	310	D	5.05	25.92	30.97	0.05	0.42	0.39
	Front End Loader	2	262	D	2.31	7.56	19.24	0.04	0.30	0.28
Preparatory Work -North Side	Front End Loader	2	262	D	2.31	7.56	19.24	0.04	0.30	0.28
	Crane	2	173	D	0.89	11.17	13.76	0.02	0.22	0.21
	P.D Crane	1	230	D	1.12	3.19	7.82	0.01	0.10	0.10
	Backhoe	2	101	D	0.83	8.97	11.14	0.02	0.18	0.17
	Vibratory Rollers	1	142	D	0.48	5.70	7.35	0.01	0.12	0.11
	Motor Grader	1	145	D	0.53	6.56	8.18	0.01	0.13	0.12
	Paving Machine	1	170	D	0.63	7.93	9.75	0.01	0.16	0.15
North Bridge	Auger	1	177	D	0.68	3.03	6.15	0.02	0.14	0.13
	Pile driver Crane	1	230	D	1.12	3.19	7.82	0.01	0.10	0.10
	Diesel Hammer	1	44	D	0.06	0.86	1.04	0.00	0.02	0.02
	Crane	2	173	D	0.89	11.17	13.76	0.02	0.22	0.21
	Backhoe	2	101	D	0.83	8.97	11.14	0.02	0.18	0.17
Pave N/S Bridge And Reroute Traffic	Motor Grader	1	145	D	0.53	6.56	8.18	0.01	0.13	0.12
	Front End Loader	1	262	D	1.15	3.78	9.62	0.02	0.15	0.14
	Vibratory rollers	1	138	D	0.46	5.54	7.15	0.01	0.12	0.11
	Slip Form Machine	1	250	D	1.08	3.94	10.52	0.02	0.16	0.15
	Paving Machine	1	170	D	0.63	7.93	9.75	0.01	0.16	0.15
	Backhoe	1	101	D	0.42	4.49	5.57	0.01	0.09	0.08
Demolition - South Side	P.D Crane	1	230	D	1.12	3.19	7.82	0.01	0.10	0.10
	Vibratory Rollers	1	240	D	1.35	4.19	10.62	0.02	0.14	0.13
	Excavator	2	321	D	3.39	10.37	26.15	0.05	0.39	0.36
	Dozers	2	310	D	5.05	25.92	30.97	0.05	0.42	0.39
	Front End Loader	2	262	D	2.31	7.56	19.24	0.04	0.30	0.28
Preparatory Work -South Side	Front End Loader	2	262	D	2.31	7.56	19.24	0.04	0.30	0.28
	Crane	2	173	D	0.89	11.17	13.76	0.02	0.22	0.21
	P.D Crane	1	175	D	0.45	5.65	6.96	0.01	0.11	0.10
	Backhoe	2	101	D	0.83	8.97	11.14	0.02	0.18	0.17
	Vibratory Rollers	1	142	D	0.48	5.70	7.35	0.01	0.12	0.11
	Motor Grader	1	145	D	0.53	6.56	8.18	0.01	0.13	0.12
	Paving Machine	1	175	D	0.65	8.16	10.03	0.02	0.16	0.15
South Bridge	Auger	1	190	D	0.73	3.25	6.60	0.02	0.15	0.14
	Pile driver Crane	1	230	D	1.12	3.19	7.82	0.01	0.10	0.10
	Diesel Hammer	1	44	D	0.06	0.86	1.04	0.00	0.02	0.02
	Crane	2	173	D	0.89	11.17	13.76	0.02	0.22	0.21
	Backhoe	2	101	D	0.83	8.97	11.14	0.02	0.18	0.17
Pave S/S Bridge And Yard Access Roads	Motor Grader	1	145	D	0.53	6.56	8.18	0.01	0.13	0.12
	Front End Loader	1	262	D	1.15	3.78	9.62	0.02	0.15	0.14
	Vibratory rollers	1	138	D	0.46	5.54	7.15	0.01	0.12	0.11
	Slip Form Machine	1	250	D	1.08	3.94	10.52	0.02	0.16	0.15
	Paving Machine	1	170	D	0.63	7.93	9.75	0.01	0.16	0.15
	Backhoe	1	101	D	0.42	4.49	5.57	0.01	0.09	0.08
Total Emissions					55.07	326.47	525.35	0.90	8.15	7.49

Table C1.1-24. On-Road Trucks Activities - Site Construction

Year	Truck Type	Vehicle Class	Sub-Element	Idling Time [hr/Trip]	On-Site Round Trip Distance of Route [mi/trip]	Off-site Round Trip Distance of Route [mi/Trip]	Number of days of operation	Total Number of Trips
2013	Stakebed trucks	MHDT	Mobilization	0.17	0.76	40.00	26	10
	Dump trucks	HHDT	Demolition	0.17	0.76	40.00	104	4853
	Semi-End Dump trucks	HHDT	Demolition	0.17	0.76	40.00	52	4517
	48-ft flatbed trailer trucks	HHDT	Demolition	0.17	0.76	40.00	52	146
	Stakebed trucks	MHDT	Utility Relocation	0.17	0.76	40.00	104	208
	Semi-End Dump trucks	HHDT	Rough Grading	0.17	0.76	40.00	234	13462
	48-ft flatbed trailer trucks	HHDT	New Utility	0.17	0.76	40.00	78	50
	Concrete trucks	HHDT	Building	0.33	0.76	15.00	78	472
	Water trucks	MHDT	Site	0.17	0.76	13.00	312	3744
2014	48-ft flatbed trailer trucks	HHDT	New Utility	0.17	0.76	40.00	78	50
	48-ft flatbed trailer trucks	HHDT	Building	0.17	0.76	40.00	52	730
	Concrete trucks	HHDT	Building	0.17	0.76	40.00	156	2808
	Concrete trucks	HHDT	Final Grading	0.33	0.76	15.00	52	624
	Semi end dump trucks	HHDT	Trackwork	0.17	0.76	40.00	78	16962
	48-ft flatbed trailer trucks	HHDT	Trackwork	0.17	0.76	40.00	78	819
	Concrete trucks	HHDT	Cranepads	0.33	0.76	15.00	52	1545
	Dump trucks	HHDT	Asphalt	0.17	0.76	40.00	78	156
	Bottom-dump asphalt trucks	HHDT	Asphalt	0.17	0.76	40.00	78	11924
	48-ft flatbed trailer trucks	HHDT	Delination	0.17	0.76	40.00	26	4
	Stakebed trucks	MHDT	Commissioning	0.17	0.76	40.00	26	10
	Stakebed trucks	MHDT	Demobilization	0.17	0.76	40.00	26	10
	Water trucks	MHDT	Site	0.17	0.76	13.00	182	2184

Table C1.1-25. On-Road Trucks Activities - Sepulveda Bridge

Year	Truck Type	Vehicle Class	Sub-Element	Idling Time [hr/Trip]	On-Site Round Trip Distance of Route [mi/trip]	Off-site Round Trip Distance of Route [mi/Trip]	Number of days of operation	Total Number of Trips
2013	48-ft flatbed trailer trucks	HHDT	Mobilization	0.17	0.76	40.00	208	48
	Stakebed trucks	MHDT	Demolition	0.17	0.76	40.00	52	8
	Semi-End dump trucks	HHDT	Demolition	0.17	0.76	40.00	40	13
	48-ft flatbed trailer trucks	HHDT	Demolition	0.17	0.76	40.00	12	4
	Concrete trucks	HHDT	Demolition	0.33	0.76	15.00	52	21
	Stakebed trucks	MHDT	Preparatory	0.17	0.76	40.00	26	7
	Dump trucks	HHDT	Preparatory	0.17	0.76	40.00	26	8
	Stakebed trucks	MHDT	Foundation	0.17	0.76	40.00	78	20
	Semi-End dump trucks	HHDT	Foundation	0.17	0.76	40.00	50	28
	48-ft flatbed trailer trucks	HHDT	Foundation	0.17	0.76	40.00	28	16
	Concrete trucks	HHDT	Foundation	0.33	0.76	15.00	78	57
	Stakebed trucks	MHDT	East Track	0.17	0.76	40.00	104	27
	Semi-End dump trucks	HHDT	East Track	0.17	0.76	40.00	104	23
	Concrete trucks	HHDT	East Track	0.33	0.76	15.00	104	269
	Stakebed trucks	MHDT	Pile Prep	0.17	0.76	40.00	52	20
	Semi-End dump trucks	HHDT	Pile Prep	0.17	0.76	40.00	39	75
	48-ft flatbed trailer trucks	HHDT	Pile Prep	0.17	0.76	40.00	13	24
	Concrete trucks	HHDT	Pile Prep	0.33	0.76	15.00	52	68
	Stakebed trucks	MHDT	North End Prep	0.17	0.76	40.00	26	7
	Semi-End dump trucks	HHDT	North End Prep	0.17	0.76	40.00	18	15
	48-ft flatbed trailer trucks	HHDT	North End Prep	0.17	0.76	40.00	8	6
	Concrete trucks	HHDT	North End Prep	0.33	0.76	15.00	26	17
	Water trucks	MHDT	Site	0.17	0.76	13.00	312	1248
2014	Stakebed trucks	MHDT	North End Prep	0.17	0.76	40.00	52	13
	Semi-End dump trucks	HHDT	North End Prep	0.17	0.76	40.00	37	29
	48-ft flatbed trailer trucks	HHDT	North End Prep	0.17	0.76	40.00	15	13
	Concrete trucks	HHDT	North End Prep	0.33	0.76	15.00	52	35
	Stakebed trucks	MHDT	Wingwall	0.17	0.76	40.00	78	3
	Semi-End dump trucks	HHDT	Wingwall	0.17	0.76	40.00	78	24
	Concrete trucks	HHDT	Wingwall	0.33	0.76	15.00	78	17
	48-ft flatbed trailer trucks	HHDT	Demobilization	0.17	0.76	40.00	26	24
	Water trucks	MHDT	Site	0.17	0.76	13.00	104	416

**Table C1.1-26. On-Road Trucks Activities - Lead & Storage Track**

Year	Truck Type	Vehicle Class	Sub-Element	Idling Time [hr/Trip]	On-Site Round Trip Distance of Route [mi/trip]	Off-site Round Trip Distance of Route [mi/Trip]	Number of days of operation	Total Number of Trips
2013	48-ft flatbed trailer trucks	HHDT	Mobilization	0.17	0.76	40.00	26	10
	Stakedbed trucks	HHDT	Utility Relocation	0.17	0.76	40.00	78	624
	48-ft flatbed trailer trucks	HHDT	Demolition	0.17	0.76	40.00	52	125
	Dump trucks	HHDT	Rough Grading	0.17	0.76	40.00	104	2118
	Bottom-dump trucks	HHDT	Civil Construction	0.17	0.76	40.00	104	2524
	Bottom-dump trucks	HHDT	Trackwork Distribute	0.17	0.76	40.00	104	954
	48-ft flatbed trailer trucks	HHDT	Trackwork	0.17	0.76	40.00	87	370
	Water trucks	MHDT	Site	0.17	0.76	13.00	312	2496
2014	48-ft flatbed trailer trucks	HHDT	Trackwork	0.17	0.76	40.00	43	185
	48-ft flatbed trailer trucks	HHDT	Demobilization	0.17	0.76	40.00	26	10
	Water trucks	MHDT	Site	0.17	0.76	13.00	52	208

Table C1.1-27. On-Road Trucks Activities - Dominguez Channel

Year	Truck Type	Vehicle Class	Sub-Element	Idling Time [hr/Trip]	On-Site Round Trip Distance of Route [mi/trip]	Off-site Round Trip Distance of Route [mi/Trip]	Number of days of operation	Total Number of Trips
2013	48-ft flatbed trailer trucks	HHDT	Mobilization	0.17	0.76	40.00	156	10
	Stakebed Trucks	MHDT	Demolition	0.17	0.76	40.00	78	8
	Semi-End Dump Trucks	HHDT	Demolition	0.17	0.76	40.00	78	9
	Semi-End Dump Trucks	HHDT	Excavation	0.17	0.76	40.00	26	24
	Stakebed Trucks	MHDT	CISS Piles	0.17	0.76	40.00	52	5
	Semi-End Dump Trucks	HHDT	CISS Piles	0.17	0.76	40.00	23	13
	48-ft flatbed trailer trucks	HHDT	CISS Piles	0.17	0.76	40.00	29	16
	Concrete Trucks	HHDT	CISS Piles	0.33	0.76	15.00	52	30
	Stakebed Trucks	MHDT	Concrete	0.17	0.76	40.00	52	3
	Concrete Trucks	HHDT	Concrete	0.33	0.76	15.00	52	17
	Semi-End Dump Trucks	HHDT	Backfill Coffe	0.17	0.76	40.00	26	8
	48-ft flatbed trailer trucks	HHDT	Bearings & Structural	0.17	0.76	40.00	26	6
	Stakebed Trucks	MHDT	Bridge Deck	0.17	0.76	40.00	26	2
	48-ft flatbed trailer trucks	HHDT	Bridge Deck	0.17	0.76	40.00	26	3
	Double Bottom Dump Trucks	HHDT	Bridge Deck Ballast	0.17	0.76	40.00	26	14
	48-ft flatbed trailer trucks	HHDT	Concrete Tie & Track	0.17	0.76	40.00	26	2
	Semi-End Dump Trucks	HHDT	Painting & Reparis	0.17	0.76	40.00	26	1
	Water trucks	MHDT	Site	0.17	0.76	13.00	312	104
	Dump trucks	HHDT	Site	0.17	0.76	40.00	312	104
	48-ft flatbed trailer trucks	HHDT	Demobilization	0.17	0.76	40.00	26	10



Table C1.1-28. On-Road Trucks Activities - PCH Grade Separation

Year	Truck Type	Vehicle Class	Sub-Element	Idling Time [hr/Trip]	On-Site Round Trip Distance of Route [mi/trip]	Off-site Round Trip Distance of Route [mi/Trip]	Number of days of operation	Total Number of Trips
2013	Semi-End Dump Trucks	HHDT	Demolition (north side)	0.17	0.76	40.00	54	119
	48 - ft flatbed trailer trucks	HHDT	Demolition (north side)	0.17	0.76	40.00	132	518
	Stakebed Trucks	MHDT	Demolition (north side)	0.17	0.76	40.00	132	36
	Semi-End Dump Trucks	HHDT	North Side Bridge & WB Ramp	0.17	0.76	40.00	204	237
	48 - ft flatbed trailer trucks	HHDT	North Side Bridge & WB Ramp	0.17	0.76	40.00	204	5987
	Stakebed Trucks	MHDT	North Side Bridge & WB Ramp	0.17	0.76	40.00	204	244
	Concrete trucks	HHDT	North Side Bridge & WB Ramp	0.33	0.76	15.00	204	1127
	Water Truck	MHDT	Site	0.17	0.76	2.00	312	3120
2014	Semi-End Dump Trucks	HHDT	Demolition (south side)	0.17	0.76	40.00	60	143
	48 - ft flatbed trailer trucks	HHDT	Demolition (south side)	0.17	0.76	40.00	60	1036
	Stakebed Trucks	MHDT	Demolition (south side)	0.17	0.76	40.00	60	21
	Semi-End Dump Trucks	HHDT	South Side Bridge	0.17	0.76	40.00	264	251
	48 - ft flatbed trailer trucks	HHDT	South Side Bridge	0.17	0.76	40.00	264	4641
	Stakebed Trucks	MHDT	South Side Bridge	0.17	0.76	40.00	180	222
	Concrete trucks	HHDT	South Side Bridge	0.33	0.76	15.00	264	1163
	48 - ft flatbed trailer trucks	HHDT	Demobilization	0.17	0.76	40.00	30	24
Water Truck	MHDT	Site	0.17	0.76	2.00	260	2600	

Table C1.1-29. Unmitigated Emission Factors for On-Road Trucks - Site Construction

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013</b>										
Stakebed trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Stakebed trucks	MHDT	On-site	0.39	4.62	7.31	0.01	1.88	0.36	2.41	0.47
Stakebed trucks	MHDT	Off-site	0.20	1.96	6.00	0.01	1.05	0.18		
Dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Dump trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Dump trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Semi-End Dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Semi-End Dump trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Semi-End Dump trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
48-ft flatbed trailer trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
48-ft flatbed trailer trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
48-ft flatbed trailer trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Concrete trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Concrete trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Concrete trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Water trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Water trucks	MHDT	On-site	0.39	4.62	7.31	0.01	1.88	0.36	2.41	0.47
Water trucks	MHDT	Off-site	0.20	1.96	6.00	0.01	1.05	0.18		
<b>2014</b>										
48-ft flatbed trailer trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
48-ft flatbed trailer trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
48-ft flatbed trailer trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Concrete trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Concrete trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
Concrete trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Semi end dump trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Semi end dump trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
Semi end dump trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Dump trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Dump trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
Dump trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Bottom-dump asphalt trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Bottom-dump asphalt trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
Bottom-dump asphalt trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Stakebed trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Stakebed trucks	MHDT	On-site	0.38	4.49	6.21	0.01	1.70	0.20	2.23	0.31
Stakebed trucks	MHDT	Off-site	0.19	1.91	5.10	0.01	0.97	0.10		
Water trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Water trucks	MHDT	On-site	0.38	4.49	6.21	0.01	1.70	0.20	2.23	0.31
Water trucks	MHDT	Off-site	0.19	1.91	5.10	0.01	0.97	0.10		

Notes:

- (1) On-site operation assume a speed of 10 mph; Off-site travel assumes a composite speed of 40% at 55 mph, 50% at 25 mph, and 10% at 10 mph
- (2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.
- (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.

Source: EMFAC2007

Table C1.1-30. Unmitigated Emission Factors for On-Road Trucks - Sepulveda Bridge

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013</b>										
48-ft flatbed trailer trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
48-ft flatbed trailer trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
48-ft flatbed trailer trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Stakebed trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Stakebed trucks	MHDT	On-site	0.39	4.62	7.31	0.01	1.88	0.36	2.41	0.47
Stakebed trucks	MHDT	Off-site	0.20	1.96	6.00	0.01	1.05	0.18		
Semi-End dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Semi-End dump trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Semi-End dump trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Concrete trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Concrete trucks	HHDT	On-site	0.39	4.62	7.31	0.01	1.91	0.37	2.45	0.47
Concrete trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Dump trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Dump trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Water trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Water trucks	MHDT	On-site	0.39	4.62	7.31	0.01	1.88	0.36	2.41	0.47
Water trucks	MHDT	Off-site	0.20	1.96	6.00	0.01	1.05	0.18		
<b>2014</b>										
Stakebed trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Stakebed trucks	MHDT	On-site	0.38	4.49	6.21	0.01	1.70	0.20	2.23	0.31
Stakebed trucks	MHDT	Off-site	0.19	1.91	5.10	0.01	0.97	0.10		
Semi-End dump trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Semi-End dump trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
Semi-End dump trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
48-ft flatbed trailer trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
48-ft flatbed trailer trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
48-ft flatbed trailer trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Concrete trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Concrete trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
Concrete trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Stakebed trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Stakebed trucks	MHDT	On-site	0.38	4.49	6.21	0.01	1.70	0.20	2.23	0.31
Stakebed trucks	MHDT	Off-site	0.19	1.91	5.10	0.01	0.97	0.10		
Semi-End dump trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Semi-End dump trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
Semi-End dump trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Concrete trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Concrete trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
Concrete trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
48-ft flatbed trailer trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
48-ft flatbed trailer trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
48-ft flatbed trailer trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Water trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Water trucks	MHDT	On-site	0.38	4.49	6.21	0.01	1.70	0.20	2.23	0.31
Water trucks	MHDT	Off-site	0.19	1.91	5.10	0.01	0.97	0.10		
Notes:										
(1) On-site operation assume a speed of 10 mph; Off-site travel assumes a composite speed of 40% at 55 mph, 50% at 25 mph, and 10% at 10 mph										
(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.										
(3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.										
Source: EMFAC2007										

**Table C1.1-31. Unmitigated Emission Factors for On-Road Trucks - Lead & Storage Track**

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013</b>										
48-ft flatbed trailer trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
48-ft flatbed trailer trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
48-ft flatbed trailer trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Stakedbed trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Stakedbed trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Stakedbed trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Dump trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Dump trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Bottom-dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Bottom-dump trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Bottom-dump trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Water trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Water trucks	MHDT	On-site	0.39	4.62	7.31	0.01	1.88	0.36	2.41	0.47
Water trucks	MHDT	Off-site	0.20	1.96	6.00	0.01	1.05	0.18		
<b>2014</b>										
48-ft flatbed trailer trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
48-ft flatbed trailer trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
48-ft flatbed trailer trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Water trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Water trucks	MHDT	On-site	0.38	4.49	6.21	0.01	1.70	0.20	2.23	0.31
Water trucks	MHDT	Off-site	0.19	1.91	5.10	0.01	0.97	0.10		
Notes:										
(1) On-site operation assume a speed of 10 mph; Off-site travel assumes a composite speed of 40% at 55 mph, 50% at 25 mph, and 10% at 10 mph										
(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.										
(3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.										
Source: EMFAC2007										

Table C1.1-32. Unmitigated Emission Factors for On-Road Trucks - Dominguez Channel

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013</b>										
48-ft flatbed trailer trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
48-ft flatbed trailer trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
48-ft flatbed trailer trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Stakebed Trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Stakebed Trucks	MHDT	On-site	0.39	4.62	7.31	0.01	1.88	0.36	2.41	0.47
Stakebed Trucks	MHDT	Off-site	0.20	1.96	6.00	0.01	1.05	0.18		
Semi-End Dump Trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Semi-End Dump Trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Semi-End Dump Trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Concrete Trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Concrete Trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Concrete Trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Double Bottom Dump Trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Double Bottom Dump Trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Double Bottom Dump Trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Water trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Water trucks	MHDT	On-site	0.39	4.62	7.31	0.01	1.88	0.36	2.41	0.47
Water trucks	MHDT	Off-site	0.20	1.96	6.00	0.01	1.05	0.18		
Dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Dump trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Dump trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		

Notes:  
 (1) On-site operation assume a speed of 10 mph; Off-site travel assumes a composite speed of 40% at 55 mph, 50% at 25 mph, and 10% at 10 mph  
 (2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.  
 (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.  
 Source: EMFAC2007

Table C1.1-33. Unmitigated Emission Factors for On-Road Trucks - PCH Grade Separation

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013</b>										
Semi-End Dump Trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Semi-End Dump Trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Semi-End Dump Trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
48 - ft flatbed trailer trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
48 - ft flatbed trailer trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
48 - ft flatbed trailer trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Stakebed Trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Stakebed Trucks	MHDT	On-site	0.39	4.62	7.31	0.01	1.88	0.36	2.41	0.47
Stakebed Trucks	MHDT	Off-site	0.20	1.96	6.00	0.01	1.05	0.18		
Concrete trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Concrete trucks	HHDT	On-site	4.83	10.14	19.56	0.03	2.30	0.72	2.83	0.82
Concrete trucks	HHDT	Off-site	1.22	4.32	11.72	0.02	1.25	0.34		
Water Truck	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Water Truck	MHDT	On-site	0.39	4.62	7.31	0.01	1.88	0.36	2.41	0.47
Water Truck	MHDT	Off-site	0.20	1.96	6.00	0.01	1.05	0.18		
<b>2014</b>										
Semi-End Dump Trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Semi-End Dump Trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
Semi-End Dump Trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
48 - ft flatbed trailer trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
48 - ft flatbed trailer trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
48 - ft flatbed trailer trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Stakebed Trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Stakebed Trucks	MHDT	On-site	0.38	4.49	6.21	0.01	1.70	0.20	2.23	0.31
Stakebed Trucks	MHDT	Off-site	0.19	1.91	5.10	0.01	0.97	0.10		
Concrete trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Concrete trucks	HHDT	On-site	4.28	9.00	16.28	0.03	1.85	0.31	2.39	0.41
Concrete trucks	HHDT	Off-site	1.09	3.84	9.67	0.02	1.05	0.15		
Water Truck	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Water Truck	MHDT	On-site	0.38	4.49	6.21	0.01	1.70	0.20	2.23	0.31
Water Truck	MHDT	Off-site	0.19	1.91	5.10	0.01	0.97	0.10		
Notes:										
(1) On-site operation assume a speed of 10 mph; Off-site travel assumes a composite speed of 40% at 55 mph, 50% at 25 mph, and 10% at 10 mph										
(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.										
(3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.										
Source: EMFAC2007										

**Table C1.1-34. Mitigated Emission Factors for On-Road Trucks - Site Construction**

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013</b>										
Stakebed trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Stakebed trucks	MHDT	On-site	0.39	4.62	3.70	0.01	1.78	0.28	2.31	0.38
Stakebed trucks	MHDT	Off-site	0.20	1.96	3.70	0.01	1.04	0.18		
Dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Dump trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
Dump trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Semi-End Dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Semi-End Dump trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
Semi-End Dump trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
48-ft flatbed trailer trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
48-ft flatbed trailer trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
48-ft flatbed trailer trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Concrete trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Concrete trucks	HHDT	On-site	4.83	10.14	3.60	0.03	1.67	0.14	2.20	0.24
Concrete trucks	HHDT	Off-site	1.22	4.32	3.60	0.02	0.98	0.09		
Water trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Water trucks	MHDT	On-site	0.39	4.62	2.22	0.01	1.62	0.12	2.15	0.23
Water trucks	MHDT	Off-site	0.20	1.96	2.22	0.01	0.93	0.07		
<b>2014</b>										
48-ft flatbed trailer trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
48-ft flatbed trailer trucks	HHDT	On-site	4.28	9.00	6.00	0.03	1.85	0.31	2.39	0.41
48-ft flatbed trailer trucks	HHDT	Off-site	1.09	3.84	6.00	0.02	1.05	0.15		
Concrete trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Concrete trucks	HHDT	On-site	4.28	9.00	3.60	0.03	1.67	0.14	2.20	0.24
Concrete trucks	HHDT	Off-site	1.09	3.84	3.60	0.02	0.98	0.09		
Semi end dump trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Semi-End Dump trucks	HHDT	On-site	4.28	9.00	6.00	0.03	1.85	0.31	2.39	0.41
Semi-End Dump trucks	HHDT	Off-site	1.09	3.84	6.00	0.02	1.05	0.15		
Bottom Dump trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Bottom-Dump trucks	HHDT	On-site	4.28	9.00	6.00	0.03	1.85	0.31	2.39	0.41
Bottom-Dump trucks	HHDT	Off-site	1.09	3.84	6.00	0.02	1.05	0.15		
Dump trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Dump trucks	HHDT	On-site	4.28	9.00	6.00	0.03	1.85	0.31	2.39	0.41
Dump trucks	HHDT	Off-site	1.09	3.84	6.00	0.02	1.05	0.15		
Bottom-dump asphalt trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Bottom-dump asphalt trucks	HHDT	On-site	4.28	9.00	6.00	0.03	1.85	0.31	2.39	0.41
Bottom-dump asphalt trucks	HHDT	Off-site	1.09	3.84	6.00	0.02	1.05	0.15		
Stakebed trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Stakebed trucks	MHDT	On-site	0.38	4.49	3.70	0.01	1.70	0.20	2.23	0.31
Stakebed trucks	MHDT	Off-site	0.19	1.91	3.70	0.01	0.97	0.10		

Notes:

NOx and PM emission factors are adjusted for the Mitigated Case to comply with the Port's Construction Guidelines.

(1) On-site operation assume a speed of 10 mph; Off-site travel assumes a composite speed of 40% at 55 mph, 50% at 25 mph, and 10% at 10 mph

(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.

(3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.

Source: EMFAC2007

**Table C1.1-35. Mitigated Emission Factors for On-Road Trucks - Sepulveda Bridge**

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013</b>										
48-ft flatbed trailer trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
48-ft flatbed trailer trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
48-ft flatbed trailer trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Stakebed trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Stakebed trucks	MHDT	On-site	0.39	4.62	3.70	0.01	1.78	0.28	2.31	0.38
Stakebed trucks	MHDT	Off-site	0.20	1.96	3.70	0.01	1.04	0.18		
Semi-End dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Semi-End dump trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
Semi-End dump trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Concrete trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Concrete trucks	HHDT	On-site	0.39	4.62	3.60	0.01	1.65	0.13	2.19	0.23
Concrete trucks	HHDT	Off-site	1.22	4.32	3.60	0.02	0.98	0.09		
Dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Dump trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
Dump trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Water trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Water trucks	MHDT	On-site	0.39	4.62	2.22	0.01	1.62	0.12	2.15	0.23
Water trucks	MHDT	Off-site	0.20	1.96	2.22	0.01	0.93	0.07		
<b>2014</b>										
Stakebed trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Stakebed trucks	MHDT	On-site	0.38	4.49	3.70	0.01	1.70	0.20	2.23	0.31
Stakebed trucks	MHDT	Off-site	0.19	1.91	3.70	0.01	0.97	0.10		
Semi-End dump trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Semi-End dump trucks	HHDT	On-site	4.28	9.00	6.00	0.03	1.85	0.31	2.39	0.41
Semi-End dump trucks	HHDT	Off-site	1.09	3.84	6.00	0.02	1.05	0.15		
48-ft flatbed trailer trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
48-ft flatbed trailer trucks	HHDT	On-site	4.28	9.00	6.00	0.03	1.85	0.31	2.39	0.41
48-ft flatbed trailer trucks	HHDT	Off-site	1.09	3.84	6.00	0.02	1.05	0.15		
Concrete trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Concrete trucks	HHDT	On-site	4.28	9.00	3.60	0.03	1.67	0.14	2.20	0.24
Concrete trucks	HHDT	Off-site	1.09	3.84	3.60	0.02	0.98	0.09		
Water trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Water trucks	MHDT	On-site	0.38	4.49	2.22	0.01	1.62	0.12	2.15	0.23
Water trucks	MHDT	Off-site	0.19	1.91	2.22	0.01	0.93	0.07		

Notes:  
 NOx and PM emission factors are adjusted for the Mitigated Case to comply with the Port's Construction Guidelines.  
 (1) On-site operation assume a speed of 10 mph; Off-site travel assumes a composite speed of 40% at 55 mph, 50% at 25 mph, and 10% at 10 mph  
 (2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.  
 (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.  
 Source: EMFAC2007



**Table C1.1-36. Mitigated Emission Factors for On-Road Trucks - Lead & Storage Track**

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013</b>										
48-ft flatbed trailer trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
48-ft flatbed trailer trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
48-ft flatbed trailer trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Stakebed trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Stakebed trucks	MHDT	On-site	0.39	4.62	3.70	0.01	1.62	0.12	2.15	0.23
Stakebed trucks	MHDT	Off-site	1.22	4.32	3.70	0.02	0.93	0.07		
Dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Dump trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
Dump trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Bottom-dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Bottom-dump trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
Bottom-dump trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Water trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Water trucks	MHDT	On-site	0.39	4.62	2.22	0.01	1.62	0.12	2.15	0.23
Water trucks	MHDT	Off-site	0.20	1.96	2.22	0.01	0.93	0.07		
<b>2014</b>										
48-ft flatbed trailer trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
48-ft flatbed trailer trucks	HHDT	On-site	4.28	9.00	6.00	0.03	1.85	0.31	2.39	0.41
48-ft flatbed trailer trucks	HHDT	Off-site	1.09	3.84	6.00	0.02	1.05	0.15		
Water trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Water trucks	MHDT	On-site	0.38	4.49	2.22	0.01	1.62	0.12	2.15	0.23
Water trucks	MHDT	Off-site	0.19	1.91	2.22	0.01	0.93	0.07		

Notes:

NOx and PM emission factors are adjusted for the Mitigated Case to comply with the Port's Construction Guidelines.

(1) On-site operation assume a speed of 10 mph; Off-site travel assumes a composite speed of 40% at 55 mph, 50% at 25 mph, and 10% at 10 mph

(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.

(3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.

Source: EMFAC2007

**Table C1.1-37. Mitigated Emission Factors for On-Road Trucks - Dominguez Channel**

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013</b>										
48-ft flatbed trailer trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
48-ft flatbed trailer trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
48-ft flatbed trailer trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Stakebed Trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Stakebed Trucks	MHDT	On-site	0.39	4.62	3.70	0.01	1.78	0.28	2.31	0.38
Stakebed Trucks	MHDT	Off-site	0.20	1.96	3.70	0.01	1.04	0.18		
Semi-End Dump Trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Semi-End Dump Trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
Semi-End Dump Trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Concrete Trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Concrete Trucks	HHDT	On-site	4.83	10.14	3.60	0.03	1.67	0.14	2.20	0.24
Concrete Trucks	HHDT	Off-site	1.22	4.32	3.60	0.02	0.98	0.09		
Double Bottom Dump Trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Double Bottom Dump Trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
Double Bottom Dump Trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Water trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Water trucks	MHDT	On-site	0.39	4.62	2.22	0.01	1.62	0.12	2.15	0.23
Water trucks	MHDT	Off-site	0.20	1.96	2.22	0.01	0.93	0.07		
Dump trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Dump trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
Dump trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		

Notes:

NOx and PM emission factors are adjusted for the Mitigated Case to comply with the Port's Construction Guidelines.

(1) On-site operation assume a speed of 10 mph; Off-site travel assumes a composite speed of 40% at 55 mph, 50% at 25 mph, and 10% at 10 mph

(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.

(3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.

Source: EMFAC2007

**Table C1.1-38. Mitigated Emission Factors for On-Road Trucks - PCH Grade Separation**

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013</b>										
Semi-End Dump Trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Semi-End Dump Trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
Semi-End Dump Trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
48-ft flatbed trailer trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
48-ft flatbed trailer trucks	HHDT	On-site	4.83	10.14	6.00	0.03	1.94	0.39	2.47	0.49
48-ft flatbed trailer trucks	HHDT	Off-site	1.22	4.32	6.00	0.02	1.22	0.30		
Stakebed Trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Stakebed Trucks	MHDT	On-site	0.39	4.62	3.70	0.01	1.78	0.28	2.31	0.38
Stakebed Trucks	MHDT	Off-site	0.20	1.96	3.70	0.01	1.04	0.18		
Concrete trucks	HHDT	Idle	10.78	45.96	114.93	0.06	0.76	0.70	0.76	0.70
Concrete trucks	HHDT	On-site	4.83	10.14	3.60	0.03	1.67	0.14	2.20	0.24
Concrete trucks	HHDT	Off-site	1.22	4.32	3.60	0.02	0.98	0.09		
Water Trucks	MHDT	Idle	3.17	26.30	75.05	0.04	0.53	0.49	0.53	0.49
Water Trucks	MHDT	On-site	0.39	4.62	2.22	0.01	1.62	0.12	2.15	0.23
Water Trucks	MHDT	Off-site	0.20	1.96	2.22	0.01	0.93	0.07		
<b>2014</b>										
Semi-End Dump Trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Semi-End Dump Trucks	HHDT	On-site	4.28	9.00	6.00	0.03	1.85	0.31	2.39	0.41
Semi-End Dump Trucks	HHDT	Off-site	1.09	3.84	6.00	0.02	1.05	0.15		
48-ft flatbed trailer trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
48-ft flatbed trailer trucks	HHDT	On-site	4.28	9.00	6.00	0.03	1.85	0.31	2.39	0.41
48-ft flatbed trailer trucks	HHDT	Off-site	1.09	3.84	6.00	0.02	1.05	0.15		
Stakebed Trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Stakebed Trucks	MHDT	On-site	0.38	4.49	3.70	0.01	1.70	0.20	2.23	0.31
Stakebed Trucks	MHDT	Off-site	0.19	1.91	3.70	0.01	0.97	0.10		
Concrete trucks	HHDT	Idle	10.30	45.29	109.69	0.06	0.27	0.24	0.27	0.24
Concrete trucks	HHDT	On-site	4.28	9.00	3.60	0.03	1.67	0.14	2.20	0.24
Concrete trucks	HHDT	Off-site	1.09	3.84	3.60	0.02	0.98	0.09		
Water Trucks	MHDT	Idle	3.17	26.30	70.81	0.04	0.21	0.19	0.21	0.19
Water Trucks	MHDT	On-site	0.38	4.49	2.22	0.01	1.62	0.12	2.15	0.23
Water Trucks	MHDT	Off-site	0.19	1.91	2.22	0.01	0.93	0.07		

Notes:

NOx and PM emission factors are adjusted for the Mitigated Case to comply with the Port's Construction Guidelines.

(1) On-site operation assume a speed of 10 mph; Off-site travel assumes a composite speed of 40% at 55 mph, 50% at 25 mph, and 10% at 10 mph

(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.

(3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.

Source: EMFAC2007

**Table C1.1-39. Summary of Unmitigated Daily On-Site Emissions of On-Road Trucks at Site Construction and Sepulveda Bridge**

Year	Construction Sub-Element	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Mobilization (Site)	0.00	0.01	0.02	0.00	0.00	0.00
	Demolition (Site)	1.64	4.61	10.21	0.01	0.68	0.24
	Utility Relocation (Site)	0.00	0.03	0.08	0.00	0.01	0.00
	Rough Grade (Site)	0.69	1.95	4.31	0.00	0.29	0.10
	New Utility (Site)	0.01	0.02	0.05	0.00	0.00	0.00
	Building (Site)	0.10	0.31	0.71	0.00	0.03	0.01
	Site (Site)	0.02	0.21	0.48	0.00	0.05	0.01
	Mobilization (Sep)	0.00	0.01	0.02	0.00	0.00	0.00
	Demolition (Sep)	0.01	0.05	0.10	0.00	0.01	0.00
	Preparatory (Sep)	0.00	0.02	0.03	0.00	0.00	0.00
	Foundation (Sep)	0.03	0.08	0.18	0.00	0.01	0.00
	East Track (Sep)	0.04	0.14	0.33	0.00	0.02	0.01
	Pile Prep (Sep)	0.07	0.20	0.45	0.00	0.03	0.01
	North End Prep (Sep)	0.03	0.09	0.21	0.00	0.01	0.00
Site (Sep)	0.01	0.07	0.16	0.00	0.02	0.00	
<b>Total</b>		<b>2.66</b>	<b>7.79</b>	<b>17.33</b>	<b>0.02</b>	<b>1.16</b>	<b>0.39</b>
2014	New Utility (Site)	0.01	0.02	0.04	0.00	0.00	0.00
	Building (Site)	0.42	1.31	2.89	0.00	0.13	0.03
	Final Grade (Site)	0.18	0.58	1.29	0.00	0.05	0.01
	Track Work (Site)	2.49	7.22	15.38	0.02	0.93	0.20
	Cranepads (Site)	0.44	1.44	3.20	0.00	0.12	0.03
	Asphalt (Site)	1.69	4.90	10.45	0.01	0.63	0.14
	Delination (Site)	0.00	0.00	0.01	0.00	0.00	0.00
	Commissioning (Site)	0.00	0.01	0.01	0.00	0.00	0.00
	Demobilization (Site)	0.00	0.01	0.01	0.00	0.00	0.00
	Site (Site)	0.02	0.21	0.44	0.00	0.05	0.01
	North End Prep (Sep)	0.03	0.09	0.19	0.00	0.01	0.00
	Wing wall (Sep)	0.01	0.02	0.05	0.00	0.00	0.00
	Bridge Widening (Sep)	0.00	0.00	0.00	0.00	0.00	0.00
	Commissioning (Sep)	0.00	0.00	0.00	0.00	0.00	0.00
Demobilization (Sep)	0.01	0.03	0.06	0.00	0.00	0.00	
Site (Sep)	0.01	0.07	0.15	0.00	0.02	0.00	
<b>Total</b>		<b>5.30</b>	<b>15.90</b>	<b>34.18</b>	<b>0.04</b>	<b>1.95</b>	<b>0.42</b>

**Table C1.1-40. Summary of Unmitigated Daily On-Site Emissions of On-Road Trucks at Lead & Storage Track and Dominguez Channel.**

Year	Construction Sub-Element	Emissions (lb/day)						
		VOC	CO	NOx	SOx	PM10	PM2.5	
2013	Mobilization (Lead)	0.00	0.01	0.03	0.00	0.00	0.00	
	Utility Relocation (Lead)	0.01	0.14	0.32	0.00	0.03	0.01	
	Demolition (Lead)	0.03	0.08	0.18	0.00	0.01	0.00	
	Rough Grading (Lead)	0.24	0.69	1.52	0.00	0.10	0.04	
	Civil Construction (Lead)	0.29	0.82	1.82	0.00	0.12	0.04	
	Track Work Materials (Lead)	0.11	0.31	0.69	0.00	0.05	0.02	
	Track Work Assembly (Lead)	0.05	0.14	0.32	0.00	0.02	0.01	
	Site (Lead)	0.01	0.14	0.32	0.00	0.03	0.01	
	Mobilization (Dom)	0.00	0.00	0.00	0.00	0.00	0.00	
	Demolition (Dom)	0.00	0.01	0.01	0.00	0.00	0.00	
	Excavation (Dom)	0.01	0.03	0.07	0.00	0.00	0.00	
	CISS Piles (Dom)	0.02	0.07	0.15	0.00	0.01	0.00	
	Concrete (Dom)	0.01	0.02	0.04	0.00	0.00	0.00	
	Backfill Cofferdam Piling (Dom)	0.00	0.01	0.02	0.00	0.00	0.00	
	Bearing & Structural Steel Beams (Dom)	0.00	0.01	0.02	0.00	0.00	0.00	
	Bridge Deck Plate, Waterproofing, Misc. Steel (Dom)	0.00	0.01	0.01	0.00	0.00	0.00	
	Bridge Deck Ballast (Dom)	0.01	0.02	0.04	0.00	0.00	0.00	
	Concrete Ties & Track (Dom)	0.00	0.00	0.01	0.00	0.00	0.00	
	Painting & Repairs (Dom)	0.00	0.00	0.00	0.00	0.00	0.00	
	Site (Dom)	0.00	0.02	0.04	0.00	0.00	0.00	
	Demobilization (Dom)	0.00	0.01	0.03	0.00	0.00	0.00	
	<b>Total</b>		<b>0.83</b>	<b>2.54</b>	<b>5.64</b>	<b>0.01</b>	<b>0.40</b>	<b>0.13</b>
	2014	Track Work Assembly (Lead)	0.05	0.14	0.29	0.00	0.02	0.00
Demobilization (Lead)		0.00	0.01	0.03	0.00	0.00	0.00	
Site (Lead)		0.01	0.07	0.15	0.00	0.02	0.00	
<b>Total</b>		<b>0.06</b>	<b>0.22</b>	<b>0.46</b>	<b>0.00</b>	<b>0.03</b>	<b>0.01</b>	

**Table C1.1-41. Summary of Unmitigated Daily On-Site Emissions of On-Road Trucks at PCH Grade Separation.**

Year	Construction Sub-Element	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Demolition - North Side	0.05	0.18	0.40	0.00	0.03	0.01
	North Bridge	0.46	1.33	2.98	0.00	0.19	0.06
	Site	0.02	0.17	0.40	0.00	0.04	0.01
	<b>Total</b>	<b>0.53</b>	<b>1.69</b>	<b>3.78</b>	<b>0.00</b>	<b>0.26</b>	<b>0.08</b>
2014	Demolition - South Side	0.20	0.60	1.28	0.00	0.08	0.02
	South Bridge	0.27	0.82	1.78	0.00	0.10	0.02
	Demobilization	0.01	0.03	0.05	0.00	0.00	0.00
	Site	0.01	0.14	0.30	0.00	0.03	0.01
	<b>Total</b>	<b>0.49</b>	<b>1.59</b>	<b>3.41</b>	<b>0.00</b>	<b>0.21</b>	<b>0.04</b>

**Table C1.1-42. Summary of Mitigated Daily On-Site Emissions of On-Road Trucks at Site Construction and Sepulveda Bridge**

Year	Construction Sub-Element	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Mobilization (Site)	0.00	0.01	0.01	0.00	0.00	0.00
	Demolition (Site)	1.64	4.61	7.12	0.01	0.60	0.16
	Utility Relocation (Site)	0.00	0.03	0.07	0.00	0.01	0.00
	Rough Grade (Site)	0.69	1.95	3.01	0.00	0.25	0.07
	New Utility (Site)	0.01	0.02	0.03	0.00	0.00	0.00
	Building (Site)	0.10	0.31	0.55	0.00	0.03	0.01
	Site (Site)	0.02	0.21	0.38	0.00	0.05	0.01
	Mobilization (Sep)	0.00	0.01	0.01	0.00	0.00	0.00
	Demolition (Sep)	0.01	0.05	0.08	0.00	0.01	0.00
	Preparatory (Sep)	0.00	0.02	0.03	0.00	0.00	0.00
	Foundation (Sep)	0.03	0.08	0.13	0.00	0.01	0.00
	East Track (Sep)	0.04	0.14	0.25	0.00	0.01	0.00
	Pile Prep (Sep)	0.07	0.20	0.33	0.00	0.02	0.01
	North End Prep (Sep)	0.03	0.09	0.15	0.00	0.01	0.00
	Site (Sep)	0.01	0.07	0.13	0.00	0.02	0.00
	<b>Total</b>	<b>2.66</b>	<b>7.79</b>	<b>12.27</b>	<b>0.02</b>	<b>1.02</b>	<b>0.26</b>
2014	New Utility (Site)	0.01	0.02	0.03	0.00	0.00	0.00
	Building (Site)	0.42	1.31	2.27	0.00	0.13	0.02
	Final Grade (Site)	0.18	0.58	1.04	0.00	0.05	0.01
	Track Work (Site)	2.49	7.22	11.47	0.02	0.93	0.20
	Cranepads (Site)	0.44	1.44	2.57	0.00	0.11	0.02
	Asphalt (Site)	1.69	4.90	7.79	0.01	0.63	0.14
	Delination (Site)	0.00	0.00	0.01	0.00	0.00	0.00
	Commissioning (Site)	0.00	0.01	0.01	0.00	0.00	0.00
	Demobilization (Site)	0.00	0.01	0.01	0.00	0.00	0.00
	Site (Site)	0.02	0.21	0.36	0.00	0.04	0.01
	North End Prep (Sep)	0.03	0.09	0.15	0.00	0.01	0.00
	Wing wall (Sep)	0.01	0.02	0.04	0.00	0.00	0.00
	Bridge Widening (Sep)	0.00	0.00	0.00	0.00	0.00	0.00
	Commissioning (Sep)	0.00	0.00	0.00	0.00	0.00	0.00
	Demobilization (Sep)	0.01	0.03	0.05	0.00	0.00	0.00
Site (Sep)	0.01	0.07	0.12	0.00	0.01	0.00	
	<b>Total</b>	<b>5.30</b>	<b>15.90</b>	<b>25.91</b>	<b>0.04</b>	<b>1.93</b>	<b>0.40</b>

**Table C1.1-43. Summary of Mitigated Daily On-Site Emissions of On-Road Trucks at Lead & Storage Track and Dominguez Channel.**

Year	Construction Sub-Element	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Mobilization (Lead)	0.00	0.01	0.02	0.00	0.00	0.00
	Utility Relocation (Lead)	0.01	0.14	0.27	0.00	0.03	0.01
	Demolition (Lead)	0.03	0.08	0.13	0.00	0.01	0.00
	Rough Grading (Lead)	0.24	0.69	1.06	0.00	0.09	0.02
	Civil Construction (Lead)	0.29	0.82	1.27	0.00	0.11	0.03
	Track Work Materials (Lead)	0.11	0.31	0.48	0.00	0.04	0.01
	Track Work Assembly (Lead)	0.05	0.14	0.22	0.00	0.02	0.00
	Site (Lead)	0.01	0.14	0.25	0.00	0.03	0.00
	Mobilization (Dom)	0.00	0.00	0.00	0.00	0.00	0.00
	Demolition (Dom)	0.00	0.01	0.01	0.00	0.00	0.00
	Excavation (Dom)	0.01	0.03	0.05	0.00	0.00	0.00
	CISS Piles (Dom)	0.02	0.07	0.11	0.00	0.01	0.00
	Concrete (Dom)	0.01	0.02	0.03	0.00	0.00	0.00
	Backfill Cofferdam Piling (Dom)	0.00	0.01	0.02	0.00	0.00	0.00
	Bearing & Structural Steel Beams (Dom)	0.00	0.01	0.01	0.00	0.00	0.00
	Bridge Deck Plate, Waterproofing, Misc. Steel (Dom)	0.00	0.01	0.01	0.00	0.00	0.00
	Bridge Deck Ballast (Dom)	0.01	0.02	0.03	0.00	0.00	0.00
	Concrete Ties & Track (Dom)	0.00	0.00	0.00	0.00	0.00	0.00
	Painting & Repairs (Dom)	0.00	0.00	0.00	0.00	0.00	0.00
	Site (Dom)	0.00	0.02	0.03	0.00	0.00	0.00
Demobilization (Dom)	0.00	0.01	0.02	0.00	0.00	0.00	
	<b>Total</b>	<b>0.83</b>	<b>2.54</b>	<b>4.03</b>	<b>0.01</b>	<b>0.36</b>	<b>0.09</b>
2014	Track Work Assembly (Lead)	0.05	0.14	0.21	0.00	0.02	0.00
	Demobilization (Lead)	0.00	0.01	0.02	0.00	0.00	0.00
	Site (Lead)	0.01	0.07	0.12	0.00	0.01	0.00
	<b>Total</b>	<b>0.06</b>	<b>0.22</b>	<b>0.35</b>	<b>0.00</b>	<b>0.03</b>	<b>0.01</b>



**Table C1.1-44. Summary of Mitigated Daily On-Site Emissions of On-Road Trucks at PCH Grade Separation.**

Year	Construction Sub-Element	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Demolition - North Side	0.05	0.18	0.29	0.00	0.03	0.01
	North Bridge	0.46	1.33	2.13	0.00	0.16	0.04
	Site	0.02	0.17	0.31	0.00	0.04	0.01
<b>Total</b>		<b>0.53</b>	<b>1.69</b>	<b>2.74</b>	<b>0.00</b>	<b>0.23</b>	<b>0.06</b>
2014	Demolition - South Side	0.20	0.60	0.96	0.00	0.08	0.02
	South Bridge	0.27	0.82	1.36	0.00	0.10	0.02
	Demobilization	0.01	0.03	0.04	0.00	0.00	0.00
	Site	0.01	0.14	0.25	0.00	0.03	0.00
<b>Total</b>		<b>0.49</b>	<b>1.59</b>	<b>2.61</b>	<b>0.00</b>	<b>0.21</b>	<b>0.04</b>

**Table C1.1-45. Summary of Unmitigated Daily Off-Site Emissions of On-Road Trucks at Site Construction and Sepulveda Bridge**

Year	Construction Sub-Element	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Mobilization (Site)	0.01	0.07	0.20	0.00	0.04	0.01
	Demolition (Site)	14.72	51.90	140.91	0.23	15.09	4.28
	Utility Relocation (Site)	0.03	0.35	1.06	0.00	0.19	0.03
	Rough Grade (Site)	6.21	21.90	59.46	0.10	6.37	1.81
	New Utility (Site)	0.07	0.24	0.66	0.00	0.07	0.02
	Building (Site)	0.25	0.86	2.35	0.00	0.25	0.07
	Site (Site)	0.07	0.67	2.06	0.00	0.36	0.07
	Mobilization (Sep)	0.02	0.09	0.24	0.00	0.03	0.01
	Demolition (Sep)	0.09	0.35	0.96	0.00	0.10	0.03
	Preparatory (Sep)	0.04	0.16	0.46	0.00	0.06	0.01
	Foundation (Sep)	0.16	0.60	1.64	0.00	0.18	0.05
	East Track (Sep)	0.13	0.49	1.35	0.00	0.16	0.04
	Pile Prep (Sep)	0.49	1.89	5.21	0.01	0.52	0.15
	North End Prep (Sep)	0.21	0.81	2.23	0.00	0.23	0.07
Site (Sep)	0.02	0.22	0.69	0.00	0.12	0.02	
<b>Total</b>		<b>22.53</b>	<b>80.60</b>	<b>219.48</b>	<b>0.37</b>	<b>23.76</b>	<b>6.67</b>
2014	New Utility (Site)	0.06	0.22	0.55	0.00	0.06	0.01
	Building (Site)	2.00	7.03	17.73	0.04	1.93	0.32
	Final Grade (Site)	0.43	1.52	3.84	0.01	0.42	0.07
	Track Work (Site)	21.93	77.11	194.46	0.39	21.20	3.46
	Cranepads (Site)	1.07	3.77	9.50	0.02	1.04	0.17
	Asphalt (Site)	14.90	52.39	132.11	0.26	14.40	2.35
	Delination (Site)	0.01	0.05	0.13	0.00	0.01	0.00
	Commissioning (Site)	0.01	0.06	0.17	0.00	0.03	0.00
	Demobilization (Site)	0.01	0.06	0.17	0.00	0.03	0.00
	Site (Site)	0.06	0.66	1.75	0.00	0.33	0.04
	North End Prep (Sep)	0.18	0.67	1.71	0.00	0.20	0.03
	Wing wall (Sep)	0.04	0.14	0.35	0.00	0.04	0.01
	Bridge Widening (Sep)	0.00	0.00	0.00	0.00	0.00	0.00
	Commissioning (Sep)	0.00	0.00	0.00	0.00	0.00	0.00
Demobilization (Sep)	0.09	0.31	0.79	0.00	0.09	0.01	
Site (Sep)	0.02	0.22	0.58	0.00	0.11	0.01	
<b>Total</b>		<b>40.83</b>	<b>144.23</b>	<b>363.85</b>	<b>0.73</b>	<b>39.90</b>	<b>6.48</b>

**Table C1.1-46. Summary of Unmitigated Daily Off-Site Emissions of On-Road Trucks at Lead & Storage Track and Dominguez Channel.**

Year	Construction Sub-Element	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Mobilization (Lead)	0.04	0.15	0.40	0.00	0.04	0.01
	Utility Relocation (Lead)	0.14	1.38	4.23	0.01	0.74	0.14
	Demolition (Lead)	0.26	0.92	2.48	0.00	0.27	0.08
	Rough Grading (Lead)	2.20	7.75	21.05	0.03	2.25	0.64
	Civil Construction (Lead)	2.62	9.24	25.08	0.04	2.69	0.76
	Track Work Materials (Lead)	0.99	3.49	9.48	0.02	1.01	0.29
	Track Work Assembly (Lead)	0.46	1.63	4.41	0.01	0.47	0.13
	Site (Lead)	0.04	0.45	1.38	0.00	0.24	0.04
	Mobilization (Dom)	0.01	0.02	0.07	0.00	0.01	0.00
	Demolition (Dom)	0.01	0.06	0.17	0.00	0.02	0.01
	Excavation (Dom)	0.10	0.35	0.95	0.00	0.10	0.03
	CISS Piles (Dom)	0.15	0.52	1.43	0.00	0.16	0.04
	Concrete (Dom)	0.01	0.06	0.16	0.00	0.02	0.00
	Backfill Cofferdam Piling (Dom)	0.03	0.12	0.32	0.00	0.03	0.01
	Bearing & Structural Steel Beams (Dom)	0.02	0.09	0.24	0.00	0.03	0.01
	Bridge Deck Plate, Waterproofing, Misc. Steel (Dom)	0.01	0.06	0.16	0.00	0.02	0.00
	Bridge Deck Ballast (Dom)	0.06	0.20	0.56	0.00	0.06	0.02
	Concrete Ties & Track (Dom)	0.01	0.03	0.08	0.00	0.01	0.00
	Painting & Repairs (Dom)	0.00	0.01	0.04	0.00	0.00	0.00
	Site (Dom)	0.04	0.15	0.40	0.00	0.05	0.01
Demobilization (Dom)	0.04	0.15	0.40	0.00	0.04	0.01	
<b>Total</b>		<b>7.26</b>	<b>26.82</b>	<b>73.49</b>	<b>0.13</b>	<b>8.27</b>	<b>2.24</b>
2014	Track Work Assembly (Lead)	0.41	1.44	3.64	0.01	0.40	0.06
	Demobilization (Lead)	0.04	0.13	0.33	0.00	0.04	0.01
	Site (Lead)	0.02	0.22	0.58	0.00	0.11	0.01
<b>Total</b>		<b>0.47</b>	<b>1.79</b>	<b>4.55</b>	<b>0.01</b>	<b>0.54</b>	<b>0.08</b>

**Table C1.1-47. Summary of Unmitigated Daily Off-Site Emissions of On-Road Trucks at PCH Grade Separation.**

Year	Construction Sub-Element	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Demolition - North Side	0.49	1.98	5.50	0.01	0.67	0.17
	North Bridge	3.54	12.62	34.32	0.06	3.72	1.04
	Site	0.01	0.09	0.26	0.00	0.05	0.01
<b>Total</b>		<b>4.04</b>	<b>14.68</b>	<b>40.09</b>	<b>0.07</b>	<b>4.43</b>	<b>1.22</b>
2014	Demolition - South Side	1.73	6.36	16.10	0.03	1.84	0.29
	South Bridge	1.98	7.08	17.88	0.04	1.98	0.32
	Demobilization	0.08	0.27	0.68	0.00	0.07	0.01
	Site	0.01	0.07	0.19	0.00	0.04	0.00
<b>Total</b>		<b>3.80</b>	<b>13.78</b>	<b>34.85</b>	<b>0.07</b>	<b>3.94</b>	<b>0.63</b>

**Table C1.1-48. Summary of Mitigated Daily Off-Site Emissions of On-Road Trucks at Site Construction and Sepulveda Bridge**

Year	Construction Sub-Element	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Mobilization (Site)	0.01	0.07	0.13	0.00	0.04	0.01
	Demolition (Site)	14.72	51.90	72.14	0.23	14.65	3.88
	Utility Relocation (Site)	0.03	0.35	0.65	0.00	0.18	0.03
	Rough Grade (Site)	6.21	21.90	30.44	0.10	6.18	1.64
	New Utility (Site)	0.07	0.24	0.34	0.00	0.07	0.02
	Building (Site)	0.25	0.86	0.72	0.00	0.20	0.02
	Site (Site)	0.07	0.67	0.76	0.00	0.32	0.03
	Mobilization (Sep)	0.02	0.09	0.01	0.00	0.03	0.01
	Demolition (Sep)	0.09	0.35	0.44	0.00	0.10	0.02
	Preparatory (Sep)	0.04	0.16	0.25	0.00	0.06	0.01
	Foundation (Sep)	0.16	0.60	0.77	0.00	0.17	0.04
	East Track (Sep)	0.13	0.49	0.51	0.00	0.13	0.02
	Pile Prep (Sep)	0.49	1.89	2.30	0.01	0.49	0.12
	North End Prep (Sep)	0.21	0.81	1.02	0.00	0.22	0.05
Site (Sep)	0.02	0.22	0.25	0.00	0.11	0.01	
<b>Total</b>		<b>22.53</b>	<b>80.60</b>	<b>110.72</b>	<b>0.37</b>	<b>22.93</b>	<b>5.90</b>
2014	New Utility (Site)	0.06	0.22	0.34	0.00	0.06	0.01
	Building (Site)	2.00	7.03	9.57	0.04	1.89	0.28
	Final Grade (Site)	0.43	1.52	1.43	0.01	0.39	0.04
	Track Work (Site)	21.93	77.11	120.61	0.39	21.20	3.46
	Cranepads (Site)	1.07	3.77	3.54	0.02	0.97	0.10
	Asphalt (Site)	14.90	52.39	81.94	0.26	14.40	2.35
	Delination (Site)	0.01	0.05	0.08	0.00	0.01	0.00
	Commissioning (Site)	0.01	0.06	0.13	0.00	0.03	0.00
	Demobilization (Site)	0.01	0.06	0.13	0.00	0.03	0.00
	Site (Site)	0.06	0.66	0.76	0.00	0.32	0.03
	North End Prep (Sep)	0.18	0.67	1.02	0.00	0.19	0.03
	Wing wall (Sep)	0.04	0.14	0.20	0.00	0.04	0.01
	Bridge Widening (Sep)	0.00	0.00	0.00	0.00	0.00	0.00
	Commissioning (Sep)	0.00	0.00	0.00	0.00	0.00	0.00
Demobilization (Sep)	0.09	0.31	0.49	0.00	0.09	0.01	
Site (Sep)	0.02	0.22	0.25	0.00	0.11	0.01	
<b>Total</b>		<b>40.83</b>	<b>144.23</b>	<b>220.49</b>	<b>0.73</b>	<b>39.74</b>	<b>6.33</b>

**Table C1.1-49. Summary of Mitigated Daily Off-Site Emissions of On-Road Trucks at Lead & Storage Track and Dominguez Channel.**

Year	Construction Sub-Element	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Mobilization (Lead)	0.04	0.15	0.20	0.00	0.04	0.01
	Utility Relocation (Lead)	0.14	1.38	2.61	0.01	0.74	0.13
	Demolition (Lead)	0.26	0.92	1.27	0.00	0.26	0.07
	Rough Grading (Lead)	2.20	7.75	10.78	0.03	2.19	0.58
	Civil Construction (Lead)	2.62	9.24	12.84	0.04	2.61	0.69
	Track Work Materials (Lead)	0.99	3.49	4.85	0.02	0.99	0.26
	Track Work Assembly (Lead)	0.46	1.63	2.26	0.01	0.46	0.12
	Site (Lead)	0.04	0.45	0.51	0.00	0.21	0.02
	Mobilization (Dom)	0.01	0.02	0.03	0.00	0.01	0.00
	Demolition (Dom)	0.01	0.06	0.09	0.00	0.02	0.00
	Excavation (Dom)	0.10	0.35	0.49	0.00	0.10	0.03
	CISS Piles (Dom)	0.15	0.52	0.69	0.00	0.15	0.04
	Concrete (Dom)	0.01	0.06	0.06	0.00	0.02	0.00
	Backfill Cofferdam Piling (Dom)	0.03	0.12	0.16	0.00	0.03	0.01
	Bearing & Structural Steel Beams (Dom)	0.02	0.09	0.12	0.00	0.02	0.01
	Bridge Deck Plate, Waterproofing, Misc. Steel (Dom)	0.01	0.06	0.09	0.00	0.02	0.00
	Bridge Deck Ballast (Dom)	0.06	0.20	0.28	0.00	0.06	0.02
	Concrete Ties & Track (Dom)	0.01	0.03	0.04	0.00	0.01	0.00
	Painting & Repairs (Dom)	0.00	0.01	0.02	0.00	0.00	0.00
	Site (Dom)	0.04	0.15	0.20	0.00	0.04	0.01
Demobilization (Dom)	0.04	0.15	0.20	0.00	0.04	0.01	
<b>Total</b>		<b>7.26</b>	<b>26.82</b>	<b>37.81</b>	<b>0.13</b>	<b>8.01</b>	<b>2.01</b>
2014	Track Work Assembly (Lead)	0.41	1.44	2.26	0.01	0.40	0.06
	Demobilization (Lead)	0.04	0.13	0.20	0.00	0.04	0.01
	Site (Lead)	0.02	0.22	0.25	0.00	0.11	0.01
<b>Total</b>		<b>0.47</b>	<b>1.79</b>	<b>2.72</b>	<b>0.01</b>	<b>0.54</b>	<b>0.08</b>

**Table C1.1-50. Summary of Mitigated Daily Off-Site Emissions of On-Road Trucks at PCH Grade Separation.**

Year	Construction Sub-Element	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Demolition - North Side	0.49	1.98	2.94	0.01	0.65	0.16
	North Bridge	3.54	12.62	17.20	0.06	3.57	0.91
	Site	0.01	0.09	0.10	0.00	0.04	0.00
<b>Total</b>		<b>4.04</b>	<b>14.68</b>	<b>20.24</b>	<b>0.07</b>	<b>4.26</b>	<b>1.07</b>
2014	Demolition - South Side	1.73	6.36	10.10	0.03	1.84	0.29
	South Bridge	1.98	7.08	10.79	0.04	1.97	0.31
	Demobilization	0.08	0.27	0.42	0.00	0.07	0.01
	Site	0.01	0.07	0.08	0.00	0.04	0.00
<b>Total</b>		<b>3.80</b>	<b>13.78</b>	<b>21.39</b>	<b>0.07</b>	<b>3.93</b>	<b>0.62</b>

**Table C1.1-51. Equipment Type, Size and Activity for Sound Wall Construction**

Construction Activity	Equipment / Off-road Source	No.	Size-hp	Fuel	Ave. Load Factor (%)	Construction Year	Daily Hours	Days Per Unit	Acre Disturbed per Day <sup>(1)</sup>
<b>2013 Sound Wall Construction</b>									
Foundation	Dozer	1	250	D	59%	2013	8	212	
	Backhoe	1	100	D	55%	2013	8	212	
	Fugitive Dust					2013		212	0.36
Raise Wall	Man lift (cherry picker)	1	34	D	46%	2013	8	148	

Note:

(1) Emissions from ground disturbing activities were based upon the assumption that from 5 to 20 percent of the total activity area would be disturbed at any one time during construction



**Table C1.1-52. Unmitigated Emission Factors of Equipment Used at Sound Wall Construction**

Construction Sub-Element	Equipment / Off-road Source	Size-hp	Fuel	EF Unit	Emission Factors					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>2013 Sound Wall Construction</b>										
Foundation	Dozer	250	D	g/bhp-hr	0.75	2.12	4.90	0.01	0.16	0.15
	Backhoe	100	D	g/bhp-hr	0.76	3.88	5.01	0.01	0.26	0.24
	Fugitive Dust			lb/acre-day					4.17	0.87
Raise Wall	Man lift (cherry picker)	34	D	g/bhp-hr	1.71	5.09	5.10	0.01	0.39	0.36
Note: Source: OFFROAD2007 NOx and PM emissions factors were adjusted for compliance with ARB In-Use Off-road rule.										

**Table C1.1-53. Mitigated Emission Factors of Equipment Used at Sound Wall Construction**

Construction Sub-Element	Equipment / Off-road Source	Size-hp	Fuel	EF Unit	Emission Factors					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>2013 Sound Wall Construction</b>										
Foundation	Dozer	250	D	g/bhp-hr	0.58	2.12	4.24	0.01	0.05	0.04
	Backhoe	100	D	g/bhp-hr	0.27	3.88	4.19	0.01	0.08	0.07
	Fugitive Dust			lb/acre-day					0.42	0.09
Raise Wall	Man lift (cherry picker)	34	D	g/bhp-hr	0.28	4.10	5.10	0.01	0.09	0.08

Notes:

Source: OFFROAD2007

NOx and PM emissions factors were adjusted for compliance with ARB In-Use Off-road Rule and the Port's Construction Guidelines, where construction equipment shall meet 50% Tier 3 Level 3, 20% Tier 2 Level 3, 10% Tier 1 Level 3, 10% Tier 2 Level 2, and 10% Tier 1 Level 2. The mitigation also includes a 90% reduction in fugitive dust per Port's Construction Guidelines.

**Table C1.1-54. Summary of Unmitigated Daily Emissions of Equipment Used at Sound Wall Construction**

Construction Sub-Element	Equipment	No.	Size-hp	Fuel	Emissions (lb/day)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>2013 Sound Wall Construction</b>										
Foundation	Dozer	1	250	D	1.96	5.51	12.75	0.02	0.42	0.38
	Backhoe	1	100	D	0.74	3.76	4.86	0.01	0.25	0.23
	Fugitive Dust								1.52	0.32
Raise Wall	Man lift (cherry picker)	1	34	D	0.47	1.40	1.41	0.00	0.11	0.10
Total Emissions					3.17	10.67	19.02	0.03	2.30	1.03

**Table C1.1-55. Summary of Mitigated Daily Emissions of Equipment Used at Sound Wall Construction**

Construction Sub-Element	Equipment	No.	Size-hp	Fuel	Emissions (lb/day)					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>2013 Sound Wall Construction</b>										
Foundation	Dozer	1	250	D	1.51	5.51	11.03	0.02	0.12	0.11
	Backhoe	1	100	D	0.26	3.76	4.07	0.01	0.07	0.07
	Fugitive Dust								0.15	0.03
Raise Wall	Man lift (cherry picker)	1	34	D	0.08	1.13	1.41	0.00	0.03	0.02
Total Emissions					1.85	10.40	16.51	0.03	0.38	0.24

**Table C1.1-56. On-road Trucks Activities for Construction of Sound Wall**

<b>Truck Type</b>	<b>Vehicle Class</b>	<b>Idling Time [hr/Trip]</b>	<b>Round Trip Distance On-site [mi/trip]</b>	<b>Average Off-site Round Trip Distance [mi/trip]</b>	<b>Total Number of Trips</b>
<b>2013 Sound Wall Construction</b>					
Trucks Carrying Wall and Dirt	HHDT	0.17	0.80	12.40	720
Light-Duty Gasoline Trucks	LDGT	0.07	0.80	12.40	360

**Table C1.1-57. Unmitigated Emission Factors for On-road Trucks for Sound Wall Construction**

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013 Sound Wall Construction</b>										
Trucks Carrying Wall and Dirt	HHDT	Idle	10.78	45.96	114.93	0.06			0.76	0.70
		On-site	4.83	10.14	19.56	0.03			2.83	0.88
		Off-site <sup>(4)</sup>	0.60	3.02	10.23	0.02	1.84	0.35		
Light-Duty Gasoline Trucks	LDGT	Idle	0.00	0.00	0.00	0.00			0.00	0.00
		On-site	0.16	3.39	0.38	0.01			2.18	0.17
		Off-site <sup>(4)</sup>	0.06	2.18	0.27	0.00	1.61	0.13		

Notes:

(1) On-site operation assumes a speed of 10 mph for HHDT and 15 mph for LDGT; Off-site travel speed based on traffic modeling.

(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.

(3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.

(4) Weighted average emission factors based on speeds by roadway links from traffic modeling.

Source: EMFAC2007

**Table C1.1-58. Mitigated Emission Factors for On-road Trucks for Sound Wall Construction**

Truck Type	Vehicle Class	Speed <sup>(1)</sup>	Emission Factors (grams/mile or grams/hr)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust) <sup>(2)</sup>	Total PM2.5 (incl. paved road dust) <sup>(2)</sup>	Total PM10 (incl. unpaved road dust) <sup>(3)</sup>	Total PM2.5 (incl. unpaved road dust) <sup>(3)</sup>
<b>2013 Sound Wall Construction</b>										
Trucks Carrying Wall <sup>(5)</sup>	HHDT	Idle	10.78	45.96	114.93	0.06			0.76	0.70
		On-site	4.83	10.14	3.60	0.03			2.20	0.30
		Off-site <sup>(4)</sup>	0.60	3.02	3.60	0.02	1.67	0.19		
Earth Mover <sup>(5)</sup>	HHDT	Idle	10.78	45.96	114.93	0.06			0.76	0.70
		On-site	4.83	10.14	6.00	0.03			2.47	0.55
		Off-site <sup>(4)</sup>	0.60	3.02	6.00	0.02	1.84	0.35		
Light-Duty Gasoline Trucks	LDGT	Idle	0.00	0.00	0.00	0.00			0.00	0.00
		On-site	0.16	3.39	0.38	0.01			2.18	0.17
		Off-site <sup>(4)</sup>	0.06	2.18	0.27	0.00	1.61	0.13		

Notes:

- (1) On-site operation assumes a speed of 10 mph for HHDT and 15 mph for LDGT; Off-site travel speed based on traffic modeling.
  - (2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.
  - (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and unpaved road dust. Road dust emission factors were obtained from USEPA AP-42.
  - (4) Emission factors for off-site travel assumes a composite speed weighted by the distance of each truck route link.
  - (5) Trucks carrying wall and earth mover trucks are listed separately in the Mitigated Case because they are subject to different requirements in the Port's Construction Guidelines
- NOx and PM emission factors are adjusted to comply with the Port's Construction Guidelines.  
 Source: EMFAC2007

Table C1.1-59. Summary of Unmitigated Daily Emissions of On-Road Trucks at Sound Wall Construction.

Truck Type	Vehicle Class	On-site / Off-site	Emissions (lb/day)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust)	Total PM2.5 (incl. paved road dust)	Total PM10 (incl. unpaved road dust)	Total PM2.5 (incl. unpaved road dust)
<b>2013 Sound Wall Construction</b>										
Trucks Carrying Wall and Dirt	HHDT	On-site	0.03	0.07	0.16	0.00			0.01	0.00
		Off-site	0.04	0.19	0.59	0.00	0.07	0.02		
Light-Duty Gasoline Trucks	LDGT	On-site	0.00	0.01	0.00	0.00			0.00	0.00
		Off-site	0.00	0.06	0.01	0.00	0.02	0.00		



**Table C1.1-60. Summary of Mitigated Daily Emissions of On-Road Trucks at Sound Wall Construction.**

Truck Type	Vehicle Class	On-site / Off-site	Emissions (lb/day)							
			VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust)	Total PM2.5 (incl. paved road dust)	Total PM10 (incl. unpaved road dust)	Total PM2.5 (incl. unpaved road dust)
<b>2013 Sound Wall Construction</b>										
Trucks Carrying Wall <sup>(1)</sup>	HHDT	On-site	0.01	0.04	0.05	0.00			0.00	0.00
		Off-site	0.02	0.09	0.10	0.00	0.05	0.01		
Earth Mover <sup>(1)</sup>	HHDT	On-site	0.01	0.04	0.05	0.00			0.00	0.00
		Off-site	0.02	0.09	0.16	0.00	0.03	0.01		
Light-Duty Gasoline Trucks	LDGT	On-site	0.00	0.01	0.00	0.00			0.00	0.00
		Off-site	0.00	0.01	0.00	0.00	0.00	0.00		

Note:  
 (1) Trucks carrying wall and earth mover trucks are listed separately in the Mitigated Case because they are subject to different requirements in the Port's Construction Guidelines

**Table C1.1-61. Truck and Ship Activities for Crane Delivery and Assembly**

Activity	Vehicle / Equipment Type	Setting	Fuel	Time on Site [hr/Trip]	Round Trip Distance of Route [mi/trip]	Number of days of operation	Total Number of Trips
<b>2015 Crane Delivery</b>							
Crane Delivery	Heavy-Duty Diesel Truck	Idle	D	0.07		30	320
		On-site	D		3.9	30	320
		Off-site	D		9.9	30	320
Deliver Steel via Ship	Container Ship		D			1	1
<b>2015 Crane Assembly</b>							
Crane Assembly	Light-Duty Gasoline Trucks	Idle	G	0.07			64
		On-site	G		3.9		64
		Off-site	G		9.9		64

**Table C1.1-62. Rail Activities for Crane Delivery**

Activity	Vehicle / Equipment Type	Quantity	Fuel	Round Trip Distance of Route [mi/trip] <sup>(2)</sup>	Total Number of Trips
<b>2015 Crane Delivery</b>					
Deliver Small Parts of Crane via Rail <sup>(1)</sup>	Line-Haul Train	1	D	202	1

Notes:

(1) Assumed one rail train is used to carry small parts for the cranes, and the delivery occurs in the first month of 2015.

(2) Roundtrip distance from primary Project site to South Coast Air Basin boundary.

**Table C1.1-63. Off-road Equipment Type, Size, and Activities for Crane Assembly**

Activity <sup>(1)</sup>	Vehicle / Equipment Type	Quantity	Fuel	Size-HP	Load Factor (%)	Operating hours/day	Number of days of operation
<b>2015 Crane Assembly</b>							
Unload Cranes Parts	150T crane	4	D	150	70%	24	3
Assemble Crane components	150T crane	1	D	150	60%	10	45
	Air compressor	2	D	54	60%	10	45
	Welder	2	D	46	60%	10	45
	Generator (single-phase)	1	D	229	70%	10	45
	Generator (double-phase)	1	D	229	70%	10	45
Erect Columns	150T crane	2	D	150	70%	10	5
	Air compressor	2	D	54	60%	10	4
	Welder	2	D	46	60%	10	4
	Generator (single-phase)	1	D	229	70%	10	4
	Generator (double-phase)	1	D	229	70%	10	4
Erect Lifting beams on columns	500T crane	2	D	500	70%	10	4
	150T crane	2	D	150	70%	10	4
	Air compressor	2	D	54	60%	10	4
	Welder	2	D	46	60%	10	4
	Generator (single-phase)	1	D	229	70%	10	4
	Generator (double-phase)	1	D	229	70%	10	4
Complete assembly	Air compressor	2	D	54	60%	10	45
	Welder	2	D	46	60%	10	45
	Generator (single-phase)	1	D	229	70%	10	45
	Generator (double-phase)	1	D	229	70%	10	45
	Man lift	3	D	34	80%	10	45

Notes:

(1) The activities and off-road equipment listed here are for assembly of two cranes.

**Table C1.1-64. Unmitigated Emission Factors for Crane Delivery and Assembly Activities**

Activity	Vehicle / Equipment Type	Size-hp	Fuel	Speed	EF Unit	Emission Factors					
						VOC	CO	NOx	SO2	PM10	PM2.5
<b>2015 Crane Delivery</b>											
Crane Delivery	Heavy-Duty Diesel Truck		D	Idle	g/hr	7.65	41.43	123.52	0.06	0.11	0.10
			D	On-site	g/mile	1.17	3.02	10.09	0.03	1.05	0.17
			D	Off-site	g/mile	0.51	1.92	6.61	0.02	1.04	0.16
Deliver Steel via Ship	Container Ship		D		lb/call	127.80	305.77	2812.89	54.44	36.89	29.82
<b>2015 Crane Assembly</b>											
Crane Assembly	Light-Duty Gasoline Trucks		G	Idle	g/hr	0.00	0.00	0.00	0.00	0.00	0.00
			G	On-site	g/mile	0.14	2.89	0.23	0.01	1.62	0.14
			G	Off-site	g/mile	0.07	2.08	0.18	0.00	1.61	0.11
Unload Cranes Parts	150T crane	150	D		g/bhp-hr	0.65	3.39	4.30	0.01	0.18	0.17
Assemble Crane components	150T crane	150	D		g/bhp-hr	0.65	3.39	4.30	0.01	0.18	0.17
	Air compressor	54	D		g/bhp-hr	0.82	3.84	5.22	0.01	0.30	0.28
	Welder	46	D		g/bhp-hr	1.75	5.61	5.14	0.01	0.44	0.40
	Generator (single-phase)	229	D		g/bhp-hr	0.44	1.27	3.87	0.01	0.13	0.12
	Generator (double-phase)	229	D		g/bhp-hr	0.44	1.27	3.87	0.01	0.13	0.12
Erect Columns	150T crane	150	D		g/bhp-hr	0.65	3.39	4.30	0.01	0.18	0.17
	Air compressor	54	D		g/bhp-hr	0.82	3.84	5.22	0.01	0.30	0.28
	Welder	46	D		g/bhp-hr	1.75	5.61	5.14	0.01	0.44	0.40
	Generator (single-phase)	229	D		g/bhp-hr	0.44	1.27	3.87	0.01	0.13	0.12
	Generator (double-phase)	229	D		g/bhp-hr	0.44	1.27	3.87	0.01	0.13	0.12
Erect Lifting beams on columns	500T crane	500	D		g/bhp-hr	0.44	1.47	2.70	0.01	0.11	0.10
	150T crane	150	D		g/bhp-hr	0.65	3.39	4.30	0.01	0.18	0.17
	Air compressor	54	D		g/bhp-hr	0.82	3.84	5.22	0.01	0.30	0.28
	Welder	46	D		g/bhp-hr	1.75	5.61	5.14	0.01	0.44	0.40
	Generator (single-phase)	229	D		g/bhp-hr	0.44	1.27	3.87	0.01	0.13	0.12
Complete assembly	Generator (double-phase)	229	D		g/bhp-hr	0.44	1.27	3.87	0.01	0.13	0.12
	Air compressor	54	D		g/bhp-hr	0.82	3.84	5.22	0.01	0.30	0.28
	Welder	46	D		g/bhp-hr	1.75	5.61	5.14	0.01	0.44	0.40
	Generator (single-phase)	229	D		g/bhp-hr	0.44	1.27	3.87	0.01	0.13	0.12
	Generator (double-phase)	229	D		g/bhp-hr	0.44	1.27	3.87	0.01	0.13	0.12
	Man lift	34	D		g/bhp-hr	1.39	4.75	4.60	0.01	0.29	0.27

**Notes:**

- (1) On-road truck emission factors generated from EMFAC2007. On-site speed is assumed to be 15 mph and off-site speed averages to be 30.8 mph.
- (2) Container ship emissions per call were based on Port of Los Angeles Inventory of Air Emissions 2007
- (3) Off-road equipment emission factors were based on OFFROAD2007. NOx and PM emissions factors were adjusted for compliance with ARB In-Use Off-road rule to NOx and PM exhaust emission factors as well as the ARB Air Toxic Control Measure (ATCM) for Portable Equipment.
- (4) PM emissions for onroad trucks include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.

**Table C1.1-65. Mitigated Emission Factors for Crane Delivery and Assembly Activities**

Activity	Vehicle / Equipment Type	Size-hp	Fuel	Speed / Notch Setting	EF Unit	Emission Factors					
						VOC	CO	NOx	SO2	PM10	PM2.5
<b>2015 Crane Delivery</b>											
Crane Delivery	Heavy-Duty Diesel Truck		D	Idle	g/hr	7.65	41.43	123.52	0.06	0.11	0.10
			D	On-site	g/mile	1.17	3.02	3.60	0.03	0.98	0.11
			D	Off-site		0.51	1.92	3.60	0.02	0.98	0.11
Deliver Steel via Ship	Container Ship		D		lb/call	127.80	305.77	2812.89	54.44	36.89	29.82
<b>2015 Crane Assembly</b>											
Crane Assembly	Light-Duty Gasoline Trucks		G	Idle	g/hr	0.00	0.00	0.00	0.00	0.00	0.00
			G	On-site	g/mile	0.14	2.89	0.23	0.01	1.62	0.14
			G	Off-site		0.07	2.08	0.18	0.00	1.61	0.13
Unload Cranes Parts	150T crane	150	D		g/bhp-hr	0.27	3.39	3.56	0.01	0.07	0.06
Assemble Crane components	150T crane	150	D		g/bhp-hr	0.27	3.39	3.56	0.01	0.07	0.06
	Air compressor	54	D		g/bhp-hr	0.35	3.73	4.63	0.01	0.07	0.06
	Welder	46	D		g/bhp-hr	0.28	4.10	5.14	0.01	0.09	0.08
	Generator (single-phase)	229	D		g/bhp-hr	0.44	1.27	3.59	0.01	0.05	0.04
	Generator (double-phase)	229	D		g/bhp-hr	0.42	1.27	3.59	0.01	0.05	0.04
Erect Columns	150T crane	150	D		g/bhp-hr	0.27	3.39	3.56	0.01	0.07	0.06
	Air compressor	54	D		g/bhp-hr	0.35	3.73	4.63	0.01	0.07	0.06
	Welder	46	D		g/bhp-hr	0.28	4.10	5.14	0.01	0.09	0.08
	Generator (single-phase)	229	D		g/bhp-hr	0.44	1.27	3.59	0.01	0.05	0.04
	Generator (double-phase)	229	D		g/bhp-hr	0.44	1.27	3.59	0.01	0.05	0.04
Erect Lifting beams on columns	500T crane	500	D		g/bhp-hr	0.44	1.47	2.70	0.01	0.05	0.04
	150T crane	150	D		g/bhp-hr	0.27	3.39	3.56	0.01	0.07	0.06
	Air compressor	54	D		g/bhp-hr	0.35	3.73	4.63	0.01	0.07	0.06
	Welder	46	D		g/bhp-hr	0.28	4.10	5.14	0.01	0.09	0.08
	Generator (single-phase)	229	D		g/bhp-hr	0.44	1.27	3.59	0.01	0.05	0.04
Complete assembly	Generator (double-phase)	229	D		g/bhp-hr	0.44	1.27	3.59	0.01	0.05	0.04
	Air compressor	54	D		g/bhp-hr	0.35	3.73	4.63	0.01	0.07	0.06
	Welder	46	D		g/bhp-hr	0.28	4.10	5.14	0.01	0.09	0.08
	Generator (single-phase)	229	D		g/bhp-hr	0.44	1.27	3.59	0.01	0.05	0.04
	Generator (double-phase)	229	D		g/bhp-hr	0.44	1.27	3.59	0.01	0.05	0.04
	Man lift	34	D		g/bhp-hr	0.28	4.10	4.60	0.01	0.09	0.08
<b>Notes:</b>											
(1) On-road truck emission factors generated from EMFAC2007. On-site speed is assumed to be 15 mph and off-site speed averages to be 30.8 mph. NOx and PM emission factors for HDDT are adjusted to comply with the Port's Construction Guidelines.											
(2) Container ship emissions per call were based on Port of Los Angeles Inventory of Air Emissions 2007											
(3) Off-road equipment emission factors were based on OFFROAD2007. NOx and PM emissions factors were adjusted for compliance with ARB In-Use Off-road rule, ARB Air Toxic Control Measure (ATCM) for Portable Equipment, and the Port's Construction Guidelines.											
(4) PM emissions for onroad trucks include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.											

**Table C1.1-66. Summary of Unmitigated Peak Daily Emissions for Crane Delivery and Assembly Activities**

Activity	Vehicle / Equipment Type	Emission [lb/day]					
		VOC	CO	NOx	SO2	PM10	PM2.5
<b>2015 Crane Delivery (Peak Month: January 2015)</b>							
Crane Delivery	Heavy-Duty Diesel Truck (On-site)	0.12	0.34	1.11	0.00	0.10	0.02
	Heavy-Duty Diesel Truck (Off-site)	0.12	0.45	1.54	0.00	0.24	0.04
Deliver Steel via Ship	Container Ship	127.80	305.77	2812.89	54.44	36.89	29.82
Deliver Small Parts of Crane via Rail	Line-Haul Train (On-site)	0.55	1.13	11.64	0.01	0.34	0.31
	Line-Haul Train (Off-site)	73.08	110.56	971.32	0.81	27.82	25.59
<b>2015 Crane Assembly (Peak Month: April 2015)</b>							
Crane Assembly	Light-Duty Gasoline Trucks (On-site)	0.04	0.79	0.06	0.00	0.44	0.04
	Light-Duty Gasoline Trucks (Off-site)	0.05	1.46	0.13	0.00	1.13	0.08
Assemble Crane components	150T crane	1.29	6.73	8.53	0.01	0.36	0.33
	Air compressor	1.17	5.49	7.45	0.01	0.43	0.39
	Welder	2.13	6.83	6.25	0.01	0.53	0.49
	Generator (single-phase)	1.57	4.50	13.69	0.02	0.46	0.42
	Generator (double-phase)	1.57	4.50	13.69	0.02	0.46	0.42
	Erect Lifting beams on columns	500T crane	6.83	22.68	41.67	0.09	1.70
150T crane		3.01	15.70	19.91	0.03	0.83	0.77
Air compressor		1.17	5.49	7.45	0.01	0.43	0.39
Welder		2.13	6.83	6.25	0.01	0.53	0.49
Generator (single-phase)		1.57	4.50	13.69	0.02	0.46	0.42
Generator (double-phase)		1.57	4.50	13.69	0.02	0.46	0.42
Complete assembly	Air compressor	2.33	10.98	14.90	0.02	0.86	0.79
	Welder	4.27	13.67	12.50	0.02	1.06	0.98
	Generator (single-phase)	3.14	8.99	27.37	0.05	0.91	0.84
	Generator (double-phase)	3.14	8.99	27.37	0.05	0.91	0.84
	Man lift	5.01	17.11	16.55	0.03	1.04	0.96
<b>Notes:</b> (1) Container ship emissions per call were based on Port of Los Angeles Inventory of Air Emissions 2007 (2) PM emissions for onroad trucks include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42. (3) Offsite linehaul locomotive emissions were based on travel distance to South Coast Air Basin. (4) Assume truck deliveries happen in 30 days, and rail delivery in one day. (5) Assume maximum of four assemblies in a day (6) Peak month for crane delivery is January 2015, and peak month for crane assembly is April 2015							

**Table C1.1-67. Summary of Mitigated Daily Emissions for Crane Delivery and Assembly Activities**

Activity	Vehicle / Equipment Type	Emission [lb/day]					
		VOC	CO	NOx	SO2	PM10	PM2.5
<b>2015 Crane Delivery (Peak Month: January 2015)</b>							
Crane Delivery	Heavy-Duty Diesel Truck (On-site)	0.12	0.34	0.52	0.00	0.09	0.01
	Heavy-Duty Diesel Truck (Off-site)	0.12	0.45	0.84	0.00	0.23	0.02
Deliver Steel via Ship	Container Ship	127.80	305.77	2812.89	54.44	36.89	29.82
Deliver Small Parts of Crane via Rail	Line-Haul Train (On-site)	0.55	1.13	11.64	0.01	0.34	0.31
	Line-Haul Train (Off-site)	73.08	110.56	971.32	0.81	27.82	25.59
<b>2015 Crane Assembly (Peak Month: April 2015)</b>							
Crane Assembly	Light-Duty Gasoline Trucks (On-site)	0.04	0.79	0.06	0.00	0.44	0.04
	Light-Duty Gasoline Trucks (Off-site)	0.05	1.46	0.13	0.00	1.13	0.09
Assemble Crane components	150T crane	0.54	6.73	7.07	0.01	0.14	0.12
	Air compressor	0.49	5.33	6.62	0.01	0.10	0.09
	Welder	0.34	5.00	6.25	0.01	0.11	0.10
	Generator (single-phase)	1.57	4.50	12.69	0.02	0.16	0.15
	Generator (double-phase)	1.49	4.50	12.69	0.02	0.16	0.15
	500T crane	6.83	22.68	41.67	0.09	0.70	0.65
Erect Lifting beams on columns	150T crane	1.25	15.70	16.49	0.03	0.32	0.29
	Air compressor	0.49	5.33	6.62	0.01	0.10	0.09
	Welder	0.34	5.00	6.25	0.01	0.11	0.10
	Generator (single-phase)	1.57	4.50	12.69	0.02	0.16	0.15
	Generator (double-phase)	1.57	4.50	12.69	0.02	0.16	0.15
	Air compressor	0.99	10.66	13.24	0.02	0.20	0.18
Complete assembly	Welder	0.68	9.99	12.50	0.02	0.22	0.20
	Generator (single-phase)	3.14	8.99	25.38	0.05	0.32	0.30
	Generator (double-phase)	3.14	8.99	25.38	0.05	0.32	0.30
	Man lift	1.01	14.77	16.55	0.03	0.33	0.30

Notes:

- (1) Container ship emissions per call were based on Port of Los Angeles Inventory of Air Emissions 2007
- (2) PM emissions for onroad trucks include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust. Road dust emission factors were obtained from USEPA AP-42.
- (3) Offsite linehaul locomotive emissions were based on travel distance to South Coast Air Basin.
- (4) Assume truck deliveries happen in 30 days, and rail delivery in one day.
- (5) Assume maximum of four assemblies in a day
- (6) Peak month for crane delivery is January 2015, and peak month for crane assembly is April 2015
- (7) NOx and PM emission factors for HDDT are adjusted to comply with the Port's Construction Guidelines.
- (8) NOx and PM emissions factors were adjusted for compliance with ARB In-Use Off-road rule, ARB Air Toxic Control Measure (ATCM) for Portable Equipment, and the Port's Construction Guidelines.



**Table C1.1-68. Equipment Type, Size and Activity for SCE Tower Relocation**

Construction Activity	Equipment / Off-road Source	No.	Size-hp	Fuel	Construction Year	Daily Hours	Days Per Unit
<b>2013 SCE Tower Relocation</b>							
Civil Contract for Foundations	Boom/Crane Truck	1	300	D	2013	4	12
	Auger Truck	1	79	D	2013	6	12
	Backhoe/Front Loader	1	79	D	2013	3	12
	Concrete Pump	1	175	D	2013	6	12
	Arrow Board	1	15	D	2013	8	35
Install New Above-Grade Structures	Boom/Crane Truck	1	300	D	2013	4	9
	Heavy Line Truck	1	250	D	2013	2	9
	265-Ton Crane	1	350	D	2013	6	9
	Flatbed Trucks	5	250	D	2013	6	25
	90-Ton Crane	1	125	D	2013	6	9
	Oiler's Support Truck	1	125	D	2013	2	25
	Arrow Board	2	15	D	2013	8	25
Install New Overhead Conductors	Bucket Truck	2	350	D	2013	4	20
	Boom/Crane Truck	1	300	D	2013	4	20
	Heavy Line Truck	1	250	D	2013	2	20
	3 Drum Line Puller	1	170	D	2013	6	20
	Bull Wheel Puller	1	125	D	2013	6	20
	Static Truck/Tensioner	1	125	D	2013	6	20
	Backhoe/Front Loader	1	79	D	2013	2	20
	Arrow Board	2	15	D	2013	8	20
Remove Old Overhead Conductors	Bucket Truck	2	350	D	2013	4	10
	Boom/Crane Truck	1	300	D	2013	4	10
	Heavy Line Truck	1	250	D	2013	2	10
	3 Drum Line Puller	1	120	D	2013	6	10
	Bull Wheel Puller	1	120	D	2013	6	10
	Static Truck/Tensioner	1	120	D	2013	6	10
	Backhoe/Front Loader	1	79	D	2013	2	10
Remove Old Above-Grade Structures	Arrow Board	2	15	D	2013	8	10
	Boom/Crane Truck	1	300	D	2013	4	5
	Heavy Line Truck	1	250	D	2013	2	5
	265-Ton Crane	1	350	D	2013	6	5
	Flatbed Trucks	5	250	D	2013	6	15
	90-Ton Crane	1	125	D	2013	6	5
	Oiler's Support Truck	1	125	D	2013	2	15
Arrow Board	2	15	D	2013	8	15	

Source: BNSF

Table C1.1-69. Emission Factors of Equipment Used at SCE Tower Relocation

Construction Sub-Element	Equipment / Off-road Source	Size-hp	Fuel	EF Unit	Emission Factors					
					VOC	CO	NOX	SO2	PM10	PM2.5
<b>2013 SCE Tower Relocation</b>										
Civil Contract for Foundations	Boom/Crane Truck	300	D	lb/hr	0.16	0.53	1.42	0.00	0.05	0.05
	Auger Truck	79	D	lb/hr	0.04	0.47	0.46	0.00	0.03	0.02
	Backhoe/Front Loader	79	D	lb/hr	0.07	0.35	0.46	0.00	0.04	0.04
	Concrete Pump	175	D	lb/hr	0.14	0.74	1.23	0.00	0.06	0.06
	Arrow Board	15	D	lb/hr	0.01	0.04	0.04	0.00	0.00	0.00
	Earthwork Fugitive Dust			lb/cu. yd					0.003	0.001
Install New Above-Grade Structures	Boom/Crane Truck	300	D	lb/hr	0.16	0.53	1.42	0.00	0.05	0.05
	Heavy Line Truck	250	D	lb/hr	0.14	0.38	1.24	0.00	0.04	0.04
	265-Ton Crane	350	D	lb/hr	0.16	0.53	1.42	0.00	0.05	0.05
	Flatbed Trucks	250	D	lb/hr	0.14	0.38	1.24	0.00	0.04	0.04
	90-Ton Crane	125	D	lb/hr	0.14	0.76	1.03	0.00	0.06	0.06
	Oiler's Support Truck	125	D	lb/hr	0.14	0.76	1.03	0.00	0.06	0.06
	Arrow Board	15	D	lb/hr	0.01	0.04	0.04	0.00	0.00	0.00
Install New Overhead Conductors	Bucket Truck	350	D	lb/hr	0.16	0.53	1.42	0.00	0.05	0.05
	Boom/Crane Truck	300	D	lb/hr	0.16	0.53	1.42	0.00	0.05	0.05
	Heavy Line Truck	250	D	lb/hr	0.14	0.38	1.24	0.00	0.04	0.04
	3 Drum Line Puller	170	D	lb/hr	0.11	0.51	0.84	0.00	0.05	0.04
	Bull Wheel Puller	125	D	lb/hr	0.11	0.51	0.84	0.00	0.05	0.04
	Static Truck/Tensioner	125	D	lb/hr	0.11	0.51	0.84	0.00	0.05	0.04
	Backhoe/Front Loader	79	D	lb/hr	0.07	0.35	0.46	0.00	0.04	0.04
	Arrow Board	15	D	lb/hr	0.01	0.04	0.04	0.00	0.00	0.00
	Bucket Truck	350	D	lb/hr	0.16	0.53	1.42	0.00	0.05	0.05
Remove Old Overhead Conductors	Boom/Crane Truck	300	D	lb/hr	0.16	0.53	1.42	0.00	0.05	0.05
	Heavy Line Truck	250	D	lb/hr	0.14	0.38	1.24	0.00	0.04	0.04
	3 Drum Line Puller	120	D	lb/hr	0.11	0.49	0.76	0.00	0.06	0.05
	Bull Wheel Puller	120	D	lb/hr	0.11	0.49	0.76	0.00	0.06	0.05
	Static Truck/Tensioner	120	D	lb/hr	0.11	0.49	0.76	0.00	0.06	0.05
	Backhoe/Front Loader	79	D	lb/hr	0.07	0.35	0.46	0.00	0.04	0.04
	Arrow Board	15	D	lb/hr	0.01	0.04	0.04	0.00	0.00	0.00
	Bucket Truck	350	D	lb/hr	0.16	0.53	1.42	0.00	0.05	0.05
Remove Old Above-Grade Structures	Boom/Crane Truck	300	D	lb/hr	0.16	0.53	1.42	0.00	0.05	0.05
	Heavy Line Truck	250	D	lb/hr	0.14	0.38	1.24	0.00	0.04	0.04
	265-Ton Crane	350	D	lb/hr	0.16	0.53	1.42	0.00	0.05	0.05
	Flatbed Trucks	250	D	lb/hr	0.14	0.38	1.24	0.00	0.04	0.04
	90-Ton Crane	125	D	lb/hr	0.14	0.76	1.03	0.00	0.06	0.06
	Oiler's Support Truck	125	D	lb/hr	0.14	0.76	1.03	0.00	0.06	0.06
	Arrow Board	15	D	lb/hr	0.01	0.04	0.04	0.00	0.00	0.00

Notes:

(1) Offroad equipment emission factors generated from OFFROAD2007.

Source: BNSF

**Table C1.1-70. Summary of Daily Emissions of Equipment Used at SCE Tower Relocation**

Construction Sub-Element	Equipment	Emissions (lb/day)					
		VOC	CO	NOX	SO2	PM10	PM2.5
<b>2013 SCE Tower Relocation</b>							
Civil Contract for Foundations	Boom/Crane Truck	0.62	2.12	5.69	0.01	0.21	0.19
	Auger Truck	0.27	2.82	2.75	0.01	0.15	0.14
	Backhoe/Front Loader	0.21	1.06	1.37	0.00	0.11	0.11
	Concrete Pump	0.83	4.44	7.41	0.01	0.37	0.34
	Arrow Board	0.06	0.30	0.36	0.00	0.01	0.01
	Earthwork Fugitive Dust					0.13	0.03
Install New Above-Grade Structures	Boom/Crane Truck	0.62	2.12	5.69	0.01	0.21	0.19
	Heavy Line Truck	0.28	0.77	2.47	0.00	0.08	0.08
	265-Ton Crane	0.93	3.18	8.54	0.01	0.31	0.29
	Flatbed Trucks	4.20	11.51	37.12	0.06	1.24	1.14
	90-Ton Crane	0.86	4.55	6.18	0.01	0.36	0.33
	Oiler's Support Truck	0.29	1.52	2.06	0.00	0.12	0.11
	Arrow Board	0.11	0.60	0.72	0.00	0.03	0.03
Install New Overhead Conductors	Bucket Truck	1.24	4.23	11.38	0.01	0.41	0.38
	Boom/Crane Truck	0.62	2.12	5.69	0.01	0.21	0.19
	Heavy Line Truck	0.28	0.77	2.47	0.00	0.08	0.08
	3 Drum Line Puller	0.64	3.03	5.03	0.01	0.28	0.26
	Bull Wheel Puller	0.64	3.03	5.03	0.01	0.28	0.26
	Static Truck/Tensioner	0.64	3.03	5.03	0.01	0.28	0.26
	Backhoe/Front Loader	0.14	0.71	0.91	0.00	0.08	0.07
	Arrow Board	0.11	0.60	0.72	0.00	0.03	0.03
Remove Old Overhead Conductors	Bucket Truck	1.24	4.23	11.38	0.01	0.41	0.38
	Boom/Crane Truck	0.62	2.12	5.69	0.01	0.21	0.19
	Heavy Line Truck	0.28	0.77	2.47	0.00	0.08	0.08
	3 Drum Line Puller	0.66	2.94	4.55	0.01	0.35	0.33
	Bull Wheel Puller	0.66	2.94	4.55	0.01	0.35	0.33
	Static Truck/Tensioner	0.66	2.94	4.55	0.01	0.35	0.33
	Backhoe/Front Loader	0.14	0.71	0.91	0.00	0.08	0.07
	Arrow Board	0.11	0.60	0.72	0.00	0.03	0.03
Remove Old Above-Grade Structures	Boom/Crane Truck	0.62	2.12	5.69	0.01	0.21	0.19
	Heavy Line Truck	0.28	0.77	2.47	0.00	0.08	0.08
	265-Ton Crane	0.93	3.18	8.54	0.01	0.31	0.29
	Flatbed Trucks	4.20	11.51	37.12	0.06	1.24	1.14
	90-Ton Crane	0.86	4.55	6.18	0.01	0.36	0.33
	Oiler's Support Truck	0.29	1.52	2.06	0.00	0.12	0.11
	Arrow Board	0.11	0.60	0.72	0.00	0.03	0.03
Note:							
Source: BNSF							

**Table C1.1-71. On-road Trucks Activities for SCE Tower Relocation**

Construction Sub-Element	Vehicle	Vehicle Class	Number	Days Used	On-Site Miles/Day/Veh.	Off-Site Miles/Day/Veh.
<b>2013 SCE Tower Relocation</b>						
Civil Contract for Foundations	Dump Truck	HHDT	1	35	1	30
	3/4 Ton Pick-up, 4x4	Passenger	2	35	1	60
	1-Ton Crew Cab, 4x4	Passenger	1	35	1	60
	Concrete Truck	HHDT	1	35	1	30
	Vacuum Truck	HHDT	1	35	1	30
	Worker Commute	Passenger	8	35	0	60
Install New Above-Grade Structures	3/4 Ton Pick-up, 4x4	Passenger	2	25	1	10
	1-Ton Crew Cab, 4x4	Passenger	1	25	1	10
	Worker Commute	Passenger	10	25	0	60
Install New Overhead Conductors	3/4 Ton Pick-up, 4x4	Passenger	2	20	1	10
	1-Ton Crew Cab, 4x4	Passenger	1	20	1	10
	Lowboy Truck/Trailer	HHDT	2	20	1	10
	Worker Commute	Passenger	10	20	0	60
Remove Old Overhead Conductors	3/4 Ton Pick-up, 4x4	Passenger	2	10	1	10
	1-Ton Crew Cab, 4x4	Passenger	1	10	1	10
	Lowboy Truck/Trailer	HHDT	2	10	1	10
	Worker Commute	Passenger	10	10	0	60
Remove Old Above-Grade Structures	3/4 Ton Pick-up, 4x4	Passenger	2	15	1	10
	1-Ton Crew Cab, 4x4	Passenger	1	15	1	10
	Worker Commute	Passenger	10	15	0	60
Note:						
Source: BNSF						

Table C1.1-72. Emission Factors for On-road Trucks for SCE Tower Relocation

Truck Type	Vehicle Class	Emission Factors (lbs/mile)							
		VOC	CO	NOx	SOx	Total PM10 (incl. paved road dust)	Total PM2.5 (incl. paved road dust)	Total PM10 (incl. unpaved road dust)	Total PM2.5 (incl. unpaved road dust)
<b>2013 SCE Tower Relocation</b>									
<b>Onsite</b>									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05			9.24E-01	9.34E-02
3/4-Ton Pick-up Truck, 4x4	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05			4.47E-01	4.48E-02
1-Ton Crew Cab, 4x4	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05			5.32E-01	5.32E-02
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05			9.24E-01	9.34E-02
Vacuum Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05			9.24E-01	9.36E-02
Lowboy Truck/Trailer	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05			9.24E-01	9.34E-02
<b>Offsite</b>									
Dump Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	2.26E-03	1.15E-03		
3/4-Ton Pick-up Truck, 4x4	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	1.01E-03	5.83E-05		
1-Ton Crew Cab, 4x4	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	1.01E-03	5.83E-05		
Concrete Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	2.26E-03	1.15E-03		
Vacuum Truck	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05			9.24E-01	9.34E-02
Worker Commute	Passenger	7.46E-04	7.09E-03	7.12E-04	1.07E-05	1.01E-03	5.83E-05		
Lowboy Truck/Trailer	HHDT	2.26E-03	9.32E-03	2.74E-02	4.09E-05	2.26E-03	1.15E-03		

**Table C1.1-73. Total Daily Criteria Pollutant Construction Emissions by Phase**

Phase	Emissions (lb/day)					
	VOC	CO	NOX	SOX	PM10	PM2.5
Civil Contract for Foundations	2.69	16.31	20.60	0.04	6.05	1.38
Install New Above-Grade Structures	7.77	28.73	63.24	0.10	2.99	2.20
Install New Overhead Conductors	4.82	22.22	37.33	0.05	2.35	1.59
Remove Old Overhead Conductors	4.91	21.95	35.89	0.05	2.56	1.78
Remove Old Above-Grade Structures	7.77	28.73	63.24	0.10	2.99	2.20

**Table C1.1-74. Offroad Construction Equipment Type, Size, and Activities for Relocated Tenants**

Phase	Equipment Type	# of Equipment	Horsepower	Load Factor	Hrs/Day
Building Construction	Cranes	4	399	0.43	4
	Forklifts	6	145	0.30	6
	Generator Sets	8	49	0.74	8
	Tractors/Loaders/Backhoes	6	108	0.55	8
	Welders	8	45	0.45	8
Demolition	Concrete/Industrial Saws	8	10	0.73	8
	Rubber Tired Dozers	1	357	0.59	1
	Tractors/Loaders/Backhoes	6	108	0.55	6
Fine Site Grading	Graders	6	174	0.61	6
	Rubber Tired Dozers	1	357	0.59	6
	Tractors/Loaders/Backhoes	6	108	0.55	7
	Water Trucks	8	189	0.50	8
Mass Site Grading	Graders	6	174	0.61	6
	Rubber Tired Dozers	1	357	0.59	6
	Tractors/Loaders/Backhoes	6	108	0.55	7
	Water Trucks	8	189	0.50	8
Paving	Cement and Mortar Mixers	6	10	0.56	6
	Pavers	7	100	0.62	7
	Paving Equipment	6	104	0.53	6
	Rollers	7	95	0.56	7
	Tractors/Loaders/Backhoes	6	108	0.55	7

**Table C1.1-75. On-road Vehicle Type and Activities for Relocated Tenants Construction**

Phase	Vehicle Type	Miles / Trip	Total Days of Operation
Building Construction	Building Construction Vendor Trucks	25.4	241
	Worker Commute (LDA / LDT)	25.4	241
Demolition	On-road Trucks (HDDT)	20.0	3
	Worker Commute (LDA / LDT)	25.4	70
Fine Site Grading	Worker Commute (LDA / LDT)	25.4	32
Mass Site Grading	On-road Trucks (HDDT)	20.0	139
	Worker Commute (LDA / LDT)	25.4	139
Paving	On-road Trucks (HDDT)	20.0	45
	Worker Commute (LDA / LDT)	25.4	45



**Table C1.1-76. Unmitigated Annual Emissions for Relocated Tenants Construction**

Category	Annual Emissions (tons/year)					
	VOC	CO	NOx	SO2	PM10	PM2.5
On-site	0.63	2.45	3.88	0.00	3.10	0.81
Off-site	0.34	4.60	3.33	0.01	0.17	0.13
<b>Total</b>	<b>0.97</b>	<b>7.06</b>	<b>7.21</b>	<b>0.01</b>	<b>3.27</b>	<b>0.94</b>

Notes:

- (1) On-site emissions include emissions from construction equipment and fugitive dusts.
- (2) Off-site emissions include emissions from worker commute and on-road trucks
- (3) Source: Urbemis 2007 version 9.2.4.
- (4) Relocation tenant construction year is 2013.

**Table C1.1-77. Mitigated Annual Emissions for Relocated Tenants Construction**

Category	Annual Emissions (tons/year)					
	VOC	CO	NOx	SO2	PM10	PM2.5
On-site	0.53	2.46	3.88	0.00	1.63	0.46
Off-site	0.34	4.60	3.15	0.01	0.17	0.13
<b>Total</b>	<b>0.87</b>	<b>7.06</b>	<b>7.02</b>	<b>0.01</b>	<b>1.80</b>	<b>0.59</b>

Notes:

- (1) On-site emissions include emissions from construction equipment and fugitive dusts.
- (2) Off-site emissions include emissions from worker commute and on-road trucks
- (3) Source: Urbemis 2007 version 9.2.4. Emissions were adjusted to comply to Port's Construction Guidelines.
- (4) Relocation tenant construction year is 2013.

**Table C1.1-78. Unmitigated Peak Daily Emissions for SCIG and Relocation Tenant Construction Activities by Year**

Year	Category	Peak Daily Emissions (lbs/day)					
		VOC	CO	NOx	SO2	PM10	PM2.5
2013	On-site	157.68	616.27	1139.89	1.60	298.29	95.35
	Off-site	95.02	268.99	1179.48	1.29	62.24	35.79
2014	On-site	65.73	278.81	490.68	0.75	283.36	72.80
	Off-site	42.47	163.57	375.89	0.78	54.58	7.77
2015	On-site	41.94	148.27	251.04	0.41	11.86	10.55
	Off-site	201.45	430.96	3787.29	55.29	78.48	56.55

Notes:

- (1) Construction activities in 2013 include SCIG primary site construction, relocated tenants construction, wall construction and SCE tower relocation.
- (2) Construction activities in 2014 are SCIG primary site construction.
- (3) Construction activities in 2015 includes crane delivery and assembly.
- (4) Peak daily emissions are the total daily emissions in the peak month estimated by overlapping construction activities occur in the same month based on the construction schedule.
- (5) Offsite emissions were estimated up to South Coast Air Basin.

**Table C1.1-79. Mitigated Peak Daily Emissions for SCIG and Relocation Tenant Construction Activities by Year**

Year	Category	Peak Daily Emissions (lbs/day)					
		VOC	CO	NOx	SO2	PM10	PM2.5
2013	On-site	125.76	607.68	1058.47	1.60	72.84	28.32
	Off-site	94.46	263.77	1099.81	1.28	60.13	32.93
2014	On-site	44.80	276.69	446.94	0.75	35.13	12.57
	Off-site	42.47	163.57	229.22	0.78	54.44	7.64
2015	On-site	25.49	137.94	234.84	0.41	4.06	3.36
	Off-site	201.45	430.96	3786.59	55.29	78.47	56.54

Notes:

- (1) Construction activities in 2013 include SCIG primary site construction, relocated tenants construction, wall construction and SCE tower relocation.
- (2) Construction activities in 2014 are SCIG primary site construction.
- (3) Construction activities in 2015 includes crane delivery and assembly.
- (4) Peak daily emissions are the total daily emissions in the peak month estimated by overlapping construction activities occur in the same month based on the construction schedule.
- (5) Emissions were adjusted to comply to Port's Construction Guidelines.

**Appendix C1.2**  
**Operational Emission Calculations**

## Table Of Contents - Appendix C1.2 Operational Emission Calculations

TABLE	DESCRIPTION
Table C1.2-1	Annual SCIG TEU Throughput by Project Scenario
Table C1.2-2	Annual Truck and Employee Commute Trips
Table C1.2-3	Truck Trip Distances between Port Terminals and SCIG
Table C1.2-4	Train Capacity for SCIG Project
Table C1.2-5	Train Trips Generated by SCIG
Table C1.2-6	Peak Day Train Trips Generated by SCIG
Table C1.2-7	Truck Trips and Mileage for SCIG Project
Table C1.2-8	On-Road Truck Operational Data for SCIG Proposed Project
Table C1.2-9	On-Road Truck Emission Factors - SCIG Drayage Truck Fleet - Proposed Project
Table C1.2-10	Annual Truck Emission for SCIG - Proposed Project
Table C1.2-11	Peak Daily Truck Emissions for SCIG - Proposed Project
Table C1.2-12	Summary of Annual Truck Emission for SCIG – Proposed Project
Table C1.2-13	Summary of Peak Daily Truck Emissions for SCIG - Proposed Project
Table C1.2-14	Worker Commute Emission Factors for SCIG - Proposed Project
Table C1.2-15	Annual Worker Commute Emission for SCIG - Proposed Project
Table C1.2-16	Peak Daily Worker Commute Emission for SCIG - Proposed Project
Table C1.2-17	Summary of Annual Worker Commute Emissions for SCIG – Proposed Project
Table C1.2-18	Summary of Peak Daily Worker Commute Emissions for SCIG – Proposed Project
Table C1.2-19	SCIG Train Trips - Proposed Project
Table C1.2-20	Emission Factors for SCIG Switcher Locomotives – Proposed Project
Table C1.2-21	Emission Factors for SCIG Linehaul Locomotives – Proposed Project
Table C1.2-22	Peak Emission Factors for SCIG Linehaul Locomotives – Proposed Project
Table C1.2-23	Annual Locomotive Emissions for SCIG - Proposed Project
Table C1.2-24	Peak Daily Locomotive Emissions for SCIG - Proposed Project
Table C1.2-25	Summary of Annual Locomotive Emissions for SCIG - Proposed Project
Table C1.2-26	Summary of Peak Daily Locomotive Emissions for SCIG - Proposed Project
Table C1.2-27	Equipment Usage for SCIG Cargo Handling Equipment - Proposed Project
Table C1.2-28	Emission Factors for SCIG Cargo Handling Equipment - Proposed Project
Table C1.2-29	Annual Emissions for SCIG Cargo Handling Equipment - Proposed Project
Table C1.2-30	Peak Daily Emissions for SCIG Cargo Handling Equipment - Proposed Project
Table C1.2-31	Annual Activity Data for SCIG Maintenance Equipment - Proposed Project
Table C1.2-32	Emission Factors for SCIG Maintenance Equipment - Proposed Project
Table C1.2-33	Annual Emissions for SCIG Maintenance Equipment - Proposed Project
Table C1.2-34	Peak Daily Emissions for SCIG Maintenance Equipment - Proposed Project
Table C1.2-35	Activity Data for SCIG Emergency Generator - Proposed Project
Table C1.2-36	Emission Factors for SCIG Emergency Generator - Proposed Project
Table C1.2-37	Summary of Annual Emissions for SCIG Emergency Generator - Proposed Project
Table C1.2-38	Summary of Peak Daily Emissions for SCIG Emergency Generator - Proposed Project
Table C1.2-39	Activity Data for SCIG Gasoline Service Trucks - Proposed Project
Table C1.2-40	Emission Factors for SCIG Gasoline Service Trucks - Proposed Project
Table C1.2-41	Annual Gasoline Service Truck Emissions for SCIG - Proposed Project
Table C1.2-42	Summary of Annual Gasoline Service Truck On-Site Emissions for SCIG - Proposed Project
Table C1.2-43	Summary of Peak Daily Gasoline Service Truck Emissions for SCIG - Proposed Project
Table C1.2-44	Activity Data for SCIG Refueling Trucks - Proposed Project
Table C1.2-45	Emission Factors for SCIG Refueling Trucks – Proposed Project
Table C1.2-46	Annual Refueling Truck Emissions for SCIG - Proposed Project
Table C1.2-47	Peak Daily Refueling Truck Emissions for SCIG - Proposed Project
Table C1.2-48	Summary of Annual Refueling Truck Emissions for SCIG - Proposed Project
Table C1.2-49	Summary of Peak Daily Refueling Truck Emissions for SCIG - Proposed Project
Table C1.2-50	Activity Data for SCIG LNG Yard Hostlers - Proposed Project
Table C1.2-51	Emission Factors for SCIG LNG Yard Hostlers - Proposed Project
Table C1.2-52	Summary of Annual Emissions for SCIG LNG Yard Hostlers - Proposed Project
Table C1.2-53	Summary of Peak Daily Emissions for SCIG LNG Yard Hostlers - Proposed Project
Table C1.2-54	Activity Data for Paints, Oils, Cleaners, and Other Fluids Used for Maintenance - Proposed Project
Table C1.2-55	VOC Emissions from Paints, Oils, Cleaners, and Other Fluids Used for Maintenance - Proposed Project
Table C1.2-56	Peak Daily Operational Emissions - Proposed Project
Table C1.2-57	Average Daily Operational Emissions - Proposed Project
Table C1.2-TEN-1	Activity Data for Tenant On-Road Vehicles - Proposed Project and Reduced Project
Table C1.2-TEN-2	Emission Factors for Tenant Port Drayage Trucks - Proposed Project and Reduced Project
Table C1.2-TEN-3	Emission Factors for Tenant Vendor Vehicles - Proposed Project and Reduced Project
Table C1.2-TEN-4	Emission Factors for Tenant Employee Commute Vehicles - Proposed Project and Reduced Project
Table C1.2-TEN-5	Annual Tenant Truck Emissions - Proposed Project and Reduced Project

Table C1.2-TEN-6	Peak Daily Tenant Truck Emissions - Proposed Project and Reduced Project
Table C1.2-TEN-7	Annual Tenant Employee Commute Emissions - Proposed Project and Reduced Project
Table C1.2-TEN-8	Peak Daily Tenant Employee Commute Emissions - Proposed Project and Reduced Project
Table C1.2-TEN-9	Activity Data for Tenant CHE - Proposed Project and Reduced Project
Table C1.2-TEN-10	Emission Factors for Tenant CHE - Proposed Project and Reduced Project
Table C1.2-TEN-11	Annual Tenant CHE Emissions - Proposed Project and Reduced Project
Table C1.2-TEN-12	Peak Daily Tenant CHE Emissions - Proposed Project and Reduced Project
Table C1.2-TEN-13	Summary of Annual Tenant CHE Emissions - Proposed Project and Reduced Project
Table C1.2-TEN-14	Summary of Peak Daily Tenant CHE Emissions - Proposed Project and Reduced Project
Table C1.2-TEN-15	Activity Data for Tenant Switcher Locomotives - Proposed Project and Reduced Project
Table C1.2-TEN-16	Emission Factors for Tenant Switcher Locomotives - Proposed Project and Reduced Project
Table C1.2-TEN-17	Annual Emissions for Tenant Switcher Locomotives - Proposed Project and Reduced Project
Table C1.2-TEN-18	Peak Daily Emissions for Tenant Switcher Locomotives - Proposed Project and Reduced Project
Table C1.2-TEN-19	Annual Tenant Operation Emissions - Proposed Project and Reduced Project
Table C1.2-TEN-20	Peak Daily Tenant Operation Emissions - Proposed Project and Reduced Project
Table C1.2-RP-1	Truck Trips and Mileage for SCIG - Reduced Project Alternative
Table C1.2-RP-2	On-Road Truck Operational Data for SCIG - Reduced Project Alternative
Table C1.2-RP-3	On-Road Truck Emission Factors - SCIG Drayage Truck Fleet - Reduced Project Alternative
Table C1.2-RP-4	Annual Truck Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-5	Peak Daily Truck Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-6	Summary of Annual Truck Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-7	Summary of Peak Daily Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-8	Worker Commute Operational Data for SCIG - Reduced Project Alternative
Table C1.2-RP-9	Worker Commute Emission Factors for SCIG - Reduced Project Alternative
Table C1.2-RP-10	Annual Worker Commute Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-11	Peak Daily Worker Commute Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-12	Summary of Annual Worker Commute Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-13	Summary of Peak Daily Worker Commute Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-14	SCIG Train Trips - Reduced Project Alternative
Table C1.2-RP-15	Emission Factors for SCIG Switcher Locomotives - Reduced Project Alternative
Table C1.2-RP-16	Emission Factors for SCIG Linehaul Locomotives - Reduced Project Alternative
Table C1.2-RP-17	Peak Emission Factors SCIG Linehaul Locomotives - Reduced Project Alternative
Table C1.2-RP-18	Annual Locomotive Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-19	Peak Daily Locomotive Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-20	Summary of Annual Locomotive Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-21	Summary of Peak Daily Locomotive Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-22	Equipment Usage for SCIG Cargo Handling Equipment - Reduced Project Alternative
Table C1.2-RP-23	Emission Factors for SCIG Cargo Handling Equipment - Reduced Project Alternative
Table C1.2-RP-24	Annual Emissions for SCIG Cargo Handling Equipment - Reduced Project Alternative
Table C1.2-RP-25	Peak Daily Emissions for SCIG Cargo Handling Equipment - Reduced Project Alternative
Table C1.2-RP-26	Annual Activity Data for SCIG Maintenance Equipment - Reduced Project Alternative
Table C1.2-RP-27	Emission Factors for SCIG Maintenance Equipment - Reduced Project Alternative
Table C1.2-RP-28	Annual Emissions for SCIG Maintenance Equipment - Reduced Project Alternative
Table C1.2-RP-29	Peak Daily Emissions for SCIG Maintenance Equipment - Reduced Project Alternative
Table C1.2-RP-30	Activity Data for SCIG Emergency Generator - Reduced Project Alternative
Table C1.2-RP-31	Emission Factors for SCIG Emergency Generator - Reduced Project Alternative
Table C1.2-RP-32	Summary of Annual Emissions for SCIG Emergency Generator - Reduced Project Alternative
Table C1.2-RP-33	Summary of Peak Daily Emissions for SCIG Emergency Generator - Reduced Project Alternative
Table C1.2-RP-34	Activity Data for SCIG Gasoline Service Trucks - Reduced Project Alternative
Table C1.2-RP-35	Emission Factors for SCIG Gasoline Service Trucks - Reduced Project Alternative
Table C1.2-RP-36	Annual Gasoline Service Truck Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-37	Summary of Annual Gasoline Service Truck On-Site Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-38	Summary of Peak Daily Gasoline Service Truck Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-39	Activity Data for SCIG Refueling Trucks - Reduced Project Alternative
Table C1.2-RP-40	Emission Factors for SCIG Refueling Trucks - Reduced Project Alternative
Table C1.2-RP-41	Annual Refueling Truck Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-42	Peak Daily Refueling Truck Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-43	Summary of Annual Refueling Truck Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-44	Summary of Peak Daily Refueling Truck Emissions for SCIG - Reduced Project Alternative
Table C1.2-RP-45	Activity Data for SCIG LNG Yard Hostlers - Reduced Project Alternative
Table C1.2-RP-46	Emission Factors for SCIG LNG Yard Hostlers - Reduced Project Alternative
Table C1.2-RP-47	Summary of Annual Emissions for SCIG LNG Yard Hostlers - Reduced Project Alternative
Table C1.2-RP-48	Summary of Peak Daily Emissions for LNG Yard Hostler - Reduced Project Alternative
Table C1.2-RP-49	Activity Data for Paints, Oils, Cleaners, and Other Fluids Used for Maintenance - Reduced Project Alternative
Table C1.2-RP-50	VOC Emissions from Paints, Oils, Cleaners, and Other Fluids Used for Maintenance - Reduced Project Alternative
Table C1.2-RP-51	Activity Data for Drayage Trucks Traveling to Hobart Yard - Reduced Project Alternative

Table C1.2-RP-52	Emission Factors for Drayage Trucks Traveling to Hobart Yard - Reduced Project Alternative
Table C1.2-RP-53	Annual Emissions for Drayage Trucks Traveling to Hobart Yard - Reduced Project Alternative
Table C1.2-RP-54	Peak Daily Emissions for Drayage Trucks Traveling to Hobart Yard - Reduced Project Alternative
Table C1.2-RP-55	Activity Data for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - Reduced Project Alternative
Table C1.2-RP-56	Emission Factors for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - Reduced Project Alternative
Table C1.2-RP-57	Peak Emission Factors for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - Reduced Project Alternative
Table C1.2-RP-58	Annual Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - Reduced Project Alternative
Table C1.2-RP-59	Peak Daily Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - Reduced Project Alternative
Table C1.2-RP-60	Peak Daily Operational Emissions - Reduced Project Alternative
Table C1.2-RP-61	Average Daily Operational Emissions - Reduced Project Alternative
Table C1.2-NP-1	Activity Data for Drayage Trucks Traveling to Hobart Yard - No Project Alternative
Table C1.2-NP-2	Emission Factors for Drayage Trucks Traveling to Hobart Yard - No Project Alternative
Table C1.2-NP-3	Annual Emissions for Drayage Trucks Traveling to Hobart Yard - No Project Alternative
Table C1.2-NP-4	Peak Daily Emissions for Drayage Trucks Traveling to Hobart Yard - No Project Alternative
Table C1.2-NP-5	Activity Data for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - No Project Alternative
Table C1.2-NP-6	Emission Factors for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - No Project Alternative
Table C1.2-NP-7	Annual Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - No Project Alternative
Table C1.2-NP-8	Peak Daily Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - No Project Alternative
Table C1.2-NP-9	Activity Data for Tenant On-Road Vehicles - No Project Alternative
Table C1.2-NP-10	Emission Factors for Tenant Port Drayage Trucks - No Project Alternative
Table C1.2-NP-11	Emission Factors for Tenant Vendor Vehicles - No Project Alternative
Table C1.2-NP-12	Emission Factors for Tenant Employee Commute Vehicles - No Project Alternative
Table C1.2-NP-13	Annual Tenant Truck Emissions - No Project Alternative
Table C1.2-NP-14	Peak Daily Tenant Truck Emissions - No Project Alternative
Table C1.2-NP-15	Annual Tenant Employee Commute Emissions - No Project Alternative
Table C1.2-NP-16	Peak Daily Tenant Employee Commute Emissions - No Project Alternative
Table C1.2-NP-17	Activity Data for Tenant CHE - No Project Alternative
Table C1.2-NP-18	Emission Factors for Tenant CHE - No Project Alternative
Table C1.2-NP-19	Annual Tenant CHE Emissions - No Project Alternative
Table C1.2-NP-20	Peak Daily Tenant CHE Emissions - No Project Alternative
Table C1.2-NP-21	Summary of Annual Tenant CHE Emissions - No Project Alternative
Table C1.2-NP-22	Summary of Peak Daily Tenant CHE Emissions - No Project Alternative
Table C1.2-NP-23	Activity Data for Tenant Switcher Locomotives - No Project Alternative
Table C1.2-NP-24	Emission Factors for Tenant Switcher Locomotives - No Project Alternative
Table C1.2-NP-25	Annual Emissions for Tenant Switcher Locomotives - No Project Alternative
Table C1.2-NP-26	Peak Daily Emissions for Tenant Switcher Locomotives - No Project Alternative
Table C1.2-NP-27	Annual Tenant Operation Emissions - No Project Alternative
Table C1.2-NP-28	Peak Daily Tenant Operation Emissions - No Project Alternative
Table C1.2-NP-29	Peak Daily Operational Emissions - No Project Alternative
Table C1.2-NP-30	Average Daily Operational Emissions - No Project Alternative
Table C1.2-BL-1	Activity Data for Drayage Trucks Traveling to Hobart Yard - 2005 Baseline
Table C1.2-BL-2	Emission Factors for Drayage Trucks Traveling to Hobart Yard - 2005 Baseline
Table C1.2-BL-3	Annual Emissions for Drayage Trucks Traveling to Hobart Yard - 2005 Baseline
Table C1.2-BL-4	Peak Daily Emissions for Drayage Trucks Traveling to Hobart Yard - 2005 Baseline
Table C1.2-BL-5	Activity Data for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - 2005 Baseline
Table C1.2-BL-6	Emission Factors for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - 2005 Baseline
Table C1.2-BL-7	Annual Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - 2005 Baseline
Table C1.2-BL-8	Peak Daily Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - 2005 Baseline
Table C1.2-BL-9	Activity Data for Tenant On-Road Vehicles - 2005 Baseline
Table C1.2-BL-10	Emission Factors for Tenant Port Drayage Trucks - 2005 Baseline
Table C1.2-BL-11	Emission Factors for Tenant Vendor Vehicles - 2005 Baseline
Table C1.2-BL-12	Emission Factors for Tenant Employee Commute Vehicles - 2005 Baseline
Table C1.2-BL-13	Annual Tenant Truck Emissions - 2005 Baseline
Table C1.2-BL-14	Peak Daily Tenant Truck Emissions - 2005 Baseline
Table C1.2-BL-15	Annual Tenant Employee Commute Emissions - 2005 Baseline
Table C1.2-BL-16	Peak Daily Tenant Employee Commute Emissions - 2005 Baseline
Table C1.2-BL-17	Activity Data for Tenant CHE - 2005 Baseline
Table C1.2-BL-18	Emission Factors for Tenant CHE - 2005 Baseline



Table C1.2-BL-19	Annual Tenant CHE Emissions - 2005 Baseline
Table C1.2-BL-20	Peak Daily Tenant CHE Emissions - 2005 Baseline
Table C1.2-BL-21	Summary of Annual Tenant CHE Emissions - 2005 Baseline
Table C1.2-BL-22	Summary of Peak Daily Tenant CHE Emissions - 2005 Baseline
Table C1.2-BL-23	Activity Data for Tenant Switcher Locomotives - 2005 Baseline
Table C1.2-BL-24	Emission Factors for Tenant Switcher Locomotives - 2005 Baseline
Table C1.2-BL-25	Annual Emissions for Tenant Switcher Locomotives - 2005 Baseline
Table C1.2-BL-26	Peak Daily Emissions for Tenant Switcher Locomotives - 2005 Baseline
Table C1.2-BL-27	Annual Tenant Operation Emissions - 2005 Baseline
Table C1.2-BL-28	Peak Daily Tenant Operation Emissions - 2005 Baseline
Table C1.2-BL-29	Peak Daily Operational Emissions - 2005 Baseline
Table C1.2-BL-30	Average Daily Operational Emissions - 2005 Baseline

**Table C1.2-1. Annual SCIG TEU Throughput by Project Scenario**

Scenario	Analysis Year			
	2016	2023	2035	2046
<b>Proposed Project</b>	2,020,699	2,775,000	2,775,000	2,775,000
<b>Alternative 1 - No Project</b>	-	-	-	-
<b>Alternative 2 - Reduced Project</b>	1,850,000	1,850,000	1,850,000	1,850,000

**Table C1.2-2. Annual Truck and Employee Commute Trips**

Description		Employee Commute Trips (roundtrips)	Total Truck Trips <sup>(1)</sup> (roundtrips)
2016	Proposed Project	90,000	726,360
	Alternative 1 - No Project	N/A	N/A
	Alternative 2 - Reduced Project	73,800	665,000
2023	Proposed Project	162,000	997,500
	Alternative 1 - No Project	N/A	N/A
	Alternative 2 - Reduced Project	73,800	665,000
2035	Proposed Project	162,000	997,500
	Alternative 1 - No Project	N/A	N/A
	Alternative 2 - Reduced Project	73,800	665,000
2046	Proposed Project	162,000	997,500
	Alternative 1 - No Project	N/A	N/A
	Alternative 2 - Reduced Project	73,800	665,000

Note:  
(1) Truck trips were based on assumptions of 1.33 truck trips per lift and 1.85 TEUs per intermodal lift.

**Table C1.2-3. Truck Trip Distances between Port Terminals and SCIG**

<b>Terminals</b>	<b>One-way Distance (mi)</b>
WBCT	6.85
Trapac	4.90
GGS	5.01
Pier 400	7.05
Yusen	3.59
Evergreen	5.66
Pier A	2.65
Pier C	3.41
Pier G/J	4.84
Pier J S	6.77
LBCT	5.06
Pier T	4.36

**Table C1.2-4. Train Capacity for SCIG Project**

<b>Description</b>	<b>No. of Containers per Train Visit</b>
Inbound Train	260
Outbound Train	260

**Table C1.2-5. Train Trips Generated by SCIG**

Analysis Year	Annual TEU Distribution to SCIG			Annual Train Roundtrips		
	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Project	Proposed Project	Alternative 1 No Project	Alternative 2 Reduced Project
2016	2,020,699	N/A	1,850,000	2,160	N/A	2,160
2023	2,775,000	N/A	1,850,000	2,880	N/A	2,160
2035	2,775,000	N/A	1,850,000	2,880	N/A	2,160
2046	2,775,000	N/A	1,850,000	2,880	N/A	2,160

**Table C1.2-6. Peak Day Train Trips Generated by SCIG**

Analysis Year	Peak Daily Train Roundtrips		
	Proposed Project	No Project	Reduced Project
2016	6	N/A	6
2023	8	N/A	6
2035	8	N/A	6
2046	8	N/A	6

Note: Peak day locomotive trips were assumed to be equivalent to the average daily trips due to the physical constraints on the number of train trips in a single day that the facility can accommodate. Average day train roundtrips were estimated by dividing the annual roundtrips by 360 work days per year and rounding up to the nearest whole number.

**Table C1.2-7. Truck Trips and Mileage for SCIG Project**

<b>Analysis Year</b>	<b>Annual Round Trips</b>	<b>Annual Off-site VMT</b>
2016	726,360	7,769,503
2023	997,500	10,272,242
2035	997,500	9,873,498
2046	997,500	10,669,757

Source: Iteris, 2011.



**Table C1.2-8. On-Road Truck Operational Data for SCIG Proposed Project**

<b>Activity by Year</b>	<b>Idling Time per Round Trip (hrs)</b>	<b>Miles/Trip</b>	<b>Idling Hours / Year</b>	<b>Miles/Year</b>
<b>On-site</b>				
Year 2016	0.33	1.79	242,120	1,299,791
Year 2023	0.33	1.79	332,500	1,784,986
Year 2035	0.33	1.79	332,500	1,784,986
Year 2046	0.33	1.79	332,500	1,784,986
<b>Ingress</b>				
Year 2016	0.03	0.96	24,212	693,791
Year 2023	0.03	0.96	33,250	952,774
Year 2035	0.03	0.96	33,250	952,774
Year 2046	0.03	0.96	33,250	952,774
<b>Egress</b>				
Year 2016	0.03	1.12	24,212	815,027
Year 2023	0.03	1.12	33,250	1,119,266
Year 2035	0.03	1.12	33,250	1,119,266
Year 2046	0.03	1.12	33,250	1,119,266
<b>Off-Site</b>				
Year 2016	--	--	--	7,769,503
Year 2023	--	--	--	10,272,242
Year 2035	--	--	--	9,873,498
Year 2046	--	--	--	10,669,757

Source: BNSF

**Table C1.2-9. On-Road Truck Emission Factors - SCIG Drayage Truck Fleet - Proposed Project**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)							
		VOC	CO	NOx	SOx	PM10	PM2.5	DPM10	DPM2.5
<b>Project Year 2016</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	4.62	9.08	17.77	0.04	11.79	1.75	0.12	0.11
On-road Truck Transport	10	2.52	5.44	13.32	0.03	11.78	1.74	0.11	0.10
On-road Truck Transport	15	1.21	3.12	10.15	0.03	11.77	1.74	0.10	0.10
On-road Truck Transport	20	0.71	2.17	8.28	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	25	0.62	2.06	7.44	0.02	11.76	1.72	0.09	0.08
On-road Truck Transport	30	0.54	1.99	6.74	0.02	11.76	1.73	0.09	0.09
On-road Truck Transport	35	0.47	1.96	6.17	0.02	11.77	1.73	0.10	0.09
On-road Truck Transport	40	0.41	1.97	5.73	0.02	11.78	1.74	0.11	0.10
On-road Truck Transport	45	0.37	2.01	5.43	0.02	11.79	1.75	0.12	0.11
On-road Truck Transport	50	0.33	2.09	5.26	0.02	11.80	1.77	0.14	0.13
On-road Truck Transport	55	0.31	2.21	5.22	0.02	11.82	1.78	0.16	0.14
On-road Truck Transport	60	0.29	2.37	5.32	0.02	11.85	1.81	0.18	0.17
On-road Truck Transport	65	0.29	2.56	5.55	0.02	11.88	1.83	0.21	0.19
<b>Project Year 2023</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	3.20	6.35	9.81	0.04	11.79	1.76	0.13	0.12
On-road Truck Transport	10	1.74	3.81	7.36	0.03	11.78	1.75	0.12	0.11
On-road Truck Transport	15	0.84	2.18	5.61	0.03	11.77	1.74	0.11	0.10
On-road Truck Transport	20	0.49	1.52	4.57	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	25	0.43	1.44	4.11	0.02	11.76	1.73	0.09	0.09
On-road Truck Transport	30	0.37	1.39	3.72	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	35	0.33	1.37	3.41	0.02	11.77	1.73	0.10	0.09
On-road Truck Transport	40	0.29	1.38	3.17	0.02	11.78	1.74	0.11	0.10
On-road Truck Transport	45	0.25	1.41	3.00	0.02	11.79	1.75	0.12	0.11
On-road Truck Transport	50	0.23	1.46	2.90	0.02	11.81	1.77	0.14	0.13
On-road Truck Transport	55	0.21	1.55	2.88	0.02	11.83	1.79	0.16	0.15
On-road Truck Transport	60	0.20	1.66	2.94	0.02	11.85	1.81	0.18	0.17
On-road Truck Transport	65	0.20	1.79	3.07	0.02	11.88	1.83	0.21	0.20
<b>Project Year 2035</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	3.14	6.23	9.96	0.04	11.79	1.76	0.13	0.12
On-road Truck Transport	10	1.71	3.73	7.47	0.03	11.78	1.75	0.12	0.11
On-road Truck Transport	15	0.82	2.14	5.69	0.03	11.77	1.74	0.11	0.10
On-road Truck Transport	20	0.48	1.49	4.64	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	25	0.42	1.41	4.17	0.02	11.76	1.73	0.09	0.09
On-road Truck Transport	30	0.37	1.37	3.78	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	35	0.32	1.34	3.46	0.02	11.77	1.73	0.10	0.09
On-road Truck Transport	40	0.28	1.35	3.21	0.02	11.78	1.74	0.11	0.10
On-road Truck Transport	45	0.25	1.38	3.04	0.02	11.79	1.75	0.12	0.11
On-road Truck Transport	50	0.23	1.43	2.95	0.02	11.81	1.77	0.14	0.13
On-road Truck Transport	55	0.21	1.52	2.93	0.02	11.83	1.79	0.16	0.15
On-road Truck Transport	60	0.20	1.62	2.98	0.02	11.85	1.81	0.18	0.17
On-road Truck Transport	65	0.20	1.76	3.11	0.02	11.88	1.83	0.21	0.19
<b>Project Year 2046</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	3.11	6.18	9.89	0.04	11.79	1.75	0.12	0.11
On-road Truck Transport	10	1.70	3.70	7.41	0.03	11.78	1.74	0.11	0.10
On-road Truck Transport	15	0.81	2.12	5.65	0.03	11.77	1.74	0.10	0.10
On-road Truck Transport	20	0.48	1.47	4.61	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	25	0.42	1.40	4.14	0.02	11.76	1.72	0.09	0.08
On-road Truck Transport	30	0.36	1.35	3.75	0.02	11.76	1.73	0.09	0.09
On-road Truck Transport	35	0.32	1.33	3.43	0.02	11.77	1.73	0.10	0.09
On-road Truck Transport	40	0.28	1.34	3.19	0.02	11.77	1.74	0.11	0.10
On-road Truck Transport	45	0.25	1.37	3.02	0.02	11.79	1.75	0.12	0.11
On-road Truck Transport	50	0.22	1.42	2.93	0.02	11.80	1.76	0.14	0.13
On-road Truck Transport	55	0.21	1.50	2.91	0.02	11.82	1.78	0.16	0.14
On-road Truck Transport	60	0.20	1.61	2.96	0.02	11.85	1.81	0.18	0.17
On-road Truck Transport	65	0.20	1.74	3.09	0.02	11.88	1.83	0.21	0.19

Notes:

- (1) EMFAC2007 v2.3 with modified fleet age distribution based on Port-wide inventory (Starcrest, 2009)
- (2) Emission factors incorporated the SPBP Clean Truck Program and California Statewide Bus and Truck Regulation.
- (3) Year 2046 uses 2040 emission factors, EMFAC 2007 only calculates emissions factors to 2040.
- (4) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-10. Annual Truck Emissions for SCIG - Proposed Project**

Project Year - Mode		Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10 <sup>2</sup>	PM2.5 <sup>2</sup>
<b>On-Site <sup>1</sup></b>							
<b>2016</b>	Idling	2.45	13.27	39.56	0.02	0.04	0.03
	Driving	3.73	9.66	31.41	0.08	36.45	5.37
	<b>Subtotal</b>	<b>6.18</b>	<b>22.93</b>	<b>70.97</b>	<b>0.10</b>	<b>36.48</b>	<b>5.41</b>
<b>2023</b>	Idling	3.37	18.22	54.33	0.03	0.05	0.04
	Driving	3.55	9.28	23.83	0.11	50.05	7.38
	<b>Subtotal</b>	<b>6.92</b>	<b>27.50</b>	<b>78.16</b>	<b>0.13</b>	<b>50.10</b>	<b>7.43</b>
<b>2035</b>	Idling	3.37	18.22	54.33	0.03	0.05	0.04
	Driving	3.48	9.10	24.17	0.11	50.05	7.38
	<b>Subtotal</b>	<b>6.85</b>	<b>27.32</b>	<b>78.50</b>	<b>0.13</b>	<b>50.10</b>	<b>7.43</b>
<b>2046</b>	Idling	3.37	18.22	54.33	0.03	0.05	0.04
	Driving	3.45	9.03	24.00	0.11	50.05	7.37
	<b>Subtotal</b>	<b>6.82</b>	<b>27.25</b>	<b>78.32</b>	<b>0.13</b>	<b>50.09</b>	<b>7.42</b>
<b>Off-Site</b>							
<b>2016</b>	Driving	4.68	17.89	58.01	0.16	9.05	1.49
<b>2023</b>	Driving	4.27	16.62	42.34	0.21	11.99	1.99
<b>2035</b>	Driving	4.20	15.88	41.93	0.20	11.52	1.91
<b>2046</b>	Driving	4.12	15.69	41.35	0.20	11.50	1.89

Notes:

(1) On-site driving emissions are calculated with 15 mph emission factors.

(2) Paved road dust emissions are included in the PM10 and PM2.5 calculations.

**Table C1.2-11. Peak Daily Truck Emissions for SCIG - Proposed Project**

Project Year - Mode		Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10 <sup>2</sup>	PM2.5 <sup>2</sup>
<b>On-Site <sup>1</sup></b>							
<b>2016</b>	Idling	15.24	82.53	246.06	0.13	0.22	0.20
	Driving	23.22	60.10	195.36	0.48	226.69	33.42
	<b>Subtotal</b>	<b>38.47</b>	<b>142.63</b>	<b>441.42</b>	<b>0.61</b>	<b>226.91</b>	<b>33.62</b>
<b>2023</b>	Idling	20.93	113.34	337.91	0.17	0.30	0.28
	Driving	22.08	57.73	148.23	0.66	311.34	45.92
	<b>Subtotal</b>	<b>43.02</b>	<b>171.07</b>	<b>486.14</b>	<b>0.83</b>	<b>311.64</b>	<b>46.20</b>
<b>2035</b>	Idling	20.93	113.34	337.91	0.17	0.30	0.28
	Driving	21.66	56.62	150.37	0.66	311.34	45.92
	<b>Subtotal</b>	<b>42.59</b>	<b>169.96</b>	<b>488.28</b>	<b>0.83</b>	<b>311.64</b>	<b>46.20</b>
<b>2046</b>	Idling	20.93	113.34	337.91	0.17	0.30	0.28
	Driving	21.47	56.14	149.26	0.66	311.28	45.87
	<b>Subtotal</b>	<b>42.41</b>	<b>169.48</b>	<b>487.17</b>	<b>0.83</b>	<b>311.58</b>	<b>46.15</b>
<b>Off-Site</b>							
<b>2016</b>	Driving	29.14	111.26	360.84	0.98	56.29	9.25
<b>2023</b>	Driving	26.55	103.37	263.38	1.30	74.55	12.36
<b>2035</b>	Driving	26.09	98.75	260.80	1.26	71.64	11.86
<b>2046</b>	Driving	25.60	97.58	257.22	1.26	71.53	11.76
Notes:							
(1) On-site driving emissions are calculated with 15 mph emission factors.							
(2) Paved road dust emissions are included in the PM10 and PM2.5 calculations.							

**Table C1.2-12. Summary of Annual Truck Emissions for SCIG - Proposed Project**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	10.9	40.8	129.0	0.3	45.5	6.9
2023	11.2	44.1	120.5	0.3	62.1	9.4
2035	11.0	43.2	120.4	0.3	61.6	9.3
2046	10.9	42.9	119.7	0.3	61.6	9.3

**Table C1.2-13. Summary of Peak Daily Truck Emissions for SCIG - Proposed Project**

<b>Analysis Year</b>	<b>Emissions (lb/day)</b>					
	<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
<b>2016</b>	67.6	253.9	802.3	1.6	283.2	42.9
<b>2023</b>	69.6	274.4	749.5	2.1	386.2	58.6
<b>2035</b>	68.7	268.7	749.1	2.1	383.3	58.1
<b>2046</b>	68.0	267.1	744.4	2.1	383.1	57.9

**Table C1.2-14. Worker Commute Emission Factors for SCIG - Proposed Project**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Project Year 2016</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Travel	5	0.17	2.21	0.17	0.01	1.65	0.16
On-road Travel	10	0.11	1.96	0.15	0.01	1.63	0.15
On-road Travel	15	0.08	1.76	0.13	0.01	1.62	0.14
On-road Travel	20	0.06	1.59	0.12	0.00	1.61	0.13
On-road Travel	25	0.05	1.45	0.11	0.00	1.61	0.13
On-road Travel	30	0.04	1.33	0.10	0.00	1.60	0.12
On-road Travel	35	0.03	1.23	0.10	0.00	1.60	0.12
On-road Travel	40	0.03	1.14	0.10	0.00	1.60	0.12
On-road Travel	45	0.03	1.07	0.10	0.00	1.60	0.12
On-road Travel	50	0.03	1.01	0.10	0.00	1.60	0.12
On-road Travel	55	0.03	0.97	0.10	0.00	1.60	0.12
On-road Travel	60	0.03	0.93	0.10	0.00	1.60	0.12
On-road Travel	65	0.03	0.92	0.11	0.00	1.60	0.12
<b>Project Year 2023</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Travel	5	0.10	1.30	0.10	0.01	1.65	0.17
On-road Travel	10	0.06	1.17	0.09	0.01	1.63	0.15
On-road Travel	15	0.04	1.06	0.08	0.01	1.62	0.14
On-road Travel	20	0.03	0.97	0.07	0.00	1.61	0.13
On-road Travel	25	0.02	0.89	0.06	0.00	1.61	0.13
On-road Travel	30	0.02	0.82	0.06	0.00	1.60	0.12
On-road Travel	35	0.02	0.75	0.06	0.00	1.60	0.12
On-road Travel	40	0.01	0.70	0.05	0.00	1.60	0.12
On-road Travel	45	0.01	0.65	0.05	0.00	1.60	0.12
On-road Travel	50	0.01	0.61	0.05	0.00	1.60	0.12
On-road Travel	55	0.01	0.57	0.06	0.00	1.60	0.12
On-road Travel	60	0.02	0.54	0.06	0.00	1.60	0.12
On-road Travel	65	0.02	0.52	0.06	0.00	1.60	0.12
<b>Project Year 2035</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Travel	5	0.06	0.81	0.06	0.01	1.65	0.17
On-road Travel	10	0.04	0.74	0.05	0.01	1.63	0.15
On-road Travel	15	0.03	0.68	0.05	0.01	1.62	0.14
On-road Travel	20	0.02	0.62	0.04	0.00	1.61	0.13
On-road Travel	25	0.01	0.57	0.04	0.00	1.61	0.13
On-road Travel	30	0.01	0.53	0.04	0.00	1.60	0.12
On-road Travel	35	0.01	0.49	0.03	0.00	1.60	0.12
On-road Travel	40	0.01	0.45	0.03	0.00	1.60	0.12
On-road Travel	45	0.01	0.42	0.03	0.00	1.60	0.12
On-road Travel	50	0.01	0.39	0.03	0.00	1.60	0.12
On-road Travel	55	0.01	0.37	0.03	0.00	1.60	0.12
On-road Travel	60	0.01	0.34	0.03	0.00	1.60	0.12
On-road Travel	65	0.01	0.32	0.03	0.00	1.60	0.12
<b>Project Year 2046</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Travel	5	0.05	0.74	0.05	0.01	1.65	0.17
On-road Travel	10	0.03	0.68	0.05	0.01	1.63	0.15
On-road Travel	15	0.02	0.62	0.04	0.01	1.62	0.14
On-road Travel	20	0.02	0.57	0.04	0.00	1.61	0.13
On-road Travel	25	0.01	0.52	0.03	0.00	1.61	0.13
On-road Travel	30	0.01	0.48	0.03	0.00	1.60	0.12
On-road Travel	35	0.01	0.45	0.03	0.00	1.60	0.12
On-road Travel	40	0.01	0.41	0.03	0.00	1.60	0.12
On-road Travel	45	0.01	0.38	0.03	0.00	1.60	0.12
On-road Travel	50	0.01	0.36	0.03	0.00	1.60	0.12
On-road Travel	55	0.01	0.33	0.03	0.00	1.60	0.12
On-road Travel	60	0.01	0.31	0.03	0.00	1.60	0.12
On-road Travel	65	0.01	0.29	0.03	0.00	1.60	0.12

Notes:

- (1) EMFAC2007 v2.3 with SCAQMD default age distributions.
- (2) Year 2046 uses 2040 emission factors, EMFAC 2007 only calculates emission factors to 2040.
- (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-15. Annual Worker Commute Emissions for SCIG - Proposed Project**

Project Scenario - Mode	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>On-Site</b>						
<b>Project Year 2016</b>						
Year 2016 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2016 - Driving	0.00	0.08	0.01	0.00	0.07	0.01
<b>Subtotal</b>	<b>0.00</b>	<b>0.08</b>	<b>0.01</b>	<b>0.00</b>	<b>0.07</b>	<b>0.01</b>
<b>Project Year 2023</b>						
Year 2023 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2023 - Driving	0.00	0.09	0.01	0.00	0.12	0.01
<b>Subtotal</b>	<b>0.00</b>	<b>0.09</b>	<b>0.01</b>	<b>0.00</b>	<b>0.12</b>	<b>0.01</b>
<b>Project Year 2035</b>						
Year 2035 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2035 - Driving	0.00	0.06	0.00	0.00	0.12	0.01
<b>Subtotal</b>	<b>0.00</b>	<b>0.06</b>	<b>0.00</b>	<b>0.00</b>	<b>0.12</b>	<b>0.01</b>
<b>Project Year 2046</b>						
Year 2046 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2046 - Driving	0.00	0.05	0.00	0.00	0.12	0.01
<b>Subtotal</b>	<b>0.00</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.12</b>	<b>0.01</b>
<b>Off-Site</b>						
<b>Project Year 2016</b>	0.09	3.06	0.26	0.01	2.32	0.20
<b>Project Year 2023</b>	0.09	3.32	0.27	0.01	4.17	0.35
<b>Project Year 2035</b>	0.05	2.16	0.15	0.02	4.18	0.35
<b>Project Year 2046</b>	0.05	1.97	0.14	0.01	4.17	0.33
Notes:						
(1) On-site driving emissions are calculated with 10 mph emission factors.						
(2) Paved road dust emissions are included in the PM 10 and PM 2.5 calculations.						



**Table C1.2-16. Peak Daily Worker Commute Emissions for SCIG - Proposed Project**

Project Scenario - Mode	Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>On-Site</b>						
<b>Project Year 2016</b>						
Year 2016 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2016 - Driving	0.03	0.45	0.03	0.00	0.38	0.03
<b>Subtotal</b>	<b>0.03</b>	<b>0.45</b>	<b>0.03</b>	<b>0.00</b>	<b>0.38</b>	<b>0.03</b>
<b>Project Year 2023</b>						
Year 2023 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2023 - Driving	0.03	0.49	0.04	0.00	0.68	0.06
<b>Subtotal</b>	<b>0.03</b>	<b>0.49</b>	<b>0.04</b>	<b>0.00</b>	<b>0.68</b>	<b>0.06</b>
<b>Project Year 2035</b>						
Year 2035 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2035 - Driving	0.02	0.31	0.02	0.00	0.68	0.06
<b>Subtotal</b>	<b>0.02</b>	<b>0.31</b>	<b>0.02</b>	<b>0.00</b>	<b>0.68</b>	<b>0.06</b>
<b>Project Year 2046</b>						
Year 2046 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2046 - Driving	0.01	0.28	0.02	0.00	0.68	0.06
<b>Subtotal</b>	<b>0.01</b>	<b>0.28</b>	<b>0.02</b>	<b>0.00</b>	<b>0.68</b>	<b>0.06</b>
<b>Off-Site</b>						
<b>Project Year 2016</b>	0.52	16.98	1.46	0.05	12.88	1.09
<b>Project Year 2023</b>	0.50	18.43	1.47	0.08	23.19	1.95
<b>Project Year 2035</b>	0.29	12.01	0.86	0.08	23.19	1.96
<b>Project Year 2046</b>	0.25	10.95	0.78	0.08	23.19	1.86
Notes:						
(1) On-site driving emissions are calculated with 10 mph emission factors.						
(2) Paved road dust emissions are included in the PM 10 and PM 2.5 calculations.						

**Table C1.2-17. Summary of Annual Worker Commute Emissions for SCIG - Proposed Project**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.10	3.14	0.27	0.01	2.39	0.20
2023	0.09	3.40	0.27	0.02	4.30	0.36
2035	0.05	2.22	0.16	0.02	4.30	0.36
2046	0.05	2.02	0.14	0.02	4.30	0.35

Notes:  
(1) On-site driving emissions estimates assume travel speed of 10mph.  
(2) PM10 and PM2.5 include emissions from exahust, tire wear, brake wear, and road dust.

**Table C1.2-18. Summary of Peak Daily Worker Commute Emissions for SCIG - Proposed Project**

Analysis Year	Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.54	17.44	1.50	0.05	13.26	1.12
2023	0.52	18.92	1.51	0.09	23.87	2.02
2035	0.30	12.32	0.88	0.09	23.87	2.02
2046	0.27	11.24	0.80	0.09	23.87	1.92

Notes:  
(1) On-site driving emissions estimates assume travel speed of 10mph.  
(2) PM10 and PM2.5 include emissions from exhaust, tire wear, brake wear, and road dust.

**Table C1.2-19. SCIG Train Trips - Proposed Project**

Year	Round Trips	
	Annual	Peak Day
2016	2,160	6
2023	2,880	8
2035	2,880	8
2046	2,880	8

**Table C1.2-20. Emission Factors for SCIG Switcher Locomotives - Proposed Project**

Notch Setting	Emission Factors (g/hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>All Years</b>						
Idle	10.25	51.70	157.90	0.01	6.30	5.80
Moving	90.80	1,474.40	2,423.70	0.30	52.90	48.67
Notes: (1) Assume notch setting of 4 for all switcher movement. (2) Assume sulfur content of 15ppm for PM emission factors estimates. (3) Emission factors provided by Southwest Research Institute.						

**Table C1.2-21. Emission Factors for SCIG Linehaul Locomotives – Proposed Project**

Notch Setting	Emission Factors (g/hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>						
DB	73.3	179.1	863.9	0.6	36.4	33.5
Idle	25.0	39.7	371.6	0.3	8.3	7.6
1	62.2	156.8	1260.2	1.3	50.5	46.4
2	107.9	265.8	3073.9	2.8	107.0	98.5
3	213.3	672.9	7147.8	5.8	188.3	173.3
4	219.4	1043.8	9203.5	8.0	238.0	219.0
5	289.5	907.8	10160.3	11.0	283.6	260.9
6	365.6	955.4	14182.9	14.1	280.3	257.9
7	423.0	1292.8	16786.5	17.4	283.7	261.0
8	522.7	1603.8	19596.7	21.4	334.3	307.5
<b>Year 2023</b>						
DB	47.8	163.0	574.1	0.6	18.6	17.1
Idle	21.3	45.3	310.7	0.3	6.8	6.2
1	40.5	149.3	969.8	1.3	22.8	20.9
2	67.3	264.1	2193.7	2.8	48.3	44.4
3	147.7	676.1	5472.7	5.8	83.6	76.9
4	141.8	1135.1	7147.0	8.1	104.7	96.3
5	193.0	1061.0	6947.4	11.1	155.7	143.3
6	237.7	1058.8	9964.8	14.2	148.5	136.6
7	272.9	1383.3	11805.5	17.5	143.2	131.7
8	336.1	1673.8	14028.8	21.5	157.7	145.1
<b>Year 2035</b>						
DB	17.3	128.3	239.5	0.6	7.2	6.7
Idle	6.4	32.0	114.5	0.3	1.6	1.5
1	15.6	143.7	388.4	1.4	10.6	9.8
2	28.3	243.2	932.9	2.8	22.5	20.7
3	54.6	617.1	1988.2	6.0	39.5	36.3
4	55.4	845.0	2641.7	8.3	49.8	45.8
5	75.2	549.1	3182.1	11.2	59.0	54.3
6	96.4	603.6	4460.2	14.4	57.9	53.2
7	113.4	868.3	5294.7	17.7	59.1	54.4
8	142.0	1121.1	6169.0	21.7	69.0	63.5
<b>Year 2046</b>						
DB	10.2	120.6	136.6	0.6	4.0	3.7
Idle	3.8	30.4	68.0	0.3	0.7	0.7
1	9.8	141.9	234.6	1.4	6.6	6.1
2	18.8	239.5	565.2	2.8	13.9	12.8
3	34.5	607.5	1103.2	6.1	24.5	22.5
4	35.2	806.4	1502.8	8.3	30.8	28.3
5	48.7	480.2	1987.9	11.2	34.4	31.7
6	63.8	538.5	2781.7	14.4	33.6	30.9
7	76.2	791.5	3308.6	17.8	35.3	32.5
8	96.8	1035.6	3837.7	21.7	41.4	38.1
Notes:						
(1) Assume sulfur content of 15ppm for PM EF estimates.						
(2) Line-haul locomotive fleets for future years based on projections from 2005 CARB Railroad Statewide Agreement and EPA Regulatory Impact Analysis for the Locomotive Emissions Rulemaking						

**Table C1.2-22. Peak Emission Factors for SCIG Linehaul Locomotives – Proposed Project**

Notch Setting	Emission Factors (g/hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>						
DB	149.9	196.8	1010.3	0.6	50.7	46.6
Idle	102.2	95.3	927.9	0.4	33.8	31.1
1	132.7	139.2	2510.8	1.1	56.1	51.6
2	212.9	310.1	4806.2	2.5	117.4	108.0
3	548.9	830.6	13850.8	5.3	193.2	177.7
4	462.8	2136.1	18663.0	7.6	233.3	214.7
5	682.6	2801.2	13662.6	11.0	548.0	504.2
6	817.6	2502.2	21113.3	13.8	483.1	444.4
7	938.6	2932.0	25088.8	17.0	437.9	402.8
8	1164.8	3249.7	31154.3	21.3	403.9	371.5
<b>Year 2023</b>						
DB	149.9	196.8	1010.3	0.6	50.7	46.6
Idle	102.2	95.3	927.9	0.4	33.8	31.1
1	132.7	139.2	2510.8	1.1	56.1	51.6
2	212.9	310.1	4806.2	2.5	117.4	108.0
3	548.9	830.6	13850.8	5.3	193.2	177.7
4	462.8	2136.1	18663.0	7.6	233.3	214.7
5	682.6	2801.2	13662.6	11.0	548.0	504.2
6	817.6	2502.2	21113.3	13.8	483.1	444.4
7	938.6	2932.0	25088.8	17.0	437.9	402.8
8	1164.8	3249.7	31154.3	21.3	403.9	371.5
<b>Year 2035</b>						
DB	93.7	196.8	845.6	0.6	31.7	29.1
Idle	63.9	95.3	776.6	0.4	21.1	19.5
1	82.9	139.2	2101.5	1.1	35.1	32.3
2	133.1	310.1	4022.8	2.5	73.3	67.5
3	343.1	830.6	11593.1	5.3	120.7	111.1
4	289.2	2136.1	15620.9	7.6	145.8	134.2
5	426.6	2801.2	11435.6	11.0	342.5	315.1
6	511.0	2502.2	17671.9	13.8	301.9	277.8
7	586.6	2932.0	20999.3	17.0	273.7	251.8
8	728.0	3249.7	26076.2	21.3	252.4	232.2
<b>Year 2046</b>						
DB	179.3	461.4	2035.5	0.7	55.3	50.8
Idle	31.8	49.4	375.9	0.3	10.6	9.7
1	122.0	243.5	1538.4	1.2	38.8	35.7
2	172.7	368.0	4671.8	2.5	87.6	80.6
3	351.5	895.5	14368.6	5.0	160.1	147.3
4	413.9	1505.0	16071.1	6.9	212.0	195.0
5	457.6	1788.4	13854.8	9.8	235.7	216.9
6	540.0	2014.4	18020.0	12.7	273.7	251.8
7	567.3	2713.7	20886.3	15.8	245.1	225.5
8	634.5	3356.1	23912.8	19.9	346.6	318.9
Notes:						
(1) Assume sulfur content of 15ppm for PM EF estimates.						
(2) Line-haul locomotive fleets for future years based on projections from 2005 CARB Railroad Statewide Agreement and EPA Regulatory Impact Analysis for the Locomotive Emissions Rulemaking						

**Table C1.2-23. Annual Locomotive Emissions for SCIG - Proposed Project**

Analysis Year	Source Activity	Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>On-Site</b>							
2016	Line Haul Locomotive	0.48	1.18	11.34	0.01	0.30	0.27
	Switcher	0.03	0.41	0.70	0.00	0.02	0.01
	<b>Subtotal</b>	<b>0.51</b>	<b>1.59</b>	<b>12.04</b>	<b>0.01</b>	<b>0.31</b>	<b>0.29</b>
2023	Line Haul Locomotive	0.51	1.67	11.44	0.01	0.22	0.21
	Switcher	0.03	0.41	0.70	0.00	0.02	0.01
	<b>Subtotal</b>	<b>0.54</b>	<b>2.08</b>	<b>12.14</b>	<b>0.01</b>	<b>0.24</b>	<b>0.22</b>
2035	Line Haul Locomotive	0.17	1.23	4.57	0.01	0.08	0.07
	Switcher	0.03	0.41	0.70	0.00	0.02	0.01
	<b>Subtotal</b>	<b>0.20</b>	<b>1.65</b>	<b>5.26</b>	<b>0.01</b>	<b>0.10</b>	<b>0.09</b>
2046	Line Haul Locomotive	0.11	1.17	2.72	0.01	0.05	0.04
	Switcher	0.03	0.41	0.70	0.00	0.02	0.01
	<b>Subtotal</b>	<b>0.14</b>	<b>1.58</b>	<b>3.42</b>	<b>0.01</b>	<b>0.06</b>	<b>0.06</b>
<b>Off-Site</b>							
2016	East Alameda Corridor	0.85	2.60	30.33	0.03	0.60	0.55
	West Alameda Corridor	1.56	3.88	35.86	0.03	1.06	0.98
	Alameda Corridor to SCAB	8.39	25.01	287.01	0.29	5.94	5.46
	<b>Subtotal</b>	<b>10.80</b>	<b>31.48</b>	<b>353.20</b>	<b>0.36</b>	<b>7.60</b>	<b>6.99</b>
2023	East Alameda Corridor	0.74	3.64	28.96	0.04	0.39	0.36
	West Alameda Corridor	1.47	5.28	35.91	0.04	0.72	0.67
	Alameda Corridor to SCAB	7.35	35.00	275.04	0.39	3.86	3.55
	<b>Subtotal</b>	<b>9.56</b>	<b>43.91</b>	<b>339.91</b>	<b>0.48</b>	<b>4.97</b>	<b>4.57</b>
2035	East Alameda Corridor	0.30	2.44	12.36	0.04	0.16	0.15
	West Alameda Corridor	0.52	4.21	13.99	0.04	0.29	0.27
	Alameda Corridor to SCAB	2.91	23.82	116.46	0.39	1.61	1.48
	<b>Subtotal</b>	<b>3.72</b>	<b>30.46</b>	<b>142.80</b>	<b>0.48</b>	<b>2.06</b>	<b>1.90</b>
2046	East Alameda Corridor	0.20	2.26	7.58	0.04	0.10	0.09
	West Alameda Corridor	0.32	4.04	8.24	0.04	0.17	0.16
	Alameda Corridor to SCAB	1.92	22.15	71.23	0.39	0.96	0.88
	<b>Subtotal</b>	<b>2.43</b>	<b>28.44</b>	<b>87.05</b>	<b>0.48</b>	<b>1.23</b>	<b>1.13</b>



**Table C1.2-24. Peak Daily Locomotive Emissions for SCIG - Proposed Project**

Analysis Year	Source Activity	Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
	<b>On-Site</b>						
2016	Line Haul Locomotive	8.73	12.60	119.19	0.06	3.35	3.08
	Switcher	0.14	2.29	3.88	0.00	0.09	0.08
	<b>Subtotal</b>	<b>8.88</b>	<b>14.89</b>	<b>123.07</b>	<b>0.06</b>	<b>3.44</b>	<b>3.16</b>
2023	Line Haul Locomotive	11.64	16.80	158.91	0.08	4.47	4.11
	Switcher	0.15	2.29	3.88	0.00	0.09	0.08
	<b>Subtotal</b>	<b>11.80</b>	<b>19.09</b>	<b>162.80</b>	<b>0.08</b>	<b>4.56</b>	<b>4.19</b>
2035	Line Haul Locomotive	7.28	16.80	133.01	0.08	2.79	2.57
	Switcher	0.15	2.29	3.88	0.00	0.09	0.08
	<b>Subtotal</b>	<b>7.43</b>	<b>19.09</b>	<b>136.89</b>	<b>0.08</b>	<b>2.88</b>	<b>2.65</b>
2046	Line Haul Locomotive	5.91	14.51	119.21	0.07	2.29	2.11
	Switcher	0.15	2.29	3.88	0.00	0.09	0.08
	<b>Subtotal</b>	<b>6.06</b>	<b>16.80</b>	<b>123.09</b>	<b>0.07</b>	<b>2.38</b>	<b>2.19</b>
	<b>Off-Site</b>						
2016	East Alameda Corridor	10.88	30.14	274.71	0.18	4.53	4.16
	West Alameda Corridor	24.08	34.80	379.22	0.18	9.53	8.77
	Alameda Corridor to SCAB	110.31	285.77	2634.03	1.63	46.19	42.49
	<b>Subtotal</b>	<b>145.26</b>	<b>350.71</b>	<b>3287.96</b>	<b>1.98</b>	<b>60.25</b>	<b>55.43</b>
2023	East Alameda Corridor	14.50	40.18	366.28	0.23	6.03	5.55
	West Alameda Corridor	32.11	46.40	505.62	0.23	12.71	11.69
	Alameda Corridor to SCAB	147.08	381.02	3512.04	2.18	61.58	56.66
	<b>Subtotal</b>	<b>193.68</b>	<b>467.61</b>	<b>4383.94</b>	<b>2.65</b>	<b>80.33</b>	<b>73.90</b>
2035	East Alameda Corridor	9.06	40.18	306.58	0.23	3.77	3.47
	West Alameda Corridor	20.07	46.40	423.20	0.23	7.94	7.31
	Alameda Corridor to SCAB	91.92	381.02	2939.58	2.18	38.49	35.41
	<b>Subtotal</b>	<b>121.05</b>	<b>467.61</b>	<b>3669.36</b>	<b>2.65</b>	<b>50.20</b>	<b>46.19</b>
2046	East Alameda Corridor	6.58	12.52	203.71	0.23	3.77	3.47
	West Alameda Corridor	10.72	22.43	220.95	0.23	7.94	7.31
	Alameda Corridor to SCAB	63.95	122.85	1913.09	2.18	38.49	35.41
	<b>Subtotal</b>	<b>81.24</b>	<b>157.80</b>	<b>2337.75</b>	<b>2.65</b>	<b>50.20</b>	<b>46.19</b>

Note:

(1) Peak locomotive emissions were estimated assuming that all daily locomotive trips on the peak day were conducted by the lowest Tier level locomotive in the fleet mix for each analysis year.

**Table C1.2-25. Summary of Annual Locomotive Emissions for SCIG - Proposed Project**

<b>Analysis Year</b>	<b>Emissions (tons/year)</b>					
	<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
2016	11.30	33.07	365.24	0.37	7.91	7.28
2023	10.10	45.99	352.05	0.49	5.21	4.80
2035	3.92	32.11	148.07	0.49	2.16	1.99
2046	2.57	30.03	90.48	0.49	1.29	1.18

**Table C1.2-26. Summary of Peak Daily Locomotive Emissions for SCIG - Proposed Project**

<b>Analysis Year</b>	<b>Emissions (lbs/day)</b>					
	<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
2016	154.14	365.59	3411.03	2.04	63.68	58.59
2023	205.48	486.70	4546.74	2.72	84.88	78.09
2035	128.48	486.70	3806.25	2.72	53.08	48.84
2046	87.30	174.60	2460.84	2.72	52.59	48.38

**Table C1.2-27. Equipment Usage for SCIG Cargo Handling Equipment – Proposed Project**

<b>Equipment</b>	<b>HP</b>	<b>LF</b>	<b>Fuel</b>	<b>Hours/Unit</b>	<b>Quatity</b>	<b>Total hp-hr</b>
<b>Year 2016</b>						
Crane	160	0.43	D	1,632	2	522,240
TRU	34	0.53	D	0.3	1420	14,484
<b>Year 2023</b>						
Crane	160	0.43	D	1,632	2	522,240
TRU	34	0.53	D	0.3	1950	19,890
<b>Year 2035</b>						
Crane	160	0.43	D	1,632	2	522,240
TRU	34	0.53	D	0.3	1950	19,890
<b>Year 2046</b>						
Crane	160	0.43	D	1,632	2	522,240
TRU	34	0.53	D	0.3	1950	19,890

**Notes:**

- (1) Crane emissions are estimated using the ARB CHE Calculator; TRU emissions are estimated using CARB OFFROAD2007 Model.
- (2) All TRUs will be electrified on the SCIG site; emissions estimates assume 30 minutes running on diesel fuel between arrival on-site and plugging in to electrical outlets.
- (3) 0.13% of the container throughput at SCIG are TRUs

**Table C1.2-28. Emission Factors for SCIG Cargo Handling Equipment – Proposed Project**

Equipment	Emission Factors (g/hp-hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>						
Crane	0.05	2.70	0.27	0.06	0.01	0.01
TRU	0.65	5.17	4.68	0.01	0.15	0.14
<b>Year 2023</b>						
Crane	0.05	2.70	0.27	0.06	0.01	0.01
TRU	0.58	5.13	3.62	0.01	0.02	0.02
<b>Year 2035</b>						
Crane	0.05	2.70	0.27	0.06	0.01	0.01
TRU	0.58	5.13	3.57	0.01	0.02	0.02
<b>Year 2046</b>						
Crane	0.05	2.70	0.27	0.06	0.01	0.01
TRU	0.58	5.13	3.57	0.01	0.02	0.02
Notes:						
(1) Emission factors were estimated with the use of ARB CHE calculator						
(2) Year 2046 uses 2040 emission factors						

**Table C1.2-29. Annual Emissions for SCIG Cargo Handling Equipment – Proposed Project**

Equipment	HP	Emission (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>							
Crane	160	0.01	0.67	0.06	0.00	0.00	0.00
TRU	34	0.01	0.04	0.04	0.00	0.00	0.00
<b>Total</b>		<b>0.02</b>	<b>0.72</b>	<b>0.10</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Year 2023</b>							
Crane	160	0.01	0.72	0.07	0.00	0.00	0.00
TRU	34	0.01	0.06	0.04	0.00	0.00	0.00
<b>Total</b>		<b>0.02</b>	<b>0.77</b>	<b>0.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Year 2035</b>							
Crane	160	0.01	0.67	0.06	0.00	0.00	0.00
TRU	34	0.01	0.06	0.04	0.00	0.00	0.00
<b>Total</b>		<b>0.02</b>	<b>0.73</b>	<b>0.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Year 2046</b>							
Crane	160	0.01	0.74	0.07	0.00	0.00	0.00
TRU	34	0.01	0.06	0.04	0.00	0.00	0.00
<b>Total</b>		<b>0.02</b>	<b>0.80</b>	<b>0.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Table C1.2-30. Peak Daily Emissions for SCIG Cargo Handling Equipment – Proposed Project**

Equipment	HP	Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>							
Crane	160	0.06	3.74	0.35	0.01	0.01	0.01
TRU	34	1.46	11.67	10.57	0.02	0.34	0.31
<b>Total</b>		<b>1.52</b>	<b>15.41</b>	<b>10.93</b>	<b>0.03</b>	<b>0.35</b>	<b>0.32</b>
<b>Year 2023</b>							
Crane	160	0.07	3.97	0.37	0.01	0.01	0.01
TRU	34	1.81	15.91	11.21	0.03	0.07	0.06
<b>Total</b>		<b>1.88</b>	<b>19.88</b>	<b>11.59</b>	<b>0.03</b>	<b>0.08</b>	<b>0.08</b>
<b>Year 2035</b>							
Crane	160	0.06	3.74	0.35	0.01	0.01	0.01
TRU	34	1.81	15.91	11.06	0.03	0.05	0.05
<b>Total</b>		<b>1.87</b>	<b>19.65</b>	<b>11.41</b>	<b>0.03</b>	<b>0.06</b>	<b>0.06</b>
<b>Year 2046</b>							
Crane	160	0.07	4.11	0.38	0.01	0.01	0.01
TRU	34	1.81	15.91	11.06	0.03	0.05	0.05
<b>Total</b>		<b>1.89</b>	<b>20.01</b>	<b>11.44</b>	<b>0.03</b>	<b>0.07</b>	<b>0.06</b>

**Table C1.2-31. Annual Activity Data for SCIG Maintenance Equipment – Proposed Project**

<b>Equipment</b>	<b>Quantity</b>	<b>Model Year</b>	<b>Fuel Type</b>	<b>HP</b>	<b>Activity (hrs/yr)</b>	<b>Load Factor</b>
<b>All Years</b>						
Welder	2	1996	G	20	208	0.51
Air Compressor	1	1989	G	35	484	0.56
Source: BNSF						



**Table C1.2-32. Emission Factors for SCIG Maintenance Equipment – Proposed Project**

Equipment	HP	Emission Factors (g/hp-hr)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>							
Welder	20	6.84	268.19	4.53	0.01	3.60	3.31
Air Compressor	35	2.94	120.21	4.04	0.01	0.06	0.06
<b>Year 2023</b>							
Welder	20	6.74	266.89	4.57	0.01	3.60	3.31
Air Compressor	35	1.91	132.78	2.43	0.01	0.06	0.06
<b>Year 2035</b>							
Welder	20	6.73	266.68	4.56	0.01	3.60	3.31
Air Compressor	35	1.50	141.45	1.86	0.01	0.06	0.06
<b>Year 2046</b>							
Welder	20	6.73	266.59	4.56	0.01	3.60	3.31
Air Compressor	35	1.50	141.36	1.85	0.01	0.06	0.06

Notes:

(1) Emission factors were estimated with the use of ARB OFFROAD2007 model.

(2) Year 2046 uses 2040 emission factors

**Table C1.2-33. Annual Emissions for SCIG Maintenance Equipment – Proposed Project**

Equipment	HP	Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>							
Welder	20	0.03	1.25	0.02	0.00	0.02	0.02
Air Compressor	35	0.03	1.26	0.04	0.00	0.00	0.00
<b>Total</b>		<b>0.06</b>	<b>2.51</b>	<b>0.06</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>Year 2023</b>							
Welder	20	0.03	1.25	0.02	0.00	0.02	0.02
Air Compressor	35	0.02	1.39	0.03	0.00	0.00	0.00
<b>Total</b>		<b>0.05</b>	<b>2.64</b>	<b>0.05</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>Year 2035</b>							
Welder	20	0.03	1.25	0.02	0.00	0.02	0.02
Air Compressor	35	0.02	1.48	0.02	0.00	0.00	0.00
<b>Total</b>		<b>0.05</b>	<b>2.73</b>	<b>0.04</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>Year 2046</b>							
Welder	20	0.03	1.25	0.02	0.00	0.02	0.02
Air Compressor	35	0.02	1.48	0.02	0.00	0.00	0.00
<b>Total</b>		<b>0.05</b>	<b>2.73</b>	<b>0.04</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>

**Table C1.2-34. Peak Daily Emissions for SCIG Maintenance Equipment – Proposed Project**

Equipment	HP	Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>							
Welder	20	0.18	6.97	0.12	0.00	0.09	0.09
Air Compressor	35	0.17	6.98	0.23	0.00	0.00	0.00
<b>Total</b>		<b>0.35</b>	<b>13.95</b>	<b>0.35</b>	<b>0.00</b>	<b>0.10</b>	<b>0.09</b>
<b>Year 2023</b>							
Welder	20	0.18	6.94	0.12	0.00	0.09	0.09
Air Compressor	35	0.11	7.71	0.14	0.00	0.00	0.00
<b>Total</b>		<b>0.29</b>	<b>14.65</b>	<b>0.26</b>	<b>0.00</b>	<b>0.10</b>	<b>0.09</b>
<b>Year 2035</b>							
Welder	20	0.17	6.93	0.12	0.00	0.09	0.09
Air Compressor	35	0.09	8.22	0.11	0.00	0.00	0.00
<b>Total</b>		<b>0.26</b>	<b>15.15</b>	<b>0.23</b>	<b>0.00</b>	<b>0.10</b>	<b>0.09</b>
<b>Year 2046</b>							
Welder	20	0.17	6.93	0.12	0.00	0.09	0.09
Air Compressor	35	0.09	8.21	0.11	0.00	0.00	0.00
<b>Total</b>		<b>0.26</b>	<b>15.14</b>	<b>0.23</b>	<b>0.00</b>	<b>0.10</b>	<b>0.09</b>

**Table C1.2-35. Activity Data for SCIG Emergency Generator – Proposed Project**

<b>Equipment</b>	<b>Quantity</b>	<b>HP</b>	<b>Fuel Type</b>	<b>Annual Usage (hr/yr)</b>	<b>Peak Daily Usage (hr/day)</b>
<b>All Years</b>					
Emergency Generator	1	846	D	199	24

**Table C1.2-36. Emission Factors for SCIG Emergency Generator – Proposed Project**

Equipment	HP	Emission Factor (g/bhp-hr)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>All Years</b>							
Emergency Generator	846	0.13	2.60	0.50	0.00	0.02	0.02
Notes:							
(1) Emission factors assume Tier 4 generator.							
(2) SOx emission factor from OFFROAD2007							

**Table C1.2-37. Summary of Annual Emissions for SCIG Emergency Generator – Proposed Project**

Equipment	HP	Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>All Years</b>							
Emergency Generator	846	0.02	0.48	0.09	0.00	0.00	0.00
<b>Total</b>		<b>0.02</b>	<b>0.48</b>	<b>0.09</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Table C1.2-38. Summary of Peak Daily Emissions for SCIG Emergency Generator – Proposed Project**

Equipment	HP	Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>All Years</b>							
Emergency Generator	846	5.96	116.38	22.38	0.19	0.98	0.91
<b>Total</b>		<b>5.96</b>	<b>116.38</b>	<b>22.38</b>	<b>0.19</b>	<b>0.98</b>	<b>0.91</b>

**Table C1.2-39. Activity Data for SCIG Gasoline Service Trucks - Proposed Project**

<b>Project Year/Mode</b>	<b>Throughput</b>	<b>On-site Idle / Trip (hrs)</b>	<b>Avg On-site Distance (mi)</b>	<b>Idle Hr / Year</b>	<b>VMT / Year</b>
<b>All Years</b>					
Light Duty Gas Service Trucks	5,040	0.17	0.42	840	2116.8



**Table C1.2-40. Emission Factors for SCIG Gasoline Service Trucks - Proposed Project**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Project Year 2016</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.27	3.59	0.40	0.01	1.73	0.24
On-road Truck Transport	10	0.18	3.17	0.34	0.01	1.68	0.20
On-road Truck Transport	15	0.13	2.84	0.30	0.01	1.65	0.17
On-road Truck Transport	20	0.09	2.56	0.27	0.01	1.64	0.15
On-road Truck Transport	25	0.07	2.33	0.25	0.01	1.63	0.15
On-road Truck Transport	30	0.06	2.14	0.23	0.00	1.62	0.14
On-road Truck Transport	35	0.05	1.97	0.22	0.00	1.62	0.14
On-road Truck Transport	40	0.05	1.84	0.21	0.00	1.61	0.13
On-road Truck Transport	45	0.04	1.72	0.21	0.00	1.61	0.13
On-road Truck Transport	50	0.04	1.63	0.21	0.00	1.61	0.13
On-road Truck Transport	55	0.04	1.55	0.22	0.00	1.61	0.13
On-road Truck Transport	60	0.05	1.50	0.23	0.00	1.61	0.13
On-road Truck Transport	65	0.05	1.48	0.25	0.01	1.62	0.14
<b>Project Year 2023</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.18	2.41	0.25	0.01	1.74	0.25
On-road Truck Transport	10	0.12	2.17	0.21	0.01	1.69	0.20
On-road Truck Transport	15	0.08	1.96	0.19	0.01	1.66	0.17
On-road Truck Transport	20	0.06	1.79	0.17	0.01	1.64	0.16
On-road Truck Transport	25	0.05	1.63	0.15	0.01	1.63	0.15
On-road Truck Transport	30	0.04	1.50	0.14	0.00	1.62	0.14
On-road Truck Transport	35	0.03	1.39	0.14	0.00	1.62	0.14
On-road Truck Transport	40	0.03	1.28	0.13	0.00	1.61	0.13
On-road Truck Transport	45	0.03	1.20	0.13	0.00	1.61	0.13
On-road Truck Transport	50	0.03	1.12	0.13	0.00	1.61	0.13
On-road Truck Transport	55	0.03	1.06	0.13	0.00	1.61	0.13
On-road Truck Transport	60	0.03	1.00	0.14	0.00	1.62	0.14
On-road Truck Transport	65	0.03	0.96	0.15	0.01	1.62	0.14
<b>Project Year 2035</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.12	1.58	0.12	0.01	1.74	0.25
On-road Truck Transport	10	0.08	1.43	0.11	0.01	1.69	0.20
On-road Truck Transport	15	0.05	1.31	0.10	0.01	1.66	0.17
On-road Truck Transport	20	0.04	1.20	0.09	0.01	1.64	0.16
On-road Truck Transport	25	0.03	1.10	0.08	0.01	1.63	0.15
On-road Truck Transport	30	0.02	1.01	0.07	0.00	1.62	0.14
On-road Truck Transport	35	0.02	0.94	0.07	0.00	1.62	0.14
On-road Truck Transport	40	0.02	0.87	0.07	0.00	1.61	0.13
On-road Truck Transport	45	0.02	0.81	0.07	0.00	1.61	0.13
On-road Truck Transport	50	0.02	0.75	0.07	0.00	1.61	0.13
On-road Truck Transport	55	0.02	0.70	0.07	0.00	1.61	0.13
On-road Truck Transport	60	0.02	0.66	0.07	0.00	1.62	0.14
On-road Truck Transport	65	0.02	0.62	0.07	0.01	1.62	0.14
<b>Project Year 2046</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.11	1.43	0.10	0.01	1.74	0.25
On-road Truck Transport	10	0.07	1.31	0.09	0.01	1.69	0.20
On-road Truck Transport	15	0.05	1.20	0.08	0.01	1.66	0.17
On-road Truck Transport	20	0.04	1.10	0.07	0.01	1.64	0.16
On-road Truck Transport	25	0.03	1.01	0.07	0.01	1.63	0.15
On-road Truck Transport	30	0.02	0.93	0.06	0.00	1.62	0.14
On-road Truck Transport	35	0.02	0.86	0.06	0.00	1.62	0.14
On-road Truck Transport	40	0.02	0.80	0.06	0.00	1.61	0.13
On-road Truck Transport	45	0.01	0.74	0.06	0.00	1.61	0.13
On-road Truck Transport	50	0.01	0.69	0.06	0.00	1.61	0.13
On-road Truck Transport	55	0.02	0.64	0.06	0.00	1.61	0.13
On-road Truck Transport	60	0.02	0.60	0.06	0.00	1.62	0.14
On-road Truck Transport	65	0.02	0.57	0.06	0.01	1.62	0.14

Notes:

- (1) EMFAC2007 v2.3 with SCAB default age distributions.
- (2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.
- (3) Year 2046 uses 2040 emission factors.

**Table C1.2-41. Annual Gasoline Service Truck Emissions for SCIG - Proposed Project**

Project Scenario - Mode	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b><i>Project Year 2016</i></b>						
Year 2016 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2016 - Driving	0.00	0.01	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b><i>Project Year 2023</i></b>						
Year 2023 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2023 - Driving	0.00	0.01	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b><i>Project Year 2035</i></b>						
Year 2035 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2035 - Driving	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b><i>Project Year 2046</i></b>						
Year 2046 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2046 - Driving	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Notes:						
(1) On-site driving emissions are calculated with 10 mph emission factors.						
(2) Paved road dust emissions are included in the PM10 and PM2.5 calculations.						

**Table C1.2-42. Summary of Annual Gasoline Service Truck On-Site Emissions for SCIG - Proposed Project**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.00	0.01	0.00	0.00	0.00	0.00
2023	0.00	0.01	0.00	0.00	0.00	0.00
2035	0.00	0.00	0.00	0.00	0.00	0.00
2046	0.00	0.00	0.00	0.00	0.00	0.00

**Table C1.2-43. Summary of Peak Daily Gasoline Service Truck Emissions for SCIG  
- Proposed Project**

Analysis Year	Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.00	0.04	0.00	0.00	0.02	0.00
2023	0.00	0.03	0.00	0.00	0.02	0.00
2035	0.00	0.02	0.00	0.00	0.02	0.00
2046	0.00	0.02	0.00	0.00	0.02	0.00

**Table C1.2-44. Activity Data for SCIG Refueling Trucks - Proposed Project**

<b>Truck Type</b>	<b>Annual Throughput</b>	<b>Idle / Trip (hrs)</b>	<b>Average Distance (mi)</b>	<b>Idle Hr / Year</b>	<b>VMT / Year</b>
<b>Year 2016</b>					
<b>On-Site</b>					
Refueling Trucks for Diesel Fuel	683	0.17	0.25	114	171
Refueling Trucks for LNG Fuel	36	0.17	0.25	6	9
<b>Off-Site</b>					
Refueling Trucks for all fuels	719	--	12.38	--	8,892
<b>Year 2023</b>					
<b>On-Site</b>					
Refueling Trucks for Diesel Fuel	910	0.17	0.25	152	228
Refueling Trucks for LNG Fuel	51	0.17	0.25	8	13
<b>Off-Site</b>					
Refueling Trucks for all fuels	961	--	12.38	--	11,890
<b>Year 2035</b>					
<b>On-Site</b>					
Refueling Trucks for Diesel Fuel	910	0.17	0.25	152	228
Refueling Trucks for LNG Fuel	51	0.17	0.25	8	13
<b>Off-Site</b>					
Refueling Trucks for all fuels	961	--	12.38	--	11,890
<b>Year 2046</b>					
<b>On-Site</b>					
Refueling Trucks for Diesel Fuel	910	0.17	0.25	152	228
Refueling Trucks for LNG Fuel	51	0.17	0.25	8	13
<b>Off-Site</b>					
Refueling Trucks for all fuels	961	--	12.38	--	11,890
Notes:					
(1) The number of fuel delivery truck trips for each analysis year was estimated based on the expected fuel consumption at the facility and tanker truck capacity.					
(2) Trucks were assumed to travel on-site at an average speed of 10 mph;					

**Table C1.2-45. Emission Factors for SCIG Refueling Trucks – Proposed Project**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Project Year 2016</b>							
On-road Truck - Idle (g/hr)	0	9.53	44.19	113.59	0.06	0.27	0.25
On-road Truck Transport	5	6.28	10.79	18.48	0.04	1.92	0.50
On-road Truck Transport	10	3.45	7.27	13.09	0.03	1.83	0.42
On-road Truck Transport	15	1.64	4.82	9.62	0.03	1.77	0.36
On-road Truck Transport	20	0.90	3.51	8.07	0.02	1.73	0.33
On-road Truck Transport	25	0.75	3.08	7.55	0.02	1.72	0.32
On-road Truck Transport	30	0.62	2.72	7.12	0.02	1.71	0.31
On-road Truck Transport	35	0.52	2.45	6.79	0.02	1.71	0.31
On-road Truck Transport	40	0.45	2.25	6.55	0.02	1.71	0.31
On-road Truck Transport	45	0.41	2.13	6.40	0.02	1.71	0.31
On-road Truck Transport	50	0.40	2.09	6.35	0.02	1.72	0.32
On-road Truck Transport	55	0.42	2.13	6.39	0.02	1.73	0.33
On-road Truck Transport	60	0.47	2.25	6.52	0.02	1.75	0.34
On-road Truck Transport	65	0.54	2.45	6.75	0.02	1.77	0.36
<b>Project Year 2023</b>							
On-road Truck - Idle (g/hr)	0	8.15	42.17	43.54	0.06	0.22	0.21
On-road Truck Transport	5	3.36	6.33	3.54	0.04	1.80	0.39
On-road Truck Transport	10	1.83	3.94	2.61	0.03	1.76	0.36
On-road Truck Transport	15	0.88	2.37	1.96	0.03	1.73	0.33
On-road Truck Transport	20	0.50	1.67	1.62	0.02	1.72	0.31
On-road Truck Transport	25	0.43	1.54	1.47	0.02	1.71	0.31
On-road Truck Transport	30	0.37	1.45	1.35	0.02	1.71	0.31
On-road Truck Transport	35	0.32	1.38	1.25	0.02	1.71	0.31
On-road Truck Transport	40	0.28	1.35	1.18	0.02	1.71	0.31
On-road Truck Transport	45	0.25	1.35	1.13	0.02	1.72	0.32
On-road Truck Transport	50	0.23	1.38	1.11	0.02	1.73	0.33
On-road Truck Transport	55	0.22	1.45	1.10	0.02	1.74	0.34
On-road Truck Transport	60	0.23	1.55	1.12	0.02	1.76	0.35
On-road Truck Transport	65	0.24	1.68	1.17	0.02	1.78	0.37
<b>Project Year 2035</b>							
On-road Truck - Idle (g/hr)	0	7.68	41.48	57.35	0.06	0.12	0.11
On-road Truck Transport	5	2.43	4.81	3.30	0.04	1.73	0.32
On-road Truck Transport	10	1.33	2.89	2.48	0.03	1.72	0.32
On-road Truck Transport	15	0.63	1.66	1.88	0.03	1.71	0.31
On-road Truck Transport	20	0.37	1.15	1.54	0.02	1.70	0.30
On-road Truck Transport	25	0.33	1.09	1.38	0.02	1.70	0.30
On-road Truck Transport	30	0.28	1.06	1.25	0.02	1.70	0.30
On-road Truck Transport	35	0.25	1.04	1.15	0.02	1.70	0.30
On-road Truck Transport	40	0.22	1.04	1.07	0.02	1.71	0.31
On-road Truck Transport	45	0.19	1.06	1.01	0.02	1.72	0.32
On-road Truck Transport	50	0.17	1.11	0.98	0.02	1.73	0.33
On-road Truck Transport	55	0.16	1.17	0.97	0.02	1.75	0.34
On-road Truck Transport	60	0.16	1.25	0.99	0.02	1.76	0.36
On-road Truck Transport	65	0.15	1.35	1.03	0.02	1.78	0.37
<b>Project Year 2046</b>							
On-road Truck - Idle (g/hr)	0	7.66	41.44	58.12	0.06	0.11	0.10
On-road Truck Transport	5	2.40	4.75	3.29	0.04	1.72	0.32
On-road Truck Transport	10	1.31	2.85	2.47	0.03	1.72	0.31
On-road Truck Transport	15	0.63	1.63	1.88	0.03	1.71	0.31
On-road Truck Transport	20	0.37	1.13	1.53	0.02	1.70	0.30
On-road Truck Transport	25	0.32	1.08	1.38	0.02	1.70	0.30
On-road Truck Transport	30	0.28	1.04	1.25	0.02	1.70	0.30
On-road Truck Transport	35	0.24	1.02	1.14	0.02	1.70	0.30
On-road Truck Transport	40	0.21	1.03	1.06	0.02	1.71	0.31
On-road Truck Transport	45	0.19	1.05	1.01	0.02	1.72	0.32
On-road Truck Transport	50	0.17	1.09	0.97	0.02	1.73	0.33
On-road Truck Transport	55	0.16	1.15	0.97	0.02	1.75	0.34
On-road Truck Transport	60	0.15	1.24	0.99	0.02	1.76	0.36
On-road Truck Transport	65	0.15	1.34	1.03	0.02	1.78	0.38
Notes:							
(1) Emission factors were generated with the use of EMFAC2007 v2.3 model with SCAB default age distributions.							
(2) NOx and PM emission factors are adjusted to to meet the Statewide Bus and Truck Rule.							
(3) PM emission factors include those from vehicle exhaust, tire wear, brake wear, and paved road dust.							
(4) Year 2046 uses 2040 emission factors							

**Table C1.2-46. Annual Refueling Truck Emissions for SCIG - Proposed Project**

Analysis Year	Refueling Truck Type - Mode	Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>On-Site</b>							
<b>2016</b>	Diesel Fuel - Idling	0.00	0.01	0.01	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>2023</b>	Diesel Fuel - Idling	0.00	0.01	0.01	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>2035</b>	Diesel Fuel - Idling	0.00	0.01	0.01	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>2046</b>	Diesel Fuel - Idling	0.00	0.01	0.01	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Off-Site</b>							
<b>2016</b>	Driving	0.01	0.03	0.07	0.00	0.01	0.00
<b>2023</b>	Driving	0.00	0.02	0.02	0.00	0.01	0.00
<b>2035</b>	Driving	0.00	0.01	0.02	0.00	0.01	0.00
<b>2046</b>	Driving	0.00	0.01	0.02	0.00	0.01	0.00
Notes:							
(1) On-site driving emissions assume 10 mph.							
(2) Paved road dust emissions are included in the PM10 and PM2.5 calculations.							

**Table C1.2-47. Peak Daily Refueling Truck Emissions for SCIG - Proposed Project**

Analysis Year	Refueling Truck Type - Mode	Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>On-Site</b>							
2016	Diesel Fuel - Idling	0.01	0.03	0.08	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.01	0.01	0.00	0.01	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.01</b>	<b>0.04</b>	<b>0.10</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>
2023	Diesel Fuel - Idling	0.01	0.04	0.04	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.01	0.00	0.00	0.02	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.01</b>	<b>0.05</b>	<b>0.05</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>
2035	Diesel Fuel - Idling	0.01	0.04	0.05	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.02	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.01</b>	<b>0.04</b>	<b>0.06</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>
2046	Diesel Fuel - Idling	0.01	0.04	0.05	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.02	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.01</b>	<b>0.04</b>	<b>0.06</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>
<b>Off-Site</b>							
2016	Driving	0.03	0.14	0.38	0.00	0.06	0.01
2023	Driving	0.03	0.11	0.09	0.00	0.08	0.01
2035	Driving	0.02	0.08	0.09	0.00	0.08	0.01
2046	Driving	0.02	0.08	0.09	0.00	0.08	0.01
Notes:							
(1) On-site driving emissions assume 10 mph.							
(2) Paved road dust emissions are included in the PM10 and PM2.5 calculations.							



**Table C1.2-48. Summary of Annual Refueling Truck Emissions for SCIG - Proposed Project**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.01	0.03	0.09	0.00	0.01	0.00
2023	0.01	0.03	0.03	0.00	0.02	0.00
2035	0.01	0.02	0.03	0.00	0.02	0.00
2046	0.01	0.02	0.03	0.00	0.02	0.00

**Table C1.2-49. Summary of Peak Daily Refueling Truck Emissions for SCIG - Proposed Project**

Analysis Year	Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.05	0.18	0.48	0.00	0.07	0.01
2023	0.04	0.16	0.14	0.00	0.09	0.01
2035	0.03	0.13	0.15	0.00	0.09	0.01
2046	0.03	0.13	0.15	0.00	0.09	0.01

**Table C1.2-50. Activity Data for SCIG LNG Yard Hostlers – Proposed Project**

<b>Analysis Year</b>	<b>Quantity</b>	<b>HP</b>	<b>Load Factor</b>	<b>Daily Activity (hr/day/unit)</b>	<b>Annual Activity (hr/yr/unit)</b>	<b>Round Trip Distance (mi)</b>	<b>Annual VMT (mi/unit)</b>
2016	7	250	0.65	18	6480	0.98	52.92
2023	10	250	0.65	18	6480	0.98	52.92
2035	10	250	0.65	18	6480	0.98	52.92
2046	10	250	0.65	18	6480	0.98	52.92

**Table C1.2-51. Emission Factors for SCIG LNG Yard Hostlers – Proposed Project**

Analysis Year	Emission Factor (g/bhp-hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.01	14.20	0.13	0.00	0.00	0.00
2023	0.01	14.20	0.13	0.00	0.00	0.00
2035	0.01	14.20	0.13	0.00	0.00	0.00
2046	0.01	14.20	0.13	0.00	0.00	0.00

Note:  
(1) Emission factors from engine certification data.

**Table C1.2-52. Summary of Annual Emissions for SCIG LNG Yard Hostlers  
– Proposed Project**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.05	115.38	1.06	0.00	0.02	0.01
2023	0.08	164.82	1.51	0.00	0.02	0.02
2035	0.08	164.82	1.51	0.00	0.02	0.02
2046	0.08	164.82	1.51	0.00	0.02	0.02

**Table C1.2-53. Summary of Peak Daily Emissions for LNG Yard Hostler – Proposed Project**

Analysis Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.34	717.64	6.57	0.00	0.10	0.09
2023	0.48	1025.21	9.39	0.00	0.14	0.13
2035	0.48	1025.21	9.39	0.00	0.14	0.13
2046	0.48	1025.21	9.39	0.00	0.14	0.13

**Table C1.2-54. Activity Data for Paints, Oils, Cleaners, and Other Fluids Used for Maintenance – Proposed Project**

Year	Cans Used Per Month
2016	438
2023, 2035, 2046	613
Note: Cans include paints, cleaners, oils, lubricants, etc.	

**Table C1.2-55. VOC Emissions from Paints, Oils, Cleaners, and Other Fluids Used for Maintenance – Proposed Project**

<b>Year</b>	<b>Annual Emissions (tons/yr)</b>	<b>Peak Daily Emissions (lbs/day)</b>
2016	0.99	5.48
2023, 2035, 2046	1.35	7.52



Table C1.2-56. Peak Daily Operational Emissions - Proposed Project

Source Category	Peak Daily Emissions (lb/day) <sup>a,e</sup>					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Project Year 2013</b>						
Trucks On-Site	23	63	148	0	32	6
Trucks Off-Site <sup>b</sup>	25	108	340	1	44	9
CHE	48	1,517	297	0	9	8
Employee Commute On-Site	0	1	0	0	1	0
Employee Commute Off-Site <sup>b</sup>	3	86	8	0	51	5
Tenant Locomotive Activities	0	0	1	0	0	0
<b>Total - Project Year 2013 <sup>d</sup></b>	<b>99</b>	<b>1,775</b>	<b>794</b>	<b>1</b>	<b>137</b>	<b>29</b>
<u>CEQA Impacts</u>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline <sup>f</sup>	-116	-1,102	-1,601	-13	-167	-79
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2014</b>						
Trucks On-Site	13	39	90	0	19	3
Trucks Off-Site <sup>b</sup>	14	59	170	0	22	3
CHE	15	453	132	0	4	4
Employee Commute On-Site	0	1	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	2	49	4	0	31	4
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2014 <sup>d</sup></b>	<b>44</b>	<b>602</b>	<b>396</b>	<b>1</b>	<b>77</b>	<b>15</b>
<u>CEQA Impacts</u>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline <sup>f</sup>	-172	-2,275	-1,999	-13	-227	-94
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2015</b>						
Trucks On-Site	12	38	92	0	19	3
Trucks Off-Site <sup>b</sup>	13	55	162	0	22	3
CHE	4	454	131	0	4	4
Employee Commute On-Site	0	1	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	45	4	0	32	4
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2015 <sup>d</sup></b>	<b>32</b>	<b>593</b>	<b>389</b>	<b>1</b>	<b>78</b>	<b>15</b>
<u>CEQA Impacts</u>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline <sup>f</sup>	-184	-2,284	-2,006	-13	-226	-94
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2016</b>						
Locomotives On-Site	9	15	123	0	3	3
Locomotives Off-Site <sup>b</sup>	145	351	3,288	2	60	55
Trucks On-Site	38	143	441	1	227	34
Trucks Off-Site <sup>b</sup>	29	111	361	1	56	9
Railyard Equipment	12	852	30	0	1	1
TRU	1	12	11	0	0	0
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	17	1	0	13	1
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<u>Relocated Tenant Sources</u>						
Trucks On-Site	12	37	87	0	19	3
Trucks Off-Site <sup>b</sup>	13	51	146	0	22	3
CHE	12	405	94	0	3	3

Employee Commute On-Site	0	1	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	36	3	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2016 <sup>d</sup></b>	<b>274</b>	<b>2,030</b>	<b>4,586</b>	<b>5</b>	<b>434</b>	<b>117</b>

<u>CEQA Impacts</u>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline	-316	-2,905	-5,619	-139	-313	-228
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**Project Year 2023**

Locomotives On-Site	12	19	163	0	5	4
Locomotives Off-Site <sup>b</sup>	194	468	4,384	3	80	74
Trucks On-Site	43	171	486	1	312	46
Trucks Off-Site <sup>b</sup>	27	103	263	1	75	12
Railyard Equipment	14	1,160	32	0	1	1
TRU	2	16	11	0	0	0
Employee Commute On-Site	0	0	0	0	1	0
Employee Commute Off-Site <sup>b</sup>	0	18	1	0	23	2
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0

<u>Relocated Tenant Sources</u>						
Trucks On-Site	8	31	41	0	19	3
Trucks Off-Site <sup>b</sup>	8	31	49	0	22	3
CHE	12	408	86	0	3	3
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	22	2	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2023 <sup>d</sup></b>	<b>320</b>	<b>2,448</b>	<b>5,519</b>	<b>6</b>	<b>568</b>	<b>153</b>

<u>CEQA Impacts</u>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline	-270	-2,487	-4,686	-138	-178	-192
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**Project Year 2035**

Locomotives On-Site	7	19	137	0	3	3
Locomotives Off-Site <sup>b</sup>	121	468	3,669	3	50	46
Trucks On-Site	43	170	488	1	312	46
Trucks Off-Site <sup>b</sup>	26	99	261	1	72	12
Railyard Equipment	14	1,160	32	0	1	1
TRU	2	16	11	0	0	0
Employee Commute On-Site	0	0	0	0	1	0
Employee Commute Off-Site <sup>b</sup>	0	12	1	0	23	2
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0

<u>Relocated Tenant Sources</u>						
Trucks On-Site	7	29	46	0	19	3
Trucks Off-Site <sup>b</sup>	7	26	49	0	22	3
CHE	11	404	48	0	1	1
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	14	1	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2035 <sup>d</sup></b>	<b>239</b>	<b>2,418</b>	<b>4,744</b>	<b>6</b>	<b>531</b>	<b>121</b>

<u>CEQA Impacts</u>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline	-351	-2,517	-5,461	-138	-215	-224
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**Project Year 2046**

Locomotives On-Site	6	17	123	0	2	2
Locomotives Off-Site <sup>b</sup>	81	158	2,338	3	50	46
Trucks On-Site	42	169	487	1	312	46
Trucks Off-Site <sup>b</sup>	26	98	257	1	72	12
Railyard Equipment	14	1,161	32	0	1	1
TRU	2	16	11	0	0	0
Employee Commute On-Site	0	0	0	0	1	0
Employee Commute Off-Site <sup>b</sup>	0	11	1	0	23	2
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	7	29	47	0	18	3
Trucks Off-Site <sup>b</sup>	7	26	48	0	22	3
CHE	11	406	48	0	1	1
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	13	1	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2046<sup>d</sup></b>	<b>197</b>	<b>2,104</b>	<b>3,393</b>	<b>6</b>	<b>530</b>	<b>120</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline	-393	-2,832	-6,812	-138	-217	-225
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes:

- a) Emissions assume the simultaneous occurrence of maximum theoretical daily equipment activity levels. Such levels would rarely occur during day-to-day operations of the facility.
- b) Truck, train, and worker commute emissions include transport within the South Coast Air Basin.
- c) By definition, the Proposed Project minus Baseline increment in 2013, 2014 and 2015 does not account for both the truck travel between port terminals to Hobart railyard and the rail travel from Hobart railyard to the South Coast Air Basin boundary as they are not a part of the Project and Alternatives during this period
- d) Emissions might not precisely add due to rounding. For further explanation, refer to the discussion in Section 3.2.4.1.
- e) The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

Table C1.2-57. Average Daily Operational Emissions – Proposed Project

Source Category	Average Daily Emissions (lb/day) <sup>a,e</sup>					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Project Year 2013</b>						
Trucks On-Site	20	56	132	0	28	5
Trucks Off-Site <sup>b</sup>	23	96	304	1	40	8
CHE	43	1,355	265	0	8	7
Employee Commute On-Site	0	1	0	0	1	0
Employee Commute Off-Site <sup>b</sup>	3	86	8	0	51	5
Tenant Locomotive Activities	0	0	1	0	0	0
<b>Total - Project Year 2013<sup>d</sup></b>	<b>89</b>	<b>1,595</b>	<b>710</b>	<b>1</b>	<b>128</b>	<b>26</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline <sup>c</sup>	-106	-1,024	-1,435	-12	-156	-71
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2014</b>						
Trucks On-Site	12	35	80	0	17	3
Trucks Off-Site <sup>b</sup>	13	53	152	0	20	3
CHE	13	405	118	0	4	4
Employee Commute On-Site	0	1	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	2	49	4	0	31	4
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2014<sup>d</sup></b>	<b>39</b>	<b>543</b>	<b>354</b>	<b>1</b>	<b>73</b>	<b>13</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline <sup>c</sup>	-155	-2,076	-1,791	-12	-212	-84
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2015</b>						
Trucks On-Site	11	34	82	0	17	3
Trucks Off-Site <sup>b</sup>	12	49	145	0	20	3
CHE	4	406	117	0	4	4
Employee Commute On-Site	0	1	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	45	4	0	32	4
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2015<sup>d</sup></b>	<b>28</b>	<b>534</b>	<b>348</b>	<b>1</b>	<b>73</b>	<b>14</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline <sup>c</sup>	-166	-2,084	-1,797	-12	-212	-84
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2016</b>						
Locomotives On-Site	3	9	67	0	2	2
Locomotives Off-Site <sup>b</sup>	60	175	1,962	2	42	39
Trucks On-Site	34	127	394	1	203	30
Trucks Off-Site <sup>b</sup>	26	99	322	1	50	8
Railyard Equipment	6	661	7	0	0	0
TRU	0	0	0	0	0	0
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	17	1	0	13	1
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	10	33	78	0	17	3
Trucks Off-Site <sup>b</sup>	11	46	131	0	20	3
CHE	12	405	94	0	3	3
Employee Commute On-Site	0	1	0	0	0	0

Employee Commute Off-Site <sup>b</sup>	1	36	3	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2016 <sup>d</sup></b>	<b>165</b>	<b>1,610</b>	<b>3,061</b>	<b>4</b>	<b>378</b>	<b>92</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline	-374	-2,470	-5,387	-135	-307	-221
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2023</b>						
Locomotives On-Site	3	12	67	0	1	1
Locomotives Off-Site <sup>b</sup>	53	244	1,888	3	28	25
Trucks On-Site	38	153	434	1	278	41
Trucks Off-Site <sup>b</sup>	24	92	235	1	67	11
Railyard Equipment	8	937	10	0	0	0
TRU	0	0	0	0	0	0
Employee Commute On-Site	0	0	0	0	1	0
Employee Commute Off-Site <sup>b</sup>	0	18	1	0	23	2
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	7	27	36	0	17	3
Trucks Off-Site <sup>b</sup>	7	28	43	0	20	3
CHE	12	408	86	0	3	3
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	22	2	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2023 <sup>d</sup></b>	<b>154</b>	<b>1,942</b>	<b>2,804</b>	<b>5</b>	<b>466</b>	<b>93</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline	-385	-2,137	-5,643	-134	-219	-220
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2035</b>						
Locomotives On-Site	1	9	29	0	1	0
Locomotives Off-Site <sup>b</sup>	21	169	793	3	11	11
Trucks On-Site	38	152	436	1	278	41
Trucks Off-Site <sup>b</sup>	23	88	233	1	64	11
Railyard Equipment	8	937	9	0	0	0
TRU	0	0	0	0	0	0
Employee Commute On-Site	0	0	0	0	1	0
Employee Commute Off-Site <sup>b</sup>	0	12	1	0	23	2
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	6	26	41	0	17	3
Trucks Off-Site <sup>b</sup>	6	23	43	0	19	3
CHE	11	404	48	0	1	1
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	14	1	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2035 <sup>d</sup></b>	<b>115</b>	<b>1,836</b>	<b>1,636</b>	<b>5</b>	<b>444</b>	<b>75</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline	-424	-2,243	-6,811	-134	-241	-239
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2046</b>						
Locomotives On-Site	1	9	19	0	0	0
Locomotives Off-Site <sup>b</sup>	14	158	484	3	7	6

Trucks On-Site	38	151	435	1	278	41
Trucks Off-Site <sup>b</sup>	23	87	230	1	64	11
Railyard Equipment	8	938	10	0	0	0
TRU	0	0	0	0	0	0
Employee Commute On-Site	0	0	0	0	1	0
Employee Commute Off-Site <sup>b</sup>	0	11	1	0	23	2
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<u>Relocated Tenant Sources</u>						
Trucks On-Site	6	26	42	0	16	2
Trucks Off-Site <sup>b</sup>	6	23	42	0	19	3
CHE	11	406	48	0	1	1
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	13	1	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2046<sup>d</sup></b>	<b>107</b>	<b>1,823</b>	<b>1,312</b>	<b>5</b>	<b>438</b>	<b>70</b>
<u>CEQA Impacts</u>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline	-432	-2,257	-7,136	-134	-247	-243
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes:

- a) Emissions represent annual emissions divided by 365 days per year of operation.
- b) Truck, train, and worker commute emissions include transport within the South Coast Air Basin.
- c) By definition, the Proposed Project minus Baseline increment in 2013, 2014 and 2015 does not account for both the truck travel between port terminals to Hobart railyard and the rail travel from Hobart railyard to the South Coast Air Basin boundary as they are not a part of the Project and Alternatives during this period
- d) Emissions might not precisely add due to rounding. For further explanation, refer to the discussion in Section 3.2.4.1.
- e) The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

**Table C1.2-TEN-1. Activity Data for Tenant On-Road Vehicles - Proposed Project and Reduced Project**

<b>Project Year - Source</b>	<b>Number of Trips</b>	<b>Average Idling Time per Trip (hr)</b>	<b>Average On-Site Distance per Trip (mi)</b>	<b>Average Off-Site Round-Trip Distance to Port Terminals (mi)</b>	<b>Average Off-Site Round-Trip Distance Outside of Harbor District (mi)</b>
<b>Year 2013</b>					
Port Drayage Trucks	243,913	0.32	0.83	10.13	
Vendor Vehicles	249,347	0.31	0.94		11.45
Employee Commute Vehicles	307,251	0.15	0.22		11.88
Medium Duty Trucks	520	0.33	0.20		12.40
<b>Years 2014, 2015, 2016, 2023, 2035, 2046</b>					
Port Drayage Trucks	91,456	0.32	0.83	10.66	
Vendor Vehicles	144,961	0.31	0.94		12.35
Employee Commute Vehicles	172,251	0.15	0.22		12.57
Medium Duty Trucks	520	0.33	0.20		14.39
Note:					
(1) On-road vehicle activity represent data averaged across all tenants.					

**Table C1.2-TEN-2. Emission Factors for Tenant Port Drayage Trucks - Proposed Project and Reduced Project**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.98	7.83	16.69	0.04	11.77	1.73
On-road Truck Transport	7.5	3.08	6.26	14.60	0.03	11.77	1.73
On-road Truck Transport	10	2.17	4.69	12.52	0.03	11.76	1.73
On-road Truck Transport	15	1.04	2.69	9.53	0.03	11.75	1.72
On-road Truck Transport	20	0.61	1.87	7.78	0.02	11.75	1.71
On-road Truck Transport	25	0.53	1.77	6.99	0.02	11.74	1.71
On-road Truck Transport	30	0.47	1.72	6.33	0.02	11.75	1.71
On-road Truck Transport	35	0.41	1.69	5.79	0.02	11.75	1.72
On-road Truck Transport	40	0.36	1.69	5.38	0.02	11.76	1.72
On-road Truck Transport	45	0.32	1.73	5.10	0.02	11.77	1.73
On-road Truck Transport	50	0.29	1.80	4.94	0.02	11.78	1.74
On-road Truck Transport	55	0.27	1.90	4.91	0.02	11.80	1.76
On-road Truck Transport	60	0.25	2.04	5.00	0.02	11.82	1.78
On-road Truck Transport	65	0.25	2.21	5.22	0.02	11.84	1.80
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.98	7.83	16.69	0.04	1.06	0.17
On-road Truck Transport	10	2.17	4.69	12.52	0.03	1.05	0.17
On-road Truck Transport	15	1.04	2.69	9.53	0.03	1.04	0.16
On-road Truck Transport	20	0.61	1.87	7.78	0.02	1.03	0.15
On-road Truck Transport	25	0.53	1.77	6.99	0.02	1.03	0.15
On-road Truck Transport	30	0.47	1.72	6.33	0.02	1.03	0.15
On-road Truck Transport	35	0.41	1.69	5.79	0.02	1.03	0.15
On-road Truck Transport	40	0.36	1.69	5.38	0.02	1.04	0.16
On-road Truck Transport	45	0.32	1.73	5.10	0.02	1.05	0.17
On-road Truck Transport	50	0.29	1.80	4.94	0.02	1.07	0.18
On-road Truck Transport	55	0.27	1.90	4.91	0.02	1.08	0.20
On-road Truck Transport	60	0.25	2.04	5.00	0.02	1.10	0.22
On-road Truck Transport	65	0.25	2.21	5.22	0.02	1.13	0.24
<b>Year 2014</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	4.26	8.36	17.30	0.04	11.78	1.74
On-road Truck Transport	7.5	3.29	6.69	15.14	0.03	11.77	1.74
On-road Truck Transport	10	2.32	5.01	12.98	0.03	11.77	1.73
On-road Truck Transport	15	1.11	2.87	9.88	0.03	11.76	1.73
On-road Truck Transport	20	0.65	1.99	8.07	0.02	11.75	1.72
On-road Truck Transport	25	0.57	1.90	7.25	0.02	11.75	1.72
On-road Truck Transport	30	0.50	1.83	6.56	0.02	11.75	1.72
On-road Truck Transport	35	0.43	1.80	6.01	0.02	11.76	1.72
On-road Truck Transport	40	0.38	1.81	5.58	0.02	11.76	1.73
On-road Truck Transport	45	0.34	1.85	5.29	0.02	11.78	1.74
On-road Truck Transport	50	0.31	1.93	5.12	0.02	11.79	1.75
On-road Truck Transport	55	0.28	2.04	5.09	0.02	11.81	1.77
On-road Truck Transport	60	0.27	2.18	5.18	0.02	11.83	1.79
On-road Truck Transport	65	0.27	2.36	5.41	0.02	11.85	1.81
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	4.26	8.36	17.30	0.04	1.06	0.18
On-road Truck Transport	10	2.32	5.01	12.98	0.03	1.05	0.17
On-road Truck Transport	15	1.11	2.87	9.88	0.03	1.05	0.16
On-road Truck Transport	20	0.65	1.99	8.07	0.02	1.04	0.16
On-road Truck Transport	25	0.57	1.90	7.25	0.02	1.04	0.15



On-road Truck Transport	30	0.50	1.83	6.56	0.02	1.04	0.16
On-road Truck Transport	35	0.43	1.80	6.01	0.02	1.04	0.16
On-road Truck Transport	40	0.38	1.81	5.58	0.02	1.05	0.17
On-road Truck Transport	45	0.34	1.85	5.29	0.02	1.06	0.18
On-road Truck Transport	50	0.31	1.93	5.12	0.02	1.07	0.19
On-road Truck Transport	55	0.28	2.04	5.09	0.02	1.09	0.21
On-road Truck Transport	60	0.27	2.18	5.18	0.02	1.11	0.23
On-road Truck Transport	65	0.27	2.36	5.41	0.02	1.14	0.25
<b>Year 2015</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	4.47	8.78	17.66	0.04	11.79	1.75
On-road Truck Transport	7.5	3.45	7.02	15.45	0.03	11.78	1.74
On-road Truck Transport	10	2.44	5.26	13.24	0.03	11.78	1.74
On-road Truck Transport	15	1.17	3.02	10.09	0.03	11.77	1.73
On-road Truck Transport	20	0.69	2.09	8.23	0.02	11.76	1.72
On-road Truck Transport	25	0.60	1.99	7.40	0.02	11.76	1.72
On-road Truck Transport	30	0.52	1.93	6.70	0.02	11.76	1.72
On-road Truck Transport	35	0.46	1.90	6.13	0.02	11.76	1.73
On-road Truck Transport	40	0.40	1.90	5.70	0.02	11.77	1.73
On-road Truck Transport	45	0.36	1.94	5.39	0.02	11.78	1.74
On-road Truck Transport	50	0.32	2.02	5.23	0.02	11.80	1.76
On-road Truck Transport	55	0.30	2.14	5.19	0.02	11.82	1.78
On-road Truck Transport	60	0.28	2.29	5.29	0.02	11.84	1.80
On-road Truck Transport	65	0.28	2.48	5.52	0.02	11.87	1.82
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	4.47	8.78	17.66	0.04	1.07	0.19
On-road Truck Transport	10	2.44	5.26	13.24	0.03	1.06	0.18
On-road Truck Transport	15	1.17	3.02	10.09	0.03	1.05	0.17
On-road Truck Transport	20	0.69	2.09	8.23	0.02	1.04	0.16
On-road Truck Transport	25	0.60	1.99	7.40	0.02	1.04	0.16
On-road Truck Transport	30	0.52	1.93	6.70	0.02	1.04	0.16
On-road Truck Transport	35	0.46	1.90	6.13	0.02	1.05	0.16
On-road Truck Transport	40	0.40	1.90	5.70	0.02	1.05	0.17
On-road Truck Transport	45	0.36	1.94	5.39	0.02	1.07	0.18
On-road Truck Transport	50	0.32	2.02	5.23	0.02	1.08	0.20
On-road Truck Transport	55	0.30	2.14	5.19	0.02	1.10	0.21
On-road Truck Transport	60	0.28	2.29	5.29	0.02	1.12	0.24
On-road Truck Transport	65	0.28	2.48	5.52	0.02	1.15	0.26
<b>Year 2016</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	4.62	9.08	17.77	0.04	11.76	1.73
On-road Truck Transport	7.5	3.57	7.26	15.54	0.03	11.76	1.72
On-road Truck Transport	10	2.52	5.44	13.32	0.03	11.75	1.72
On-road Truck Transport	15	1.21	3.12	10.15	0.03	11.75	1.71
On-road Truck Transport	20	0.71	2.17	8.28	0.02	11.74	1.71
On-road Truck Transport	25	0.62	2.06	7.44	0.02	11.74	1.70
On-road Truck Transport	30	0.54	1.99	6.74	0.02	11.74	1.71
On-road Truck Transport	35	0.47	1.96	6.17	0.02	11.74	1.71
On-road Truck Transport	40	0.41	1.97	5.73	0.02	11.75	1.72
On-road Truck Transport	45	0.37	2.01	5.43	0.02	11.76	1.72
On-road Truck Transport	50	0.33	2.09	5.26	0.02	11.77	1.74
On-road Truck Transport	55	0.31	2.21	5.22	0.02	11.79	1.75
On-road Truck Transport	60	0.29	2.37	5.32	0.02	11.81	1.77
On-road Truck Transport	65	0.29	2.56	5.55	0.02	11.83	1.79
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10

On-road Truck Transport	5	4.62	9.08	17.77	0.04	1.08	0.19
On-road Truck Transport	10	2.52	5.44	13.32	0.03	1.07	0.18
On-road Truck Transport	15	1.21	3.12	10.15	0.03	1.06	0.17
On-road Truck Transport	20	0.71	2.17	8.28	0.02	1.05	0.17
On-road Truck Transport	25	0.62	2.06	7.44	0.02	1.04	0.16
On-road Truck Transport	30	0.54	1.99	6.74	0.02	1.05	0.16
On-road Truck Transport	35	0.47	1.96	6.17	0.02	1.05	0.17
On-road Truck Transport	40	0.41	1.97	5.73	0.02	1.06	0.18
On-road Truck Transport	45	0.37	2.01	5.43	0.02	1.07	0.19
On-road Truck Transport	50	0.33	2.09	5.26	0.02	1.09	0.20
On-road Truck Transport	55	0.31	2.21	5.22	0.02	1.11	0.22
On-road Truck Transport	60	0.29	2.37	5.32	0.02	1.13	0.24
On-road Truck Transport	65	0.29	2.56	5.55	0.02	1.16	0.27
<b>Year 2023</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.20	6.35	9.81	0.04	11.76	1.73
On-road Truck Transport	7.5	2.47	5.08	8.59	0.03	11.76	1.72
On-road Truck Transport	10	1.74	3.81	7.36	0.03	11.75	1.72
On-road Truck Transport	15	0.84	2.18	5.61	0.03	11.75	1.71
On-road Truck Transport	20	0.49	1.52	4.57	0.02	11.74	1.71
On-road Truck Transport	25	0.43	1.44	4.11	0.02	11.74	1.70
On-road Truck Transport	30	0.37	1.39	3.72	0.02	11.74	1.71
On-road Truck Transport	35	0.33	1.37	3.41	0.02	11.74	1.71
On-road Truck Transport	40	0.29	1.38	3.17	0.02	11.75	1.72
On-road Truck Transport	45	0.25	1.41	3.00	0.02	11.76	1.72
On-road Truck Transport	50	0.23	1.46	2.90	0.02	11.77	1.74
On-road Truck Transport	55	0.21	1.55	2.88	0.02	11.79	1.75
On-road Truck Transport	60	0.20	1.66	2.94	0.02	11.81	1.77
On-road Truck Transport	65	0.20	1.79	3.07	0.02	11.83	1.79
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.20	6.35	9.81	0.04	1.08	0.19
On-road Truck Transport	10	1.74	3.81	7.36	0.03	1.07	0.18
On-road Truck Transport	15	0.84	2.18	5.61	0.03	1.06	0.17
On-road Truck Transport	20	0.49	1.52	4.57	0.02	1.05	0.17
On-road Truck Transport	25	0.43	1.44	4.11	0.02	1.05	0.16
On-road Truck Transport	30	0.37	1.39	3.72	0.02	1.05	0.17
On-road Truck Transport	35	0.33	1.37	3.41	0.02	1.05	0.17
On-road Truck Transport	40	0.29	1.38	3.17	0.02	1.06	0.18
On-road Truck Transport	45	0.25	1.41	3.00	0.02	1.07	0.19
On-road Truck Transport	50	0.23	1.46	2.90	0.02	1.09	0.21
On-road Truck Transport	55	0.21	1.55	2.88	0.02	1.11	0.22
On-road Truck Transport	60	0.20	1.66	2.94	0.02	1.14	0.25
On-road Truck Transport	65	0.20	1.79	3.07	0.02	1.16	0.27
<b>Year 2035</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.14	6.23	9.96	0.04	11.76	1.73
On-road Truck Transport	7.5	2.42	4.98	8.71	0.03	11.76	1.72
On-road Truck Transport	10	1.71	3.73	7.47	0.03	11.75	1.72
On-road Truck Transport	15	0.82	2.14	5.69	0.03	11.75	1.71
On-road Truck Transport	20	0.48	1.49	4.64	0.02	11.74	1.71
On-road Truck Transport	25	0.42	1.41	4.17	0.02	11.74	1.70
On-road Truck Transport	30	0.37	1.37	3.78	0.02	11.74	1.71
On-road Truck Transport	35	0.32	1.34	3.46	0.02	11.74	1.71
On-road Truck Transport	40	0.28	1.35	3.21	0.02	11.75	1.72
On-road Truck Transport	45	0.25	1.38	3.04	0.02	11.76	1.72
On-road Truck Transport	50	0.23	1.43	2.95	0.02	11.77	1.74

On-road Truck Transport	55	0.21	1.52	2.93	0.02	11.79	1.75
On-road Truck Transport	60	0.20	1.62	2.98	0.02	11.81	1.77
On-road Truck Transport	65	0.20	1.76	3.11	0.02	11.83	1.79
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.14	6.23	9.96	0.04	1.08	0.19
On-road Truck Transport	10	1.71	3.73	7.47	0.03	1.07	0.18
On-road Truck Transport	15	0.82	2.14	5.69	0.03	1.06	0.17
On-road Truck Transport	20	0.48	1.49	4.64	0.02	1.05	0.17
On-road Truck Transport	25	0.42	1.41	4.17	0.02	1.05	0.16
On-road Truck Transport	30	0.37	1.37	3.78	0.02	1.05	0.17
On-road Truck Transport	35	0.32	1.34	3.46	0.02	1.05	0.17
On-road Truck Transport	40	0.28	1.35	3.21	0.02	1.06	0.18
On-road Truck Transport	45	0.25	1.38	3.04	0.02	1.07	0.19
On-road Truck Transport	50	0.23	1.43	2.95	0.02	1.09	0.20
On-road Truck Transport	55	0.21	1.52	2.93	0.02	1.11	0.22
On-road Truck Transport	60	0.20	1.62	2.98	0.02	1.14	0.25
On-road Truck Transport	65	0.20	1.76	3.11	0.02	1.16	0.27
<b>Year 2046</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.11	6.18	9.88	0.04	11.76	1.73
On-road Truck Transport	7.5	2.40	4.94	8.65	0.03	11.76	1.72
On-road Truck Transport	10	1.70	3.70	7.41	0.03	11.75	1.72
On-road Truck Transport	15	0.81	2.12	5.64	0.03	11.75	1.71
On-road Truck Transport	20	0.48	1.47	4.61	0.02	11.74	1.71
On-road Truck Transport	25	0.42	1.40	4.14	0.02	11.74	1.70
On-road Truck Transport	30	0.36	1.35	3.75	0.02	11.74	1.71
On-road Truck Transport	35	0.32	1.33	3.43	0.02	11.74	1.71
On-road Truck Transport	40	0.28	1.34	3.19	0.02	11.75	1.72
On-road Truck Transport	45	0.25	1.37	3.02	0.02	11.76	1.72
On-road Truck Transport	50	0.22	1.42	2.92	0.02	11.77	1.74
On-road Truck Transport	55	0.21	1.50	2.91	0.02	11.79	1.75
On-road Truck Transport	60	0.20	1.61	2.96	0.02	11.81	1.77
On-road Truck Transport	65	0.20	1.74	3.09	0.02	11.83	1.79
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.11	6.18	9.88	0.04	1.08	0.19
On-road Truck Transport	10	1.70	3.70	7.41	0.03	1.07	0.18
On-road Truck Transport	15	0.81	2.12	5.64	0.03	1.06	0.17
On-road Truck Transport	20	0.48	1.47	4.61	0.02	1.05	0.17
On-road Truck Transport	25	0.42	1.40	4.14	0.02	1.04	0.16
On-road Truck Transport	30	0.36	1.35	3.75	0.02	1.05	0.16
On-road Truck Transport	35	0.32	1.33	3.43	0.02	1.05	0.17
On-road Truck Transport	40	0.28	1.34	3.19	0.02	1.06	0.18
On-road Truck Transport	45	0.25	1.37	3.02	0.02	1.07	0.19
On-road Truck Transport	50	0.22	1.42	2.93	0.02	1.09	0.20
On-road Truck Transport	55	0.21	1.50	2.91	0.02	1.11	0.22
On-road Truck Transport	60	0.20	1.61	2.96	0.02	1.13	0.24
On-road Truck Transport	65	0.20	1.74	3.09	0.02	1.16	0.27
<b>Notes:</b>							
(1) On-site travel speed was assumed at 7.5 mph.							
(2) Emission factors were derived from EMFAC2007 v2.3 with modified fleet age distribution based on Port-wide inventory (Starcrest, 2009)							
(3) Emission factors incorporated the SPBP Clean Truck Program and California Statewide Bus and Truck Regulation.							
(4) Year 2046 uses 2040 emission factors, EMFAC 2007 only calculates emissions factor to 2040.							
(5) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.							

Table C1.2-TEN-3. Emission Factors for Tenant Vendor Vehicles - Proposed Project and Reduced Project

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	10.80	45.98	114.90	0.06	0.77	0.70
On-road Truck Transport	5	8.94	14.76	28.36	0.04	12.66	2.55
On-road Truck Transport	7.5	6.94	12.58	24.06	0.03	12.50	2.41
On-road Truck Transport	10	4.95	10.39	19.77	0.03	12.35	2.26
On-road Truck Transport	15	2.36	7.22	14.38	0.03	12.12	2.05
On-road Truck Transport	20	1.27	5.36	12.18	0.02	11.99	1.93
On-road Truck Transport	25	1.04	4.60	11.53	0.02	11.94	1.89
On-road Truck Transport	30	0.85	3.97	11.01	0.02	11.90	1.86
On-road Truck Transport	35	0.71	3.47	10.61	0.02	11.88	1.84
On-road Truck Transport	40	0.61	3.09	10.33	0.02	11.87	1.83
On-road Truck Transport	45	0.56	2.83	10.18	0.02	11.88	1.84
On-road Truck Transport	50	0.56	2.71	10.16	0.02	11.90	1.85
On-road Truck Transport	55	0.61	2.70	10.26	0.02	11.93	1.88
On-road Truck Transport	60	0.70	2.83	10.48	0.02	11.98	1.93
On-road Truck Transport	65	0.84	3.08	10.83	0.02	12.04	1.99
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	10.80	45.98	114.90	0.06	0.77	0.70
On-road Truck Transport	5	8.94	14.76	28.36	0.04	1.95	1.06
On-road Truck Transport	10	4.95	10.39	19.77	0.03	1.63	0.77
On-road Truck Transport	15	2.36	7.22	14.38	0.03	1.40	0.56
On-road Truck Transport	20	1.27	5.36	12.18	0.02	1.27	0.44
On-road Truck Transport	25	1.04	4.60	11.53	0.02	1.22	0.39
On-road Truck Transport	30	0.85	3.97	11.01	0.02	1.19	0.36
On-road Truck Transport	35	0.71	3.47	10.61	0.02	1.17	0.34
On-road Truck Transport	40	0.61	3.09	10.33	0.02	1.16	0.33
On-road Truck Transport	45	0.56	2.83	10.18	0.02	1.16	0.34
On-road Truck Transport	50	0.56	2.71	10.16	0.02	1.18	0.36
On-road Truck Transport	55	0.61	2.70	10.26	0.02	1.22	0.39
On-road Truck Transport	60	0.70	2.83	10.48	0.02	1.27	0.43
On-road Truck Transport	65	0.84	3.08	10.83	0.02	1.33	0.49
<b>Year 2014</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	10.32	45.31	109.66	0.06	0.27	0.25
On-road Truck Transport	5	7.95	13.29	23.52	0.04	11.99	1.94
On-road Truck Transport	7.5	6.17	11.26	20.00	0.03	11.94	1.89
On-road Truck Transport	10	4.39	9.22	16.48	0.03	11.89	1.85
On-road Truck Transport	15	2.09	6.31	12.03	0.03	11.82	1.78
On-road Truck Transport	20	1.14	4.65	10.16	0.02	11.77	1.74
On-road Truck Transport	25	0.93	4.02	9.58	0.02	11.76	1.72
On-road Truck Transport	30	0.76	3.50	9.11	0.02	11.75	1.71
On-road Truck Transport	35	0.64	3.08	8.75	0.02	11.74	1.71
On-road Truck Transport	40	0.55	2.77	8.49	0.02	11.74	1.71
On-road Truck Transport	45	0.51	2.57	8.35	0.02	11.74	1.71
On-road Truck Transport	50	0.50	2.48	8.31	0.02	11.75	1.71
On-road Truck Transport	55	0.54	2.50	8.39	0.02	11.76	1.73
On-road Truck Transport	60	0.61	2.62	8.57	0.02	11.78	1.74
On-road Truck Transport	65	0.73	2.85	8.86	0.02	11.80	1.76
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	10.32	45.31	109.66	0.06	0.27	0.25
On-road Truck Transport	5	7.95	13.29	23.52	0.04	1.28	0.44
On-road Truck Transport	10	4.39	9.22	16.48	0.03	1.18	0.35
On-road Truck Transport	15	2.09	6.31	12.03	0.03	1.10	0.28
On-road Truck Transport	20	1.14	4.65	10.16	0.02	1.06	0.24
On-road Truck Transport	25	0.93	4.02	9.58	0.02	1.04	0.23
On-road Truck Transport	30	0.76	3.50	9.11	0.02	1.03	0.22
On-road Truck Transport	35	0.64	3.08	8.75	0.02	1.02	0.21
On-road Truck Transport	40	0.55	2.77	8.49	0.02	1.02	0.21
On-road Truck Transport	45	0.51	2.57	8.35	0.02	1.03	0.21
On-road Truck Transport	50	0.50	2.48	8.31	0.02	1.03	0.22
On-road Truck Transport	55	0.54	2.50	8.39	0.02	1.05	0.23
On-road Truck Transport	60	0.61	2.62	8.57	0.02	1.06	0.25
On-road Truck Transport	65	0.73	2.85	8.86	0.02	1.08	0.27
<b>Year 2015</b>							

<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	9.89	44.70	117.40	0.06	0.27	0.25
On-road Truck Transport	5	7.03	11.92	21.80	0.04	11.98	1.92
On-road Truck Transport	7.5	5.45	10.03	18.58	0.03	11.93	1.88
On-road Truck Transport	10	3.88	8.15	15.36	0.03	11.88	1.84
On-road Truck Transport	15	1.85	5.49	11.25	0.03	11.81	1.77
On-road Truck Transport	20	1.01	4.02	9.47	0.02	11.77	1.73
On-road Truck Transport	25	0.83	3.50	8.89	0.02	11.76	1.72
On-road Truck Transport	30	0.69	3.07	8.42	0.02	11.75	1.71
On-road Truck Transport	35	0.57	2.73	8.06	0.02	11.74	1.71
On-road Truck Transport	40	0.50	2.48	7.80	0.02	11.74	1.71
On-road Truck Transport	45	0.46	2.33	7.64	0.02	11.74	1.71
On-road Truck Transport	50	0.45	2.27	7.60	0.02	11.75	1.72
On-road Truck Transport	55	0.47	2.30	7.65	0.02	11.76	1.73
On-road Truck Transport	60	0.53	2.42	7.82	0.02	11.78	1.74
On-road Truck Transport	65	0.62	2.63	8.09	0.02	11.80	1.76
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	9.89	44.70	117.40	0.06	0.27	0.25
On-road Truck Transport	5	7.03	11.92	21.80	0.04	1.26	0.43
On-road Truck Transport	10	3.88	8.15	15.36	0.03	1.16	0.34
On-road Truck Transport	15	1.85	5.49	11.25	0.03	1.10	0.28
On-road Truck Transport	20	1.01	4.02	9.47	0.02	1.06	0.24
On-road Truck Transport	25	0.83	3.50	8.89	0.02	1.04	0.23
On-road Truck Transport	30	0.69	3.07	8.42	0.02	1.03	0.22
On-road Truck Transport	35	0.57	2.73	8.06	0.02	1.02	0.21
On-road Truck Transport	40	0.50	2.48	7.80	0.02	1.02	0.21
On-road Truck Transport	45	0.46	2.33	7.64	0.02	1.03	0.21
On-road Truck Transport	50	0.45	2.27	7.60	0.02	1.03	0.22
On-road Truck Transport	55	0.47	2.30	7.65	0.02	1.05	0.23
On-road Truck Transport	60	0.53	2.42	7.82	0.02	1.06	0.25
On-road Truck Transport	65	0.62	2.63	8.09	0.02	1.09	0.27
<b>Year 2016</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	9.53	44.19	113.59	0.06	0.27	0.25
On-road Truck Transport	5	6.28	10.79	18.48	0.04	11.95	1.90
On-road Truck Transport	7.5	4.86	9.03	15.79	0.03	11.91	1.86
On-road Truck Transport	10	3.45	7.27	13.09	0.03	11.87	1.82
On-road Truck Transport	15	1.64	4.82	9.62	0.03	11.80	1.76
On-road Truck Transport	20	0.90	3.51	8.07	0.02	11.77	1.73
On-road Truck Transport	25	0.75	3.08	7.55	0.02	11.75	1.72
On-road Truck Transport	30	0.62	2.72	7.12	0.02	11.74	1.71
On-road Truck Transport	35	0.52	2.45	6.79	0.02	11.74	1.71
On-road Truck Transport	40	0.45	2.25	6.55	0.02	11.74	1.70
On-road Truck Transport	45	0.41	2.13	6.40	0.02	11.74	1.71
On-road Truck Transport	50	0.40	2.09	6.35	0.02	11.75	1.72
On-road Truck Transport	55	0.42	2.13	6.39	0.02	11.76	1.73
On-road Truck Transport	60	0.47	2.25	6.52	0.02	11.78	1.74
On-road Truck Transport	65	0.54	2.45	6.75	0.02	11.80	1.76
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	9.53	44.19	113.59	0.06	0.27	0.25
On-road Truck Transport	5	6.28	10.79	18.48	0.04	1.24	0.41
On-road Truck Transport	10	3.45	7.27	13.09	0.03	1.15	0.33
On-road Truck Transport	15	1.64	4.82	9.62	0.03	1.09	0.27
On-road Truck Transport	20	0.90	3.51	8.07	0.02	1.05	0.24
On-road Truck Transport	25	0.75	3.08	7.55	0.02	1.04	0.22
On-road Truck Transport	30	0.62	2.72	7.12	0.02	1.03	0.21
On-road Truck Transport	35	0.52	2.45	6.79	0.02	1.02	0.21
On-road Truck Transport	40	0.45	2.25	6.55	0.02	1.02	0.21
On-road Truck Transport	45	0.41	2.13	6.40	0.02	1.03	0.21
On-road Truck Transport	50	0.40	2.09	6.35	0.02	1.04	0.22
On-road Truck Transport	55	0.42	2.13	6.39	0.02	1.05	0.23
On-road Truck Transport	60	0.47	2.25	6.52	0.02	1.06	0.25
On-road Truck Transport	65	0.54	2.45	6.75	0.02	1.09	0.27
<b>Year 2023</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	8.15	42.17	43.54	0.06	0.22	0.21
On-road Truck Transport	5	3.36	6.33	3.54	0.04	11.83	1.79
On-road Truck Transport	7.5	2.60	5.14	3.07	0.03	11.81	1.77

On-road Truck Transport	10	1.83	3.94	2.61	0.03	11.79	1.76
On-road Truck Transport	15	0.88	2.37	1.96	0.03	11.77	1.73
On-road Truck Transport	20	0.50	1.67	1.62	0.02	11.75	1.71
On-road Truck Transport	25	0.43	1.54	1.47	0.02	11.74	1.71
On-road Truck Transport	30	0.37	1.45	1.35	0.02	11.74	1.70
On-road Truck Transport	35	0.32	1.38	1.25	0.02	11.74	1.71
On-road Truck Transport	40	0.28	1.35	1.18	0.02	11.74	1.71
On-road Truck Transport	45	0.25	1.35	1.13	0.02	11.75	1.72
On-road Truck Transport	50	0.23	1.38	1.11	0.02	11.76	1.73
On-road Truck Transport	55	0.22	1.45	1.10	0.02	11.77	1.74
On-road Truck Transport	60	0.23	1.55	1.12	0.02	11.79	1.75
On-road Truck Transport	65	0.24	1.68	1.17	0.02	11.81	1.77
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	8.15	42.17	43.54	0.06	0.22	0.21
On-road Truck Transport	5	3.36	6.33	3.54	0.04	1.12	0.30
On-road Truck Transport	10	1.83	3.94	2.61	0.03	1.08	0.26
On-road Truck Transport	15	0.88	2.37	1.96	0.03	1.05	0.23
On-road Truck Transport	20	0.50	1.67	1.62	0.02	1.03	0.22
On-road Truck Transport	25	0.43	1.54	1.47	0.02	1.03	0.21
On-road Truck Transport	30	0.37	1.45	1.35	0.02	1.02	0.21
On-road Truck Transport	35	0.32	1.38	1.25	0.02	1.02	0.21
On-road Truck Transport	40	0.28	1.35	1.18	0.02	1.03	0.21
On-road Truck Transport	45	0.25	1.35	1.13	0.02	1.03	0.22
On-road Truck Transport	50	0.23	1.38	1.11	0.02	1.05	0.23
On-road Truck Transport	55	0.22	1.45	1.10	0.02	1.06	0.24
On-road Truck Transport	60	0.23	1.55	1.12	0.02	1.08	0.26
On-road Truck Transport	65	0.24	1.68	1.17	0.02	1.10	0.28
<b>Year 2035</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.68	41.48	57.35	0.06	0.12	0.11
On-road Truck Transport	5	2.43	4.81	3.30	0.04	11.76	1.72
On-road Truck Transport	7.5	1.88	3.85	2.89	0.03	11.75	1.72
On-road Truck Transport	10	1.33	2.89	2.48	0.03	11.75	1.72
On-road Truck Transport	15	0.63	1.66	1.88	0.03	11.74	1.71
On-road Truck Transport	20	0.37	1.15	1.54	0.02	11.73	1.70
On-road Truck Transport	25	0.33	1.09	1.38	0.02	11.73	1.70
On-road Truck Transport	30	0.28	1.06	1.25	0.02	11.73	1.70
On-road Truck Transport	35	0.25	1.04	1.15	0.02	11.74	1.70
On-road Truck Transport	40	0.22	1.04	1.07	0.02	11.74	1.71
On-road Truck Transport	45	0.19	1.06	1.01	0.02	11.75	1.72
On-road Truck Transport	50	0.17	1.11	0.98	0.02	11.76	1.73
On-road Truck Transport	55	0.16	1.17	0.97	0.02	11.78	1.74
On-road Truck Transport	60	0.16	1.25	0.99	0.02	11.79	1.76
On-road Truck Transport	65	0.15	1.35	1.03	0.02	11.81	1.77
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.68	41.48	57.35	0.06	0.12	0.11
On-road Truck Transport	5	2.43	4.81	3.30	0.04	1.04	0.23
On-road Truck Transport	10	1.33	2.89	2.48	0.03	1.03	0.22
On-road Truck Transport	15	0.63	1.66	1.88	0.03	1.03	0.21
On-road Truck Transport	20	0.37	1.15	1.54	0.02	1.02	0.21
On-road Truck Transport	25	0.33	1.09	1.38	0.02	1.02	0.20
On-road Truck Transport	30	0.28	1.06	1.25	0.02	1.02	0.21
On-road Truck Transport	35	0.25	1.04	1.15	0.02	1.02	0.21
On-road Truck Transport	40	0.22	1.04	1.07	0.02	1.03	0.21
On-road Truck Transport	45	0.19	1.06	1.01	0.02	1.04	0.22
On-road Truck Transport	50	0.17	1.11	0.98	0.02	1.05	0.23
On-road Truck Transport	55	0.16	1.17	0.97	0.02	1.06	0.25
On-road Truck Transport	60	0.16	1.25	0.99	0.02	1.08	0.26
On-road Truck Transport	65	0.15	1.35	1.03	0.02	1.10	0.28
<b>Year 2046</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.66	41.44	58.12	0.06	0.11	0.10
On-road Truck Transport	5	2.40	4.75	3.29	0.04	11.76	1.72
On-road Truck Transport	7.5	1.85	3.80	2.88	0.03	11.75	1.72
On-road Truck Transport	10	1.31	2.85	2.47	0.03	11.75	1.71
On-road Truck Transport	15	0.63	1.63	1.88	0.03	11.74	1.71
On-road Truck Transport	20	0.37	1.13	1.53	0.02	11.74	1.70
On-road Truck Transport	25	0.32	1.08	1.38	0.02	11.73	1.70

On-road Truck Transport	30	0.28	1.04	1.25	0.02	11.73	1.70
On-road Truck Transport	35	0.24	1.02	1.14	0.02	11.74	1.70
On-road Truck Transport	40	0.21	1.03	1.06	0.02	11.74	1.71
On-road Truck Transport	45	0.19	1.05	1.01	0.02	11.75	1.72
On-road Truck Transport	50	0.17	1.09	0.97	0.02	11.76	1.73
On-road Truck Transport	55	0.16	1.15	0.97	0.02	11.78	1.74
On-road Truck Transport	60	0.15	1.24	0.99	0.02	11.79	1.76
On-road Truck Transport	65	0.15	1.34	1.03	0.02	11.82	1.78
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.66	41.44	58.12	0.06	0.11	0.10
On-road Truck Transport	5	2.40	4.75	3.29	0.04	1.04	0.23
On-road Truck Transport	10	1.31	2.85	2.47	0.03	1.03	0.22
On-road Truck Transport	15	0.63	1.63	1.88	0.03	1.03	0.21
On-road Truck Transport	20	0.37	1.13	1.53	0.02	1.02	0.21
On-road Truck Transport	25	0.32	1.08	1.38	0.02	1.02	0.21
On-road Truck Transport	30	0.28	1.04	1.25	0.02	1.02	0.21
On-road Truck Transport	35	0.24	1.02	1.14	0.02	1.02	0.21
On-road Truck Transport	40	0.21	1.03	1.06	0.02	1.03	0.21
On-road Truck Transport	45	0.19	1.05	1.01	0.02	1.04	0.22
On-road Truck Transport	50	0.17	1.09	0.97	0.02	1.05	0.23
On-road Truck Transport	55	0.16	1.15	0.97	0.02	1.06	0.25
On-road Truck Transport	60	0.15	1.24	0.99	0.02	1.08	0.26
On-road Truck Transport	65	0.15	1.34	1.03	0.02	1.10	0.28

Notes:

- (1) On-site travel speed was assumed at 7.5 mph.
- (2) Emission factors were generated by EMFAC2007 v2.3 model with SCAB default age distributions.
- (3) NOx and PM emission factors are adjusted to meet CARB Statewide Truck and Bus Regulation.
- (4) Year 2046 uses 2040 emission factors, EMFAC 2007 only calculates emissions factors to 2040.
- (5) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-TEN-4. Emission Factors for Tenant Employee Commute Vehicles - Proposed Project and Reduced Project**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.21	2.93	0.23	0.01	1.65	0.16
On-road Truck Transport	7.5	0.17	2.75	0.22	0.01	1.64	0.15
On-road Truck Transport	10	0.14	2.57	0.20	0.01	1.63	0.15
On-road Truck Transport	15	0.10	2.28	0.18	0.01	1.62	0.14
On-road Truck Transport	20	0.07	2.05	0.16	0.00	1.61	0.13
On-road Truck Transport	25	0.06	1.86	0.15	0.00	1.61	0.13
On-road Truck Transport	30	0.05	1.71	0.14	0.00	1.60	0.12
On-road Truck Transport	35	0.04	1.58	0.13	0.00	1.60	0.12
On-road Truck Transport	40	0.04	1.47	0.13	0.00	1.60	0.12
On-road Truck Transport	45	0.03	1.39	0.13	0.00	1.60	0.12
On-road Truck Transport	50	0.03	1.32	0.13	0.00	1.60	0.12
On-road Truck Transport	55	0.04	1.28	0.14	0.00	1.60	0.12
On-road Truck Transport	60	0.04	1.26	0.14	0.00	1.60	0.12
On-road Truck Transport	65	0.04	1.27	0.15	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.24	2.93	0.23	0.01	0.96	0.11
On-road Truck Transport	10	0.16	2.57	0.20	0.01	0.94	0.09
On-road Truck Transport	15	0.11	2.28	0.18	0.01	0.93	0.09
On-road Truck Transport	20	0.08	2.05	0.16	0.00	0.93	0.08
On-road Truck Transport	25	0.07	1.86	0.15	0.00	0.92	0.08
On-road Truck Transport	30	0.05	1.71	0.14	0.00	0.92	0.07
On-road Truck Transport	35	0.05	1.58	0.13	0.00	0.92	0.07
On-road Truck Transport	40	0.04	1.47	0.13	0.00	0.92	0.07
On-road Truck Transport	45	0.04	1.39	0.13	0.00	0.92	0.07
On-road Truck Transport	50	0.04	1.32	0.13	0.00	0.92	0.07
On-road Truck Transport	55	0.04	1.28	0.14	0.00	0.92	0.07
On-road Truck Transport	60	0.04	1.26	0.14	0.00	0.92	0.07
On-road Truck Transport	65	0.05	1.27	0.15	0.00	0.92	0.07
<b>Year 2014</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.19	2.65	0.21	0.01	1.65	0.16
On-road Truck Transport	7.5	0.16	2.49	0.20	0.01	1.64	0.15
On-road Truck Transport	10	0.12	2.33	0.18	0.01	1.63	0.15
On-road Truck Transport	15	0.09	2.08	0.16	0.01	1.62	0.14
On-road Truck Transport	20	0.06	1.88	0.15	0.00	1.61	0.13
On-road Truck Transport	25	0.05	1.71	0.14	0.00	1.61	0.13
On-road Truck Transport	30	0.04	1.57	0.13	0.00	1.60	0.12
On-road Truck Transport	35	0.04	1.45	0.12	0.00	1.60	0.12
On-road Truck Transport	40	0.03	1.35	0.12	0.00	1.60	0.12
On-road Truck Transport	45	0.03	1.27	0.12	0.00	1.60	0.12
On-road Truck Transport	50	0.03	1.20	0.12	0.00	1.60	0.12
On-road Truck Transport	55	0.03	1.16	0.12	0.00	1.60	0.12
On-road Truck Transport	60	0.03	1.13	0.13	0.00	1.60	0.12
On-road Truck Transport	65	0.04	1.13	0.14	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.21	2.65	0.21	0.01	0.96	0.11
On-road Truck Transport	10	0.14	2.33	0.18	0.01	0.94	0.10
On-road Truck Transport	15	0.10	2.08	0.16	0.01	0.93	0.09
On-road Truck Transport	20	0.07	1.88	0.15	0.00	0.93	0.08
On-road Truck Transport	25	0.06	1.71	0.14	0.00	0.92	0.08



On-road Truck Transport	30	0.05	1.57	0.13	0.00	0.92	0.07
On-road Truck Transport	35	0.04	1.45	0.12	0.00	0.92	0.07
On-road Truck Transport	40	0.04	1.35	0.12	0.00	0.92	0.07
On-road Truck Transport	45	0.03	1.27	0.12	0.00	0.92	0.07
On-road Truck Transport	50	0.03	1.20	0.12	0.00	0.92	0.07
On-road Truck Transport	55	0.04	1.16	0.12	0.00	0.92	0.07
On-road Truck Transport	60	0.04	1.13	0.13	0.00	0.92	0.07
On-road Truck Transport	65	0.04	1.13	0.14	0.00	0.92	0.07
<b>Year 2015</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.17	2.41	0.19	0.01	1.65	0.16
On-road Truck Transport	7.5	0.14	2.27	0.18	0.01	1.64	0.15
On-road Truck Transport	10	0.11	2.13	0.17	0.01	1.63	0.15
On-road Truck Transport	15	0.08	1.91	0.15	0.01	1.62	0.14
On-road Truck Transport	20	0.06	1.72	0.13	0.00	1.61	0.13
On-road Truck Transport	25	0.04	1.57	0.12	0.00	1.61	0.13
On-road Truck Transport	30	0.04	1.44	0.11	0.00	1.60	0.12
On-road Truck Transport	35	0.03	1.33	0.11	0.00	1.60	0.12
On-road Truck Transport	40	0.03	1.24	0.11	0.00	1.60	0.12
On-road Truck Transport	45	0.03	1.16	0.11	0.00	1.60	0.12
On-road Truck Transport	50	0.03	1.10	0.11	0.00	1.60	0.12
On-road Truck Transport	55	0.03	1.05	0.11	0.00	1.60	0.12
On-road Truck Transport	60	0.03	1.02	0.11	0.00	1.60	0.12
On-road Truck Transport	65	0.03	1.01	0.12	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.19	2.41	0.19	0.01	0.96	0.11
On-road Truck Transport	10	0.13	2.13	0.17	0.01	0.94	0.10
On-road Truck Transport	15	0.09	1.91	0.15	0.01	0.93	0.09
On-road Truck Transport	20	0.07	1.72	0.13	0.00	0.93	0.08
On-road Truck Transport	25	0.05	1.57	0.12	0.00	0.92	0.08
On-road Truck Transport	30	0.04	1.44	0.11	0.00	0.92	0.07
On-road Truck Transport	35	0.04	1.33	0.11	0.00	0.92	0.07
On-road Truck Transport	40	0.03	1.24	0.11	0.00	0.92	0.07
On-road Truck Transport	45	0.03	1.16	0.11	0.00	0.92	0.07
On-road Truck Transport	50	0.03	1.10	0.11	0.00	0.92	0.07
On-road Truck Transport	55	0.03	1.05	0.11	0.00	0.92	0.07
On-road Truck Transport	60	0.03	1.02	0.11	0.00	0.92	0.07
On-road Truck Transport	65	0.04	1.01	0.12	0.00	0.92	0.07
<b>Year 2016</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.17	2.21	0.17	0.01	1.65	0.16
On-road Truck Transport	7.5	0.14	2.08	0.16	0.01	1.64	0.16
On-road Truck Transport	10	0.11	1.96	0.15	0.01	1.63	0.15
On-road Truck Transport	15	0.08	1.76	0.13	0.01	1.62	0.14
On-road Truck Transport	20	0.06	1.59	0.12	0.00	1.61	0.13
On-road Truck Transport	25	0.05	1.45	0.11	0.00	1.61	0.13
On-road Truck Transport	30	0.04	1.33	0.10	0.00	1.60	0.12
On-road Truck Transport	35	0.03	1.23	0.10	0.00	1.60	0.12
On-road Truck Transport	40	0.03	1.14	0.10	0.00	1.60	0.12
On-road Truck Transport	45	0.03	1.07	0.10	0.00	1.60	0.12
On-road Truck Transport	50	0.03	1.01	0.10	0.00	1.60	0.12
On-road Truck Transport	55	0.03	0.97	0.10	0.00	1.60	0.12
On-road Truck Transport	60	0.03	0.93	0.10	0.00	1.60	0.12
On-road Truck Transport	65	0.03	0.92	0.11	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00

On-road Truck Transport	5	0.17	2.21	0.17	0.01	0.96	0.11
On-road Truck Transport	10	0.11	1.96	0.15	0.01	0.95	0.10
On-road Truck Transport	15	0.08	1.76	0.13	0.01	0.93	0.09
On-road Truck Transport	20	0.06	1.59	0.12	0.00	0.93	0.08
On-road Truck Transport	25	0.05	1.45	0.11	0.00	0.92	0.08
On-road Truck Transport	30	0.04	1.33	0.10	0.00	0.92	0.07
On-road Truck Transport	35	0.03	1.23	0.10	0.00	0.92	0.07
On-road Truck Transport	40	0.03	1.14	0.10	0.00	0.92	0.07
On-road Truck Transport	45	0.03	1.07	0.10	0.00	0.92	0.07
On-road Truck Transport	50	0.03	1.01	0.10	0.00	0.92	0.07
On-road Truck Transport	55	0.03	0.97	0.10	0.00	0.92	0.07
On-road Truck Transport	60	0.03	0.93	0.10	0.00	0.92	0.07
On-road Truck Transport	65	0.03	0.92	0.11	0.00	0.92	0.07
<b>Year 2023</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.10	1.30	0.10	0.01	1.65	0.16
On-road Truck Transport	7.5	0.08	1.24	0.09	0.01	1.64	0.16
On-road Truck Transport	10	0.06	1.17	0.09	0.01	1.63	0.15
On-road Truck Transport	15	0.04	1.06	0.08	0.01	1.62	0.14
On-road Truck Transport	20	0.03	0.97	0.07	0.00	1.61	0.13
On-road Truck Transport	25	0.02	0.89	0.06	0.00	1.61	0.13
On-road Truck Transport	30	0.02	0.82	0.06	0.00	1.60	0.12
On-road Truck Transport	35	0.02	0.75	0.06	0.00	1.60	0.12
On-road Truck Transport	40	0.01	0.70	0.05	0.00	1.60	0.12
On-road Truck Transport	45	0.01	0.65	0.05	0.00	1.60	0.12
On-road Truck Transport	50	0.01	0.61	0.05	0.00	1.60	0.12
On-road Truck Transport	55	0.01	0.57	0.06	0.00	1.60	0.12
On-road Truck Transport	60	0.02	0.54	0.06	0.00	1.60	0.12
On-road Truck Transport	65	0.02	0.52	0.06	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.10	1.30	0.10	0.01	0.96	0.11
On-road Truck Transport	10	0.06	1.17	0.09	0.01	0.95	0.10
On-road Truck Transport	15	0.04	1.06	0.08	0.01	0.93	0.09
On-road Truck Transport	20	0.03	0.97	0.07	0.00	0.93	0.08
On-road Truck Transport	25	0.02	0.89	0.06	0.00	0.92	0.08
On-road Truck Transport	30	0.02	0.82	0.06	0.00	0.92	0.07
On-road Truck Transport	35	0.02	0.75	0.06	0.00	0.92	0.07
On-road Truck Transport	40	0.01	0.70	0.05	0.00	0.92	0.07
On-road Truck Transport	45	0.01	0.65	0.05	0.00	0.92	0.07
On-road Truck Transport	50	0.01	0.61	0.05	0.00	0.92	0.07
On-road Truck Transport	55	0.01	0.57	0.06	0.00	0.92	0.07
On-road Truck Transport	60	0.02	0.54	0.06	0.00	0.92	0.07
On-road Truck Transport	65	0.02	0.52	0.06	0.00	0.92	0.07
<b>Year 2035</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.06	0.81	0.06	0.01	1.65	0.16
On-road Truck Transport	7.5	0.05	0.78	0.05	0.01	1.64	0.16
On-road Truck Transport	10	0.04	0.74	0.05	0.01	1.63	0.15
On-road Truck Transport	15	0.03	0.68	0.05	0.01	1.62	0.14
On-road Truck Transport	20	0.02	0.62	0.04	0.00	1.61	0.13
On-road Truck Transport	25	0.01	0.57	0.04	0.00	1.61	0.13
On-road Truck Transport	30	0.01	0.53	0.04	0.00	1.60	0.12
On-road Truck Transport	35	0.01	0.49	0.03	0.00	1.60	0.12
On-road Truck Transport	40	0.01	0.45	0.03	0.00	1.60	0.12
On-road Truck Transport	45	0.01	0.42	0.03	0.00	1.60	0.12
On-road Truck Transport	50	0.01	0.39	0.03	0.00	1.60	0.12

On-road Truck Transport	55	0.01	0.37	0.03	0.00	1.60	0.12
On-road Truck Transport	60	0.01	0.34	0.03	0.00	1.60	0.12
On-road Truck Transport	65	0.01	0.32	0.03	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.06	0.81	0.06	0.01	0.96	0.11
On-road Truck Transport	10	0.04	0.74	0.05	0.01	0.95	0.10
On-road Truck Transport	15	0.03	0.68	0.05	0.01	0.93	0.09
On-road Truck Transport	20	0.02	0.62	0.04	0.00	0.93	0.08
On-road Truck Transport	25	0.01	0.57	0.04	0.00	0.92	0.08
On-road Truck Transport	30	0.01	0.53	0.04	0.00	0.92	0.07
On-road Truck Transport	35	0.01	0.49	0.03	0.00	0.92	0.07
On-road Truck Transport	40	0.01	0.45	0.03	0.00	0.92	0.07
On-road Truck Transport	45	0.01	0.42	0.03	0.00	0.92	0.07
On-road Truck Transport	50	0.01	0.39	0.03	0.00	0.92	0.07
On-road Truck Transport	55	0.01	0.37	0.03	0.00	0.92	0.07
On-road Truck Transport	60	0.01	0.34	0.03	0.00	0.92	0.07
On-road Truck Transport	65	0.01	0.32	0.03	0.00	0.92	0.07
<b>Year 2046</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.05	0.74	0.05	0.01	1.65	0.17
On-road Truck Transport	7.5	0.04	0.71	0.05	0.01	1.64	0.16
On-road Truck Transport	10	0.03	0.68	0.05	0.01	1.63	0.15
On-road Truck Transport	15	0.02	0.62	0.04	0.01	1.62	0.14
On-road Truck Transport	20	0.02	0.57	0.04	0.00	1.61	0.13
On-road Truck Transport	25	0.01	0.52	0.03	0.00	1.61	0.13
On-road Truck Transport	30	0.01	0.48	0.03	0.00	1.60	0.12
On-road Truck Transport	35	0.01	0.45	0.03	0.00	1.60	0.12
On-road Truck Transport	40	0.01	0.41	0.03	0.00	1.60	0.12
On-road Truck Transport	45	0.01	0.38	0.03	0.00	1.60	0.12
On-road Truck Transport	50	0.01	0.36	0.03	0.00	1.60	0.12
On-road Truck Transport	55	0.01	0.33	0.03	0.00	1.60	0.12
On-road Truck Transport	60	0.01	0.31	0.03	0.00	1.60	0.12
On-road Truck Transport	65	0.01	0.29	0.03	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.05	0.74	0.05	0.01	0.97	0.12
On-road Truck Transport	10	0.03	0.68	0.05	0.01	0.95	0.10
On-road Truck Transport	15	0.02	0.62	0.04	0.01	0.93	0.09
On-road Truck Transport	20	0.02	0.57	0.04	0.00	0.93	0.08
On-road Truck Transport	25	0.01	0.52	0.03	0.00	0.92	0.08
On-road Truck Transport	30	0.01	0.48	0.03	0.00	0.92	0.07
On-road Truck Transport	35	0.01	0.45	0.03	0.00	0.92	0.07
On-road Truck Transport	40	0.01	0.41	0.03	0.00	0.92	0.07
On-road Truck Transport	45	0.01	0.38	0.03	0.00	0.92	0.07
On-road Truck Transport	50	0.01	0.36	0.03	0.00	0.92	0.07
On-road Truck Transport	55	0.01	0.33	0.03	0.00	0.92	0.07
On-road Truck Transport	60	0.01	0.31	0.03	0.00	0.92	0.07
On-road Truck Transport	65	0.01	0.29	0.03	0.00	0.92	0.07

Notes:

- (1) On-site travel speed was assumed at 7.5 mph.
- (2) Emission factors were generated by EMFAC2007 v2.3 model with SCAB default age distributions.
- (4) Year 2046 uses 2040 emission factors, EMFAC 2007 only calculates emissions factors to 2040.
- (5) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-TEN-5. Annual Tenant Truck Emissions - Proposed Project and Reduced Project**

Project Year - Mode	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>						
On-Site	3.29	9.06	21.20	0.02	4.59	0.88
Off-Site	3.64	15.48	48.93	0.10	6.40	1.33
<b>Year 2013</b>	<b>6.93</b>	<b>24.54</b>	<b>70.13</b>	<b>0.12</b>	<b>10.98</b>	<b>2.21</b>
<b>Year 2014</b>						
On-Site	1.86	5.52	12.65	0.01	2.76	0.44
Off-Site	2.00	8.29	23.88	0.05	3.06	0.48
<b>Year 2014</b>	<b>3.87</b>	<b>13.81</b>	<b>36.53</b>	<b>0.07</b>	<b>5.82</b>	<b>0.92</b>
<b>Year 2015</b>						
On-Site	1.74	5.32	12.93	0.01	2.76	0.44
Off-Site	1.88	7.70	22.79	0.05	3.06	0.48
<b>Year 2015</b>	<b>3.62</b>	<b>13.02</b>	<b>35.72</b>	<b>0.07</b>	<b>5.82</b>	<b>0.92</b>
<b>Year 2016</b>						
On-Site	1.64	5.16	12.29	0.01	2.75	0.44
Off-Site	1.78	7.21	20.53	0.05	3.07	0.49
<b>Year 2016</b>	<b>3.42</b>	<b>12.37</b>	<b>32.82</b>	<b>0.07</b>	<b>5.82</b>	<b>0.92</b>
<b>Year 2023</b>						
On-Site	1.16	4.31	5.70	0.01	2.74	0.42
Off-Site	1.09	4.36	6.79	0.05	3.06	0.48
<b>Year 2023</b>	<b>2.25</b>	<b>8.67</b>	<b>12.49</b>	<b>0.07</b>	<b>5.80</b>	<b>0.91</b>
<b>Year 2035</b>						
On-Site	1.02	4.07	6.51	0.01	2.72	0.41
Off-Site	0.96	3.68	6.77	0.05	3.05	0.47
<b>Year 2035</b>	<b>1.98</b>	<b>7.75</b>	<b>13.29</b>	<b>0.07</b>	<b>5.78</b>	<b>0.88</b>
<b>Year 2046</b>						
On-Site	1.02	4.06	6.55	0.01	2.60	0.39
Off-Site	0.93	3.63	6.64	0.05	3.06	0.47
<b>Year 2046</b>	<b>1.94</b>	<b>7.68</b>	<b>13.19</b>	<b>0.07</b>	<b>5.66</b>	<b>0.86</b>
Notes:						
(1) Trucks include Port drayage trucks, vendor trucks, and other medium-duty trucks.						
(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.						

**Table C1.2-TEN-6. Peak Daily Tenant Truck Emissions - Proposed Project and Reduced Project**

Project Year - Mode	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>						
On-Site	22.85	63.04	147.77	0.13	31.71	6.08
Off-Site	25.29	107.67	340.09	0.72	44.45	9.27
<b>Year 2013</b>	<b>48.14</b>	<b>170.72</b>	<b>487.86</b>	<b>0.85</b>	<b>76.16</b>	<b>15.35</b>
<b>Year 2014</b>						
On-Site	13.13	39.07	89.69	0.09	19.33	3.08
Off-Site	14.25	58.92	169.99	0.38	21.82	3.45
<b>Year 2014</b>	<b>27.38</b>	<b>97.99</b>	<b>259.67</b>	<b>0.47</b>	<b>41.16</b>	<b>6.53</b>
<b>Year 2015</b>						
On-Site	12.30	37.70	91.70	0.09	19.32	3.07
Off-Site	13.38	54.75	162.33	0.38	21.86	3.46
<b>Year 2015</b>	<b>25.68</b>	<b>92.46</b>	<b>254.03</b>	<b>0.47</b>	<b>41.18</b>	<b>6.53</b>
<b>Year 2016</b>						
On-Site	11.61	36.56	87.25	0.09	19.29	3.06
Off-Site	12.65	51.32	146.31	0.38	21.88	3.48
<b>Year 2016</b>	<b>24.26</b>	<b>87.88</b>	<b>233.56</b>	<b>0.47</b>	<b>41.17</b>	<b>6.53</b>
<b>Year 2023</b>						
On-Site	8.19	30.59	40.58	0.09	19.18	2.95
Off-Site	7.79	31.07	48.65	0.38	21.85	3.46
<b>Year 2023</b>	<b>15.98</b>	<b>61.65</b>	<b>89.23</b>	<b>0.47</b>	<b>41.03</b>	<b>6.41</b>
<b>Year 2035</b>						
On-Site	7.24	28.92	46.36	0.09	19.09	2.86
Off-Site	6.82	26.27	48.52	0.39	21.79	3.39
<b>Year 2035</b>	<b>14.06</b>	<b>55.19</b>	<b>94.88</b>	<b>0.47</b>	<b>40.88</b>	<b>6.25</b>
<b>Year 2046</b>						
On-Site	7.20	28.83	46.64	0.09	18.21	2.73
Off-Site	6.63	25.90	47.54	0.38	21.79	3.39
<b>Year 2046</b>	<b>13.83</b>	<b>54.72</b>	<b>94.19</b>	<b>0.47</b>	<b>40.01</b>	<b>6.12</b>

Notes:

(1) Trucks include Port drayage trucks, vendor trucks, and other medium-duty trucks.

(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-TEN-7. Annual Tenant Employee Commute Emissions - Proposed Project and Reduced Project**

Project Year - Mode	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>						
On-Site	0.01	0.21	0.02	0.00	0.12	0.01
Off-Site	0.44	13.32	1.20	0.03	7.96	0.80
<b>Year 2013</b>	<b>0.46</b>	<b>13.53</b>	<b>1.22</b>	<b>0.03</b>	<b>8.08</b>	<b>0.81</b>
<b>Year 2014</b>						
On-Site	0.01	0.10	0.01	0.00	0.07	0.01
Off-Site	0.24	7.27	0.63	0.02	4.63	0.55
<b>Year 2014</b>	<b>0.24</b>	<b>7.38</b>	<b>0.64</b>	<b>0.02</b>	<b>4.70</b>	<b>0.56</b>
<b>Year 2015</b>						
On-Site	0.01	0.10	0.01	0.00	0.07	0.01
Off-Site	0.21	6.66	0.57	0.02	4.64	0.56
<b>Year 2015</b>	<b>0.22</b>	<b>6.76</b>	<b>0.58</b>	<b>0.02</b>	<b>4.71</b>	<b>0.57</b>
<b>Year 2016</b>						
On-Site	0.01	0.09	0.01	0.00	0.07	0.01
Off-Site	0.16	5.33	0.45	0.01	4.02	0.48
<b>Year 2016</b>	<b>0.17</b>	<b>5.42</b>	<b>0.46</b>	<b>0.01</b>	<b>4.09</b>	<b>0.49</b>
<b>Year 2023</b>						
On-Site	0.00	0.05	0.00	0.00	0.07	0.01
Off-Site	0.09	3.20	0.25	0.01	4.02	0.48
<b>Year 2023</b>	<b>0.09</b>	<b>3.25</b>	<b>0.26</b>	<b>0.01</b>	<b>4.09</b>	<b>0.49</b>
<b>Year 2035</b>						
On-Site	0.00	0.03	0.00	0.00	0.07	0.01
Off-Site	0.05	2.10	0.15	0.01	4.02	0.48
<b>Year 2035</b>	<b>0.05</b>	<b>2.13</b>	<b>0.15</b>	<b>0.01</b>	<b>4.09</b>	<b>0.49</b>
<b>Year 2046</b>						
On-Site	0.00	0.03	0.00	0.00	0.07	0.01
Off-Site	0.04	1.92	0.13	0.01	4.02	0.48
<b>Year 2046</b>	<b>0.05</b>	<b>1.95</b>	<b>0.14</b>	<b>0.01</b>	<b>4.09</b>	<b>0.49</b>
Notes:						
(1) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.						

**Table C1.2-TEN-8. Peak Daily Tenant Employee Commute Emissions - Proposed Project and Reduced Project**

Project Year - Mode	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>						
On-Site	0.10	1.32	0.10	0.00	0.79	0.08
Off-Site	2.85	86.10	7.76	0.18	51.46	5.37
<b>Year 2013</b>	<b>2.94</b>	<b>87.42</b>	<b>7.87</b>	<b>0.19</b>	<b>52.25</b>	<b>5.45</b>
<b>Year 2014</b>						
On-Site	0.05	0.71	0.06	0.00	0.46	0.05
Off-Site	1.60	49.38	4.30	0.11	31.50	3.90
<b>Year 2014</b>	<b>1.65</b>	<b>50.09</b>	<b>4.36</b>	<b>0.12</b>	<b>31.96</b>	<b>3.96</b>
<b>Year 2015</b>						
On-Site	0.05	0.65	0.05	0.00	0.46	0.05
Off-Site	1.42	45.23	3.88	0.11	31.54	3.96
<b>Year 2015</b>	<b>1.46</b>	<b>45.88</b>	<b>3.93</b>	<b>0.12</b>	<b>32.00</b>	<b>4.02</b>
<b>Year 2016</b>						
On-Site	0.04	0.60	0.05	0.00	0.47	0.06
Off-Site	1.10	36.25	3.08	0.10	27.40	3.41
<b>Year 2016</b>	<b>1.14</b>	<b>36.85</b>	<b>3.13</b>	<b>0.10</b>	<b>27.87</b>	<b>3.46</b>
<b>Year 2023</b>						
On-Site	0.02	0.36	0.03	0.00	0.47	0.05
Off-Site	0.58	21.77	1.72	0.10	27.39	3.40
<b>Year 2023</b>	<b>0.60</b>	<b>22.13</b>	<b>1.75</b>	<b>0.10</b>	<b>27.86</b>	<b>3.45</b>
<b>Year 2035</b>						
On-Site	0.01	0.23	0.02	0.00	0.47	0.05
Off-Site	0.34	14.28	1.01	0.10	27.40	3.41
<b>Year 2035</b>	<b>0.36</b>	<b>14.51</b>	<b>1.03</b>	<b>0.10</b>	<b>27.87</b>	<b>3.46</b>
<b>Year 2046</b>						
On-Site	0.01	0.21	0.01	0.00	0.47	0.05
Off-Site	0.30	13.07	0.92	0.10	27.40	3.41
<b>Year 2046</b>	<b>0.31</b>	<b>13.28</b>	<b>0.93</b>	<b>0.10</b>	<b>27.88</b>	<b>3.47</b>
Notes:						
(1) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.						
(2) Peak daily emissions are equivalent to the average daily emissions.						

**Table C1.2-TEN-9. Activity Data for Tenant CHE - Proposed Project and Reduced Project**

<b>Equipment</b>	<b>Fuel</b>	<b>Average HP</b>	<b>Equipment Total</b>	<b>Annual Hours of Operation</b>	<b>Average Load Factor</b>	<b>Annual hp-hrs</b>
<b>All Years</b>						
Container Handling Equipment > 175 - 210	Diesel	198	3	6,240	0.59	728,957
Fork Lift > 50-120	Diesel	97	9	6,568	0.30	198,816
Fork Lift > 120-175	Diesel	138	5	9,152	0.30	380,640
Fork Lift > 175-250	Diesel	192	3	6,240	0.30	358,800
Other, General Industrial Equipment > 175-250	Diesel	220	2	780	0.51	91,494
Power Pack > 200	Diesel	202	1	750	0.74	112,110
Side Pick > 120-175	Diesel	136	1	875	0.59	70,210
Sweeper/Scrubber > 50-120	Diesel	60	1	208	0.68	8,486
Top Handler > 50-120	Diesel	120	2	1,948	0.38	89,497
Tractor/ Loader/Backhoe > 120-175	Diesel	158	4	6,448	0.55	565,365
Yard tractor > 210-400	Diesel	250	1	1,000	0.39	97,500
Yard Truck > 120-175	Diesel	150	1	1,040	0.39	60,840
Yard Truck > 175-210	Diesel	209	23	33,541	0.39	2,741,938
Yard Truck > 210-400	Diesel	350	1	2,080	0.39	283,920
Fork Lift > 50-120	LPG	77	166	324,880	0.30	72,527,587
Top Handler > 50-120	LPG	92	1	1,440	0.30	39,744



**Table C1.2-TEN-10. Emission Factors for Tenant CHE - Proposed Project and Reduced Project**

Equipment	Fuel	Emission Factors (grams/hp-hr)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2013</b>							
Container Handling Equipment > 175 - 210	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Fork Lift > 50-120	Diesel	0.11	3.06	3.14	0.01	0.18	0.17
Fork Lift > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Fork Lift > 175-250	Diesel	0.07	0.92	1.36	0.01	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Power Pack > 200	Diesel	0.41	1.17	4.48	0.01	0.12	0.11
Side Pick > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Sweeper/Scrubber > 50-120	Diesel	0.09	3.05	2.89	0.01	0.20	0.18
Top Handler > 50-120	Diesel	0.10	3.05	2.89	0.01	0.20	0.18
Tractor/ Loader/Backhoe > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard tractor > 210-400	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Yard Truck > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard Truck > 175-210	Diesel	0.10	0.92	2.45	0.01	0.11	0.10
Yard Truck > 210-400	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Fork Lift > 50-120	LPG	0.88	28.63	3.45	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.88	30.41	3.46	0.00	0.06	0.06
<b>Year 2014</b>							
Container Handling Equipment > 175 - 210	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Fork Lift > 50-120	Diesel	0.11	3.06	3.14	0.01	0.18	0.17
Fork Lift > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Fork Lift > 175-250	Diesel	0.07	0.92	1.36	0.01	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Power Pack > 200	Diesel	0.38	1.14	4.08	0.01	0.11	0.10
Side Pick > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Sweeper/Scrubber > 50-120	Diesel	0.09	3.05	2.89	0.01	0.20	0.18
Top Handler > 50-120	Diesel	0.09	3.05	2.89	0.01	0.20	0.18
Tractor/ Loader/Backhoe > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard tractor > 210-400	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Yard Truck > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard Truck > 175-210	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Yard Truck > 210-400	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Fork Lift > 50-120	LPG	0.77	28.63	3.80	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.77	30.41	3.33	0.00	0.06	0.06
<b>Year 2015</b>							
Container Handling Equipment > 175 - 210	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Fork Lift > 50-120	Diesel	0.11	3.06	3.14	0.01	0.18	0.17
Fork Lift > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Fork Lift > 175-250	Diesel	0.07	0.92	1.36	0.01	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Power Pack > 200	Diesel	0.29	1.11	3.68	0.01	0.10	0.09
Side Pick > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Sweeper/Scrubber > 50-120	Diesel	0.09	3.05	2.89	0.01	0.20	0.18
Top Handler > 50-120	Diesel	0.09	3.05	2.89	0.01	0.20	0.18
Tractor/ Loader/Backhoe > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard tractor > 210-400	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Yard Truck > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard Truck > 175-210	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Yard Truck > 210-400	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Fork Lift > 50-120	LPG	0.07	28.64	3.70	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.07	30.42	3.23	0.00	0.06	0.06
<b>Year 2016</b>							
Container Handling Equipment > 175 - 210	Diesel	0.09	0.92	2.45	0.06	0.11	0.10
Fork Lift > 50-120	Diesel	0.11	3.06	3.14	0.06	0.18	0.17
Fork Lift > 120-175	Diesel	0.09	2.70	2.45	0.06	0.14	0.13
Fork Lift > 175-250	Diesel	0.07	0.92	1.36	0.06	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.09	0.92	2.45	0.06	0.11	0.10
Power Pack > 200	Diesel	0.32	1.09	3.30	0.01	0.09	0.08
Side Pick > 120-175	Diesel	0.09	2.70	2.45	0.06	0.14	0.13
Sweeper/Scrubber > 50-120	Diesel	0.09	3.05	2.89	0.06	0.20	0.18
Top Handler > 50-120	Diesel	0.09	3.05	2.89	0.06	0.20	0.18
Tractor/ Loader/Backhoe > 120-175	Diesel	0.09	2.70	2.45	0.06	0.14	0.13
Yard tractor > 210-400	Diesel	0.09	0.92	2.45	0.06	0.11	0.10

Yard Truck > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Yard Truck > 175-210	Diesel	0.07	0.92	1.31	0.06	0.06	0.05
Yard Truck > 210-400	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	LPG	0.71	28.64	3.14	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.71	30.42	3.16	0.00	0.06	0.06
<b>Year 2023</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Fork Lift > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Fork Lift > 175-250	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Power Pack > 200	Diesel	0.13	1.00	0.33	0.01	0.01	0.01
Side Pick > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Top Handler > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Tractor/ Loader/Backhoe > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Yard tractor > 210-400	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Yard Truck > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Yard Truck > 175-210	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Yard Truck > 210-400	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	LPG	0.69	28.64	3.03	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.69	30.42	3.05	0.00	0.06	0.06
<b>Year 2035</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Fork Lift > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Fork Lift > 175-250	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Power Pack > 200	Diesel	0.13	1.00	0.33	0.01	0.01	0.01
Side Pick > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Top Handler > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Tractor/ Loader/Backhoe > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Yard tractor > 210-400	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Yard Truck > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Yard Truck > 175-210	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Yard Truck > 210-400	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	LPG	0.69	28.64	3.03	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.69	30.42	3.05	0.00	0.06	0.06
<b>Year 2046</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Fork Lift > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Fork Lift > 175-250	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Power Pack > 200	Diesel	0.13	1.00	0.28	0.01	0.01	0.01
Side Pick > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Top Handler > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Tractor/ Loader/Backhoe > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Yard tractor > 210-400	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Yard Truck > 120-175	Diesel	0.05	2.70	0.27	0.06	0.01	0.01
Yard Truck > 175-210	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Yard Truck > 210-400	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	LPG	0.69	28.63	3.03	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.69	30.42	3.05	0.00	0.06	0.06
Note: Emission factors were estimated with the use of ARB CHE calculator.							

**Table C1.2-TEN-11. Annual Tenant CHE Emissions - Proposed Project and Reduced Project**

Equipment	Fuel	Annual Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2013</b>							
Container Handling Equipment > 175 - 210	Diesel	0.08	0.79	1.97	0.01	0.08	0.08
Fork Lift > 50-120	Diesel	0.03	0.70	0.74	0.00	0.04	0.04
Fork Lift > 120-175	Diesel	0.04	1.17	1.01	0.00	0.05	0.05
Fork Lift > 175-250	Diesel	0.03	0.37	0.52	0.00	0.00	0.00
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.10	0.25	0.00	0.01	0.01
Power Pack > 200	Diesel	0.05	0.14	0.55	0.00	0.02	0.01
Side Pick > 120-175	Diesel	0.01	0.22	0.19	0.00	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.03	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.02	0.48	0.43	0.00	0.03	0.02
Tractor/ Loader/Backhoe > 120-175	Diesel	0.06	1.76	1.50	0.00	0.08	0.07
Yard tractor > 210-400	Diesel	0.01	0.12	0.29	0.00	0.01	0.01
Yard Truck > 120-175	Diesel	0.01	0.21	0.17	0.00	0.01	0.01
Yard Truck > 175-210	Diesel	0.40	3.35	8.23	0.02	0.41	0.37
Yard Truck > 210-400	Diesel	0.04	0.35	0.86	0.00	0.04	0.04
Fork Lift > 50-120	LPG	6.27	212.60	26.32	0.00	0.46	0.42
Top Handler > 50-120	LPG	0.04	1.33	0.15	0.00	0.00	0.00
<b>TOTAL 2013</b>		<b>7.08</b>	<b>223.73</b>	<b>43.21</b>	<b>0.04</b>	<b>1.25</b>	<b>1.15</b>
<b>Year 2014</b>							
Container Handling Equipment > 175 - 210	Diesel	0.08	0.80	1.99	0.01	0.08	0.08
Fork Lift > 50-120	Diesel	0.02	0.44	0.51	0.00	0.03	0.02
Fork Lift > 120-175	Diesel	0.04	1.18	1.01	0.00	0.05	0.05
Fork Lift > 175-250	Diesel	0.03	0.38	0.53	0.00	0.00	0.00
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.10	0.25	0.00	0.01	0.01
Power Pack > 200	Diesel	0.04	0.14	0.50	0.00	0.01	0.01
Side Pick > 120-175	Diesel	0.01	0.22	0.19	0.00	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.03	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.00	0.14	0.12	0.00	0.01	0.01
Tractor/ Loader/Backhoe > 120-175	Diesel	0.06	1.77	1.52	0.00	0.08	0.07
Yard tractor > 210-400	Diesel	0.01	0.12	0.30	0.00	0.01	0.01
Yard Truck > 120-175	Diesel	0.01	0.21	0.18	0.00	0.01	0.01
Yard Truck > 175-210	Diesel	0.11	0.99	2.43	0.01	0.12	0.11
Yard Truck > 210-400	Diesel	0.04	0.36	0.88	0.00	0.05	0.04
Fork Lift > 50-120	LPG	1.69	59.28	8.26	0.00	0.13	0.12
Top Handler > 50-120	LPG	0.01	0.37	0.04	0.00	0.00	0.00
<b>TOTAL 2014</b>		<b>2.17</b>	<b>66.54</b>	<b>18.74</b>	<b>0.03</b>	<b>0.61</b>	<b>0.56</b>
<b>Year 2015</b>							
Container Handling Equipment > 175 - 210	Diesel	0.09	0.81	2.01	0.01	0.09	0.08
Fork Lift > 50-120	Diesel	0.02	0.45	0.51	0.00	0.03	0.02
Fork Lift > 120-175	Diesel	0.04	1.19	1.02	0.00	0.05	0.05
Fork Lift > 175-250	Diesel	0.03	0.38	0.53	0.00	0.00	0.00
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.10	0.26	0.00	0.01	0.01
Power Pack > 200	Diesel	0.03	0.14	0.46	0.00	0.01	0.01
Side Pick > 120-175	Diesel	0.01	0.22	0.19	0.00	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.03	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.00	0.14	0.12	0.00	0.01	0.01
Tractor/ Loader/Backhoe > 120-175	Diesel	0.06	1.79	1.53	0.00	0.08	0.07
Yard tractor > 210-400	Diesel	0.01	0.12	0.30	0.00	0.02	0.01
Yard Truck > 120-175	Diesel	0.01	0.21	0.18	0.00	0.01	0.01
Yard Truck > 175-210	Diesel	0.12	1.02	2.48	0.01	0.13	0.12
Yard Truck > 210-400	Diesel	0.04	0.37	0.90	0.00	0.05	0.04
Fork Lift > 50-120	LPG	0.15	59.31	8.06	0.00	0.13	0.12
Top Handler > 50-120	LPG	0.00	0.37	0.04	0.00	0.00	0.00
<b>TOTAL 2015</b>		<b>0.62</b>	<b>66.65</b>	<b>18.62</b>	<b>0.03</b>	<b>0.63</b>	<b>0.58</b>
<b>Year 2016</b>							
Container Handling Equipment > 175 - 210	Diesel	0.09	0.82	2.03	0.01	0.09	0.08
Fork Lift > 50-120	Diesel	0.02	0.45	0.52	0.00	0.03	0.03

Fork Lift > 120-175	Diesel	0.04	1.20	1.03	0.00	0.05	0.05
Fork Lift > 175-250	Diesel	0.03	0.39	0.54	0.00	0.00	0.00
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.10	0.26	0.00	0.01	0.01
Power Pack > 200	Diesel	0.04	0.13	0.41	0.00	0.01	0.01
Side Pick > 120-175	Diesel	0.01	0.23	0.19	0.00	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.03	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.00	0.14	0.12	0.00	0.01	0.01
Tractor/ Loader/Backhoe > 120-175	Diesel	0.06	1.81	1.54	0.00	0.08	0.08
Yard tractor > 210-400	Diesel	0.01	0.13	0.31	0.00	0.02	0.02
Yard Truck > 120-175	Diesel	0.00	0.18	0.02	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.07	0.90	1.05	0.01	0.05	0.05
Yard Truck > 210-400	Diesel	0.02	0.30	0.08	0.00	0.00	0.00
Fork Lift > 50-120	LPG	1.56	59.30	6.68	0.00	0.13	0.12
Top Handler > 50-120	LPG	0.01	0.37	0.04	0.00	0.00	0.00
<b>TOTAL 2016</b>		<b>1.97</b>	<b>66.48</b>	<b>14.84</b>	<b>0.03</b>	<b>0.50</b>	<b>0.46</b>
<b>Year 2023</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.10	0.89	2.18	0.01	0.11	0.10
Fork Lift > 50-120	Diesel	0.02	0.47	0.54	0.00	0.03	0.03
Fork Lift > 120-175	Diesel	0.05	1.27	1.07	0.00	0.06	0.06
Fork Lift > 175-250	Diesel	0.03	0.42	0.58	0.00	0.00	0.00
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.12	0.28	0.00	0.01	0.01
Power Pack > 200	Diesel	0.02	0.12	0.17	0.00	0.00	0.00
Side Pick > 120-175	Diesel	0.01	0.24	0.20	0.00	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.03	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.00	0.15	0.13	0.00	0.01	0.01
Tractor/ Loader/Backhoe > 120-175	Diesel	0.07	1.92	1.63	0.00	0.10	0.09
Yard tractor > 210-400	Diesel	0.01	0.12	0.03	0.00	0.00	0.00
Yard Truck > 120-175	Diesel	0.00	0.21	0.02	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.06	0.99	0.27	0.01	0.01	0.01
Yard Truck > 210-400	Diesel	0.02	0.36	0.10	0.00	0.00	0.00
Fork Lift > 50-120	LPG	1.50	59.34	6.45	0.00	0.13	0.12
Top Handler > 50-120	LPG	0.01	0.37	0.04	0.00	0.00	0.00
<b>TOTAL 2023</b>		<b>1.92</b>	<b>67.03</b>	<b>13.71</b>	<b>0.03</b>	<b>0.49</b>	<b>0.45</b>
<b>Year 2035</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.04	0.82	0.22	0.01	0.01	0.01
Fork Lift > 50-120	Diesel	0.01	0.44	0.19	0.00	0.00	0.00
Fork Lift > 120-175	Diesel	0.02	1.18	0.11	0.00	0.00	0.00
Fork Lift > 175-250	Diesel	0.02	0.38	0.10	0.00	0.00	0.00
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.11	0.03	0.00	0.00	0.00
Power Pack > 200	Diesel	0.02	0.12	0.04	0.00	0.00	0.00
Side Pick > 120-175	Diesel	0.00	0.23	0.02	0.00	0.00	0.00
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.01	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.00	0.14	0.06	0.00	0.00	0.00
Tractor/ Loader/Backhoe > 120-175	Diesel	0.03	1.84	0.17	0.00	0.01	0.01
Yard tractor > 210-400	Diesel	0.01	0.10	0.03	0.00	0.00	0.00
Yard Truck > 120-175	Diesel	0.00	0.19	0.02	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.04	0.84	0.23	0.01	0.01	0.01
Yard Truck > 210-400	Diesel	0.02	0.31	0.08	0.00	0.00	0.00
Fork Lift > 50-120	LPG	1.50	59.31	6.44	0.00	0.13	0.12
Top Handler > 50-120	LPG	0.01	0.37	0.04	0.00	0.00	0.00
<b>TOTAL 2035</b>		<b>1.74</b>	<b>66.41</b>	<b>7.81</b>	<b>0.03</b>	<b>0.17</b>	<b>0.15</b>
<b>Year 2046</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.05	0.93	0.25	0.01	0.01	0.01
Fork Lift > 50-120	Diesel	0.01	0.48	0.20	0.00	0.00	0.00
Fork Lift > 120-175	Diesel	0.02	1.28	0.12	0.00	0.00	0.00
Fork Lift > 175-250	Diesel	0.02	0.43	0.12	0.00	0.00	0.00
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.10	0.03	0.00	0.00	0.00
Power Pack > 200	Diesel	0.02	0.12	0.03	0.00	0.00	0.00
Side Pick > 120-175	Diesel	0.00	0.21	0.02	0.00	0.00	0.00

Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.01	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.00	0.15	0.06	0.00	0.00	0.00
Tractor/ Loader/Backhoe > 120-175	Diesel	0.03	1.74	0.16	0.00	0.01	0.00
Yard tractor > 210-400	Diesel	0.01	0.11	0.03	0.00	0.00	0.00
Yard Truck > 120-175	Diesel	0.00	0.20	0.02	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.05	0.89	0.24	0.01	0.01	0.01
Yard Truck > 210-400	Diesel	0.02	0.32	0.09	0.00	0.00	0.00
Fork Lift > 50-120	LPG	1.50	59.30	6.44	0.00	0.13	0.12
Top Handler > 50-120	LPG	0.01	0.37	0.04	0.00	0.00	0.00
<b>TOTAL 2046</b>		<b>1.76</b>	<b>66.66</b>	<b>7.87</b>	<b>0.03</b>	<b>0.17</b>	<b>0.16</b>

**Table C1.2-TEN-12. Peak Daily Tenant CHE Emissions - Proposed Project and Reduced Project**

Equipment	Fuel	Daily Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2013</b>							
Container Handling Equipment > 175 - 210	Diesel	0.58	5.64	14.11	0.04	0.59	0.54
Fork Lift > 50-120	Diesel	0.20	5.10	5.37	0.01	0.29	0.27
Fork Lift > 120-175	Diesel	0.29	8.43	7.22	0.02	0.37	0.34
Fork Lift > 175-250	Diesel	0.19	2.68	3.75	0.02	0.02	0.02
Other, General Industrial Equipment > 175-250	Diesel	0.08	0.72	1.80	0.00	0.08	0.07
Power Pack > 200	Diesel	0.41	1.24	4.77	0.01	0.13	0.12
Side Pick > 120-175	Diesel	0.07	1.89	1.62	0.00	0.08	0.08
Sweeper/Scrubber > 50-120	Diesel	0.01	0.21	0.19	0.00	0.01	0.01
Top Handler > 50-120	Diesel	0.11	3.27	2.92	0.01	0.18	0.16
Tractor/ Loader/Backhoe > 120-175	Diesel	0.44	12.61	10.79	0.03	0.55	0.51
Yard tractor > 210-400	Diesel	0.11	1.01	2.49	0.01	0.12	0.11
Yard Truck > 120-175	Diesel	0.05	1.48	1.25	0.00	0.07	0.07
Yard Truck > 175-210	Diesel	2.72	22.70	55.75	0.13	2.76	2.54
Yard Truck > 210-400	Diesel	0.28	2.52	6.17	0.01	0.31	0.28
Fork Lift > 50-120	LPG	42.40	1438.23	178.03	0.00	3.10	2.86
Top Handler > 50-120	LPG	0.24	9.01	1.03	0.00	0.02	0.02
<b>TOTAL 2013</b>		<b>48.18</b>	<b>1516.76</b>	<b>297.25</b>	<b>0.29</b>	<b>8.69</b>	<b>8.00</b>
<b>Year 2014</b>							
Container Handling Equipment > 175 - 210	Diesel	0.60	5.72	14.27	0.04	0.61	0.56
Fork Lift > 50-120	Diesel	0.14	3.37	3.84	0.01	0.20	0.19
Fork Lift > 120-175	Diesel	0.30	8.49	7.27	0.02	0.37	0.34
Fork Lift > 175-250	Diesel	0.19	2.72	3.78	0.02	0.02	0.02
Other, General Industrial Equipment > 175-250	Diesel	0.08	0.73	1.82	0.00	0.08	0.07
Power Pack > 200	Diesel	0.35	1.21	4.34	0.01	0.12	0.11
Side Pick > 120-175	Diesel	0.07	1.91	1.63	0.00	0.09	0.08
Sweeper/Scrubber > 50-120	Diesel	0.01	0.21	0.19	0.00	0.01	0.01
Top Handler > 50-120	Diesel	0.03	0.92	0.82	0.00	0.05	0.05
Tractor/ Loader/Backhoe > 120-175	Diesel	0.45	12.73	10.88	0.03	0.57	0.52
Yard tractor > 210-400	Diesel	0.12	1.04	2.54	0.01	0.13	0.12
Yard Truck > 120-175	Diesel	0.06	1.51	1.27	0.00	0.08	0.07
Yard Truck > 175-210	Diesel	0.77	6.74	16.49	0.04	0.84	0.77
Yard Truck > 210-400	Diesel	0.29	2.58	6.31	0.01	0.33	0.30
Fork Lift > 50-120	LPG	11.40	401.03	55.90	0.00	0.87	0.80
Top Handler > 50-120	LPG	0.07	2.51	0.28	0.00	0.00	0.00
<b>TOTAL 2014</b>		<b>14.90</b>	<b>453.42</b>	<b>131.63</b>	<b>0.19</b>	<b>4.36</b>	<b>4.02</b>
<b>Year 2015</b>							
Container Handling Equipment > 175 - 210	Diesel	0.61	5.79	14.42	0.04	0.62	0.57
Fork Lift > 50-120	Diesel	0.14	3.40	3.86	0.01	0.21	0.19
Fork Lift > 120-175	Diesel	0.30	8.56	7.32	0.02	0.38	0.35
Fork Lift > 175-250	Diesel	0.20	2.75	3.82	0.02	0.03	0.02
Other, General Industrial Equipment > 175-250	Diesel	0.08	0.74	1.84	0.00	0.08	0.08
Power Pack > 200	Diesel	0.27	1.18	3.92	0.01	0.11	0.10
Side Pick > 120-175	Diesel	0.07	1.93	1.64	0.00	0.09	0.08
Sweeper/Scrubber > 50-120	Diesel	0.01	0.21	0.19	0.00	0.01	0.01
Top Handler > 50-120	Diesel	0.03	0.93	0.83	0.00	0.05	0.05
Tractor/ Loader/Backhoe > 120-175	Diesel	0.45	12.85	10.97	0.03	0.58	0.54
Yard tractor > 210-400	Diesel	0.12	1.06	2.60	0.01	0.13	0.12
Yard Truck > 120-175	Diesel	0.06	1.53	1.29	0.00	0.08	0.07
Yard Truck > 175-210	Diesel	0.79	6.91	16.85	0.04	0.88	0.81
Yard Truck > 210-400	Diesel	0.31	2.65	6.44	0.01	0.34	0.31
Fork Lift > 50-120	LPG	0.99	401.20	54.55	0.00	0.87	0.80
Top Handler > 50-120	LPG	0.01	2.51	0.27	0.00	0.00	0.00
<b>TOTAL 2015</b>		<b>4.44</b>	<b>454.21</b>	<b>130.83</b>	<b>0.19</b>	<b>4.47</b>	<b>4.11</b>

Year 2016		VOC	CO	NOx	SOx	PM10	PM2.5
Container Handling Equipment > 175 - 210	Diesel	0.56	5.24	13.02	0.03	0.57	0.53
Fork Lift > 50-120	Diesel	0.13	3.06	3.47	0.01	0.19	0.17
Fork Lift > 120-175	Diesel	0.27	7.70	6.58	0.02	0.35	0.32
Fork Lift > 175-250	Diesel	0.18	2.49	3.45	0.02	0.02	0.02
Other, General Industrial Equipment > 175-250	Diesel	0.07	0.67	1.67	0.00	0.08	0.07
Power Pack > 200	Diesel	0.30	1.03	3.14	0.01	0.09	0.08
Side Pick > 120-175	Diesel	0.06	1.73	1.48	0.00	0.08	0.07
Sweeper/Scrubber > 50-120	Diesel	0.01	0.19	0.17	0.00	0.01	0.01
Top Handler > 50-120	Diesel	0.03	0.84	0.74	0.00	0.05	0.04
Tractor/ Loader/Backhoe > 120-175	Diesel	0.41	11.58	9.88	0.03	0.53	0.49
Yard tractor > 210-400	Diesel	0.11	0.97	2.37	0.01	0.13	0.12
Yard Truck > 120-175	Diesel	0.02	1.18	0.11	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.42	5.45	6.36	0.03	0.32	0.29
Yard Truck > 210-400	Diesel	0.10	1.90	0.53	0.01	0.02	0.02
Fork Lift > 50-120	LPG	9.41	358.33	40.36	0.00	0.77	0.71
Top Handler > 50-120	LPG	0.05	2.25	0.23	0.00	0.00	0.00
<b>TOTAL 2016</b>		<b>12.13</b>	<b>404.62</b>	<b>93.56</b>	<b>0.17</b>	<b>3.21</b>	<b>2.95</b>
Year 2023		VOC	CO	NOx	SOx	PM10	PM2.5
Container Handling Equipment > 175 - 210	Diesel	0.64	5.70	14.00	0.03	0.69	0.64
Fork Lift > 50-120	Diesel	0.14	3.22	3.63	0.01	0.21	0.19
Fork Lift > 120-175	Diesel	0.30	8.11	6.88	0.02	0.39	0.36
Fork Lift > 175-250	Diesel	0.21	2.69	3.69	0.02	0.03	0.03
Other, General Industrial Equipment > 175-250	Diesel	0.08	0.74	1.80	0.00	0.09	0.08
Power Pack > 200	Diesel	0.19	0.96	1.28	0.01	0.04	0.03
Side Pick > 120-175	Diesel	0.07	1.83	1.55	0.00	0.09	0.08
Sweeper/Scrubber > 50-120	Diesel	0.01	0.21	0.18	0.00	0.01	0.01
Top Handler > 50-120	Diesel	0.03	0.88	0.78	0.00	0.05	0.05
Tractor/ Loader/Backhoe > 120-175	Diesel	0.46	12.34	10.45	0.03	0.62	0.57
Yard tractor > 210-400	Diesel	0.05	0.93	0.25	0.01	0.01	0.01
Yard Truck > 120-175	Diesel	0.03	1.35	0.13	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.34	6.02	1.62	0.03	0.07	0.06
Yard Truck > 210-400	Diesel	0.13	2.31	0.62	0.01	0.03	0.02
Fork Lift > 50-120	LPG	9.09	358.57	38.94	0.00	0.77	0.71
Top Handler > 50-120	LPG	0.05	2.25	0.23	0.00	0.00	0.00
<b>TOTAL 2023</b>		<b>11.80</b>	<b>408.08</b>	<b>86.04</b>	<b>0.17</b>	<b>3.11</b>	<b>2.87</b>
Year 2035		VOC	CO	NOx	SOx	PM10	PM2.5
Container Handling Equipment > 175 - 210	Diesel	0.28	5.24	1.44	0.03	0.05	0.05
Fork Lift > 50-120	Diesel	0.07	3.00	1.29	0.01	0.01	0.01
Fork Lift > 120-175	Diesel	0.13	7.59	0.72	0.02	0.02	0.02
Fork Lift > 175-250	Diesel	0.12	2.43	0.67	0.02	0.02	0.02
Other, General Industrial Equipment > 175-250	Diesel	0.04	0.69	0.19	0.00	0.01	0.01
Power Pack > 200	Diesel	0.13	0.95	0.32	0.01	0.01	0.01
Side Pick > 120-175	Diesel	0.03	1.73	0.16	0.00	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.00	0.20	0.08	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.02	0.84	0.36	0.00	0.00	0.00
Tractor/ Loader/Backhoe > 120-175	Diesel	0.21	11.80	1.11	0.03	0.04	0.04
Yard tractor > 210-400	Diesel	0.04	0.78	0.22	0.01	0.01	0.01
Yard Truck > 120-175	Diesel	0.02	1.21	0.11	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.26	5.11	1.41	0.03	0.05	0.04
Yard Truck > 210-400	Diesel	0.10	1.96	0.54	0.01	0.02	0.02
Fork Lift > 50-120	LPG	9.08	358.37	38.91	0.00	0.77	0.71
Top Handler > 50-120	LPG	0.05	2.25	0.23	0.00	0.00	0.00
<b>TOTAL 2035</b>		<b>10.59</b>	<b>404.13</b>	<b>47.75</b>	<b>0.17</b>	<b>1.03</b>	<b>0.95</b>
Year 2046		VOC	CO	NOx	SOx	PM10	PM2.5
Container Handling Equipment > 175 - 210	Diesel	0.34	5.96	1.60	0.03	0.07	0.06

Fork Lift > 50-120	Diesel	0.08	3.25	1.39	0.01	0.01	0.01
Fork Lift > 120-175	Diesel	0.15	8.23	0.77	0.02	0.03	0.03
Fork Lift > 175-250	Diesel	0.15	2.75	0.75	0.02	0.03	0.03
Other, General Industrial Equipment > 175-250	Diesel	0.03	0.64	0.17	0.00	0.01	0.01
Power Pack > 200	Diesel	0.12	0.95	0.26	0.01	0.01	0.01
Side Pick > 120-175	Diesel	0.03	1.62	0.15	0.00	0.00	0.00
Sweeper/Scrubber > 50-120	Diesel	0.00	0.19	0.08	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.02	0.91	0.39	0.00	0.00	0.00
Tractor/ Loader/Backhoe > 120-175	Diesel	0.19	11.15	1.05	0.03	0.03	0.03
Yard tractor > 210-400	Diesel	0.04	0.83	0.23	0.01	0.01	0.01
Yard Truck > 120-175	Diesel	0.02	1.25	0.12	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.29	5.41	1.48	0.03	0.05	0.05
Yard Truck > 210-400	Diesel	0.11	2.07	0.57	0.01	0.02	0.02
Fork Lift > 50-120	LPG	9.08	358.28	38.90	0.00	0.77	0.71
Top Handler > 50-120	LPG	0.05	2.25	0.23	0.00	0.00	0.00
<b>TOTAL 2046</b>		<b>10.72</b>	<b>405.74</b>	<b>48.14</b>	<b>0.17</b>	<b>1.06</b>	<b>0.98</b>



**Table C1.2-TEN-13. Summary of Annual Tenant CHE Emissions - Proposed Project and Reduced Project**

Project Study Year	Annual Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2013	7.08	223.73	43.21	0.04	1.25	1.15
Year 2014	2.17	66.54	18.74	0.03	0.61	0.56
Year 2015	0.62	66.65	18.62	0.03	0.63	0.58
Year 2016	1.97	66.48	14.84	0.03	0.50	0.46
Year 2023	1.92	67.03	13.71	0.03	0.49	0.45
Year 2035	1.74	66.41	7.81	0.03	0.17	0.15
Year 2046	1.76	66.66	7.87	0.03	0.17	0.16

**Table C1.2-TEN-14. Summary of Peak Daily Tenant CHE Emissions - Proposed Project and Reduced Project**

Project Study Year	Daily Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2013	48.18	1516.76	297.25	0.29	8.69	8.00
Year 2014	14.90	453.42	131.63	0.19	4.36	4.02
Year 2015	4.44	454.21	130.83	0.19	4.47	4.11
Year 2016	12.13	404.62	93.56	0.17	3.21	2.95
Year 2023	11.80	408.08	86.04	0.17	3.11	2.87
Year 2035	10.59	404.13	47.75	0.17	1.03	0.95
Year 2046	10.72	405.74	48.14	0.17	1.06	0.98

**Table C1.2-TEN-15. Activity Data for Tenant Switcher Locomotives - Proposed Project and Reduced Project**

<b>Project Scenario</b>	<b>Number of Trips</b>	<b>Idling Time per Trip (hr)</b>	<b>On-Site Distance per Trip (mi)</b>	<b>Duration of On-Site Movement per Trip (hr)</b>
Year 2013	260	0.08	2.00	0.40
Years 2013, 2014, 2015, 2016, 2023, 2035, 2046	73	0.08	2.00	0.40
Notes:				
(1) Assume switcher locomotive movement at notch setting of one and speed of 5mph.				

**Table C1.2-TEN-16. Emission Factors for Tenant Switcher Locomotives - Proposed Project and Reduced Project**

Project Year - Notch Setting	Emission Factors (g/hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>All Years</b>						
Idle	93.1	181.0	987.0	24.7	31.0	28.5
Movement	87.6	182.9	1239.8	39.0	23.0	21.2
Notes:						
(1) Assume switcher locomotive movement at notch setting of one and speed of 5mph.						

**Table C1.2-TEN-17. Annual Emissions for Tenant Switcher Locomotives - Proposed Project and Reduced Project**

Project Year - Notch Setting	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2013</b>						
Idle	0.00	0.00	0.02	0.00	0.00	0.00
Movement	0.01	0.02	0.14	0.00	0.00	0.00
<b>Year 2013</b>	<b>0.01</b>	<b>0.03</b>	<b>0.17</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>
<b>Years 2014, 2015, 2016, 2023, 2035, 2046</b>						
Idle	0.00	0.00	0.01	0.00	0.00	0.00
Movement	0.00	0.01	0.04	0.00	0.00	0.00
<b>Years 2014, 2015, 2016, 2023, 2035, 2046</b>	<b>0.00</b>	<b>0.01</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Table C1.2-TEN-18. Peak Daily Emissions for Tenant Switcher Locomotives - Proposed Project and Reduced Project**

Project Year - Notch Setting	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2013</b>						
Idle	0.01	0.03	0.14	0.00	0.00	0.00
Movement	0.06	0.13	0.86	0.03	0.02	0.01
<b>Year 2013</b>	<b>0.07</b>	<b>0.15</b>	<b>1.00</b>	<b>0.03</b>	<b>0.02</b>	<b>0.02</b>
<b>Years 2014, 2015, 2016, 2023, 2035, 2046</b>						
Idle	0.00	0.01	0.04	0.00	0.00	0.00
Movement	0.02	0.04	0.24	0.01	0.00	0.00
<b>Years 2014, 2015, 2016, 2023, 2035, 2046</b>	<b>0.02</b>	<b>0.04</b>	<b>0.28</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>

**Table C1.2-TEN-19. Annual Tenant Operation Emissions - Proposed Project and Reduced Project**

Year	Emission Source	Annual Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Trucks On-Site	3.29	9.06	21.20	0.02	4.59	0.88
	Trucks Off-Site	3.64	15.48	48.93	0.10	6.40	1.33
	Employee Commute On-Site	0.01	0.21	0.02	0.00	0.12	0.01
	Employee Commute Off-Site	0.44	13.32	1.20	0.03	7.96	0.80
	CHE	7.08	223.73	43.21	0.04	1.25	1.15
	Switcher Locomotive	0.01	0.03	0.17	0.01	0.00	0.00
	<b>TOTAL 2013</b>	<b>14.48</b>	<b>261.82</b>	<b>114.73</b>	<b>0.20</b>	<b>20.32</b>	<b>4.18</b>
2014	Trucks On-Site	1.86	5.52	12.65	0.01	2.76	0.44
	Trucks Off-Site	2.00	8.29	23.88	0.05	3.06	0.48
	Employee Commute On-Site	0.01	0.10	0.01	0.00	0.07	0.01
	Employee Commute Off-Site	0.24	7.27	0.63	0.02	4.63	0.55
	CHE	2.17	66.54	18.74	0.03	0.61	0.56
	Switcher Locomotive	0.00	0.01	0.05	0.00	0.00	0.00
	<b>TOTAL 2014</b>	<b>6.28</b>	<b>87.73</b>	<b>55.95</b>	<b>0.11</b>	<b>11.14</b>	<b>2.05</b>
2015	Trucks On-Site	1.74	5.32	12.93	0.01	2.76	0.44
	Trucks Off-Site	1.88	7.70	22.79	0.05	3.06	0.48
	Employee Commute On-Site	0.01	0.10	0.01	0.00	0.07	0.01
	Employee Commute Off-Site	0.21	6.66	0.57	0.02	4.64	0.56
	CHE	0.62	66.65	18.62	0.03	0.63	0.58
	Switcher Locomotive	0.00	0.01	0.05	0.00	0.00	0.00
	<b>TOTAL 2015</b>	<b>4.46</b>	<b>86.43</b>	<b>54.97</b>	<b>0.11</b>	<b>11.16</b>	<b>2.07</b>
2016	Trucks On-Site	1.64	5.16	12.29	0.01	2.75	0.44
	Trucks Off-Site	1.78	7.21	20.53	0.05	3.07	0.49
	Employee Commute On-Site	0.01	0.09	0.01	0.00	0.07	0.01
	Employee Commute Off-Site	0.16	5.33	0.45	0.01	4.02	0.48
	CHE	1.97	66.48	14.84	0.03	0.50	0.46
	Switcher Locomotive	0.00	0.01	0.05	0.00	0.00	0.00
	<b>TOTAL 2016</b>	<b>5.57</b>	<b>84.27</b>	<b>48.17</b>	<b>0.11</b>	<b>10.42</b>	<b>1.87</b>
2023	Trucks On-Site	1.16	4.31	5.70	0.01	2.74	0.42
	Trucks Off-Site	1.09	4.36	6.79	0.05	3.06	0.48
	Employee Commute On-Site	0.00	0.05	0.00	0.00	0.07	0.01
	Employee Commute Off-Site	0.09	3.20	0.25	0.01	4.02	0.48
	CHE	1.92	67.03	13.71	0.03	0.49	0.45
	Switcher Locomotive	0.00	0.01	0.05	0.00	0.00	0.00
	<b>TOTAL 2023</b>	<b>4.26</b>	<b>78.95</b>	<b>26.51</b>	<b>0.11</b>	<b>10.38</b>	<b>1.84</b>
2035	Trucks On-Site	1.02	4.07	6.51	0.01	2.72	0.41
	Trucks Off-Site	0.96	3.68	6.77	0.05	3.05	0.47
	Employee Commute On-Site	0.00	0.03	0.00	0.00	0.07	0.01
	Employee Commute Off-Site	0.05	2.10	0.15	0.01	4.02	0.48
	CHE	1.74	66.41	7.81	0.03	0.17	0.15
	Switcher Locomotive	0.00	0.01	0.05	0.00	0.00	0.00
	<b>TOTAL 2035</b>	<b>3.77</b>	<b>76.30</b>	<b>21.29</b>	<b>0.11</b>	<b>10.04</b>	<b>1.52</b>
2046	Trucks On-Site	1.02	4.06	6.55	0.01	2.60	0.39
	Trucks Off-Site	0.93	3.63	6.64	0.05	3.06	0.47
	Employee Commute On-Site	0.00	0.03	0.00	0.00	0.07	0.01
	Employee Commute Off-Site	0.04	1.92	0.13	0.01	4.02	0.48
	CHE	1.76	66.66	7.87	0.03	0.17	0.16
	Switcher Locomotive	0.00	0.01	0.05	0.00	0.00	0.00
	<b>TOTAL 2046</b>	<b>3.75</b>	<b>76.30</b>	<b>21.24</b>	<b>0.11</b>	<b>9.92</b>	<b>1.51</b>

**Table C1.2-TEN-20. Peak Daily Tenant Operation Emissions - Proposed Project and Reduced Project**

Year	Emission Source	Peak Daily Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Trucks On-Site	22.85	63.04	147.77	0.13	31.71	6.08
	Trucks Off-Site	25.29	107.67	340.09	0.72	44.45	9.27
	Employee Commute On-Site	0.10	1.32	0.10	0.00	0.79	0.08
	Employee Commute Off-Site	2.85	86.10	7.76	0.18	51.46	5.37
	CHE	48.18	1516.76	297.25	0.29	8.69	8.00
	Switcher Locomotive	0.07	0.15	1.00	0.03	0.02	0.02
	<b>TOTAL 2013</b>	<b>99.34</b>	<b>1775.06</b>	<b>793.98</b>	<b>1.36</b>	<b>137.12</b>	<b>28.81</b>
2014	Trucks On-Site	13.13	39.07	89.69	0.09	19.33	3.08
	Trucks Off-Site	14.25	58.92	169.99	0.38	21.82	3.45
	Employee Commute On-Site	0.05	0.71	0.06	0.00	0.46	0.05
	Employee Commute Off-Site	1.60	49.38	4.30	0.11	31.50	3.90
	CHE	14.90	453.42	131.63	0.19	4.36	4.02
	Switcher Locomotive	0.02	0.04	0.28	0.01	0.01	0.01
	<b>TOTAL 2014</b>	<b>43.96</b>	<b>601.55</b>	<b>395.94</b>	<b>0.78</b>	<b>77.49</b>	<b>14.51</b>
2015	Trucks On-Site	12.30	37.70	91.70	0.09	19.32	3.07
	Trucks Off-Site	13.38	54.75	162.33	0.38	21.86	3.46
	Employee Commute On-Site	0.05	0.65	0.05	0.00	0.46	0.05
	Employee Commute Off-Site	1.42	45.23	3.88	0.11	31.54	3.96
	CHE	4.44	454.21	130.83	0.19	4.47	4.11
	Switcher Locomotive	0.02	0.04	0.28	0.01	0.01	0.01
	<b>TOTAL 2015</b>	<b>31.60</b>	<b>592.58</b>	<b>389.07</b>	<b>0.78</b>	<b>77.66</b>	<b>14.67</b>
2016	Trucks On-Site	11.61	36.56	87.25	0.09	19.29	3.06
	Trucks Off-Site	12.65	51.32	146.31	0.38	21.88	3.48
	Employee Commute On-Site	0.04	0.60	0.05	0.00	0.47	0.06
	Employee Commute Off-Site	1.10	36.25	3.08	0.10	27.40	3.41
	CHE	12.13	404.62	93.56	0.17	3.21	2.95
	Switcher Locomotive	0.02	0.04	0.28	0.01	0.01	0.01
	<b>TOTAL 2016</b>	<b>37.56</b>	<b>529.40</b>	<b>330.52</b>	<b>0.75</b>	<b>72.25</b>	<b>12.95</b>
2023	Trucks On-Site	8.19	30.59	40.58	0.09	19.18	2.95
	Trucks Off-Site	7.79	31.07	48.65	0.38	21.85	3.46
	Employee Commute On-Site	0.02	0.36	0.03	0.00	0.47	0.05
	Employee Commute Off-Site	0.58	21.77	1.72	0.10	27.39	3.40
	CHE	11.80	408.08	86.04	0.17	3.11	2.87
	Switcher Locomotive	0.02	0.04	0.28	0.01	0.01	0.01
	<b>TOTAL 2023</b>	<b>28.41</b>	<b>491.91</b>	<b>177.30</b>	<b>0.75</b>	<b>72.02</b>	<b>12.74</b>
2035	Trucks On-Site	7.24	28.92	46.36	0.09	19.09	2.86
	Trucks Off-Site	6.82	26.27	48.52	0.39	21.79	3.39
	Employee Commute On-Site	0.01	0.23	0.02	0.00	0.47	0.05
	Employee Commute Off-Site	0.34	14.28	1.01	0.10	27.40	3.41
	CHE	10.59	404.13	47.75	0.17	1.03	0.95
	Switcher Locomotive	0.02	0.04	0.28	0.01	0.01	0.01
	<b>TOTAL 2035</b>	<b>25.03</b>	<b>473.86</b>	<b>143.94</b>	<b>0.75</b>	<b>69.78</b>	<b>10.66</b>
2046	Trucks On-Site	7.20	28.83	46.64	0.09	18.21	2.73
	Trucks Off-Site	6.63	25.90	47.54	0.38	21.79	3.39
	Employee Commute On-Site	0.01	0.21	0.01	0.00	0.47	0.05
	Employee Commute Off-Site	0.30	13.07	0.92	0.10	27.40	3.41
	CHE	10.72	405.74	48.14	0.17	1.06	0.98
	Switcher Locomotive	0.02	0.04	0.28	0.01	0.01	0.01
	<b>TOTAL 2046</b>	<b>24.88</b>	<b>473.78</b>	<b>143.54</b>	<b>0.75</b>	<b>68.95</b>	<b>10.57</b>



**Table C1.2-RP-1. Truck Trips and Mileage for SCIG - Reduced Project Alternative**

<b>Analysis Year</b>	<b>Annual Round Trips</b>	<b>Annual VMT Off-Site</b>
2016	665,000	7,113,172
2023	665,000	6,848,161
2035	665,000	6,582,332
2046	665,000	6,582,332
Notes: Source: Iteris, 2011.		

**Table C1.2-RP-2. On-Road Truck Operational Data for SCIG - Reduced Project Alternative**

<b>Activity by Year</b>	<b>Idling Time per Round Trip (hrs)</b>	<b>Miles/Trip</b>	<b>Idling Hours / Year</b>	<b>Miles/Year</b>
<b>On-site</b>				
Year 2016	0.33	1.79	221,667	1,189,991
Year 2023	0.33	1.79	221,667	1,189,991
Year 2035	0.33	1.79	221,667	1,189,991
Year 2046	0.33	1.79	221,667	1,189,991
<b>Ingress</b>				
Year 2016	0.03	0.96	22,167	635,183
Year 2023	0.03	0.96	22,167	635,183
Year 2035	0.03	0.96	22,167	635,183
Year 2046	0.03	0.96	22,167	635,183
<b>Egress</b>				
Year 2016	0.03	1.12	22,167	746,177
Year 2023	0.03	1.12	22,167	746,177
Year 2035	0.03	1.12	22,167	746,177
Year 2046	0.03	1.12	22,167	746,177
<b>Off-Site</b>				
Year 2016	--	10.70	--	7,113,172
Year 2023	--	10.30	--	6,848,161
Year 2035	--	9.90	--	6,582,332
Year 2046	--	9.90	--	6,582,332
Source: BNSF				

**Table C1.2-RP-3. On-Road Truck Emission Factors - SCIG Drayage Truck Fleet - Reduced Project Alternative**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)							
		VOC	CO	NOx	SOx	PM 10	PM 2.5	DPM 10	DPM 2.5
<b>Project Year 2016</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	4.62	9.08	17.77	0.04	11.79	1.75	0.12	0.11
On-road Truck Transport	10	2.52	5.44	13.32	0.03	11.78	1.74	0.11	0.10
On-road Truck Transport	15	1.21	3.12	10.15	0.03	11.77	1.74	0.10	0.10
On-road Truck Transport	20	0.71	2.17	8.28	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	25	0.62	2.06	7.44	0.02	11.76	1.72	0.09	0.08
On-road Truck Transport	30	0.54	1.99	6.74	0.02	11.76	1.73	0.09	0.09
On-road Truck Transport	35	0.47	1.96	6.17	0.02	11.77	1.73	0.10	0.09
On-road Truck Transport	40	0.41	1.97	5.73	0.02	11.78	1.74	0.11	0.10
On-road Truck Transport	45	0.37	2.01	5.43	0.02	11.79	1.75	0.12	0.11
On-road Truck Transport	50	0.33	2.09	5.26	0.02	11.80	1.77	0.14	0.13
On-road Truck Transport	55	0.31	2.21	5.22	0.02	11.82	1.78	0.16	0.14
On-road Truck Transport	60	0.29	2.37	5.32	0.02	11.85	1.81	0.18	0.17
On-road Truck Transport	65	0.29	2.56	5.55	0.02	11.88	1.83	0.21	0.19
<b>Project Year 2023</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	3.20	6.35	9.81	0.04	11.79	1.76	0.13	0.12
On-road Truck Transport	10	1.74	3.81	7.36	0.03	11.78	1.75	0.12	0.11
On-road Truck Transport	15	0.84	2.18	5.61	0.03	11.77	1.74	0.11	0.10
On-road Truck Transport	20	0.49	1.52	4.57	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	25	0.43	1.44	4.11	0.02	11.76	1.73	0.09	0.09
On-road Truck Transport	30	0.37	1.39	3.72	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	35	0.33	1.37	3.41	0.02	11.77	1.73	0.10	0.09
On-road Truck Transport	40	0.29	1.38	3.17	0.02	11.78	1.74	0.11	0.10
On-road Truck Transport	45	0.25	1.41	3.00	0.02	11.79	1.75	0.12	0.11
On-road Truck Transport	50	0.23	1.46	2.90	0.02	11.81	1.77	0.14	0.13
On-road Truck Transport	55	0.21	1.55	2.88	0.02	11.83	1.79	0.16	0.15
On-road Truck Transport	60	0.20	1.66	2.94	0.02	11.85	1.81	0.18	0.17
On-road Truck Transport	65	0.20	1.79	3.07	0.02	11.88	1.83	0.21	0.20
<b>Project Year 2035</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	3.14	6.23	9.96	0.04	11.79	1.76	0.13	0.12
On-road Truck Transport	10	1.71	3.73	7.47	0.03	11.78	1.75	0.12	0.11
On-road Truck Transport	15	0.82	2.14	5.69	0.03	11.77	1.74	0.11	0.10
On-road Truck Transport	20	0.48	1.49	4.64	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	25	0.42	1.41	4.17	0.02	11.76	1.73	0.09	0.09
On-road Truck Transport	30	0.37	1.37	3.78	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	35	0.32	1.34	3.46	0.02	11.77	1.73	0.10	0.09
On-road Truck Transport	40	0.28	1.35	3.21	0.02	11.78	1.74	0.11	0.10
On-road Truck Transport	45	0.25	1.38	3.04	0.02	11.79	1.75	0.12	0.11
On-road Truck Transport	50	0.23	1.43	2.95	0.02	11.81	1.77	0.14	0.13
On-road Truck Transport	55	0.21	1.52	2.93	0.02	11.83	1.79	0.16	0.15
On-road Truck Transport	60	0.20	1.62	2.98	0.02	11.85	1.81	0.18	0.17
On-road Truck Transport	65	0.20	1.76	3.11	0.02	11.88	1.83	0.21	0.19
<b>Project Year 2046</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	3.11	6.18	9.89	0.04	11.79	1.75	0.12	0.11
On-road Truck Transport	10	1.70	3.70	7.41	0.03	11.78	1.74	0.11	0.10
On-road Truck Transport	15	0.81	2.12	5.65	0.03	11.77	1.74	0.10	0.10
On-road Truck Transport	20	0.48	1.47	4.61	0.02	11.76	1.73	0.10	0.09
On-road Truck Transport	25	0.42	1.40	4.14	0.02	11.76	1.72	0.09	0.08
On-road Truck Transport	30	0.36	1.35	3.75	0.02	11.76	1.73	0.09	0.09
On-road Truck Transport	35	0.32	1.33	3.43	0.02	11.77	1.73	0.10	0.09
On-road Truck Transport	40	0.28	1.34	3.19	0.02	11.77	1.74	0.11	0.10
On-road Truck Transport	45	0.25	1.37	3.02	0.02	11.79	1.75	0.12	0.11
On-road Truck Transport	50	0.22	1.42	2.93	0.02	11.80	1.76	0.14	0.13
On-road Truck Transport	55	0.21	1.50	2.91	0.02	11.82	1.78	0.16	0.14
On-road Truck Transport	60	0.20	1.61	2.96	0.02	11.85	1.81	0.18	0.17
On-road Truck Transport	65	0.20	1.74	3.09	0.02	11.88	1.83	0.21	0.19
Notes:									
(1) EMFAC2007 v2.3 with modified fleet age distribution based on Port-wide inventory (Starcrest, 2009)									
(2) Emission factors incorporated the SPBP Clean Truck Program and California Statewide Bus and Truck Regulation.									
(3) Year 2046 uses 2040 emission factors, EMFAC 2007 only calculates emissions factors to 2040.									
(4) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.									

**Table C1.2-RP-4. Annual Truck Emissions for SCIG - Reduced Project Alternative**

Project Year - Mode		Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>On-Site</b>							
2016	Idling	2.24	12.15	36.22	0.02	0.03	0.03
	Driving	3.42	8.85	28.76	0.07	33.36	4.92
	<b>Subtotal</b>	<b>5.66</b>	<b>20.99</b>	<b>64.97</b>	<b>0.09</b>	<b>33.39</b>	<b>4.95</b>
2023	Idling	2.24	12.15	36.22	0.02	0.03	0.03
	Driving	2.37	6.19	15.89	0.07	33.36	4.92
	<b>Subtotal</b>	<b>4.61</b>	<b>18.34</b>	<b>52.10</b>	<b>0.09</b>	<b>33.39</b>	<b>4.95</b>
2035	Idling	2.24	12.15	36.22	0.02	0.03	0.03
	Driving	2.32	6.07	16.12	0.07	33.36	4.92
	<b>Subtotal</b>	<b>4.57</b>	<b>18.22</b>	<b>52.33</b>	<b>0.09</b>	<b>33.39</b>	<b>4.95</b>
2046	Idling	2.24	12.15	36.22	0.02	0.03	0.03
	Driving	2.30	6.02	16.00	0.07	33.36	4.92
	<b>Subtotal</b>	<b>4.55</b>	<b>18.17</b>	<b>52.22</b>	<b>0.09</b>	<b>33.39</b>	<b>4.95</b>
<b>Off-Site</b>							
2016	Driving	4.28	16.37	53.06	0.14	8.29	1.36
2023	Driving	2.97	11.29	28.61	0.14	7.99	1.33
2035	Driving	2.76	10.54	27.71	0.13	7.68	1.27
2046	Driving	2.74	10.46	27.50	0.13	7.67	1.26
Notes:							
(1) On-site driving emissions are calculated with 15 mph emission factors.							
(2) Paved road dust emissions are included in the PM10 and PM2.5 calculations.							

**Table C1.2-RP-5. Summary of Annual Truck Emissions for SCIG -  
Reduced Project Alternative**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>2016</b>	9.9	37.4	118.0	0.2	41.7	6.3
<b>2023</b>	7.6	29.6	80.7	0.2	41.4	6.3
<b>2035</b>	7.3	28.8	80.0	0.2	41.1	6.2
<b>2046</b>	7.3	28.6	79.7	0.2	41.1	6.2

**Table C1.2-RP-6. Peak Daily Truck Emissions for SCIG - Reduced Project Alternative**

Project Year - Mode		Emissions (lb/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>On-Site</b>							
2016	Idling	13.96	75.56	225.27	0.11	0.20	0.18
	Driving	21.26	55.02	178.86	0.44	207.50	30.59
	<b>Subtotal</b>	<b>35.22</b>	<b>130.58</b>	<b>404.13</b>	<b>0.56</b>	<b>207.70</b>	<b>30.78</b>
2023	Idling	13.96	75.56	225.27	0.11	0.20	0.18
	Driving	14.72	38.49	98.82	0.44	207.51	30.61
	<b>Subtotal</b>	<b>28.68</b>	<b>114.04</b>	<b>324.09</b>	<b>0.56</b>	<b>207.71</b>	<b>30.79</b>
2035	Idling	13.96	75.56	225.27	0.11	0.20	0.18
	Driving	14.44	37.75	100.25	0.44	207.51	30.61
	<b>Subtotal</b>	<b>28.39</b>	<b>113.30</b>	<b>325.52</b>	<b>0.56</b>	<b>207.71</b>	<b>30.79</b>
2046	Idling	13.96	75.56	225.27	0.11	0.20	0.18
	Driving	14.32	37.43	99.50	0.44	207.49	30.58
	<b>Subtotal</b>	<b>28.27</b>	<b>112.99</b>	<b>324.78</b>	<b>0.56</b>	<b>207.69</b>	<b>30.76</b>
<b>Off-Site</b>							
2016	Driving	26.62	101.80	330.00	0.90	51.53	8.47
2023	Driving	18.47	70.22	177.98	0.87	49.71	8.25
2035	Driving	17.16	65.58	172.36	0.84	47.76	7.91
2046	Driving	17.04	65.08	171.07	0.84	47.69	7.84
Notes:							
(1) On-site driving emissions are calculated with 15 mph emission factors.							
(2) Paved road dust emissions are included in the PM10 and PM2.5 calculations.							

**Table C1.2-RP-7. Summary of Peak Daily Emissions for SCIG -  
Reduced Project Alternative**

Analysis Year	Emissions (lb/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>2016</b>	61.8	232.4	734.1	1.5	259.2	39.3
<b>2023</b>	47.1	184.3	502.1	1.4	257.4	39.0
<b>2035</b>	45.6	178.9	497.9	1.4	255.5	38.7
<b>2046</b>	45.3	178.1	495.8	1.4	255.4	38.6

**Table C1.2-RP-8. Worker Commute Operational Data for SCIG - Reduced Project Alternative**

<b>Activity by Year</b>	<b>Idling Time per Round Trip (hrs)</b>	<b>Miles/Round Trip</b>	<b>Idling Hours / Year</b>	<b>Miles/Year</b>
<b>On-site</b>				
Year 2016	0.07	0.42	4,920	30,996
Year 2023	0.07	0.42	4,920	30,996
Year 2035	0.07	0.42	4,920	30,996
Year 2046	0.07	0.42	4,920	30,996
<b>Off-Site</b>				
Year 2016	--	12.38	--	913,275
Year 2023	--	12.38	--	913,275
Year 2035	--	12.38	--	913,275
Year 2046	--	12.38	--	913,275



**Table C1.2-RP-9. Worker Commute Emission Factors for SCIG - Reduced Project Alternative**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Project Year 2016</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Travel	5	0.17	2.21	0.17	0.01	1.24	0.14
On-road Travel	10	0.11	1.96	0.15	0.01	1.22	0.12
On-road Travel	15	0.08	1.76	0.13	0.01	1.21	0.11
On-road Travel	20	0.06	1.59	0.12	0.00	1.20	0.10
On-road Travel	25	0.05	1.45	0.11	0.00	1.20	0.10
On-road Travel	30	0.04	1.33	0.10	0.00	1.20	0.10
On-road Travel	35	0.03	1.23	0.10	0.00	1.19	0.09
On-road Travel	40	0.03	1.14	0.10	0.00	1.19	0.09
On-road Travel	45	0.03	1.07	0.10	0.00	1.19	0.09
On-road Travel	50	0.03	1.01	0.10	0.00	1.19	0.09
On-road Travel	55	0.03	0.97	0.10	0.00	1.19	0.09
On-road Travel	60	0.03	0.93	0.10	0.00	1.19	0.09
On-road Travel	65	0.03	0.92	0.11	0.00	1.19	0.10
<b>Project Year 2023</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Travel	5	0.10	1.30	0.10	0.01	1.24	0.14
On-road Travel	10	0.06	1.17	0.09	0.01	1.22	0.12
On-road Travel	15	0.04	1.06	0.08	0.01	1.21	0.11
On-road Travel	20	0.03	0.97	0.07	0.00	1.20	0.10
On-road Travel	25	0.02	0.89	0.06	0.00	1.20	0.10
On-road Travel	30	0.02	0.82	0.06	0.00	1.20	0.10
On-road Travel	35	0.02	0.75	0.06	0.00	1.19	0.09
On-road Travel	40	0.01	0.70	0.05	0.00	1.19	0.09
On-road Travel	45	0.01	0.65	0.05	0.00	1.19	0.09
On-road Travel	50	0.01	0.61	0.05	0.00	1.19	0.09
On-road Travel	55	0.01	0.57	0.06	0.00	1.19	0.09
On-road Travel	60	0.02	0.54	0.06	0.00	1.19	0.09
On-road Travel	65	0.02	0.52	0.06	0.00	1.19	0.10
<b>Project Year 2035</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Travel	5	0.06	0.81	0.06	0.01	1.24	0.14
On-road Travel	10	0.04	0.74	0.05	0.01	1.22	0.12
On-road Travel	15	0.03	0.68	0.05	0.01	1.21	0.11
On-road Travel	20	0.02	0.62	0.04	0.00	1.20	0.10
On-road Travel	25	0.01	0.57	0.04	0.00	1.20	0.10
On-road Travel	30	0.01	0.53	0.04	0.00	1.20	0.10
On-road Travel	35	0.01	0.49	0.03	0.00	1.19	0.09
On-road Travel	40	0.01	0.45	0.03	0.00	1.19	0.09
On-road Travel	45	0.01	0.42	0.03	0.00	1.19	0.09
On-road Travel	50	0.01	0.39	0.03	0.00	1.19	0.09
On-road Travel	55	0.01	0.37	0.03	0.00	1.19	0.09
On-road Travel	60	0.01	0.34	0.03	0.00	1.19	0.09
On-road Travel	65	0.01	0.32	0.03	0.00	1.19	0.10
<b>Project Year 2046</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Travel	5	0.05	0.74	0.05	0.01	1.24	0.14
On-road Travel	10	0.03	0.68	0.05	0.01	1.22	0.12
On-road Travel	15	0.02	0.62	0.04	0.01	1.21	0.11
On-road Travel	20	0.02	0.57	0.04	0.00	1.20	0.10
On-road Travel	25	0.01	0.52	0.03	0.00	1.20	0.10
On-road Travel	30	0.01	0.48	0.03	0.00	1.20	0.10
On-road Travel	35	0.01	0.45	0.03	0.00	1.19	0.09
On-road Travel	40	0.01	0.41	0.03	0.00	1.19	0.09
On-road Travel	45	0.01	0.38	0.03	0.00	1.19	0.09
On-road Travel	50	0.01	0.36	0.03	0.00	1.19	0.09
On-road Travel	55	0.01	0.33	0.03	0.00	1.19	0.09
On-road Travel	60	0.01	0.31	0.03	0.00	1.19	0.09
On-road Travel	65	0.01	0.29	0.03	0.00	1.19	0.10

Notes:  
(1) EMFAC2007 v2.3 with SCAQMD default age distributions.  
(2) Year 2046 uses 2040 emission factors, EMFAC 2007 only calculates emission factors to 2040.  
(3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-RP-10. Annual Worker Commute Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>On-Site</b>						
2016	0.00	0.07	0.01	0.00	0.06	0.01
2023	0.00	0.04	0.00	0.00	0.06	0.01
2035	0.00	0.03	0.00	0.00	0.06	0.01
2046	0.00	0.02	0.00	0.00	0.06	0.01
<b>Off-Site</b>						
2016	0.08	2.51	0.22	0.01	1.90	0.15
2023	0.04	1.51	0.12	0.01	1.90	0.15
2035	0.02	0.98	0.07	0.01	1.90	0.15
2046	0.02	0.90	0.06	0.01	1.90	0.15
Notes:						
(1) On-site driving emissions are calculated with 10 mph emission factors.						
(2) Paved road dust emissions are included in the PM 10 and PM 2.5 calculations.						

**Table C1.2-RP-11. Peak Daily Worker Commute Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>On-Site</b>						
2016	0.02	0.37	0.03	0.00	0.31	0.03
2023	0.01	0.22	0.02	0.00	0.31	0.03
2035	0.01	0.14	0.01	0.00	0.31	0.03
2046	0.01	0.13	0.01	0.00	0.31	0.03
<b>Off-Site</b>						
2016	0.42	13.93	1.20	0.04	10.57	0.85
2023	0.23	8.39	0.67	0.04	10.56	0.85
2035	0.13	5.47	0.39	0.04	10.57	0.85
2046	0.12	4.99	0.36	0.04	10.57	0.85
Notes:						
(1) On-site driving emissions are calculated with 10 mph emission factors.						
(2) Paved road dust emissions are included in the PM 10 and PM 2.5 calculations.						

**Table C1.2-RP-12. Summary of Annual Worker Commute Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.08	2.57	0.22	0.01	1.96	0.16
2023	0.04	1.55	0.12	0.01	1.96	0.16
2035	0.02	1.01	0.07	0.01	1.96	0.16
2046	0.02	0.92	0.07	0.01	1.96	0.16

Notes:  
 (1) On-site driving emissions estimates assume travel speed of 10mph.  
 (2) PM10 and PM2.5 include emissions from exahust, tire wear, brake wear, and road dust.

**Table C1.2-RP-13. Summary of Peak Daily Worker Commute Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.45	14.30	1.23	0.04	10.88	0.88
2023	0.24	8.62	0.69	0.04	10.87	0.88
2035	0.14	5.61	0.40	0.04	10.88	0.88
2046	0.12	5.12	0.36	0.04	10.88	0.88

Notes:  
 (1) On-site driving emissions estimates assume travel speed of 10mph.  
 (2) PM10 and PM2.5 include emissions from exhaust, tire wear, brake wear, and road dust.

**Table C1.2-RP-14. SCIG Train Trips - Reduced  
Project Alternative**

Year	Round Trips	
	Annual	Peak Day
2016	2,160	6
2023	2,160	6
2035	2,160	6
2046	2,160	6

**Table C1.2-RP-15. Emission Factors for SCIG Switcher Locomotives - Reduced Project Alternative**

Notch Setting	Emission Factors (g/hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>All Years</b>						
Idle	10.25	51.70	157.90	0.01	6.30	5.80
Moving	90.80	1,474.40	2,423.70	0.30	52.90	48.67
Notes: (1) Assume notch setting of 4 for all switcher movement. (2) Assume sulfur content of 15ppm for PM emission factors estimates. (3) Emission factors provided by Southwest Research Institute.						

**Table C1.2-RP-16. Emission Factors for SCIG Linehaul Locomotives - Reduced Project Alternative**

Notch Setting	Emission Factors (g/hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>						
DB	73.3	179.1	863.9	0.6	36.4	33.5
Idle	25.0	39.7	371.6	0.3	8.3	7.6
1	62.2	156.8	1260.2	1.3	50.5	46.4
2	107.9	265.8	3073.9	2.8	107.0	98.5
3	213.3	672.9	7147.8	5.8	188.3	173.3
4	219.4	1043.8	9203.5	8.0	238.0	219.0
5	289.5	907.8	10160.3	11.0	283.6	260.9
6	365.6	955.4	14182.9	14.1	280.3	257.9
7	423.0	1292.8	16786.5	17.4	283.7	261.0
8	522.7	1603.8	19596.7	21.4	334.3	307.5
<b>Year 2023</b>						
DB	47.8	163.0	574.1	0.6	18.6	17.1
Idle	21.3	45.3	310.7	0.3	6.8	6.2
1	40.5	149.3	969.8	1.3	22.8	20.9
2	67.3	264.1	2193.7	2.8	48.3	44.4
3	147.7	676.1	5472.7	5.8	83.6	76.9
4	141.8	1135.1	7147.0	8.1	104.7	96.3
5	193.0	1061.0	6947.4	11.1	155.7	143.3
6	237.7	1058.8	9964.8	14.2	148.5	136.6
7	272.9	1383.3	11805.5	17.5	143.2	131.7
8	336.1	1673.8	14028.8	21.5	157.7	145.1
<b>Year 2035</b>						
DB	17.3	128.3	239.5	0.6	7.2	6.7
Idle	6.4	32.0	114.5	0.3	1.6	1.5
1	15.6	143.7	388.4	1.4	10.6	9.8
2	28.3	243.2	932.9	2.8	22.5	20.7
3	54.6	617.1	1988.2	6.0	39.5	36.3
4	55.4	845.0	2641.7	8.3	49.8	45.8
5	75.2	549.1	3182.1	11.2	59.0	54.3
6	96.4	603.6	4460.2	14.4	57.9	53.2
7	113.4	868.3	5294.7	17.7	59.1	54.4
8	142.0	1121.1	6169.0	21.7	69.0	63.5
<b>Year 2046</b>						
DB	10.2	120.6	136.6	0.6	4.0	3.7
Idle	3.8	30.4	68.0	0.3	0.7	0.7
1	9.8	141.9	234.6	1.4	6.6	6.1
2	18.8	239.5	565.2	2.8	13.9	12.8
3	34.5	607.5	1103.2	6.1	24.5	22.5
4	35.2	806.4	1502.8	8.3	30.8	28.3
5	48.7	480.2	1987.9	11.2	34.4	31.7
6	63.8	538.5	2781.7	14.4	33.6	30.9
7	76.2	791.5	3308.6	17.8	35.3	32.5
8	96.8	1035.6	3837.7	21.7	41.4	38.1
Notes:						
(1) Assume sulfur content of 15ppm for PM EF estimates.						
(2) Line-haul locomotive fleets for future years based on projections from 2005 CARB Railroad Statewide Agreement and EPA Regulatory Impact Analysis for the Locomotive Emissions Rulemaking						



**Table C1.2-RP-17. Peak Emission Factors SCIG Linehaul Locomotives - Reduced Project Alternative**

Notch Setting	Emission Factors (g/hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>						
DB	149.9	196.8	1010.3	0.6	50.7	46.6
Idle	102.2	95.3	927.9	0.4	33.8	31.1
1	132.7	139.2	2510.8	1.1	56.1	51.6
2	212.9	310.1	4806.2	2.5	117.4	108.0
3	548.9	830.6	13850.8	5.3	193.2	177.7
4	462.8	2136.1	18663.0	7.6	233.3	214.7
5	682.6	2801.2	13662.6	11.0	548.0	504.2
6	817.6	2502.2	21113.3	13.8	483.1	444.4
7	938.6	2932.0	25088.8	17.0	437.9	402.8
8	1164.8	3249.7	31154.3	21.3	403.9	371.5
<b>Year 2023</b>						
DB	149.9	196.8	1010.3	0.6	50.7	46.6
Idle	102.2	95.3	927.9	0.4	33.8	31.1
1	132.7	139.2	2510.8	1.1	56.1	51.6
2	212.9	310.1	4806.2	2.5	117.4	108.0
3	548.9	830.6	13850.8	5.3	193.2	177.7
4	462.8	2136.1	18663.0	7.6	233.3	214.7
5	682.6	2801.2	13662.6	11.0	548.0	504.2
6	817.6	2502.2	21113.3	13.8	483.1	444.4
7	938.6	2932.0	25088.8	17.0	437.9	402.8
8	1164.8	3249.7	31154.3	21.3	403.9	371.5
<b>Year 2035</b>						
DB	93.7	196.8	845.6	0.6	31.7	29.1
Idle	63.9	95.3	776.6	0.4	21.1	19.5
1	82.9	139.2	2101.5	1.1	35.1	32.3
2	133.1	310.1	4022.8	2.5	73.3	67.5
3	343.1	830.6	11593.1	5.3	120.7	111.1
4	289.2	2136.1	15620.9	7.6	145.8	134.2
5	426.6	2801.2	11435.6	11.0	342.5	315.1
6	511.0	2502.2	17671.9	13.8	301.9	277.8
7	586.6	2932.0	20999.3	17.0	273.7	251.8
8	728.0	3249.7	26076.2	21.3	252.4	232.2
<b>Year 2046</b>						
DB	179.3	461.4	2035.5	0.7	55.3	50.8
Idle	31.8	49.4	375.9	0.3	10.6	9.7
1	122.0	243.5	1538.4	1.2	38.8	35.7
2	172.7	368.0	4671.8	2.5	87.6	80.6
3	351.5	895.5	14368.6	5.0	160.1	147.3
4	413.9	1505.0	16071.1	6.9	212.0	195.0
5	457.6	1788.4	13854.8	9.8	235.7	216.9
6	540.0	2014.4	18020.0	12.7	273.7	251.8
7	567.3	2713.7	20886.3	15.8	245.1	225.5
8	634.5	3356.1	23912.8	19.9	346.6	318.9
Notes:						
(1) Assume sulfur content of 15ppm for PM EF estimates.						
(2) Line-haul locomotive fleets for future years based on projections from 2005 CARB Railroad Statewide Agreement and EPA Regulatory Impact Analysis for the Locomotive Emissions Rulemaking						

Table C1.2-RP-18. Annual Locomotive Emissions for SCIG - Reduced Project Alternative

Analysis Year	Source Activity	Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
	<b>On-Site</b>						
2016	Line Haul Locomotive	0.44	1.08	10.36	0.01	0.27	0.25
	Switcher	0.03	0.41	0.70	0.00	0.02	0.01
	<b>Subtotal</b>	<b>0.47</b>	<b>1.49</b>	<b>11.06</b>	<b>0.01</b>	<b>0.29</b>	<b>0.26</b>
2023	Line Haul Locomotive	0.35	1.14	7.85	0.01	0.15	0.14
	Switcher	0.03	0.41	0.70	0.00	0.02	0.01
	<b>Subtotal</b>	<b>0.38</b>	<b>1.55</b>	<b>8.55</b>	<b>0.01</b>	<b>0.17</b>	<b>0.16</b>
2035	Line Haul Locomotive	0.13	0.93	3.42	0.01	0.06	0.06
	Switcher	0.03	0.41	0.70	0.00	0.02	0.01
	<b>Subtotal</b>	<b>0.16</b>	<b>1.34</b>	<b>4.12</b>	<b>0.01</b>	<b>0.08</b>	<b>0.07</b>
2046	Line Haul Locomotive	0.08	0.88	2.04	0.01	0.03	0.03
	Switcher	0.03	0.41	0.70	0.00	0.02	0.01
	<b>Subtotal</b>	<b>0.11</b>	<b>1.29</b>	<b>2.74</b>	<b>0.01</b>	<b>0.05</b>	<b>0.05</b>
	<b>Off-Site</b>						
2016	Travel on Alameda Corridor	2.21	5.92	60.52	0.06	1.52	1.40
	Alameda Corridor to SCAB	7.67	22.86	262.38	0.27	5.43	4.99
	<b>Subtotal</b>	<b>9.87</b>	<b>28.78</b>	<b>322.89</b>	<b>0.33</b>	<b>6.95</b>	<b>6.39</b>
2023	Travel on Alameda Corridor	1.51	6.11	44.47	0.06	0.76	0.70
	Alameda Corridor to SCAB	5.04	23.99	188.58	0.27	2.65	2.44
	<b>Subtotal</b>	<b>6.56</b>	<b>30.11</b>	<b>233.05</b>	<b>0.33</b>	<b>3.41</b>	<b>3.14</b>
2035	Travel on Alameda Corridor	0.61	4.98	19.76	0.06	0.34	0.31
	Alameda Corridor to SCAB	2.18	17.86	87.34	0.29	1.21	1.11
	<b>Subtotal</b>	<b>2.79</b>	<b>22.85</b>	<b>107.10</b>	<b>0.36</b>	<b>1.55</b>	<b>1.42</b>
2046	Travel on Alameda Corridor	0.39	4.72	11.87	0.06	0.20	0.18
	Alameda Corridor to SCAB	1.44	16.61	53.42	0.29	0.72	0.66
	<b>Subtotal</b>	<b>1.83</b>	<b>21.33</b>	<b>65.29</b>	<b>0.36</b>	<b>0.92</b>	<b>0.85</b>

**Table C1.2-RP-19. Peak Daily Locomotive Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Source Activity	Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>On-Site</b>							
2016	Line Haul Locomotive	7.98	11.52	108.96	0.05	3.06	2.82
	Switcher	0.15	2.29	3.88	0.00	0.09	0.08
	<b>Subtotal</b>	<b>8.14</b>	<b>13.81</b>	<b>112.84</b>	<b>0.05</b>	<b>3.15</b>	<b>2.90</b>
2023	Line Haul Locomotive	7.98	11.52	108.96	0.05	3.06	2.82
	Switcher	0.15	2.29	3.88	0.00	0.09	0.08
	<b>Subtotal</b>	<b>8.14</b>	<b>13.81</b>	<b>112.84</b>	<b>0.05</b>	<b>3.15</b>	<b>2.90</b>
2035	Line Haul Locomotive	5.46	12.60	99.76	0.06	2.09	1.93
	Switcher	0.15	2.29	3.88	0.00	0.09	0.08
	<b>Subtotal</b>	<b>5.61</b>	<b>14.89</b>	<b>103.64</b>	<b>0.06</b>	<b>2.18</b>	<b>2.01</b>
2046	Line Haul Locomotive	4.43	10.88	89.40	0.05	1.72	1.58
	Switcher	0.15	2.29	3.88	0.00	0.09	0.08
	<b>Subtotal</b>	<b>4.58</b>	<b>13.17</b>	<b>93.29</b>	<b>0.05</b>	<b>1.81</b>	<b>1.67</b>
<b>Off-Site</b>							
2016	Travel on Alameda Corridor	31.96	59.37	597.81	0.32	12.85	11.82
	Alameda Corridor to SCAB	100.84	261.24	2407.99	1.49	42.22	38.85
	<b>Subtotal</b>	<b>132.80</b>	<b>320.61</b>	<b>3005.80</b>	<b>1.81</b>	<b>55.07</b>	<b>50.67</b>
2023	Travel on Alameda Corridor	31.96	59.37	597.81	0.32	12.85	11.82
	Alameda Corridor to SCAB	100.84	261.24	2407.99	1.49	42.22	38.85
	<b>Subtotal</b>	<b>132.80</b>	<b>320.61</b>	<b>3005.80</b>	<b>1.81</b>	<b>55.07</b>	<b>50.67</b>
2035	Travel on Alameda Corridor	21.85	64.94	547.34	0.35	8.79	8.08
	Alameda Corridor to SCAB	68.94	285.77	2204.68	1.63	28.87	26.56
	<b>Subtotal</b>	<b>90.79</b>	<b>350.71</b>	<b>2752.02</b>	<b>1.98</b>	<b>37.65</b>	<b>34.64</b>
2046 <sup>1</sup>	Travel on Alameda Corridor	12.97	26.21	318.50	0.35	8.79	8.08
	Alameda Corridor to SCAB	47.96	92.14	1434.82	1.63	28.87	26.56
	<b>Subtotal</b>	<b>60.93</b>	<b>118.35</b>	<b>1753.32</b>	<b>1.98</b>	<b>37.65</b>	<b>34.64</b>

Note:

(1) Peak locomotive emissions were estimated assuming that all daily locomotive trips on the peak day were conducted by the lowest Tier level locomotive in the fleet mix for each analysis year.

**Table C1.2-RP-20. Summary of Annual Locomotive Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	10.34	30.27	333.95	0.34	7.24	6.66
2023	6.93	31.66	241.60	0.34	3.58	3.29
2035	2.95	24.18	111.23	0.37	1.63	1.50
2046	1.93	22.62	68.03	0.37	0.97	0.89

**Table C1.2-RP-21. Summary of Peak Daily Locomotive Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	140.93	334.42	3118.64	1.87	58.23	53.57
2023	140.93	334.42	3118.64	1.87	58.23	53.57
2035	96.40	365.59	2855.66	2.04	39.84	36.65
2046	65.52	131.52	1846.60	2.04	39.46	36.31

**Table C1.2-RP-22. Equipment Usage for SCIG Cargo Handling Equipment - Reduced Project Alternative**

Equipment	HP	LF	Fuel	Hours/Unit	Quantity	Total hp-hr
<b>Year 2016</b>						
Rail Car Wheel Change Machine	160	0.43	D	1,632	2	522,240
TRU	34	0.53	D	0.3	1420	14,484
<b>Year 2023</b>						
Rail Car Wheel Change Machine	160	0.43	D	1,632	2	522,240
TRU	34	0.53	D	0.3	1950	19,890
<b>Year 2035</b>						
Rail Car Wheel Change Machine	160	0.43	D	1,632	2	522,240
TRU	34	0.53	D	0.3	1950	19,890
<b>Year 2046</b>						
Rail Car Wheel Change Machine	160	0.43	D	1,632	2	522,240
TRU	34	0.53	D	0.3	1950	19,890
Notes:						
(1) Crane emissions are estimated using the ARB CHE Calculator; TRU emissions are estimated using CARB OFFROAD2007 Model.						
(2) All TRUs will be electrified on the SCIG site; emissions estimates assume 30 minutes running on diesel fuel between arrival on-site and						
(3) 0.13% of the container throughput at SCIG are TRUs						

**Table C1.2-RP-23. Emission Factors for SCIG Cargo Handling Equipment -  
Reduced Project Alternative**

Equipment	Emission Factors (g/hp-hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>						
Rail Car Wheel Change Machine	0.05	2.70	0.27	0.06	0.01	0.01
TRU	0.65	5.17	4.68	0.01	0.15	0.14
<b>Year 2023</b>						
Rail Car Wheel Change Machine	0.05	2.70	0.27	0.06	0.01	0.01
TRU	0.58	5.13	3.62	0.01	0.02	0.02
<b>Year 2035</b>						
Rail Car Wheel Change Machine	0.05	2.70	0.27	0.06	0.01	0.01
TRU	0.58	5.13	3.57	0.01	0.02	0.02
<b>Year 2046</b>						
Rail Car Wheel Change Machine	0.05	2.70	0.27	0.06	0.01	0.01
TRU	0.58	5.13	3.57	0.01	0.02	0.02
Notes:						
(1) Emission factors were estimated with the use of ARB CHE calculator						
(2) Year 2046 uses 2040 emission factors						

**Table C1.2-RP-24. Annual Emissions for SCIG Cargo Handling Equipment -  
Reduced Project Alternative**

Equipment	HP	Emission (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>							
Rail Car Wheel Change Machine	160	0.01	0.67	0.06	0.00	0.00	0.00
TRU	34	0.01	0.04	0.04	0.00	0.00	0.00
	<b>Total</b>	<b>0.02</b>	<b>0.72</b>	<b>0.10</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Year 2023</b>							
Rail Car Wheel Change Machine	160	0.01	0.72	0.07	0.00	0.00	0.00
TRU	34	0.01	0.06	0.04	0.00	0.00	0.00
	<b>Total</b>	<b>0.02</b>	<b>0.77</b>	<b>0.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Year 2035</b>							
Rail Car Wheel Change Machine	160	0.01	0.67	0.06	0.00	0.00	0.00
TRU	34	0.01	0.06	0.04	0.00	0.00	0.00
	<b>Total</b>	<b>0.02</b>	<b>0.73</b>	<b>0.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Year 2046</b>							
Rail Car Wheel Change Machine	160	0.01	0.74	0.07	0.00	0.00	0.00
TRU	34	0.01	0.06	0.04	0.00	0.00	0.00
	<b>Total</b>	<b>0.02</b>	<b>0.80</b>	<b>0.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>



**Table C1.2-RP-25. Peak Daily Emissions for SCIG Cargo Handling Equipment -  
Reduced Project Alternative**

Equipment	HP	Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>							
Rail Car Wheel Change Machine	160	0.06	3.74	0.35	0.01	0.01	0.01
TRU	34	1.46	11.67	10.57	0.02	0.34	0.31
	<b>Total</b>	<b>1.52</b>	<b>15.41</b>	<b>10.93</b>	<b>0.03</b>	<b>0.35</b>	<b>0.32</b>
<b>Year 2023</b>							
Rail Car Wheel Change Machine	160	0.07	3.97	0.37	0.01	0.01	0.01
TRU	34	1.81	15.91	11.21	0.03	0.07	0.06
	<b>Total</b>	<b>1.88</b>	<b>19.88</b>	<b>11.59</b>	<b>0.03</b>	<b>0.08</b>	<b>0.08</b>
<b>Year 2035</b>							
Rail Car Wheel Change Machine	160	0.06	3.74	0.35	0.01	0.01	0.01
TRU	34	1.81	15.91	11.06	0.03	0.05	0.05
	<b>Total</b>	<b>1.87</b>	<b>19.65</b>	<b>11.41</b>	<b>0.03</b>	<b>0.06</b>	<b>0.06</b>
<b>Year 2046</b>							
Rail Car Wheel Change Machine	160	0.07	4.11	0.38	0.01	0.01	0.01
TRU	34	1.81	15.91	11.06	0.03	0.05	0.05
	<b>Total</b>	<b>1.89</b>	<b>20.01</b>	<b>11.44</b>	<b>0.03</b>	<b>0.07</b>	<b>0.06</b>

**Table C1.2-RP-26. Annual Activity Data for SCIG Maintenance Equipment  
- Reduced Project Alternative**

<b>Equipment</b>	<b>Quantity</b>	<b>Model Year</b>	<b>Fuel Type</b>	<b>HP</b>	<b>Activity (hrs/yr)</b>	<b>Load Factor</b>
<b>All Years</b>						
Welder	2	1996	G	20	208	0.51
Air Compressor	1	1989	G	35	484	0.56
Source: BNSF						

**Table C1.2-RP-27. Emission Factors for SCIG Maintenance Equipment -  
Reduced Project Alternative**

Equipment	HP	Emission Factors (g/hp-hr)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>							
Welder	20	6.84	268.19	4.53	0.01	3.60	3.31
Air Compressor	35	2.94	120.21	4.04	0.01	0.06	0.06
<b>Year 2023</b>							
Welder	20	6.74	266.89	4.57	0.01	3.60	3.31
Air Compressor	35	1.91	132.78	2.43	0.01	0.06	0.06
<b>Year 2035</b>							
Welder	20	6.73	266.68	4.56	0.01	3.60	3.31
Air Compressor	35	1.50	141.45	1.86	0.01	0.06	0.06
<b>Year 2046</b>							
Welder	20	6.73	266.59	4.56	0.01	3.60	3.31
Air Compressor	35	1.50	141.36	1.85	0.01	0.06	0.06
Notes:							
(1) Emission factors were estimated with the use of ARB OFFROAD2007 model.							
(2) Year 2046 uses 2040 emission factors							

**Table C1.2-RP-28. Annual Emissions for SCIG Maintenance Equipment -  
Reduced Project Alternative**

Equipment	HP	Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>							
Welder	20	0.03	1.25	0.02	0.00	0.02	0.02
Air Compressor	35	0.03	1.26	0.04	0.00	0.00	0.00
<b>Total</b>		<b>0.06</b>	<b>2.51</b>	<b>0.06</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>Year 2023</b>							
Welder	20	0.03	1.25	0.02	0.00	0.02	0.02
Air Compressor	35	0.02	1.39	0.03	0.00	0.00	0.00
<b>Total</b>		<b>0.05</b>	<b>2.64</b>	<b>0.05</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>Year 2035</b>							
Welder	20	0.03	1.25	0.02	0.00	0.02	0.02
Air Compressor	35	0.02	1.48	0.02	0.00	0.00	0.00
<b>Total</b>		<b>0.05</b>	<b>2.73</b>	<b>0.04</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>
<b>Year 2046</b>							
Welder	20	0.03	1.25	0.02	0.00	0.02	0.02
Air Compressor	35	0.02	1.48	0.02	0.00	0.00	0.00
<b>Total</b>		<b>0.05</b>	<b>2.73</b>	<b>0.04</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>

**Table C1.2-RP-29. Peak Daily Emissions for SCIG Maintenance Equipment -  
Reduced Project Alternative**

Equipment	HP	Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>							
Welder	20	0.18	6.97	0.12	0.00	0.09	0.09
Air Compressor	35	0.17	6.98	0.23	0.00	0.00	0.00
<b>Total</b>		<b>0.35</b>	<b>13.95</b>	<b>0.35</b>	<b>0.00</b>	<b>0.10</b>	<b>0.09</b>
<b>Year 2023</b>							
Welder	20	0.18	6.94	0.12	0.00	0.09	0.09
Air Compressor	35	0.11	7.71	0.14	0.00	0.00	0.00
<b>Total</b>		<b>0.29</b>	<b>14.65</b>	<b>0.26</b>	<b>0.00</b>	<b>0.10</b>	<b>0.09</b>
<b>Year 2035</b>							
Welder	20	0.17	6.93	0.12	0.00	0.09	0.09
Air Compressor	35	0.09	8.22	0.11	0.00	0.00	0.00
<b>Total</b>		<b>0.26</b>	<b>15.15</b>	<b>0.23</b>	<b>0.00</b>	<b>0.10</b>	<b>0.09</b>
<b>Year 2046</b>							
Welder	20	0.17	6.93	0.12	0.00	0.09	0.09
Air Compressor	35	0.09	8.21	0.11	0.00	0.00	0.00
<b>Total</b>		<b>0.26</b>	<b>15.14</b>	<b>0.23</b>	<b>0.00</b>	<b>0.10</b>	<b>0.09</b>

**Table C1.2-RP-30. Activity Data for SCIG Emergency Generator - Reduced Project Alternative**

<b>Equipment</b>	<b>Quantity</b>	<b>HP</b>	<b>Fuel Type</b>	<b>Annual Usage (hr/yr)</b>	<b>Peak Daily Usage (hr/day)</b>
<b>All Years</b>					
Emergency Generator	1	846	D	199	24

**Table C1.2-RP-31. Emission Factors for SCIG Emergency Generator - Reduced Project Alternative**

Equipment	HP	Emission Factor (g/bhp-hr)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>All Years</b>							
Emergency Generator	846	0.13	2.60	0.50	0.00	0.02	0.02
Notes:							
(1) Emission factors assume Tier 4 generator.							
(2) SOx emission factor from OFFROAD2007							

**Table C1.2-RP-32. Summary of Annual Emissions for SCIG Emergency Generator  
- Reduced Project Alternative**

Equipment	HP	Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>All Years</b>							
Emergency Generator	846	0.02	0.48	0.09	0.00	0.00	0.00
<b>Total</b>		<b>0.02</b>	<b>0.48</b>	<b>0.09</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>



**Table C1.2-RP-33. Summary of Peak Daily Emissions for SCIG Emergency Generator  
- Reduced Project Alternative**

Equipment	HP	Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>All Years</b>							
Emergency Generator	846	5.96	116.38	22.38	0.19	0.98	0.91
<b>Total</b>		<b>5.96</b>	<b>116.38</b>	<b>22.38</b>	<b>0.19</b>	<b>0.98</b>	<b>0.91</b>

**Table C1.2-RP-34. Activity Data for SCIG Gasoline Service Trucks - Reduced Project Alternative**

<b>Project Year/Mode</b>	<b>Throughput</b>	<b>On-site Idle / Trip (hrs)</b>	<b>Avg On-site Distance (mi)</b>	<b>Idle Hr / Year</b>	<b>VMT / Year</b>
<b>All Years</b>					
Light Duty Gas Service Trucks	5,040	0.17	0.42	840	2,117

**Table C1.2-RP-35. Emission Factors for SCIG Gasoline Service Trucks - Reduced Project Alternative**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Project Year 2016</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.27	3.59	0.40	0.01	1.73	0.24
On-road Truck Transport	10	0.18	3.17	0.34	0.01	1.68	0.20
On-road Truck Transport	15	0.13	2.84	0.30	0.01	1.65	0.17
On-road Truck Transport	20	0.09	2.56	0.27	0.01	1.64	0.15
On-road Truck Transport	25	0.07	2.33	0.25	0.01	1.63	0.15
On-road Truck Transport	30	0.06	2.14	0.23	0.00	1.62	0.14
On-road Truck Transport	35	0.05	1.97	0.22	0.00	1.62	0.14
On-road Truck Transport	40	0.05	1.84	0.21	0.00	1.61	0.13
On-road Truck Transport	45	0.04	1.72	0.21	0.00	1.61	0.13
On-road Truck Transport	50	0.04	1.63	0.21	0.00	1.61	0.13
On-road Truck Transport	55	0.04	1.55	0.22	0.00	1.61	0.13
On-road Truck Transport	60	0.05	1.50	0.23	0.00	1.61	0.13
On-road Truck Transport	65	0.05	1.48	0.25	0.01	1.62	0.14
<b>Project Year 2023</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.18	2.41	0.25	0.01	1.74	0.25
On-road Truck Transport	10	0.12	2.17	0.21	0.01	1.69	0.20
On-road Truck Transport	15	0.08	1.96	0.19	0.01	1.66	0.17
On-road Truck Transport	20	0.06	1.79	0.17	0.01	1.64	0.16
On-road Truck Transport	25	0.05	1.63	0.15	0.01	1.63	0.15
On-road Truck Transport	30	0.04	1.50	0.14	0.00	1.62	0.14
On-road Truck Transport	35	0.03	1.39	0.14	0.00	1.62	0.14
On-road Truck Transport	40	0.03	1.28	0.13	0.00	1.61	0.13
On-road Truck Transport	45	0.03	1.20	0.13	0.00	1.61	0.13
On-road Truck Transport	50	0.03	1.12	0.13	0.00	1.61	0.13
On-road Truck Transport	55	0.03	1.06	0.13	0.00	1.61	0.13
On-road Truck Transport	60	0.03	1.00	0.14	0.00	1.62	0.14
On-road Truck Transport	65	0.03	0.96	0.15	0.01	1.62	0.14
<b>Project Year 2035</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.12	1.58	0.12	0.01	1.74	0.25
On-road Truck Transport	10	0.08	1.43	0.11	0.01	1.69	0.20
On-road Truck Transport	15	0.05	1.31	0.10	0.01	1.66	0.17
On-road Truck Transport	20	0.04	1.20	0.09	0.01	1.64	0.16
On-road Truck Transport	25	0.03	1.10	0.08	0.01	1.63	0.15
On-road Truck Transport	30	0.02	1.01	0.07	0.00	1.62	0.14
On-road Truck Transport	35	0.02	0.94	0.07	0.00	1.62	0.14
On-road Truck Transport	40	0.02	0.87	0.07	0.00	1.61	0.13
On-road Truck Transport	45	0.02	0.81	0.07	0.00	1.61	0.13
On-road Truck Transport	50	0.02	0.75	0.07	0.00	1.61	0.13
On-road Truck Transport	55	0.02	0.70	0.07	0.00	1.61	0.13
On-road Truck Transport	60	0.02	0.66	0.07	0.00	1.62	0.14
On-road Truck Transport	65	0.02	0.62	0.07	0.01	1.62	0.14
<b>Project Year 2046</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.11	1.43	0.10	0.01	1.74	0.25
On-road Truck Transport	10	0.07	1.31	0.09	0.01	1.69	0.20
On-road Truck Transport	15	0.05	1.20	0.08	0.01	1.66	0.17
On-road Truck Transport	20	0.04	1.10	0.07	0.01	1.64	0.16
On-road Truck Transport	25	0.03	1.01	0.07	0.01	1.63	0.15
On-road Truck Transport	30	0.02	0.93	0.06	0.00	1.62	0.14
On-road Truck Transport	35	0.02	0.86	0.06	0.00	1.62	0.14
On-road Truck Transport	40	0.02	0.80	0.06	0.00	1.61	0.13
On-road Truck Transport	45	0.01	0.74	0.06	0.00	1.61	0.13
On-road Truck Transport	50	0.01	0.69	0.06	0.00	1.61	0.13
On-road Truck Transport	55	0.02	0.64	0.06	0.00	1.61	0.13
On-road Truck Transport	60	0.02	0.60	0.06	0.00	1.62	0.14
On-road Truck Transport	65	0.02	0.57	0.06	0.01	1.62	0.14
Notes:							
(1) EMFAC2007 v2.3 with SCAB default age distributions.							
(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.							
(3) Year 2046 uses 2040 emission factors.							

**Table C1.2-RP-36. Annual Gasoline Service Truck Emissions for SCIG -  
Reduced Project Alternative**

Project Scenario - Mode	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Project Year 2016</b>						
Year 2016 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2016 - Driving	0.00	0.01	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Project Year 2023</b>						
Year 2023 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2023 - Driving	0.00	0.01	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Project Year 2035</b>						
Year 2035 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2035 - Driving	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Project Year 2046</b>						
Year 2046 - Idling	0.00	0.00	0.00	0.00	0.00	0.00
Year 2046 - Driving	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Notes:						
(1) On-site driving emissions are calculated with 10 mph emission factors.						
(2) Paved road dust emissions are included in the PM10 and PM2.5 calculations.						

**Table C1.2-RP-37. Summary of Annual Gasoline Service Truck On-Site Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.00	0.01	0.00	0.00	0.00	0.00
2023	0.00	0.01	0.00	0.00	0.00	0.00
2035	0.00	0.00	0.00	0.00	0.00	0.00
2046	0.00	0.00	0.00	0.00	0.00	0.00

**Table C1.2-RP-38. Summary of Peak Daily Gasoline Service Truck Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
2016	0.00	0.04	0.00	0.00	0.02	0.00
2023	0.00	0.03	0.00	0.00	0.02	0.00
2035	0.00	0.02	0.00	0.00	0.02	0.00
2046	0.00	0.02	0.00	0.00	0.02	0.00

**Table C1.2-RP-39. Activity Data for SCIG Refueling Trucks - Reduced Project Alternative**

<b>Truck Type</b>	<b>Annual Throughput</b>	<b>Idle / Trip (hrs)</b>	<b>Average Distance (mi)</b>	<b>Idle Hr / Year</b>	<b>VMT / Year</b>
<b>All Years</b>					
<b>On-Site</b>					
Refueling Trucks for Diesel Fuel	683	0.17	0.25	114	171
Refueling Trucks for LNG Fuel	36	0.17	0.25	6	9
<b>Off-Site</b>					
Refueling Trucks for all fuels	719	--	12.38	--	8,892
Notes:					
(1) The number of fuel delivery truck trips for each analysis year was estimated based on the expected fuel consumption at the facility and tanker truck capacity.					
(2) Trucks were assumed to travel on-site at an average speed of 10 mph;					

**Table C1.2-RP-40. Emission Factors for SCIG Refueling Trucks - Reduced Project Alternative**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Project Year 2016</b>							
On-road Truck - Idle (g/hr)	0	9.53	44.19	113.59	0.06	0.27	0.25
On-road Truck Transport	5	6.28	10.79	18.48	0.04	1.92	0.50
On-road Truck Transport	10	3.45	7.27	13.09	0.03	1.83	0.42
On-road Truck Transport	15	1.64	4.82	9.62	0.03	1.77	0.36
On-road Truck Transport	20	0.90	3.51	8.07	0.02	1.73	0.33
On-road Truck Transport	25	0.75	3.08	7.55	0.02	1.72	0.32
On-road Truck Transport	30	0.62	2.72	7.12	0.02	1.71	0.31
On-road Truck Transport	35	0.52	2.45	6.79	0.02	1.71	0.31
On-road Truck Transport	40	0.45	2.25	6.55	0.02	1.71	0.31
On-road Truck Transport	45	0.41	2.13	6.40	0.02	1.71	0.31
On-road Truck Transport	50	0.40	2.09	6.35	0.02	1.72	0.32
On-road Truck Transport	55	0.42	2.13	6.39	0.02	1.73	0.33
On-road Truck Transport	60	0.47	2.25	6.52	0.02	1.75	0.34
On-road Truck Transport	65	0.54	2.45	6.75	0.02	1.77	0.36
<b>Project Year 2023</b>							
On-road Truck - Idle (g/hr)	0	8.15	42.17	43.54	0.06	0.22	0.21
On-road Truck Transport	5	3.36	6.33	3.54	0.04	1.80	0.39
On-road Truck Transport	10	1.83	3.94	2.61	0.03	1.76	0.36
On-road Truck Transport	15	0.88	2.37	1.96	0.03	1.73	0.33
On-road Truck Transport	20	0.50	1.67	1.62	0.02	1.72	0.31
On-road Truck Transport	25	0.43	1.54	1.47	0.02	1.71	0.31
On-road Truck Transport	30	0.37	1.45	1.35	0.02	1.71	0.31
On-road Truck Transport	35	0.32	1.38	1.25	0.02	1.71	0.31
On-road Truck Transport	40	0.28	1.35	1.18	0.02	1.71	0.31
On-road Truck Transport	45	0.25	1.35	1.13	0.02	1.72	0.32
On-road Truck Transport	50	0.23	1.38	1.11	0.02	1.73	0.33
On-road Truck Transport	55	0.22	1.45	1.10	0.02	1.74	0.34
On-road Truck Transport	60	0.23	1.55	1.12	0.02	1.76	0.35
On-road Truck Transport	65	0.24	1.68	1.17	0.02	1.78	0.37
<b>Project Year 2035</b>							
On-road Truck - Idle (g/hr)	0	7.68	41.48	57.35	0.06	0.12	0.11
On-road Truck Transport	5	2.43	4.81	3.30	0.04	1.73	0.32
On-road Truck Transport	10	1.33	2.89	2.48	0.03	1.72	0.32
On-road Truck Transport	15	0.63	1.66	1.88	0.03	1.71	0.31
On-road Truck Transport	20	0.37	1.15	1.54	0.02	1.70	0.30
On-road Truck Transport	25	0.33	1.09	1.38	0.02	1.70	0.30
On-road Truck Transport	30	0.28	1.06	1.25	0.02	1.70	0.30
On-road Truck Transport	35	0.25	1.04	1.15	0.02	1.70	0.30
On-road Truck Transport	40	0.22	1.04	1.07	0.02	1.71	0.31
On-road Truck Transport	45	0.19	1.06	1.01	0.02	1.72	0.32
On-road Truck Transport	50	0.17	1.11	0.98	0.02	1.73	0.33
On-road Truck Transport	55	0.16	1.17	0.97	0.02	1.75	0.34
On-road Truck Transport	60	0.16	1.25	0.99	0.02	1.76	0.36
On-road Truck Transport	65	0.15	1.35	1.03	0.02	1.78	0.37
<b>Project Year 2046</b>							
On-road Truck - Idle (g/hr)	0	7.66	41.44	58.12	0.06	0.11	0.10
On-road Truck Transport	5	2.40	4.75	3.29	0.04	1.72	0.32
On-road Truck Transport	10	1.31	2.85	2.47	0.03	1.72	0.31
On-road Truck Transport	15	0.63	1.63	1.88	0.03	1.71	0.31
On-road Truck Transport	20	0.37	1.13	1.53	0.02	1.70	0.30
On-road Truck Transport	25	0.32	1.08	1.38	0.02	1.70	0.30
On-road Truck Transport	30	0.28	1.04	1.25	0.02	1.70	0.30
On-road Truck Transport	35	0.24	1.02	1.14	0.02	1.70	0.30
On-road Truck Transport	40	0.21	1.03	1.06	0.02	1.71	0.31
On-road Truck Transport	45	0.19	1.05	1.01	0.02	1.72	0.32
On-road Truck Transport	50	0.17	1.09	0.97	0.02	1.73	0.33
On-road Truck Transport	55	0.16	1.15	0.97	0.02	1.75	0.34
On-road Truck Transport	60	0.15	1.24	0.99	0.02	1.76	0.36
On-road Truck Transport	65	0.15	1.34	1.03	0.02	1.78	0.38

Notes:

- (1) Emission factors were generated with the use of EMFAC2007 v2.3 model with SCAB default age distributions.
- (2) NOx and PM emission factors are adjusted to meet the Statewide Bus and Truck Rule.
- (3) PM emission factors include those from vehicle exhaust, tire wear, brake wear, and paved road dust.
- (4) Year 2046 uses 2040 emission factors



**Table C1.2-RP-41. Annual Refueling Truck Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Refueling Truck Type - Mode	Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
	<b>On-Site</b>						
<b>2016</b>	Diesel Fuel - Idling	0.00	0.01	0.01	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.00</b>	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>2023</b>	Diesel Fuel - Idling	0.00	0.01	0.01	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>2035</b>	Diesel Fuel - Idling	0.00	0.01	0.01	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>2046</b>	Diesel Fuel - Idling	0.00	0.01	0.01	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>Off-Site</b>						
<b>2016</b>	Driving	0.01	0.04	0.10	0.00	0.01	0.00
<b>2023</b>	Driving	0.00	0.02	0.02	0.00	0.01	0.00
<b>2035</b>	Driving	0.00	0.02	0.02	0.00	0.01	0.00
<b>2046</b>	Driving	0.00	0.02	0.02	0.00	0.01	0.00

Notes:

(1) On-site driving emissions assume 10 mph.

(2) Paved road dust emissions are included in the PM10 and PM2.5 calculations.

**Table C1.2-RP-42. Peak Daily Refueling Truck Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Refueling Truck Type - Mode	Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
	<b>On-Site</b>						
<b>2016</b>	Diesel Fuel - Idling	0.01	0.03	0.08	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.01	0.01	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.01</b>	<b>0.04</b>	<b>0.10</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>2023</b>	Diesel Fuel - Idling	0.01	0.03	0.03	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.01</b>	<b>0.04</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>2035</b>	Diesel Fuel - Idling	0.01	0.03	0.04	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.01</b>	<b>0.03</b>	<b>0.04</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>2046</b>	Diesel Fuel - Idling	0.01	0.03	0.04	0.00	0.00	0.00
	Diesel Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Idling	0.00	0.00	0.00	0.00	0.00	0.00
	LNG Fuel - Driving	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal</b>	<b>0.01</b>	<b>0.03</b>	<b>0.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>Off-Site</b>						
<b>2016</b>	Driving	0.05	0.21	0.55	0.00	0.08	0.01
<b>2023</b>	Driving	0.03	0.12	0.10	0.00	0.08	0.01
<b>2035</b>	Driving	0.02	0.09	0.09	0.00	0.08	0.01
<b>2046</b>	Driving	0.02	0.09	0.09	0.00	0.08	0.01

Notes:

(1) On-site driving emissions assume 10 mph.

(2) Paved road dust emissions are included in the PM10 and PM2.5 calculations.

**Table C1.2-RP-43. Summary of Annual Refueling Truck Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
2016	0.01	0.04	0.12	0.00	0.02	0.00
2023	0.01	0.03	0.02	0.00	0.01	0.00
2035	0.00	0.02	0.02	0.00	0.01	0.00
2046	0.01	0.02	0.02	0.00	0.01	0.00

**Table C1.2-RP-44. Summary of Peak Daily Refueling Truck Emissions for SCIG - Reduced Project Alternative**

Analysis Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
2016	0.06	0.25	0.65	0.00	0.08	0.01
2023	0.04	0.15	0.14	0.00	0.08	0.01
2035	0.03	0.12	0.14	0.00	0.08	0.01
2046	0.03	0.12	0.14	0.00	0.08	0.01

**Table C1.2-RP-45. Activity Data for SCIG LNG Yard Hostlers - Reduced Project Alternative**

<b>Analysis Year</b>	<b>Quantity</b>	<b>HP</b>	<b>Load Factor</b>	<b>Daily Activity (hr/day/u)</b>	<b>Annual Activity (hr/yr/unit)</b>	<b>Round Trip Distance (mi)</b>	<b>Annual VMT (mi/unit)</b>
All Years	7	250	0.65	18	6480	0.98	52.92

**Table C1.2-RP-46. Emission Factors for SCIG LNG Yard Hostlers -  
Reduced Project Alternative**

Analysis Year	Emission Factors (g/bhp-hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
All Years	0.01	14.20	0.13	0.000	0.002	0.002
Note: (1) Emission factors from engine certification data.						

**Table C1.2-RP-47. Summary of Annual Emissions for SCIG LNG Yard  
Hostlers - Reduced Project Alternative**

Analysis Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
All Years	0.05	115.38	1.06	0.00	0.02	0.01

**Table C1.2-RP-48. Summary of Peak Daily Emissions for LNG Yard Hostler - Reduced Project Alternative**

Analysis Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
All Years	0.34	717.64	6.57	0.00	0.10	0.09



**Table C1.2-RP-49. Activity Data for Paints, Oils, Cleaners, and Other Fluids Used for Maintenance - Reduced Project Alternative**

Year	Cans Used Per Month
2016	438
2023, 2035, 2046	613
Note: Cans include paints, cleaners, oils, lubricants, etc.	

**Table C1.2-RP-50. VOC Emissions from Paints, Oils, Cleaners,  
and Other Fluids Used for Maintenance - Reduced Project  
Alternative**

<b>Year</b>	<b>Annual Emissions (tons/yr)</b>	<b>Peak Daily Emissions (lbs/day)</b>
2016	0.99	5.48
2023, 2035, 2046	1.35	7.52

**Table C1.2-RP-51. Activity Data for Drayage Trucks Traveling to Hobart Yard - Reduced Project Alternative**

<b>Project Year</b>	<b>Roundtrip Distance per Trip (mi)</b>	<b>Truck Roundtrips per Year</b>
Year 2016	40.2	96,055
Year 2023	40.2	431,990
Year 2035	--	--
Year 2046	--	--

**Table C1.2-RP-52. Emission Factors for Drayage Trucks Traveling to Hobart Yard - Reduced Project Alternative**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)							
		VOC	CO	NOx	SOx	PM 10	PM 2.5	DPM 10	DPM 2.5
<b>Year 2016</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	4.62	9.08	17.77	0.04	1.08	0.19	0.12	0.11
On-road Truck Transport	10	2.52	5.44	13.32	0.03	1.07	0.18	0.11	0.10
On-road Truck Transport	15	1.21	3.12	10.15	0.03	1.06	0.17	0.10	0.10
On-road Truck Transport	20	0.71	2.17	8.28	0.02	1.05	0.17	0.10	0.09
On-road Truck Transport	25	0.62	2.06	7.44	0.02	1.04	0.16	0.09	0.08
On-road Truck Transport	30	0.54	1.99	6.74	0.02	1.05	0.16	0.09	0.09
On-road Truck Transport	35	0.47	1.96	6.17	0.02	1.05	0.17	0.10	0.09
On-road Truck Transport	40	0.41	1.97	5.73	0.02	1.06	0.18	0.11	0.10
On-road Truck Transport	45	0.37	2.01	5.43	0.02	1.07	0.19	0.12	0.11
On-road Truck Transport	50	0.33	2.09	5.26	0.02	1.09	0.20	0.14	0.13
On-road Truck Transport	55	0.31	2.21	5.22	0.02	1.11	0.22	0.16	0.14
On-road Truck Transport	60	0.29	2.37	5.32	0.02	1.13	0.24	0.18	0.17
On-road Truck Transport	65	0.29	2.56	5.55	0.02	1.16	0.27	0.21	0.19
<b>Year 2023</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	3.20	6.35	9.81	0.04	1.08	0.19	0.13	0.12
On-road Truck Transport	10	1.74	3.81	7.36	0.03	1.07	0.18	0.12	0.11
On-road Truck Transport	15	0.84	2.18	5.61	0.03	1.06	0.17	0.11	0.10
On-road Truck Transport	20	0.49	1.52	4.57	0.02	1.05	0.17	0.10	0.09
On-road Truck Transport	25	0.43	1.44	4.11	0.02	1.05	0.16	0.09	0.09
On-road Truck Transport	30	0.37	1.39	3.72	0.02	1.05	0.17	0.10	0.09
On-road Truck Transport	35	0.33	1.37	3.41	0.02	1.05	0.17	0.10	0.09
On-road Truck Transport	40	0.29	1.38	3.17	0.02	1.06	0.18	0.11	0.10
On-road Truck Transport	45	0.25	1.41	3.00	0.02	1.07	0.19	0.12	0.11
On-road Truck Transport	50	0.23	1.46	2.90	0.02	1.09	0.21	0.14	0.13
On-road Truck Transport	55	0.21	1.55	2.88	0.02	1.11	0.22	0.16	0.15
On-road Truck Transport	60	0.20	1.66	2.94	0.02	1.14	0.25	0.18	0.17
On-road Truck Transport	65	0.20	1.79	3.07	0.02	1.16	0.27	0.21	0.20
<b>Year 2035</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	3.14	6.23	9.96	0.04	1.08	0.19	0.13	0.12
On-road Truck Transport	10	1.71	3.73	7.47	0.03	1.07	0.18	0.12	0.11
On-road Truck Transport	15	0.82	2.14	5.69	0.03	1.06	0.17	0.11	0.10
On-road Truck Transport	20	0.48	1.49	4.64	0.02	1.05	0.17	0.10	0.09
On-road Truck Transport	25	0.42	1.41	4.17	0.02	1.05	0.16	0.09	0.09
On-road Truck Transport	30	0.37	1.37	3.78	0.02	1.05	0.17	0.10	0.09
On-road Truck Transport	35	0.32	1.34	3.46	0.02	1.05	0.17	0.10	0.09
On-road Truck Transport	40	0.28	1.35	3.21	0.02	1.06	0.18	0.11	0.10
On-road Truck Transport	45	0.25	1.38	3.04	0.02	1.07	0.19	0.12	0.11
On-road Truck Transport	50	0.23	1.43	2.95	0.02	1.09	0.20	0.14	0.13
On-road Truck Transport	55	0.21	1.52	2.93	0.02	1.11	0.22	0.16	0.15
On-road Truck Transport	60	0.20	1.62	2.98	0.02	1.14	0.25	0.18	0.17
On-road Truck Transport	65	0.20	1.76	3.11	0.02	1.16	0.27	0.21	0.19
<b>Year 2046</b>									
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10	0.11	0.10
On-road Truck Transport	5	3.11	6.18	9.88	0.04	1.08	0.19	0.12	0.11
On-road Truck Transport	10	1.70	3.70	7.41	0.03	1.07	0.18	0.11	0.10
On-road Truck Transport	15	0.81	2.12	5.64	0.03	1.06	0.17	0.10	0.09
On-road Truck Transport	20	0.48	1.47	4.61	0.02	1.05	0.17	0.10	0.09
On-road Truck Transport	25	0.42	1.40	4.14	0.02	1.04	0.16	0.09	0.08
On-road Truck Transport	30	0.36	1.35	3.75	0.02	1.05	0.16	0.09	0.09
On-road Truck Transport	35	0.32	1.33	3.43	0.02	1.05	0.17	0.10	0.09
On-road Truck Transport	40	0.28	1.34	3.19	0.02	1.06	0.18	0.11	0.10
On-road Truck Transport	45	0.25	1.37	3.02	0.02	1.07	0.19	0.12	0.11
On-road Truck Transport	50	0.22	1.42	2.92	0.02	1.09	0.20	0.14	0.13
On-road Truck Transport	55	0.21	1.50	2.91	0.02	1.11	0.22	0.16	0.14
On-road Truck Transport	60	0.20	1.61	2.96	0.02	1.13	0.24	0.18	0.17
On-road Truck Transport	65	0.20	1.74	3.09	0.02	1.16	0.27	0.21	0.19
Notes:									
(1) EMFAC2007 v2.3 with modified fleet age distribution based on Port-wide inventory (Starcrest, 2009)									
(2) EMFAC model runs assume 70F, 40% RH in the South Coast Air Basin									
(3) Year 2046 uses 2040 emission factors, since EMFAC 2007 only calculates up to 2040.									
(4) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.									

**Table C1.2-RP-53. Annual Emissions for Drayage Trucks Traveling to Hobart Yard  
- Reduced Project Alternative**

Project Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
Year 2016	1.87	8.88	25.05	0.07	4.56	0.79
Year 2023	6.19	28.03	63.90	0.33	20.48	3.53
Year 2035	--	--	--	--	--	--
Year 2046	--	--	--	--	--	--

Notes:  
(1) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.  
(2) No drayage trucks are traveling to Hobart Yard in 2035 and 2046.

**Table C1.2-RP-54. Peak Daily Emissions for Drayage Trucks Traveling to Hobart Yard  
- Reduced Project Alternative**

Project Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
Year 2016	11.65	55.23	155.81	0.45	28.36	4.94
Year 2023	38.52	174.35	397.44	2.05	127.37	21.97
Year 2035	--	--	--	--	--	--
Year 2046	--	--	--	--	--	--

Notes:  
 (1) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.  
 (2) No drayage trucks are traveling to Hobart Yard in 2035 and 2046.

**Table C1.2-RP-55. Activity Data for Linehaul Locomotives  
Traveling from Hobart Yard to South Coast Air Basin Boundary -  
Reduced Project Alternative**

<b>Project Year</b>	<b>Roundtrip Distance per Trip (mi)</b>	<b>Truck Roundtrips per Year</b>
Year 2016	163.8	177
Year 2023	163.8	797
Year 2035	--	--
Year 2046	--	--
Notes: Basin boundary. (2) Source: train trips are derived from TEU throughput		

**Table C1.2-RP-56. Emission Factors for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - Reduced Project Alternative**

Project Year	Emission Factors (grams/mile)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
Year 2016	20.91	62.37	715.80	0.73	14.81	13.62
Year 2023	13.75	65.46	514.47	0.73	7.22	6.65
Year 2035	--	--	--	--	--	--
Year 2046	--	--	--	--	--	--
Notes:						
(1) Line-haul locomotive fleet fractions for Hobart from 2005 MOU emission inventory						
(2) Assume sulfur content of 15ppm.						



**Table C1.2-RP-57. Peak Emission Factors for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - Reduced Project Alternative**

Project Year	Emission Factors (grams/mile)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
Year 2016	49.52	128.29	1182.48	0.73	20.73	19.08
Year 2023	49.52	128.29	1182.48	0.73	20.73	19.08
Year 2035	--	--	--	--	--	--
Year 2046	--	--	--	--	--	--
Note: (1) No locomotives are traveling to Hobart Yard in 2035 and 2046.						

**Table C1.2-RP-58. Annual Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - Reduced Project Alternative**

Project Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
Year 2016	0.71	2.11	24.21	0.02	0.50	0.46
Year 2023	2.09	9.96	78.26	0.11	1.10	1.01
Year 2035	--	--	--	--	--	--
Year 2046	--	--	--	--	--	--
Note: (1) No locomotives are traveling to Hobart Yard in 2035 and 2046.						

**Table C1.2-RP-59. Peak Daily Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - Reduced Project Alternative**

Project Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
Year 2016	9.30	24.10	222.18	0.14	3.90	3.58
Year 2023	41.85	108.41	999.25	0.62	17.52	16.12
Year 2035	--	--	--	--	--	--
Year 2046	--	--	--	--	--	--
Note: (1) No locomotives are traveling to Hobart Yard in 2035 and 2046.						

Table C1.2-RP-60. Peak Daily Operational Emissions – Reduced Project Alternative

Source Category	Peak Daily Emissions (lb/day) <sup>a,e</sup>					
	VOC	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Project Year 2013</b>						
Trucks On-Site	23	63	148	0	32	6
Trucks Off-Site <sup>b</sup>	25	108	340	1	44	9
CHE	48	1,517	297	0	9	8
Employee Commute On-Site	0	1	0	0	1	0
Employee Commute Off-Site <sup>b</sup>	3	86	8	0	51	5
Tenant Locomotive Activities	0	0	1	0	0	0
<b>Total - Project Year 2013 <sup>d</sup></b>	<b>99</b>	<b>1,775</b>	<b>794</b>	<b>1</b>	<b>137</b>	<b>29</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline <sup>f</sup>	-116	-1,102	-1,601	-13	-167	-79
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2014</b>						
Trucks On-Site	13	39	90	0	19	3
Trucks Off-Site <sup>b</sup>	14	59	170	0	22	3
CHE	15	453	132	0	4	4
Employee Commute On-Site	0	1	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	2	49	4	0	31	4
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2014 <sup>d</sup></b>	<b>44</b>	<b>602</b>	<b>396</b>	<b>1</b>	<b>77</b>	<b>15</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline <sup>f</sup>	-172	-2,275	-1,999	-13	-227	-94
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2015</b>						
Trucks On-Site	12	38	92	0	19	3
Trucks Off-Site <sup>b</sup>	13	55	162	0	22	3
CHE	4	454	131	0	4	4
Employee Commute On-Site	0	1	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	45	4	0	32	4
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2015 <sup>d</sup></b>	<b>32</b>	<b>593</b>	<b>389</b>	<b>1</b>	<b>78</b>	<b>15</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline <sup>f</sup>	-184	-2,284	-2,006	-13	-226	-94
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2016</b>						
Locomotives On-Site	8	14	113	0	3	3
Locomotives Off-Site <sup>b</sup>	142	345	3,228	2	59	54
Trucks On-Site	35	131	404	1	208	31
Trucks Off-Site <sup>b</sup>	38	157	486	1	80	13
Railyard Equipment	12	852	30	0	1	1
TRU	1	12	11	0	0	0
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	14	1	0	11	1
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	1	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	12	37	87	0	19	3
Trucks Off-Site <sup>b</sup>	13	51	146	0	22	3
CHE	12	405	94	0	3	3
Employee Commute On-Site	0	1	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	36	3	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2016 <sup>d</sup></b>	<b>275</b>	<b>2,054</b>	<b>4,603</b>	<b>5</b>	<b>434</b>	<b>117</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline <sup>f</sup>	-314	-2,882	-5,602	-139	-312	-228
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**Project Year 2023**

Locomotives On-Site	8	14	113	0	3	3
Locomotives Off-Site <sup>b</sup>	175	429	4,005	2	73	67
Trucks On-Site	29	114	324	1	208	31
Trucks Off-Site <sup>b</sup>	57	245	575	3	177	30
Railyard Equipment	14	853	30	0	1	1
TRU	2	16	11	0	0	0
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	8	1	0	11	1
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	8	31	41	0	19	3
Trucks Off-Site <sup>b</sup>	8	31	49	0	22	3
CHE	12	408	86	0	3	3
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	22	2	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2023<sup>d</sup></b>	<b>313</b>	<b>2,171</b>	<b>5,236</b>	<b>7</b>	<b>545</b>	<b>145</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline	-277	-2,765	-4,969	-137	-202	-199
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**Project Year 2035**

Locomotives On-Site	6	15	104	0	2	2
Locomotives Off-Site <sup>b</sup>	91	351	2,752	2	38	35
Trucks On-Site	28	113	326	1	208	31
Trucks Off-Site <sup>b</sup>	17	66	172	1	48	8
Railyard Equipment	14	853	30	0	1	1
TRU	2	16	11	0	0	0
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	5	0	0	11	1
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	7	29	46	0	19	3
Trucks Off-Site <sup>b</sup>	7	26	49	0	22	3
CHE	11	404	48	0	1	1
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	14	1	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2035<sup>d</sup></b>	<b>183</b>	<b>1,893</b>	<b>3,539</b>	<b>4</b>	<b>377</b>	<b>88</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline	-407	-3,042	-6,666	-140	-369	-257
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**Project Year 2046**

Locomotives On-Site	5	13	93	0	2	2
Locomotives Off-Site <sup>b</sup>	61	118	1,753	2	38	35
Trucks On-Site	28	113	325	1	208	31
Trucks Off-Site <sup>b</sup>	17	65	171	1	48	8
Railyard Equipment	14	853	30	0	1	1
TRU	2	16	11	0	0	0
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	5	0	0	11	1
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	7	29	47	0	18	3
Trucks Off-Site <sup>b</sup>	7	26	48	0	22	3
CHE	11	406	48	0	1	1
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	13	1	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2046<sup>d</sup></b>	<b>152</b>	<b>1,658</b>	<b>2,527</b>	<b>4</b>	<b>376</b>	<b>88</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345

Proposed Project minus CEQA Baseline	-438	-3,278	-7,678	-140	-371	-257
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes:

- a) Emissions represent annual emissions divided by 365 days per year of operation.
- b) Truck, train, and worker commute emissions include transport within the South Coast Air Basin.
- c) By definition, the Reduced Project minus Baseline increment in 2013, 2014 and 2015 does not account for both the truck travel between port terminals to Hobart railyard and the rail travel from Hobart railyard to the South Coast Air Basin boundary as they are not a part of the Project and Alternatives during this period.
- d) Emissions might not precisely add due to rounding. For further explanation, refer to the discussion in Section 3.2.4.1.
- e) The emission estimates presented in this table were calculated using the latest available data, assumptions, and

Table C1.2-RP-61. Average Daily Operational Emissions – Reduced Project Alternative

Source Category	Average Daily Emissions (lb/day) <sup>a,e</sup>					
	VOC	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Project Year 2013</b>						
Trucks On-Site	20	56	132	0	28	5
Trucks Off-Site <sup>b</sup>	23	96	304	1	40	8
CHE	43	1,355	265	0	8	7
Employee Commute On-Site	0	1	0	0	1	0
Employee Commute Off-Site <sup>b</sup>	3	86	8	0	51	5
Tenant Locomotive Activities	0	0	1	0	0	0
<b>Total - Project Year 2013 <sup>d</sup></b>	<b>89</b>	<b>1,595</b>	<b>710</b>	<b>1</b>	<b>128</b>	<b>26</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline <sup>c</sup>	-106	-1,024	-1,435	-12	-156	-71
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2014</b>						
Trucks On-Site	12	35	80	0	17	3
Trucks Off-Site <sup>b</sup>	13	53	152	0	20	3
CHE	13	405	118	0	4	4
Employee Commute On-Site	0	1	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	2	49	4	0	31	4
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2014 <sup>d</sup></b>	<b>39</b>	<b>543</b>	<b>354</b>	<b>1</b>	<b>73</b>	<b>13</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline <sup>c</sup>	-155	-2,076	-1,791	-12	-212	-84
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2015</b>						
Trucks On-Site	11	34	82	0	17	3
Trucks Off-Site <sup>b</sup>	12	49	145	0	20	3
CHE	4	406	117	0	4	4
Employee Commute On-Site	0	1	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	45	4	0	32	4
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2015 <sup>d</sup></b>	<b>28</b>	<b>534</b>	<b>348</b>	<b>1</b>	<b>73</b>	<b>14</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline <sup>c</sup>	-166	-2,084	-1,797	-12	-212	-84
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2016</b>						
Locomotives On-Site	3	8	61	0	2	1
Locomotives Off-Site <sup>b</sup>	59	172	1,928	2	41	38
Trucks On-Site	31	117	361	0	186	27
Trucks Off-Site <sup>b</sup>	34	140	434	1	71	12
Railyard Equipment	6	661	7	0	0	0
TRU	0	0	0	0	0	0
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	14	1	0	11	1
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	1	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	10	33	78	0	17	3
Trucks Off-Site <sup>b</sup>	11	46	131	0	20	3
CHE	12	405	94	0	3	3
Employee Commute On-Site	0	1	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	36	3	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2016 <sup>d</sup></b>	<b>169</b>	<b>1,633</b>	<b>3,099</b>	<b>4</b>	<b>379</b>	<b>92</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline	-370	-2,446	-5,348	-135	-306	-221
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2023</b>						

Locomotives On-Site	2	9	47	0	1	1
Locomotives Off-Site <sup>b</sup>	48	223	1,729	2	25	23
Trucks On-Site	26	102	289	0	186	28
Trucks Off-Site <sup>b</sup>	51	218	514	3	158	27
Railyard Equipment	8	662	7	0	0	0
TRU	0	0	0	0	0	0
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	8	1	0	11	1
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	7	27	36	0	17	3
Trucks Off-Site <sup>b</sup>	7	28	43	0	20	3
CHE	12	408	86	0	3	3
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	1	22	2	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2023<sup>d</sup></b>	<b>162</b>	<b>1,708</b>	<b>2,756</b>	<b>6</b>	<b>449</b>	<b>92</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline	-377	-2,371	-5,691	-133	-236	-222
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2035</b>						
Locomotives On-Site	1	7	23	0	0	0
Locomotives Off-Site <sup>b</sup>	16	127	595	2	9	8
Trucks On-Site	25	101	291	0	186	28
Trucks Off-Site <sup>b</sup>	15	59	154	1	43	7
Railyard Equipment	8	663	7	0	0	0
TRU	0	0	0	0	0	0
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	5	0	0	11	1
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	6	26	41	0	17	3
Trucks Off-Site <sup>b</sup>	6	23	43	0	19	3
CHE	11	404	48	0	1	1
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	14	1	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2035<sup>d</sup></b>	<b>89</b>	<b>1,431</b>	<b>1,204</b>	<b>4</b>	<b>314</b>	<b>54</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline	-450	-2,649	-7,243	-135	-371	-260
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2046</b>						
Locomotives On-Site	1	7	15	0	0	0
Locomotives Off-Site <sup>b</sup>	10	119	363	2	5	5
Trucks On-Site	25	101	290	0	186	27
Trucks Off-Site <sup>b</sup>	15	58	153	1	43	7
Railyard Equipment	8	663	7	0	0	0
TRU	0	0	0	0	0	0
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	5	0	0	11	1
Refueling Trucks On-Site	0	0	0	0	0	0
Refueling Trucks Off-Site <sup>b</sup>	0	0	0	0	0	0
<b>Relocated Tenant Sources</b>						
Trucks On-Site	6	26	42	0	16	2
Trucks Off-Site <sup>b</sup>	6	23	42	0	19	3
CHE	11	406	48	0	1	1
Employee Commute On-Site	0	0	0	0	0	0
Employee Commute Off-Site <sup>b</sup>	0	13	1	0	27	3
Tenant Locomotive Activities	0	0	0	0	0	0
<b>Total - Project Year 2046<sup>d</sup></b>	<b>83</b>	<b>1,421</b>	<b>962</b>	<b>4</b>	<b>309</b>	<b>50</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline	-456	-2,658	-7,485	-135	-376	-263



Thresholds	55	550	55	150	150	55
Significance?	No	No	No	No	No	No

Notes:

- a) Emissions represent annual emissions divided by 365 days per year of operation.
- b) Truck, train, and worker commute emissions include transport within the South Coast Air Basin.
- c) By definition, the Reduced Project minus Baseline increment in 2013, 2014 and 2015 does not account for both the truck travel between port terminals to Hobart railyard and the rail travel from Hobart railyard to the South Coast Air Basin boundary as they are not a part of the Project and Alternatives during this period.
- d) Emissions might not precisely add due to rounding. For further explanation, refer to the discussion in Section 3.2.4.1.
- e) The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

**Table C1.2-NP-1. Activity Data for Drayage Trucks  
Traveling to Hobart Yard - No Project Alternative**

<b>Project Year</b>	<b>Roundtrip Distance per Trip (mi)</b>	<b>Truck Roundtrips per Year</b>
Year 2016	40.2	1,137,065
Year 2023	40.2	1,561,520
Year 2035	40.2	1,561,520
Year 2046	40.2	1,561,520

**Table C1.2-NP-2. Emission Factors for Drayage Trucks Traveling to Hobart Yard  
- No Project Alternative**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2016</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	4.62	9.08	17.77	0.04	1.08	0.19
On-road Truck Transport	10	2.52	5.44	13.32	0.03	1.07	0.18
On-road Truck Transport	15	1.21	3.12	10.15	0.03	1.06	0.17
On-road Truck Transport	20	0.71	2.17	8.28	0.02	1.05	0.17
On-road Truck Transport	25	0.62	2.06	7.44	0.02	1.04	0.16
On-road Truck Transport	30	0.54	1.99	6.74	0.02	1.05	0.16
On-road Truck Transport	35	0.47	1.96	6.17	0.02	1.05	0.17
On-road Truck Transport	40	0.41	1.97	5.73	0.02	1.06	0.18
On-road Truck Transport	45	0.37	2.01	5.43	0.02	1.07	0.19
On-road Truck Transport	50	0.33	2.09	5.26	0.02	1.09	0.20
On-road Truck Transport	55	0.31	2.21	5.22	0.02	1.11	0.22
On-road Truck Transport	60	0.29	2.37	5.32	0.02	1.13	0.24
On-road Truck Transport	65	0.29	2.56	5.55	0.02	1.16	0.27
<b>Year 2023</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.20	6.35	9.81	0.04	1.08	0.19
On-road Truck Transport	10	1.74	3.81	7.36	0.03	1.07	0.18
On-road Truck Transport	15	0.84	2.18	5.61	0.03	1.06	0.17
On-road Truck Transport	20	0.49	1.52	4.57	0.02	1.05	0.17
On-road Truck Transport	25	0.43	1.44	4.11	0.02	1.05	0.16
On-road Truck Transport	30	0.37	1.39	3.72	0.02	1.05	0.17
On-road Truck Transport	35	0.33	1.37	3.41	0.02	1.05	0.17
On-road Truck Transport	40	0.29	1.38	3.17	0.02	1.06	0.18
On-road Truck Transport	45	0.25	1.41	3.00	0.02	1.07	0.19
On-road Truck Transport	50	0.23	1.46	2.90	0.02	1.09	0.21
On-road Truck Transport	55	0.21	1.55	2.88	0.02	1.11	0.22
On-road Truck Transport	60	0.20	1.66	2.94	0.02	1.14	0.25
On-road Truck Transport	65	0.20	1.79	3.07	0.02	1.16	0.27
<b>Year 2035</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.14	6.23	9.96	0.04	1.08	0.19
On-road Truck Transport	10	1.71	3.73	7.47	0.03	1.07	0.18
On-road Truck Transport	15	0.82	2.14	5.69	0.03	1.06	0.17
On-road Truck Transport	20	0.48	1.49	4.64	0.02	1.05	0.17
On-road Truck Transport	25	0.42	1.41	4.17	0.02	1.05	0.16
On-road Truck Transport	30	0.37	1.37	3.78	0.02	1.05	0.17
On-road Truck Transport	35	0.32	1.34	3.46	0.02	1.05	0.17
On-road Truck Transport	40	0.28	1.35	3.21	0.02	1.06	0.18
On-road Truck Transport	45	0.25	1.38	3.04	0.02	1.07	0.19
On-road Truck Transport	50	0.23	1.43	2.95	0.02	1.09	0.20
On-road Truck Transport	55	0.21	1.52	2.93	0.02	1.11	0.22

On-road Truck Transport	60	0.20	1.62	2.98	0.02	1.14	0.25
On-road Truck Transport	65	0.20	1.76	3.11	0.02	1.16	0.27
<b>Year 2046</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.11	6.18	9.88	0.04	1.08	0.19
On-road Truck Transport	10	1.70	3.70	7.41	0.03	1.07	0.18
On-road Truck Transport	15	0.81	2.12	5.64	0.03	1.06	0.17
On-road Truck Transport	20	0.48	1.47	4.61	0.02	1.05	0.17
On-road Truck Transport	25	0.42	1.40	4.14	0.02	1.04	0.16
On-road Truck Transport	30	0.36	1.35	3.75	0.02	1.05	0.16
On-road Truck Transport	35	0.32	1.33	3.43	0.02	1.05	0.17
On-road Truck Transport	40	0.28	1.34	3.19	0.02	1.06	0.18
On-road Truck Transport	45	0.25	1.37	3.02	0.02	1.07	0.19
On-road Truck Transport	50	0.22	1.42	2.92	0.02	1.09	0.20
On-road Truck Transport	55	0.21	1.50	2.91	0.02	1.11	0.22
On-road Truck Transport	60	0.20	1.61	2.96	0.02	1.13	0.24
On-road Truck Transport	65	0.20	1.74	3.09	0.02	1.16	0.27
Notes:							
(1) EMFAC2007 v2.3 with modified fleet age distribution based on Port-wide inventory (Starcrest, 2009)							
(2) EMFAC model runs assume 70F, 40% RH in the South Coast Air Basin							
(3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.							

**Table C1.2-NP-3. Annual Emissions for Drayage Trucks Traveling to Hobart Yard  
- No Project Alternative**

Project Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2016	22.72	105.22	300.10	0.86	53.91	9.32
Year 2023	23.04	101.92	233.42	1.20	73.92	12.69
Year 2035	22.24	99.47	235.32	1.19	73.88	12.67
Year 2046	22.22	98.54	234.48	1.20	73.71	12.51
Note:						
(1) Annual emissions estimates for trips between port terminals and Hobart Yard.						

**Table C1.2-NP-4. Peak Daily Emissions for Drayage Trucks Traveling to Hobart Yard  
- No Project Alternative**

Project Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2016	141.31	654.47	1866.63	5.35	335.33	57.98
Year 2023	143.29	633.92	1451.88	7.46	459.75	78.92
Year 2035	138.36	618.71	1463.66	7.43	459.52	78.80
Year 2046	138.18	612.93	1458.45	7.45	458.48	77.84
Note:						
(1) Peak daily emissions estimates for trips between port terminals and Hobart Yard.						

**Table C1.2-NP-5. Activity Data for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - No Project Alternative**

<b>Project Year</b>	<b>Roundtrip Distance (mi)</b>	<b>Trains per Year</b>
Year 2016	163.8	2160
Year 2023	163.8	2880
Year 2035	163.8	2880
Year 2046	163.8	2880
Notes:		
(1) Round trip distance between Hobart Railyard and the South Coast Air Basin boundary.		
(2) Source: train trips are derived from TEU throughput		

**Table C1.2-NP-6. Emission Factors for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - No Project Alternative**

Project Year	Emission Factors (grams/mile)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2016	20.91	62.37	715.80	0.73	14.81	13.62
Year 2023	13.75	65.46	514.47	0.73	7.22	6.65
Year 2035	5.44	44.55	217.83	0.73	3.02	2.78
Year 2046	3.58	41.42	133.24	0.73	1.79	1.65

Notes:  
 (1) Assume sulfur content of 15ppm  
 (2) Line-haul locomotive fleet fractions for Hobart from 2005 MOU emission inventory



**Table C1.2-NP-7. Annual Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - No Project Alternative**

Project Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2016	8.16	24.32	279.17	0.29	5.77	5.31
Year 2023	7.15	34.04	267.53	0.38	3.76	3.46
Year 2035	2.83	23.17	113.27	0.38	1.57	1.44
Year 2046	1.86	21.54	69.29	0.38	0.93	0.86

**Table C1.2-NP-8. Peak Daily Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - No Project Alternative**

Project Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2016	107.29	277.96	2562.08	1.59	44.93	41.33
Year 2023	143.06	370.62	3416.10	2.12	59.90	55.11
Year 2035	89.41	370.62	2859.28	2.12	37.44	34.44
Year 2046	94.54	380.84	3039.16	2.12	45.65	42.00

**Table C1.2-NP-9. Activity Data for Tenant On-Road Vehicles - No Project Alternative**

<b>Project Year - Source</b>	<b>Number of Trips</b>	<b>Average Idling Time per Trip (hr)</b>	<b>Average On-Site Distance per Trip (mi)</b>	<b>Average Off-Site Round-Trip Distance to Port Terminals (mi)</b>	<b>Average Off-Site Round-Trip Distance Outside of Harbor District (mi)</b>
<b>Years 2013</b>					
Port Drayage Trucks	336,213	0.34	1.02	10.62	
Vendor Vehicles	249,347	0.31	0.94		11.45
Employee Commute Vehicles	634,166	0.11	0.22		11.01
Medium Duty Trucks	520	0.33	0.20		12.40
<b>Years 2014, 2015</b>					
Port Drayage Trucks	336,213	0.34	1.02	10.98	
Vendor Vehicles	249,347	0.31	0.94		11.54
Employee Commute Vehicles	634,166	0.11	0.22		11.03
Medium Duty Trucks	520	0.33	0.20		12.40
<b>Years 2016, 2023, 2035, 2046</b>					
Port Drayage Trucks	369,835	0.34	1.02	10.98	
Vendor Vehicles	274,281	0.31	0.94		11.54
Employee Commute Vehicles	697,583	0.11	0.22		11.03
Medium Duty Trucks	572	0.33	0.20		12.38
Note:					
(1) On-road vehicle activity represent data averaged across all tenants.					

**Table C1.2-NP-10. Emission Factors for Tenant Port Drayage Trucks - No Project Alternative**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.98	7.83	16.69	0.04	11.77	1.73
On-road Truck Transport	7.5	3.08	6.26	14.60	0.03	11.77	1.73
On-road Truck Transport	10	2.17	4.69	12.52	0.03	11.76	1.73
On-road Truck Transport	15	1.04	2.69	9.53	0.03	11.75	1.72
On-road Truck Transport	20	0.61	1.87	7.78	0.02	11.75	1.71
On-road Truck Transport	25	0.53	1.77	6.99	0.02	11.74	1.71
On-road Truck Transport	30	0.47	1.72	6.33	0.02	11.75	1.71
On-road Truck Transport	35	0.41	1.69	5.79	0.02	11.75	1.72
On-road Truck Transport	40	0.36	1.69	5.38	0.02	11.76	1.72
On-road Truck Transport	45	0.32	1.73	5.10	0.02	11.77	1.73
On-road Truck Transport	50	0.29	1.80	4.94	0.02	11.78	1.74
On-road Truck Transport	55	0.27	1.90	4.91	0.02	11.80	1.76
On-road Truck Transport	60	0.25	2.04	5.00	0.02	11.82	1.78
On-road Truck Transport	65	0.25	2.21	5.22	0.02	11.84	1.80
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.98	7.83	16.69	0.04	1.06	0.17
On-road Truck Transport	10	2.17	4.69	12.52	0.03	1.05	0.17
On-road Truck Transport	15	1.04	2.69	9.53	0.03	1.04	0.16
On-road Truck Transport	20	0.61	1.87	7.78	0.02	1.03	0.15
On-road Truck Transport	25	0.53	1.77	6.99	0.02	1.03	0.15
On-road Truck Transport	30	0.47	1.72	6.33	0.02	1.03	0.15
On-road Truck Transport	35	0.41	1.69	5.79	0.02	1.03	0.15
On-road Truck Transport	40	0.36	1.69	5.38	0.02	1.04	0.16
On-road Truck Transport	45	0.32	1.73	5.10	0.02	1.05	0.17
On-road Truck Transport	50	0.29	1.80	4.94	0.02	1.07	0.18
On-road Truck Transport	55	0.27	1.90	4.91	0.02	1.08	0.20
On-road Truck Transport	60	0.25	2.04	5.00	0.02	1.10	0.22
On-road Truck Transport	65	0.25	2.21	5.22	0.02	1.13	0.24
<b>Year 2014</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	4.26	8.36	17.30	0.04	11.78	1.74
On-road Truck Transport	7.5	3.29	6.69	15.14	0.03	11.77	1.74
On-road Truck Transport	10	2.32	5.01	12.98	0.03	11.77	1.73
On-road Truck Transport	15	1.11	2.87	9.88	0.03	11.76	1.73
On-road Truck Transport	20	0.65	1.99	8.07	0.02	11.75	1.72
On-road Truck Transport	25	0.57	1.90	7.25	0.02	11.75	1.72
On-road Truck Transport	30	0.50	1.83	6.56	0.02	11.75	1.72
On-road Truck Transport	35	0.43	1.80	6.01	0.02	11.76	1.72
On-road Truck Transport	40	0.38	1.81	5.58	0.02	11.76	1.73
On-road Truck Transport	45	0.34	1.85	5.29	0.02	11.78	1.74
On-road Truck Transport	50	0.31	1.93	5.12	0.02	11.79	1.75
On-road Truck Transport	55	0.28	2.04	5.09	0.02	11.81	1.77
On-road Truck Transport	60	0.27	2.18	5.18	0.02	11.83	1.79
On-road Truck Transport	65	0.27	2.36	5.41	0.02	11.85	1.81
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	4.26	8.36	17.30	0.04	1.06	0.18
On-road Truck Transport	10	2.32	5.01	12.98	0.03	1.05	0.17
On-road Truck Transport	15	1.11	2.87	9.88	0.03	1.05	0.16
On-road Truck Transport	20	0.65	1.99	8.07	0.02	1.04	0.16
On-road Truck Transport	25	0.57	1.90	7.25	0.02	1.04	0.15
On-road Truck Transport	30	0.50	1.83	6.56	0.02	1.04	0.16
On-road Truck Transport	35	0.43	1.80	6.01	0.02	1.04	0.16
On-road Truck Transport	40	0.38	1.81	5.58	0.02	1.05	0.17

On-road Truck Transport	45	0.34	1.85	5.29	0.02	1.06	0.18
On-road Truck Transport	50	0.31	1.93	5.12	0.02	1.07	0.19
On-road Truck Transport	55	0.28	2.04	5.09	0.02	1.09	0.21
On-road Truck Transport	60	0.27	2.18	5.18	0.02	1.11	0.23
On-road Truck Transport	65	0.27	2.36	5.41	0.02	1.14	0.25
<b>Year 2015</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	4.47	8.78	17.66	0.04	11.79	1.75
On-road Truck Transport	7.5	3.45	7.02	15.45	0.03	11.78	1.74
On-road Truck Transport	10	2.44	5.26	13.24	0.03	11.78	1.74
On-road Truck Transport	15	1.17	3.02	10.09	0.03	11.77	1.73
On-road Truck Transport	20	0.69	2.09	8.23	0.02	11.76	1.72
On-road Truck Transport	25	0.60	1.99	7.40	0.02	11.76	1.72
On-road Truck Transport	30	0.52	1.93	6.70	0.02	11.76	1.72
On-road Truck Transport	35	0.46	1.90	6.13	0.02	11.76	1.73
On-road Truck Transport	40	0.40	1.90	5.70	0.02	11.77	1.73
On-road Truck Transport	45	0.36	1.94	5.39	0.02	11.78	1.74
On-road Truck Transport	50	0.32	2.02	5.23	0.02	11.80	1.76
On-road Truck Transport	55	0.30	2.14	5.19	0.02	11.82	1.78
On-road Truck Transport	60	0.28	2.29	5.29	0.02	11.84	1.80
On-road Truck Transport	65	0.28	2.48	5.52	0.02	11.87	1.82
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	4.47	8.78	17.66	0.04	1.07	0.19
On-road Truck Transport	10	2.44	5.26	13.24	0.03	1.06	0.18
On-road Truck Transport	15	1.17	3.02	10.09	0.03	1.05	0.17
On-road Truck Transport	20	0.69	2.09	8.23	0.02	1.04	0.16
On-road Truck Transport	25	0.60	1.99	7.40	0.02	1.04	0.16
On-road Truck Transport	30	0.52	1.93	6.70	0.02	1.04	0.16
On-road Truck Transport	35	0.46	1.90	6.13	0.02	1.05	0.16
On-road Truck Transport	40	0.40	1.90	5.70	0.02	1.05	0.17
On-road Truck Transport	45	0.36	1.94	5.39	0.02	1.07	0.18
On-road Truck Transport	50	0.32	2.02	5.23	0.02	1.08	0.20
On-road Truck Transport	55	0.30	2.14	5.19	0.02	1.10	0.21
On-road Truck Transport	60	0.28	2.29	5.29	0.02	1.12	0.24
On-road Truck Transport	65	0.28	2.48	5.52	0.02	1.15	0.26
<b>Year 2016</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.68	7.22	15.99	0.04	11.76	1.73
On-road Truck Transport	7.5	2.84	5.78	13.99	0.03	11.76	1.72
On-road Truck Transport	10	2.01	4.33	11.99	0.03	11.75	1.72
On-road Truck Transport	15	0.96	2.48	9.13	0.03	11.75	1.71
On-road Truck Transport	20	0.56	1.72	7.45	0.02	11.74	1.71
On-road Truck Transport	25	0.49	1.64	6.70	0.02	11.74	1.70
On-road Truck Transport	30	0.43	1.58	6.06	0.02	11.74	1.71
On-road Truck Transport	35	0.38	1.56	5.55	0.02	11.74	1.71
On-road Truck Transport	40	0.33	1.56	5.16	0.02	11.75	1.72
On-road Truck Transport	45	0.29	1.60	4.88	0.02	11.76	1.72
On-road Truck Transport	50	0.26	1.66	4.73	0.02	11.77	1.74
On-road Truck Transport	55	0.25	1.76	4.70	0.02	11.79	1.75
On-road Truck Transport	60	0.23	1.88	4.79	0.02	11.81	1.77
On-road Truck Transport	65	0.23	2.04	5.00	0.02	11.83	1.79
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	4.62	9.08	17.77	0.04	1.08	0.19
On-road Truck Transport	10	2.52	5.44	13.32	0.03	1.07	0.18
On-road Truck Transport	15	1.21	3.12	10.15	0.03	1.06	0.17
On-road Truck Transport	20	0.71	2.17	8.28	0.02	1.05	0.17
On-road Truck Transport	25	0.62	2.06	7.44	0.02	1.04	0.16
On-road Truck Transport	30	0.54	1.99	6.74	0.02	1.05	0.16

On-road Truck Transport	35	0.47	1.96	6.17	0.02	1.05	0.17
On-road Truck Transport	40	0.41	1.97	5.73	0.02	1.06	0.18
On-road Truck Transport	45	0.37	2.01	5.43	0.02	1.07	0.19
On-road Truck Transport	50	0.33	2.09	5.26	0.02	1.09	0.20
On-road Truck Transport	55	0.31	2.21	5.22	0.02	1.11	0.22
On-road Truck Transport	60	0.29	2.37	5.32	0.02	1.13	0.24
On-road Truck Transport	65	0.29	2.56	5.55	0.02	1.16	0.27
<b>Year 2023</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.68	7.22	15.99	0.04	11.76	1.73
On-road Truck Transport	7.5	2.84	5.78	13.99	0.03	11.76	1.72
On-road Truck Transport	10	2.01	4.33	11.99	0.03	11.75	1.72
On-road Truck Transport	15	0.96	2.48	9.13	0.03	11.75	1.71
On-road Truck Transport	20	0.56	1.72	7.45	0.02	11.74	1.71
On-road Truck Transport	25	0.49	1.64	6.70	0.02	11.74	1.70
On-road Truck Transport	30	0.43	1.58	6.06	0.02	11.74	1.71
On-road Truck Transport	35	0.38	1.56	5.55	0.02	11.74	1.71
On-road Truck Transport	40	0.33	1.56	5.16	0.02	11.75	1.72
On-road Truck Transport	45	0.29	1.60	4.88	0.02	11.76	1.72
On-road Truck Transport	50	0.26	1.66	4.73	0.02	11.77	1.74
On-road Truck Transport	55	0.25	1.76	4.70	0.02	11.79	1.75
On-road Truck Transport	60	0.23	1.88	4.79	0.02	11.81	1.77
On-road Truck Transport	65	0.23	2.04	5.00	0.02	11.83	1.79
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.20	6.35	9.81	0.04	1.08	0.19
On-road Truck Transport	10	1.74	3.81	7.36	0.03	1.07	0.18
On-road Truck Transport	15	0.84	2.18	5.61	0.03	1.06	0.17
On-road Truck Transport	20	0.49	1.52	4.57	0.02	1.05	0.17
On-road Truck Transport	25	0.43	1.44	4.11	0.02	1.05	0.16
On-road Truck Transport	30	0.37	1.39	3.72	0.02	1.05	0.17
On-road Truck Transport	35	0.33	1.37	3.41	0.02	1.05	0.17
On-road Truck Transport	40	0.29	1.38	3.17	0.02	1.06	0.18
On-road Truck Transport	45	0.25	1.41	3.00	0.02	1.07	0.19
On-road Truck Transport	50	0.23	1.46	2.90	0.02	1.09	0.21
On-road Truck Transport	55	0.21	1.55	2.88	0.02	1.11	0.22
On-road Truck Transport	60	0.20	1.66	2.94	0.02	1.14	0.25
On-road Truck Transport	65	0.20	1.79	3.07	0.02	1.16	0.27
<b>Year 2035</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.68	7.22	15.99	0.04	11.76	1.73
On-road Truck Transport	7.5	2.84	5.78	13.99	0.03	11.76	1.72
On-road Truck Transport	10	2.01	4.33	11.99	0.03	11.75	1.72
On-road Truck Transport	15	0.96	2.48	9.13	0.03	11.75	1.71
On-road Truck Transport	20	0.56	1.72	7.45	0.02	11.74	1.71
On-road Truck Transport	25	0.49	1.64	6.70	0.02	11.74	1.70
On-road Truck Transport	30	0.43	1.58	6.06	0.02	11.74	1.71
On-road Truck Transport	35	0.38	1.56	5.55	0.02	11.74	1.71
On-road Truck Transport	40	0.33	1.56	5.16	0.02	11.75	1.72
On-road Truck Transport	45	0.29	1.60	4.88	0.02	11.76	1.72
On-road Truck Transport	50	0.26	1.66	4.73	0.02	11.77	1.74
On-road Truck Transport	55	0.25	1.76	4.70	0.02	11.79	1.75
On-road Truck Transport	60	0.23	1.88	4.79	0.02	11.81	1.77
On-road Truck Transport	65	0.23	2.04	5.00	0.02	11.83	1.79
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.14	6.23	9.96	0.04	1.08	0.19
On-road Truck Transport	10	1.71	3.73	7.47	0.03	1.07	0.18
On-road Truck Transport	15	0.82	2.14	5.69	0.03	1.06	0.17
On-road Truck Transport	20	0.48	1.49	4.64	0.02	1.05	0.17

On-road Truck Transport	25	0.42	1.41	4.17	0.02	1.05	0.16
On-road Truck Transport	30	0.37	1.37	3.78	0.02	1.05	0.17
On-road Truck Transport	35	0.32	1.34	3.46	0.02	1.05	0.17
On-road Truck Transport	40	0.28	1.35	3.21	0.02	1.06	0.18
On-road Truck Transport	45	0.25	1.38	3.04	0.02	1.07	0.19
On-road Truck Transport	50	0.23	1.43	2.95	0.02	1.09	0.20
On-road Truck Transport	55	0.21	1.52	2.93	0.02	1.11	0.22
On-road Truck Transport	60	0.20	1.62	2.98	0.02	1.14	0.25
On-road Truck Transport	65	0.20	1.76	3.11	0.02	1.16	0.27
<b>Year 2046</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.68	7.22	15.99	0.04	11.76	1.73
On-road Truck Transport	7.5	2.84	5.78	13.99	0.03	11.76	1.72
On-road Truck Transport	10	2.01	4.33	11.99	0.03	11.75	1.72
On-road Truck Transport	15	0.96	2.48	9.13	0.03	11.75	1.71
On-road Truck Transport	20	0.56	1.72	7.45	0.02	11.74	1.71
On-road Truck Transport	25	0.49	1.64	6.70	0.02	11.74	1.70
On-road Truck Transport	30	0.43	1.58	6.06	0.02	11.74	1.71
On-road Truck Transport	35	0.38	1.56	5.55	0.02	11.74	1.71
On-road Truck Transport	40	0.33	1.56	5.16	0.02	11.75	1.72
On-road Truck Transport	45	0.29	1.60	4.88	0.02	11.76	1.72
On-road Truck Transport	50	0.26	1.66	4.73	0.02	11.77	1.74
On-road Truck Transport	55	0.25	1.76	4.70	0.02	11.79	1.75
On-road Truck Transport	60	0.23	1.88	4.79	0.02	11.81	1.77
On-road Truck Transport	65	0.23	2.04	5.00	0.02	11.83	1.79
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.65	41.43	123.52	0.06	0.11	0.10
On-road Truck Transport	5	3.11	6.18	9.88	0.04	1.08	0.19
On-road Truck Transport	10	1.70	3.70	7.41	0.03	1.07	0.18
On-road Truck Transport	15	0.81	2.12	5.64	0.03	1.06	0.17
On-road Truck Transport	20	0.48	1.47	4.61	0.02	1.05	0.17
On-road Truck Transport	25	0.42	1.40	4.14	0.02	1.04	0.16
On-road Truck Transport	30	0.36	1.35	3.75	0.02	1.05	0.16
On-road Truck Transport	35	0.32	1.33	3.43	0.02	1.05	0.17
On-road Truck Transport	40	0.28	1.34	3.19	0.02	1.06	0.18
On-road Truck Transport	45	0.25	1.37	3.02	0.02	1.07	0.19
On-road Truck Transport	50	0.22	1.42	2.93	0.02	1.09	0.20
On-road Truck Transport	55	0.21	1.50	2.91	0.02	1.11	0.22
On-road Truck Transport	60	0.20	1.61	2.96	0.02	1.13	0.24
On-road Truck Transport	65	0.20	1.74	3.09	0.02	1.16	0.27

Notes:

- (1) On-site travel speed was assumed at 7.5 mph.
- (2) Emission factors were derived from EMFAC2007 v2.3 with modified fleet age distribution based on Port-wide inventory (Starcrest, 2009)
- (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-NP-11. Emission Factors for Tenant Vendor Vehicles - No Project Alternative**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	10.80	45.98	114.90	0.06	0.77	0.70
On-road Truck Transport	5	8.94	14.76	28.36	0.04	12.66	2.55
On-road Truck Transport	7.5	6.94	12.58	24.06	0.03	12.50	2.41
On-road Truck Transport	10	4.95	10.39	19.77	0.03	12.35	2.26
On-road Truck Transport	15	2.36	7.22	14.38	0.03	12.12	2.05
On-road Truck Transport	20	1.27	5.36	12.18	0.02	11.99	1.93
On-road Truck Transport	25	1.04	4.60	11.53	0.02	11.94	1.89
On-road Truck Transport	30	0.85	3.97	11.01	0.02	11.90	1.86
On-road Truck Transport	35	0.71	3.47	10.61	0.02	11.88	1.84
On-road Truck Transport	40	0.61	3.09	10.33	0.02	11.87	1.83
On-road Truck Transport	45	0.56	2.83	10.18	0.02	11.88	1.84
On-road Truck Transport	50	0.56	2.71	10.16	0.02	11.90	1.85
On-road Truck Transport	55	0.61	2.70	10.26	0.02	11.93	1.88
On-road Truck Transport	60	0.70	2.83	10.48	0.02	11.98	1.93
On-road Truck Transport	65	0.84	3.08	10.83	0.02	12.04	1.99
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	10.80	45.98	114.90	0.06	0.77	0.70
On-road Truck Transport	5	8.94	14.76	28.36	0.04	1.95	1.06
On-road Truck Transport	10	4.95	10.39	19.77	0.03	1.63	0.77
On-road Truck Transport	15	2.36	7.22	14.38	0.03	1.40	0.56
On-road Truck Transport	20	1.27	5.36	12.18	0.02	1.27	0.44
On-road Truck Transport	25	1.04	4.60	11.53	0.02	1.22	0.39
On-road Truck Transport	30	0.85	3.97	11.01	0.02	1.19	0.36
On-road Truck Transport	35	0.71	3.47	10.61	0.02	1.17	0.34
On-road Truck Transport	40	0.61	3.09	10.33	0.02	1.16	0.33
On-road Truck Transport	45	0.56	2.83	10.18	0.02	1.16	0.34
On-road Truck Transport	50	0.56	2.71	10.16	0.02	1.18	0.36
On-road Truck Transport	55	0.61	2.70	10.26	0.02	1.22	0.39
On-road Truck Transport	60	0.70	2.83	10.48	0.02	1.27	0.43
On-road Truck Transport	65	0.84	3.08	10.83	0.02	1.33	0.49
<b>Year 2014</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	10.32	45.31	109.66	0.06	0.27	0.25
On-road Truck Transport	5	7.95	13.29	23.52	0.04	11.99	1.94
On-road Truck Transport	7.5	6.17	11.26	20.00	0.03	11.94	1.89
On-road Truck Transport	10	4.39	9.22	16.48	0.03	11.89	1.85
On-road Truck Transport	15	2.09	6.31	12.03	0.03	11.82	1.78
On-road Truck Transport	20	1.14	4.65	10.16	0.02	11.77	1.74
On-road Truck Transport	25	0.93	4.02	9.58	0.02	11.76	1.72
On-road Truck Transport	30	0.76	3.50	9.11	0.02	11.75	1.71
On-road Truck Transport	35	0.64	3.08	8.75	0.02	11.74	1.71
On-road Truck Transport	40	0.55	2.77	8.49	0.02	11.74	1.71
On-road Truck Transport	45	0.51	2.57	8.35	0.02	11.74	1.71
On-road Truck Transport	50	0.50	2.48	8.31	0.02	11.75	1.71
On-road Truck Transport	55	0.54	2.50	8.39	0.02	11.76	1.73
On-road Truck Transport	60	0.61	2.62	8.57	0.02	11.78	1.74
On-road Truck Transport	65	0.73	2.85	8.86	0.02	11.80	1.76
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	10.32	45.31	109.66	0.06	0.27	0.25
On-road Truck Transport	5	7.95	13.29	23.52	0.04	1.28	0.44
On-road Truck Transport	10	4.39	9.22	16.48	0.03	1.18	0.35
On-road Truck Transport	15	2.09	6.31	12.03	0.03	1.10	0.28
On-road Truck Transport	20	1.14	4.65	10.16	0.02	1.06	0.24
On-road Truck Transport	25	0.93	4.02	9.58	0.02	1.04	0.23
On-road Truck Transport	30	0.76	3.50	9.11	0.02	1.03	0.22
On-road Truck Transport	35	0.64	3.08	8.75	0.02	1.02	0.21
On-road Truck Transport	40	0.55	2.77	8.49	0.02	1.02	0.21
On-road Truck Transport	45	0.51	2.57	8.35	0.02	1.03	0.21
On-road Truck Transport	50	0.50	2.48	8.31	0.02	1.03	0.22
On-road Truck Transport	55	0.54	2.50	8.39	0.02	1.05	0.23
On-road Truck Transport	60	0.61	2.62	8.57	0.02	1.06	0.25
On-road Truck Transport	65	0.73	2.85	8.86	0.02	1.08	0.27
<b>Year 2015</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	9.89	44.70	117.40	0.06	0.27	0.25
On-road Truck Transport	5	7.03	11.92	21.80	0.04	11.98	1.92
On-road Truck Transport	7.5	5.45	10.03	18.58	0.03	11.93	1.88
On-road Truck Transport	10	3.88	8.15	15.36	0.03	11.88	1.84



On-road Truck Transport	15	1.85	5.49	11.25	0.03	11.81	1.77
On-road Truck Transport	20	1.01	4.02	9.47	0.02	11.77	1.73
On-road Truck Transport	25	0.83	3.50	8.89	0.02	11.76	1.72
On-road Truck Transport	30	0.69	3.07	8.42	0.02	11.75	1.71
On-road Truck Transport	35	0.57	2.73	8.06	0.02	11.74	1.71
On-road Truck Transport	40	0.50	2.48	7.80	0.02	11.74	1.71
On-road Truck Transport	45	0.46	2.33	7.64	0.02	11.74	1.71
On-road Truck Transport	50	0.45	2.27	7.60	0.02	11.75	1.72
On-road Truck Transport	55	0.47	2.30	7.65	0.02	11.76	1.73
On-road Truck Transport	60	0.53	2.42	7.82	0.02	11.78	1.74
On-road Truck Transport	65	0.62	2.63	8.09	0.02	11.80	1.76
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	9.89	44.70	117.40	0.06	0.27	0.25
On-road Truck Transport	5	7.03	11.92	21.80	0.04	1.26	0.43
On-road Truck Transport	10	3.88	8.15	15.36	0.03	1.16	0.34
On-road Truck Transport	15	1.85	5.49	11.25	0.03	1.10	0.28
On-road Truck Transport	20	1.01	4.02	9.47	0.02	1.06	0.24
On-road Truck Transport	25	0.83	3.50	8.89	0.02	1.04	0.23
On-road Truck Transport	30	0.69	3.07	8.42	0.02	1.03	0.22
On-road Truck Transport	35	0.57	2.73	8.06	0.02	1.02	0.21
On-road Truck Transport	40	0.50	2.48	7.80	0.02	1.02	0.21
On-road Truck Transport	45	0.46	2.33	7.64	0.02	1.03	0.21
On-road Truck Transport	50	0.45	2.27	7.60	0.02	1.03	0.22
On-road Truck Transport	55	0.47	2.30	7.65	0.02	1.05	0.23
On-road Truck Transport	60	0.53	2.42	7.82	0.02	1.06	0.25
On-road Truck Transport	65	0.62	2.63	8.09	0.02	1.09	0.27
<b>Year 2016</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	9.53	44.19	113.59	0.06	0.27	0.25
On-road Truck Transport	5	6.28	10.79	18.48	0.04	11.95	1.90
On-road Truck Transport	7.5	4.86	9.03	15.79	0.03	11.91	1.86
On-road Truck Transport	10	3.45	7.27	13.09	0.03	11.87	1.82
On-road Truck Transport	15	1.64	4.82	9.62	0.03	11.80	1.76
On-road Truck Transport	20	0.90	3.51	8.07	0.02	11.77	1.73
On-road Truck Transport	25	0.75	3.08	7.55	0.02	11.75	1.72
On-road Truck Transport	30	0.62	2.72	7.12	0.02	11.74	1.71
On-road Truck Transport	35	0.52	2.45	6.79	0.02	11.74	1.71
On-road Truck Transport	40	0.45	2.25	6.55	0.02	11.74	1.70
On-road Truck Transport	45	0.41	2.13	6.40	0.02	11.74	1.71
On-road Truck Transport	50	0.40	2.09	6.35	0.02	11.75	1.72
On-road Truck Transport	55	0.42	2.13	6.39	0.02	11.76	1.73
On-road Truck Transport	60	0.47	2.25	6.52	0.02	11.78	1.74
On-road Truck Transport	65	0.54	2.45	6.75	0.02	11.80	1.76
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	9.53	44.19	113.59	0.06	0.27	0.25
On-road Truck Transport	5	6.28	10.79	18.48	0.04	1.24	0.41
On-road Truck Transport	10	3.45	7.27	13.09	0.03	1.15	0.33
On-road Truck Transport	15	1.64	4.82	9.62	0.03	1.09	0.27
On-road Truck Transport	20	0.90	3.51	8.07	0.02	1.05	0.24
On-road Truck Transport	25	0.75	3.08	7.55	0.02	1.04	0.22
On-road Truck Transport	30	0.62	2.72	7.12	0.02	1.03	0.21
On-road Truck Transport	35	0.52	2.45	6.79	0.02	1.02	0.21
On-road Truck Transport	40	0.45	2.25	6.55	0.02	1.02	0.21
On-road Truck Transport	45	0.41	2.13	6.40	0.02	1.03	0.21
On-road Truck Transport	50	0.40	2.09	6.35	0.02	1.04	0.22
On-road Truck Transport	55	0.42	2.13	6.39	0.02	1.05	0.23
On-road Truck Transport	60	0.47	2.25	6.52	0.02	1.06	0.25
On-road Truck Transport	65	0.54	2.45	6.75	0.02	1.09	0.27
<b>Year 2023</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	8.15	42.17	43.54	0.06	0.22	0.21
On-road Truck Transport	5	3.36	6.33	3.54	0.04	11.83	1.79
On-road Truck Transport	7.5	2.60	5.14	3.07	0.03	11.81	1.77
On-road Truck Transport	10	1.83	3.94	2.61	0.03	11.79	1.76
On-road Truck Transport	15	0.88	2.37	1.96	0.03	11.77	1.73
On-road Truck Transport	20	0.50	1.67	1.62	0.02	11.75	1.71
On-road Truck Transport	25	0.43	1.54	1.47	0.02	11.74	1.71
On-road Truck Transport	30	0.37	1.45	1.35	0.02	11.74	1.70
On-road Truck Transport	35	0.32	1.38	1.25	0.02	11.74	1.71
On-road Truck Transport	40	0.28	1.35	1.18	0.02	11.74	1.71
On-road Truck Transport	45	0.25	1.35	1.13	0.02	11.75	1.72
On-road Truck Transport	50	0.23	1.38	1.11	0.02	11.76	1.73
On-road Truck Transport	55	0.22	1.45	1.10	0.02	11.77	1.74

On-road Truck Transport	60	0.23	1.55	1.12	0.02	11.79	1.75
On-road Truck Transport	65	0.24	1.68	1.17	0.02	11.81	1.77
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	8.15	42.17	43.54	0.06	0.22	0.21
On-road Truck Transport	5	3.36	6.33	3.54	0.04	1.12	0.30
On-road Truck Transport	10	1.83	3.94	2.61	0.03	1.08	0.26
On-road Truck Transport	15	0.88	2.37	1.96	0.03	1.05	0.23
On-road Truck Transport	20	0.50	1.67	1.62	0.02	1.03	0.22
On-road Truck Transport	25	0.43	1.54	1.47	0.02	1.03	0.21
On-road Truck Transport	30	0.37	1.45	1.35	0.02	1.02	0.21
On-road Truck Transport	35	0.32	1.38	1.25	0.02	1.02	0.21
On-road Truck Transport	40	0.28	1.35	1.18	0.02	1.03	0.21
On-road Truck Transport	45	0.25	1.35	1.13	0.02	1.03	0.22
On-road Truck Transport	50	0.23	1.38	1.11	0.02	1.05	0.23
On-road Truck Transport	55	0.22	1.45	1.10	0.02	1.06	0.24
On-road Truck Transport	60	0.23	1.55	1.12	0.02	1.08	0.26
On-road Truck Transport	65	0.24	1.68	1.17	0.02	1.10	0.28
<b>Year 2035</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.68	41.48	57.35	0.06	0.12	0.11
On-road Truck Transport	5	2.43	4.81	3.30	0.04	11.76	1.72
On-road Truck Transport	7.5	1.88	3.85	2.89	0.03	11.75	1.72
On-road Truck Transport	10	1.33	2.89	2.48	0.03	11.75	1.72
On-road Truck Transport	15	0.63	1.66	1.88	0.03	11.74	1.71
On-road Truck Transport	20	0.37	1.15	1.54	0.02	11.73	1.70
On-road Truck Transport	25	0.33	1.09	1.38	0.02	11.73	1.70
On-road Truck Transport	30	0.28	1.06	1.25	0.02	11.73	1.70
On-road Truck Transport	35	0.25	1.04	1.15	0.02	11.74	1.70
On-road Truck Transport	40	0.22	1.04	1.07	0.02	11.74	1.71
On-road Truck Transport	45	0.19	1.06	1.01	0.02	11.75	1.72
On-road Truck Transport	50	0.17	1.11	0.98	0.02	11.76	1.73
On-road Truck Transport	55	0.16	1.17	0.97	0.02	11.78	1.74
On-road Truck Transport	60	0.16	1.25	0.99	0.02	11.79	1.76
On-road Truck Transport	65	0.15	1.35	1.03	0.02	11.81	1.77
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.68	41.48	57.35	0.06	0.12	0.11
On-road Truck Transport	5	2.43	4.81	3.30	0.04	1.04	0.23
On-road Truck Transport	10	1.33	2.89	2.48	0.03	1.03	0.22
On-road Truck Transport	15	0.63	1.66	1.88	0.03	1.03	0.21
On-road Truck Transport	20	0.37	1.15	1.54	0.02	1.02	0.21
On-road Truck Transport	25	0.33	1.09	1.38	0.02	1.02	0.20
On-road Truck Transport	30	0.28	1.06	1.25	0.02	1.02	0.21
On-road Truck Transport	35	0.25	1.04	1.15	0.02	1.02	0.21
On-road Truck Transport	40	0.22	1.04	1.07	0.02	1.03	0.21
On-road Truck Transport	45	0.19	1.06	1.01	0.02	1.04	0.22
On-road Truck Transport	50	0.17	1.11	0.98	0.02	1.05	0.23
On-road Truck Transport	55	0.16	1.17	0.97	0.02	1.06	0.25
On-road Truck Transport	60	0.16	1.25	0.99	0.02	1.08	0.26
On-road Truck Transport	65	0.15	1.35	1.03	0.02	1.10	0.28
<b>Year 2046</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	7.66	41.44	58.12	0.06	0.11	0.10
On-road Truck Transport	5	2.40	4.75	3.29	0.04	11.76	1.72
On-road Truck Transport	7.5	1.85	3.80	2.88	0.03	11.75	1.72
On-road Truck Transport	10	1.31	2.85	2.47	0.03	11.75	1.71
On-road Truck Transport	15	0.63	1.63	1.88	0.03	11.74	1.71
On-road Truck Transport	20	0.37	1.13	1.53	0.02	11.74	1.70
On-road Truck Transport	25	0.32	1.08	1.38	0.02	11.73	1.70
On-road Truck Transport	30	0.28	1.04	1.25	0.02	11.73	1.70
On-road Truck Transport	35	0.24	1.02	1.14	0.02	11.74	1.70
On-road Truck Transport	40	0.21	1.03	1.06	0.02	11.74	1.71
On-road Truck Transport	45	0.19	1.05	1.01	0.02	11.75	1.72
On-road Truck Transport	50	0.17	1.09	0.97	0.02	11.76	1.73
On-road Truck Transport	55	0.16	1.15	0.97	0.02	11.78	1.74
On-road Truck Transport	60	0.15	1.24	0.99	0.02	11.79	1.76
On-road Truck Transport	65	0.15	1.34	1.03	0.02	11.82	1.78
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	7.66	41.44	58.12	0.06	0.11	0.10
On-road Truck Transport	5	2.40	4.75	3.29	0.04	1.04	0.23
On-road Truck Transport	10	1.31	2.85	2.47	0.03	1.03	0.22
On-road Truck Transport	15	0.63	1.63	1.88	0.03	1.03	0.21
On-road Truck Transport	20	0.37	1.13	1.53	0.02	1.02	0.21
On-road Truck Transport	25	0.32	1.08	1.38	0.02	1.02	0.21

On-road Truck Transport	30	0.28	1.04	1.25	0.02	1.02	0.21
On-road Truck Transport	35	0.24	1.02	1.14	0.02	1.02	0.21
On-road Truck Transport	40	0.21	1.03	1.06	0.02	1.03	0.21
On-road Truck Transport	45	0.19	1.05	1.01	0.02	1.04	0.22
On-road Truck Transport	50	0.17	1.09	0.97	0.02	1.05	0.23
On-road Truck Transport	55	0.16	1.15	0.97	0.02	1.06	0.25
On-road Truck Transport	60	0.15	1.24	0.99	0.02	1.08	0.26
On-road Truck Transport	65	0.15	1.34	1.03	0.02	1.10	0.28

Notes:

- (1) On-site travel speed was assumed at 7.5 mph.
- (2) Emission factors were generated by EMFAC2007 v2.3 model with SCAB default age distributions.
- (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-NP-12. Emission Factors for Tenant Employee Commute Vehicles - No Project Alternative**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)					
		VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.21	2.93	0.23	0.01	1.65	0.16
On-road Truck Transport	7.5	0.17	2.75	0.22	0.01	1.64	0.15
On-road Truck Transport	10	0.14	2.57	0.20	0.01	1.63	0.15
On-road Truck Transport	15	0.10	2.28	0.18	0.01	1.62	0.14
On-road Truck Transport	20	0.07	2.05	0.16	0.00	1.61	0.13
On-road Truck Transport	25	0.06	1.86	0.15	0.00	1.61	0.13
On-road Truck Transport	30	0.05	1.71	0.14	0.00	1.60	0.12
On-road Truck Transport	35	0.04	1.58	0.13	0.00	1.60	0.12
On-road Truck Transport	40	0.04	1.47	0.13	0.00	1.60	0.12
On-road Truck Transport	45	0.03	1.39	0.13	0.00	1.60	0.12
On-road Truck Transport	50	0.03	1.32	0.13	0.00	1.60	0.12
On-road Truck Transport	55	0.04	1.28	0.14	0.00	1.60	0.12
On-road Truck Transport	60	0.04	1.26	0.14	0.00	1.60	0.12
On-road Truck Transport	65	0.04	1.27	0.15	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.24	2.93	0.23	0.01	0.96	0.11
On-road Truck Transport	10	0.16	2.57	0.20	0.01	0.94	0.09
On-road Truck Transport	15	0.11	2.28	0.18	0.01	0.93	0.09
On-road Truck Transport	20	0.08	2.05	0.16	0.00	0.93	0.08
On-road Truck Transport	25	0.07	1.86	0.15	0.00	0.92	0.08
On-road Truck Transport	30	0.05	1.71	0.14	0.00	0.92	0.07
On-road Truck Transport	35	0.05	1.58	0.13	0.00	0.92	0.07
On-road Truck Transport	40	0.04	1.47	0.13	0.00	0.92	0.07
On-road Truck Transport	45	0.04	1.39	0.13	0.00	0.92	0.07
On-road Truck Transport	50	0.04	1.32	0.13	0.00	0.92	0.07
On-road Truck Transport	55	0.04	1.28	0.14	0.00	0.92	0.07
On-road Truck Transport	60	0.04	1.26	0.14	0.00	0.92	0.07
On-road Truck Transport	65	0.05	1.27	0.15	0.00	0.92	0.07
<b>Year 2014</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.19	2.65	0.21	0.01	1.65	0.16
On-road Truck Transport	7.5	0.16	2.49	0.20	0.01	1.64	0.15
On-road Truck Transport	10	0.12	2.33	0.18	0.01	1.63	0.15
On-road Truck Transport	15	0.09	2.08	0.16	0.01	1.62	0.14
On-road Truck Transport	20	0.06	1.88	0.15	0.00	1.61	0.13
On-road Truck Transport	25	0.05	1.71	0.14	0.00	1.61	0.13
On-road Truck Transport	30	0.04	1.57	0.13	0.00	1.60	0.12
On-road Truck Transport	35	0.04	1.45	0.12	0.00	1.60	0.12
On-road Truck Transport	40	0.03	1.35	0.12	0.00	1.60	0.12
On-road Truck Transport	45	0.03	1.27	0.12	0.00	1.60	0.12
On-road Truck Transport	50	0.03	1.20	0.12	0.00	1.60	0.12
On-road Truck Transport	55	0.03	1.16	0.12	0.00	1.60	0.12
On-road Truck Transport	60	0.03	1.13	0.13	0.00	1.60	0.12
On-road Truck Transport	65	0.04	1.13	0.14	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.21	2.65	0.21	0.01	0.96	0.11
On-road Truck Transport	10	0.14	2.33	0.18	0.01	0.94	0.10
On-road Truck Transport	15	0.10	2.08	0.16	0.01	0.93	0.09
On-road Truck Transport	20	0.07	1.88	0.15	0.00	0.93	0.08
On-road Truck Transport	25	0.06	1.71	0.14	0.00	0.92	0.08
On-road Truck Transport	30	0.05	1.57	0.13	0.00	0.92	0.07
On-road Truck Transport	35	0.04	1.45	0.12	0.00	0.92	0.07
On-road Truck Transport	40	0.04	1.35	0.12	0.00	0.92	0.07
On-road Truck Transport	45	0.03	1.27	0.12	0.00	0.92	0.07
On-road Truck Transport	50	0.03	1.20	0.12	0.00	0.92	0.07
On-road Truck Transport	55	0.04	1.16	0.12	0.00	0.92	0.07
On-road Truck Transport	60	0.04	1.13	0.13	0.00	0.92	0.07
On-road Truck Transport	65	0.04	1.13	0.14	0.00	0.92	0.07
<b>Year 2015</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.17	2.41	0.19	0.01	1.65	0.16
On-road Truck Transport	7.5	0.14	2.27	0.18	0.01	1.64	0.15
On-road Truck Transport	10	0.11	2.13	0.17	0.01	1.63	0.15

On-road Truck Transport	15	0.08	1.91	0.15	0.01	1.62	0.14
On-road Truck Transport	20	0.06	1.72	0.13	0.00	1.61	0.13
On-road Truck Transport	25	0.04	1.57	0.12	0.00	1.61	0.13
On-road Truck Transport	30	0.04	1.44	0.11	0.00	1.60	0.12
On-road Truck Transport	35	0.03	1.33	0.11	0.00	1.60	0.12
On-road Truck Transport	40	0.03	1.24	0.11	0.00	1.60	0.12
On-road Truck Transport	45	0.03	1.16	0.11	0.00	1.60	0.12
On-road Truck Transport	50	0.03	1.10	0.11	0.00	1.60	0.12
On-road Truck Transport	55	0.03	1.05	0.11	0.00	1.60	0.12
On-road Truck Transport	60	0.03	1.02	0.11	0.00	1.60	0.12
On-road Truck Transport	65	0.03	1.01	0.12	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.19	2.41	0.19	0.01	0.96	0.11
On-road Truck Transport	10	0.13	2.13	0.17	0.01	0.94	0.10
On-road Truck Transport	15	0.09	1.91	0.15	0.01	0.93	0.09
On-road Truck Transport	20	0.07	1.72	0.13	0.00	0.93	0.08
On-road Truck Transport	25	0.05	1.57	0.12	0.00	0.92	0.08
On-road Truck Transport	30	0.04	1.44	0.11	0.00	0.92	0.07
On-road Truck Transport	35	0.04	1.33	0.11	0.00	0.92	0.07
On-road Truck Transport	40	0.03	1.24	0.11	0.00	0.92	0.07
On-road Truck Transport	45	0.03	1.16	0.11	0.00	0.92	0.07
On-road Truck Transport	50	0.03	1.10	0.11	0.00	0.92	0.07
On-road Truck Transport	55	0.03	1.05	0.11	0.00	0.92	0.07
On-road Truck Transport	60	0.03	1.02	0.11	0.00	0.92	0.07
On-road Truck Transport	65	0.04	1.01	0.12	0.00	0.92	0.07
<b>Year 2016</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.17	2.21	0.17	0.01	1.65	0.16
On-road Truck Transport	7.5	0.14	2.08	0.16	0.01	1.64	0.16
On-road Truck Transport	10	0.11	1.96	0.15	0.01	1.63	0.15
On-road Truck Transport	15	0.08	1.76	0.13	0.01	1.62	0.14
On-road Truck Transport	20	0.06	1.59	0.12	0.00	1.61	0.13
On-road Truck Transport	25	0.05	1.45	0.11	0.00	1.61	0.13
On-road Truck Transport	30	0.04	1.33	0.10	0.00	1.60	0.12
On-road Truck Transport	35	0.03	1.23	0.10	0.00	1.60	0.12
On-road Truck Transport	40	0.03	1.14	0.10	0.00	1.60	0.12
On-road Truck Transport	45	0.03	1.07	0.10	0.00	1.60	0.12
On-road Truck Transport	50	0.03	1.01	0.10	0.00	1.60	0.12
On-road Truck Transport	55	0.03	0.97	0.10	0.00	1.60	0.12
On-road Truck Transport	60	0.03	0.93	0.10	0.00	1.60	0.12
On-road Truck Transport	65	0.03	0.92	0.11	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.17	2.21	0.17	0.01	0.96	0.11
On-road Truck Transport	10	0.11	1.96	0.15	0.01	0.95	0.10
On-road Truck Transport	15	0.08	1.76	0.13	0.01	0.93	0.09
On-road Truck Transport	20	0.06	1.59	0.12	0.00	0.93	0.08
On-road Truck Transport	25	0.05	1.45	0.11	0.00	0.92	0.08
On-road Truck Transport	30	0.04	1.33	0.10	0.00	0.92	0.07
On-road Truck Transport	35	0.03	1.23	0.10	0.00	0.92	0.07
On-road Truck Transport	40	0.03	1.14	0.10	0.00	0.92	0.07
On-road Truck Transport	45	0.03	1.07	0.10	0.00	0.92	0.07
On-road Truck Transport	50	0.03	1.01	0.10	0.00	0.92	0.07
On-road Truck Transport	55	0.03	0.97	0.10	0.00	0.92	0.07
On-road Truck Transport	60	0.03	0.93	0.10	0.00	0.92	0.07
On-road Truck Transport	65	0.03	0.92	0.11	0.00	0.92	0.07
<b>Year 2023</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.17	2.21	0.17	0.01	1.65	0.16
On-road Truck Transport	7.5	0.14	2.08	0.16	0.01	1.64	0.16
On-road Truck Transport	10	0.11	1.96	0.15	0.01	1.63	0.15
On-road Truck Transport	15	0.08	1.76	0.13	0.01	1.62	0.14
On-road Truck Transport	20	0.06	1.59	0.12	0.00	1.61	0.13
On-road Truck Transport	25	0.05	1.45	0.11	0.00	1.61	0.13
On-road Truck Transport	30	0.04	1.33	0.10	0.00	1.60	0.12
On-road Truck Transport	35	0.03	1.23	0.10	0.00	1.60	0.12
On-road Truck Transport	40	0.03	1.14	0.10	0.00	1.60	0.12
On-road Truck Transport	45	0.03	1.07	0.10	0.00	1.60	0.12
On-road Truck Transport	50	0.03	1.01	0.10	0.00	1.60	0.12
On-road Truck Transport	55	0.03	0.97	0.10	0.00	1.60	0.12

On-road Truck Transport	60	0.03	0.93	0.10	0.00	1.60	0.12
On-road Truck Transport	65	0.03	0.92	0.11	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.10	1.30	0.10	0.01	0.96	0.11
On-road Truck Transport	10	0.06	1.17	0.09	0.01	0.95	0.10
On-road Truck Transport	15	0.04	1.06	0.08	0.01	0.93	0.09
On-road Truck Transport	20	0.03	0.97	0.07	0.00	0.93	0.08
On-road Truck Transport	25	0.02	0.89	0.06	0.00	0.92	0.08
On-road Truck Transport	30	0.02	0.82	0.06	0.00	0.92	0.07
On-road Truck Transport	35	0.02	0.75	0.06	0.00	0.92	0.07
On-road Truck Transport	40	0.01	0.70	0.05	0.00	0.92	0.07
On-road Truck Transport	45	0.01	0.65	0.05	0.00	0.92	0.07
On-road Truck Transport	50	0.01	0.61	0.05	0.00	0.92	0.07
On-road Truck Transport	55	0.01	0.57	0.06	0.00	0.92	0.07
On-road Truck Transport	60	0.02	0.54	0.06	0.00	0.92	0.07
On-road Truck Transport	65	0.02	0.52	0.06	0.00	0.92	0.07
<b>Year 2035</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.17	2.21	0.17	0.01	1.65	0.16
On-road Truck Transport	7.5	0.14	2.08	0.16	0.01	1.64	0.16
On-road Truck Transport	10	0.11	1.96	0.15	0.01	1.63	0.15
On-road Truck Transport	15	0.08	1.76	0.13	0.01	1.62	0.14
On-road Truck Transport	20	0.06	1.59	0.12	0.00	1.61	0.13
On-road Truck Transport	25	0.05	1.45	0.11	0.00	1.61	0.13
On-road Truck Transport	30	0.04	1.33	0.10	0.00	1.60	0.12
On-road Truck Transport	35	0.03	1.23	0.10	0.00	1.60	0.12
On-road Truck Transport	40	0.03	1.14	0.10	0.00	1.60	0.12
On-road Truck Transport	45	0.03	1.07	0.10	0.00	1.60	0.12
On-road Truck Transport	50	0.03	1.01	0.10	0.00	1.60	0.12
On-road Truck Transport	55	0.03	0.97	0.10	0.00	1.60	0.12
On-road Truck Transport	60	0.03	0.93	0.10	0.00	1.60	0.12
On-road Truck Transport	65	0.03	0.92	0.11	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.06	0.81	0.06	0.01	0.96	0.11
On-road Truck Transport	10	0.04	0.74	0.05	0.01	0.95	0.10
On-road Truck Transport	15	0.03	0.68	0.05	0.01	0.93	0.09
On-road Truck Transport	20	0.02	0.62	0.04	0.00	0.93	0.08
On-road Truck Transport	25	0.01	0.57	0.04	0.00	0.92	0.08
On-road Truck Transport	30	0.01	0.53	0.04	0.00	0.92	0.07
On-road Truck Transport	35	0.01	0.49	0.03	0.00	0.92	0.07
On-road Truck Transport	40	0.01	0.45	0.03	0.00	0.92	0.07
On-road Truck Transport	45	0.01	0.42	0.03	0.00	0.92	0.07
On-road Truck Transport	50	0.01	0.39	0.03	0.00	0.92	0.07
On-road Truck Transport	55	0.01	0.37	0.03	0.00	0.92	0.07
On-road Truck Transport	60	0.01	0.34	0.03	0.00	0.92	0.07
On-road Truck Transport	65	0.01	0.32	0.03	0.00	0.92	0.07
<b>Year 2046</b>							
<b>On-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.17	2.21	0.17	0.01	1.65	0.16
On-road Truck Transport	7.5	0.14	2.08	0.16	0.01	1.64	0.16
On-road Truck Transport	10	0.11	1.96	0.15	0.01	1.63	0.15
On-road Truck Transport	15	0.08	1.76	0.13	0.01	1.62	0.14
On-road Truck Transport	20	0.06	1.59	0.12	0.00	1.61	0.13
On-road Truck Transport	25	0.05	1.45	0.11	0.00	1.61	0.13
On-road Truck Transport	30	0.04	1.33	0.10	0.00	1.60	0.12
On-road Truck Transport	35	0.03	1.23	0.10	0.00	1.60	0.12
On-road Truck Transport	40	0.03	1.14	0.10	0.00	1.60	0.12
On-road Truck Transport	45	0.03	1.07	0.10	0.00	1.60	0.12
On-road Truck Transport	50	0.03	1.01	0.10	0.00	1.60	0.12
On-road Truck Transport	55	0.03	0.97	0.10	0.00	1.60	0.12
On-road Truck Transport	60	0.03	0.93	0.10	0.00	1.60	0.12
On-road Truck Transport	65	0.03	0.92	0.11	0.00	1.60	0.12
<b>Off-Site</b>							
On-road Truck - Idle (g/hr)	0	0.00	0.00	0.00	0.00	0.00	0.00
On-road Truck Transport	5	0.05	0.74	0.05	0.01	0.96	0.11
On-road Truck Transport	10	0.03	0.68	0.05	0.01	0.95	0.10
On-road Truck Transport	15	0.02	0.62	0.04	0.01	0.93	0.09
On-road Truck Transport	20	0.02	0.57	0.04	0.00	0.93	0.08
On-road Truck Transport	25	0.01	0.52	0.03	0.00	0.92	0.08

On-road Truck Transport	30	0.01	0.48	0.03	0.00	0.92	0.07
On-road Truck Transport	35	0.01	0.45	0.03	0.00	0.92	0.07
On-road Truck Transport	40	0.01	0.41	0.03	0.00	0.92	0.07
On-road Truck Transport	45	0.01	0.38	0.03	0.00	0.92	0.07
On-road Truck Transport	50	0.01	0.36	0.03	0.00	0.92	0.07
On-road Truck Transport	55	0.01	0.33	0.03	0.00	0.92	0.07
On-road Truck Transport	60	0.01	0.31	0.03	0.00	0.92	0.07
On-road Truck Transport	65	0.01	0.29	0.03	0.00	0.92	0.07

Notes:

- (1) On-site travel speed was assumed at 7.5 mph.
- (2) Emission factors were generated by EMFAC2007 v2.3 model with SCAB default age distributions.
- (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-NP-13. Annual Tenant Truck Emissions - No Project Alternative**

Project Year - Mode	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>						
On-Site	3.93	11.28	27.36	0.03	5.94	1.08
Off-Site	4.20	17.74	56.75	0.12	7.64	1.52
<b>Year 2013</b>	<b>8.12</b>	<b>29.01</b>	<b>84.11</b>	<b>0.15</b>	<b>13.59</b>	<b>2.61</b>
<b>Year 2014</b>						
On-Site	3.72	10.96	25.95	0.03	5.75	0.91
Off-Site	4.35	17.70	53.96	0.13	7.37	1.15
<b>Year 2014</b>	<b>8.08</b>	<b>28.65</b>	<b>79.92</b>	<b>0.15</b>	<b>13.13</b>	<b>2.06</b>
<b>Year 2015</b>						
On-Site	3.53	10.65	26.24	0.03	5.75	0.90
Off-Site	4.22	17.04	52.53	0.13	7.39	1.17
<b>Year 2015</b>	<b>7.75</b>	<b>27.68</b>	<b>78.78</b>	<b>0.15</b>	<b>13.15</b>	<b>2.08</b>
<b>Year 2016</b>						
On-Site	3.70	11.42	27.72	0.03	6.32	0.99
Off-Site	4.50	18.10	53.90	0.14	8.15	1.31
<b>Year 2016</b>	<b>8.21</b>	<b>29.53</b>	<b>81.62</b>	<b>0.17</b>	<b>14.48</b>	<b>2.30</b>
<b>Year 2023</b>						
On-Site	2.65	9.58	16.20	0.03	6.29	0.96
Off-Site	2.99	11.77	22.27	0.14	8.63	1.34
<b>Year 2023</b>	<b>5.64</b>	<b>21.35</b>	<b>38.47</b>	<b>0.17</b>	<b>14.92</b>	<b>2.30</b>
<b>Year 2035</b>						
On-Site	2.38	9.11	17.38	0.03	6.26	0.94
Off-Site	2.64	10.43	22.10	0.14	8.14	1.30
<b>Year 2035</b>	<b>5.02</b>	<b>19.53</b>	<b>39.48</b>	<b>0.17</b>	<b>14.40</b>	<b>2.23</b>
<b>Year 2046</b>						
On-Site	2.37	9.08	17.43	0.03	6.26	0.94
Off-Site	2.65	10.29	22.02	0.14	8.12	1.28
<b>Year 2046</b>	<b>5.02</b>	<b>19.37</b>	<b>39.45</b>	<b>0.17</b>	<b>14.38</b>	<b>2.21</b>

Notes:

- (1) Trucks include Port drayage trucks, vendor trucks, and other medium-duty trucks.
- (2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.



**Table C1.2-NP-14. Peak Daily Tenant Truck Emissions - No Project Alternative**

Project Year - Mode	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>						
On-Site	28.29	82.18	200.79	0.19	43.42	7.83
Off-Site	30.10	127.08	407.48	0.90	55.14	10.91
<b>Year 2013</b>	<b>58.40</b>	<b>209.26</b>	<b>608.27</b>	<b>1.09</b>	<b>98.57</b>	<b>18.74</b>
<b>Year 2014</b>						
On-Site	26.94	80.06	191.17	0.19	42.11	6.62
Off-Site	31.31	127.22	389.23	0.93	53.41	8.36
<b>Year 2014</b>	<b>58.25</b>	<b>207.28</b>	<b>580.40</b>	<b>1.12</b>	<b>95.52</b>	<b>14.97</b>
<b>Year 2015</b>						
On-Site	25.63	77.99	193.34	0.19	42.10	6.61
Off-Site	30.41	122.79	379.54	0.93	53.58	8.51
<b>Year 2015</b>	<b>56.05</b>	<b>200.78</b>	<b>572.88</b>	<b>1.12</b>	<b>95.67</b>	<b>15.12</b>
<b>Year 2016</b>						
On-Site	26.98	83.85	204.77	0.21	46.28	7.24
Off-Site	32.55	130.79	390.49	1.03	59.09	9.50
<b>Year 2016</b>	<b>59.53</b>	<b>214.64</b>	<b>595.26</b>	<b>1.23</b>	<b>105.36</b>	<b>16.74</b>
<b>Year 2023</b>						
On-Site	19.45	70.61	122.92	0.21	46.05	7.04
Off-Site	21.68	85.42	163.96	1.04	62.49	9.74
<b>Year 2023</b>	<b>41.13</b>	<b>156.03</b>	<b>286.88</b>	<b>1.24</b>	<b>108.54</b>	<b>16.78</b>
<b>Year 2035</b>						
On-Site	17.61	67.36	131.24	0.21	45.87	6.87
Off-Site	19.25	75.96	162.90	1.03	58.99	9.41
<b>Year 2035</b>	<b>36.86</b>	<b>143.32</b>	<b>294.14</b>	<b>1.24</b>	<b>104.85</b>	<b>16.28</b>
<b>Year 2046</b>						
On-Site	17.50	67.15	131.57	0.21	45.86	6.86
Off-Site	19.29	74.99	162.24	1.04	58.85	9.28
<b>Year 2046</b>	<b>36.78</b>	<b>142.14</b>	<b>293.81</b>	<b>1.24</b>	<b>104.70</b>	<b>16.14</b>

Notes:

(1) Trucks include Port drayage trucks, vendor trucks, and other medium-duty trucks.

(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-NP-15. Annual Tenant Employee Commute Emissions - No Project Alternative**

Project Year - Mode	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>						
On-Site	0.03	0.42	0.03	0.00	0.25	0.03
Off-Site	0.95	28.74	2.55	0.06	16.72	1.43
<b>Year 2013</b>	<b>0.99</b>	<b>29.16</b>	<b>2.58</b>	<b>0.06</b>	<b>16.98</b>	<b>1.46</b>
<b>Year 2014</b>						
On-Site	0.03	0.38	0.03	0.00	0.25	0.03
Off-Site	0.85	26.08	2.26	0.06	16.33	1.41
<b>Year 2014</b>	<b>0.87</b>	<b>26.46</b>	<b>2.29</b>	<b>0.06</b>	<b>16.58</b>	<b>1.44</b>
<b>Year 2015</b>						
On-Site	0.02	0.35	0.03	0.00	0.25	0.03
Off-Site	0.75	23.88	2.04	0.06	16.34	1.41
<b>Year 2015</b>	<b>0.77</b>	<b>24.23</b>	<b>2.07</b>	<b>0.06</b>	<b>16.59</b>	<b>1.44</b>
<b>Year 2016</b>						
On-Site	0.02	0.35	0.03	0.00	0.28	0.03
Off-Site	0.74	24.25	2.05	0.07	18.04	1.62
<b>Year 2016</b>	<b>0.76</b>	<b>24.60</b>	<b>2.08</b>	<b>0.07</b>	<b>18.32</b>	<b>1.65</b>
<b>Year 2023</b>						
On-Site	0.01	0.21	0.02	0.00	0.28	0.03
Off-Site	0.40	14.71	1.15	0.06	18.04	1.62
<b>Year 2023</b>	<b>0.41</b>	<b>14.92</b>	<b>1.17</b>	<b>0.07</b>	<b>18.32</b>	<b>1.65</b>
<b>Year 2035</b>						
On-Site	0.01	0.13	0.01	0.00	0.28	0.03
Off-Site	0.22	9.44	0.67	0.06	18.04	1.62
<b>Year 2035</b>	<b>0.23</b>	<b>9.57</b>	<b>0.68</b>	<b>0.07</b>	<b>18.32</b>	<b>1.65</b>
<b>Year 2046</b>						
On-Site	0.01	0.12	0.01	0.00	0.28	0.03
Off-Site	0.20	8.76	0.61	0.07	18.05	1.63
<b>Year 2046</b>	<b>0.21</b>	<b>8.88</b>	<b>0.62</b>	<b>0.07</b>	<b>18.32</b>	<b>1.65</b>

Note:

(1) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-NP-16. Peak Daily Tenant Employee Commute Emissions - No Project Alternative**

Project Year - Mode	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
<b>Year 2013</b>						
On-Site	0.22	3.05	0.24	0.01	1.81	0.18
Off-Site	6.90	207.61	18.41	0.43	120.63	10.37
<b>Year 2013</b>	<b>7.12</b>	<b>210.66</b>	<b>18.64</b>	<b>0.44</b>	<b>122.45</b>	<b>10.56</b>
<b>Year 2014</b>						
On-Site	0.20	2.76	0.22	0.01	1.81	0.18
Off-Site	6.11	188.09	16.29	0.43	117.63	10.21
<b>Year 2014</b>	<b>6.30</b>	<b>190.85</b>	<b>16.51</b>	<b>0.44</b>	<b>119.44</b>	<b>10.40</b>
<b>Year 2015</b>						
On-Site	0.18	2.52	0.20	0.01	1.81	0.18
Off-Site	5.40	172.25	14.70	0.43	117.66	10.24
<b>Year 2015</b>	<b>5.58</b>	<b>174.77</b>	<b>14.90</b>	<b>0.44</b>	<b>119.47</b>	<b>10.42</b>
<b>Year 2016</b>						
On-Site	0.17	2.54	0.20	0.01	1.99	0.20
Off-Site	5.31	174.85	14.75	0.47	129.95	11.75
<b>Year 2016</b>	<b>5.49</b>	<b>177.39</b>	<b>14.95</b>	<b>0.48</b>	<b>131.95</b>	<b>11.95</b>
<b>Year 2023</b>						
On-Site	0.10	1.51	0.11	0.01	2.00	0.21
Off-Site	2.85	106.08	8.30	0.47	129.97	11.77
<b>Year 2023</b>	<b>2.95</b>	<b>107.58</b>	<b>8.42</b>	<b>0.48</b>	<b>131.97</b>	<b>11.97</b>
<b>Year 2035</b>						
On-Site	0.06	0.95	0.07	0.01	2.00	0.21
Off-Site	1.61	68.05	4.82	0.47	129.97	11.77
<b>Year 2035</b>	<b>1.67</b>	<b>69.00</b>	<b>4.88</b>	<b>0.48</b>	<b>131.97</b>	<b>11.97</b>
<b>Year 2046</b>						
On-Site	0.05	0.87	0.06	0.01	2.00	0.21
Off-Site	1.46	63.16	4.41	0.47	130.01	11.80
<b>Year 2046</b>	<b>1.51</b>	<b>64.03</b>	<b>4.47</b>	<b>0.48</b>	<b>132.00</b>	<b>12.00</b>
Notes:						
(1) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.						
(2) Peak daily emissions are equivalent to the average daily emissions.						

**Table C1.2-NP-17. Activity Data for Tenant CHE - No Project Alternative**

<b>Cargo Handling Equipment</b>	<b>Fuel</b>	<b>Average HP</b>	<b>Equipment Total</b>	<b>Annual Hours of Operation <sup>(2)</sup></b>	<b>Average Load Factor</b>	<b>Annual hp-hrs</b>
Container Handling Equipment > 175 - 210	Diesel	198	3	6,240	0.59	728957
Fork Lift > 50-120	Diesel	100	10	7,818	0.30	243816
Fork Lift > 120-175	Diesel	138	5	9,152	0.30	380640
Fork Lift > 175-250	Diesel	192	3	6,240	0.30	358800
Loader > 50-120	Diesel	110	1	1,040	0.55	62920
Loader > 175-210	Diesel	200	1	1,040	0.55	114400
Other, General Industrial Equipment > 175-250	Diesel	220	2	780	0.51	91494
Power Pack > 200	Diesel	202	2	1,500	0.74	224220
Side Pick > 120-175	Diesel	136	2	1,750	0.59	140420
Sweeper/Scrubber > 50-120	Diesel	60	1	208	0.68	8486
Top Handler > 50-120	Diesel	120	2	1,948	0.38	89497
Tractor/ Loader/Backhoe > 120-175	Diesel	158	4	6,448	0.55	565365
Yard tractor > 210-400	Diesel	250	6	6,160	0.39	1006200
Yard Truck > 120-175	Diesel	150	1	1,040	0.39	60840
Yard Truck > 175-210	Diesel	209	23	33,541	0.39	2741938
Yard Truck > 210-400	Diesel	350	1	2,080	0.39	283920
Fork Lift > 50-120	LPG	74	216	330,196	0.30	8174032
Top Handler > 50-120	LPG	92	1	1,440	0.30	39744

**Table C1.2-NP-18. Emission Factors for Tenant CHE - No Project Alternative**

Cargo Handling Equipment	Fuel	Emission Factors (grams/hp-hr)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2013</b>							
Container Handling Equipment > 175 - 210	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Fork Lift > 50-120	Diesel	0.10	3.06	3.11	0.01	0.19	0.17
Fork Lift > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Fork Lift > 175-250	Diesel	0.06	0.92	1.36	0.01	0.01	0.01
Loader > 50-120	Diesel	0.09	3.05	2.89	0.06	0.20	0.18
Loader > 175-210	Diesel	0.09	0.92	2.45	0.06	0.11	0.10
Other, General Industrial Equipment > 175-250	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Power Pack > 200	Diesel	0.38	1.17	4.48	0.01	0.12	0.11
Side Pick > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Sweeper/Scrubber > 50-120	Diesel	0.09	3.05	2.89	0.01	0.20	0.18
Top Handler > 50-120	Diesel	0.09	3.05	2.89	0.01	0.20	0.18
Tractor/ Loader/Backhoe > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard tractor > 210-400	Diesel	0.07	0.76	2.67	0.03	0.09	0.09
Yard Truck > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard Truck > 175-210	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Yard Truck > 210-400	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Fork Lift > 50-120	LPG	0.81	28.90	3.45	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.82	30.41	3.46	0.00	0.06	0.06
<b>Year 2014</b>							
Container Handling Equipment > 175 - 210	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Fork Lift > 50-120	Diesel	0.10	3.06	3.11	0.01	0.19	0.17
Fork Lift > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Fork Lift > 175-250	Diesel	0.06	0.92	1.36	0.01	0.01	0.01
Loader > 50-120	Diesel	0.09	3.05	2.89	0.06	0.20	0.18
Loader > 175-210	Diesel	0.09	0.92	2.45	0.06	0.11	0.10
Other, General Industrial Equipment > 175-250	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Power Pack > 200	Diesel	0.35	1.14	4.08	0.01	0.11	0.10
Side Pick > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Sweeper/Scrubber > 50-120	Diesel	0.09	3.05	2.89	0.01	0.20	0.18
Top Handler > 50-120	Diesel	0.09	3.05	2.89	0.01	0.20	0.18
Tractor/ Loader/Backhoe > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard tractor > 210-400	Diesel	0.07	0.76	2.67	0.03	0.09	0.09
Yard Truck > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard Truck > 175-210	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Yard Truck > 210-400	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Fork Lift > 50-120	LPG	0.76	28.90	3.73	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.77	30.41	3.33	0.00	0.06	0.06
<b>Year 2015</b>							
Container Handling Equipment > 175 - 210	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Fork Lift > 50-120	Diesel	0.10	3.06	3.11	0.01	0.19	0.17
Fork Lift > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Fork Lift > 175-250	Diesel	0.06	0.92	1.36	0.01	0.01	0.01
Loader > 50-120	Diesel	0.09	3.05	2.89	0.06	0.20	0.18
Loader > 175-210	Diesel	0.09	0.92	2.45	0.06	0.11	0.10
Other, General Industrial Equipment > 175-250	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Power Pack > 200	Diesel	0.27	1.11	3.68	0.01	0.10	0.09
Side Pick > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Sweeper/Scrubber > 50-120	Diesel	0.09	3.05	2.89	0.01	0.20	0.18
Top Handler > 50-120	Diesel	0.09	3.05	2.89	0.01	0.20	0.18
Tractor/ Loader/Backhoe > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard tractor > 210-400	Diesel	0.07	0.76	2.67	0.03	0.09	0.09
Yard Truck > 120-175	Diesel	0.09	2.70	2.45	0.01	0.14	0.13
Yard Truck > 175-210	Diesel	0.09	0.92	2.45	0.01	0.11	0.10
Yard Truck > 210-400	Diesel	0.09	0.92	2.45	0.01	0.11	0.10

Fork Lift > 50-120	LPG	0.07	28.91	3.63	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.07	30.42	3.23	0.00	0.06	0.06
<b>Year 2016</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.09	0.92	2.45	0.06	0.11	0.10
Fork Lift > 50-120	Diesel	0.10	3.06	3.11	0.06	0.19	0.17
Fork Lift > 120-175	Diesel	0.09	2.70	2.45	0.06	0.14	0.13
Fork Lift > 175-250	Diesel	0.06	0.92	1.36	0.06	0.01	0.01
Loader > 50-120	Diesel	0.09	3.05	2.89	0.06	0.20	0.18
Loader > 175-210	Diesel	0.09	0.92	2.45	0.06	0.11	0.10
Other, General Industrial Equipment > 175-250	Diesel	0.09	0.92	2.45	0.06	0.11	0.10
Power Pack > 200	Diesel	0.30	1.09	3.30	0.01	0.09	0.08
Side Pick > 120-175	Diesel	0.09	2.70	2.45	0.06	0.14	0.13
Sweeper/Scrubber > 50-120	Diesel	0.09	3.05	2.89	0.06	0.20	0.18
Top Handler > 50-120	Diesel	0.09	3.05	2.89	0.06	0.20	0.18
Tractor/ Loader/Backhoe > 120-175	Diesel	0.09	2.70	2.45	0.06	0.14	0.13
Yard tractor > 210-400	Diesel	0.06	0.76	2.03	0.06	0.08	0.07
Yard Truck > 120-175	Diesel	0.04	2.70	0.27	0.06	0.01	0.01
Yard Truck > 175-210	Diesel	0.07	0.92	1.31	0.06	0.06	0.05
Yard Truck > 210-400	Diesel	0.04	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	LPG	0.70	28.91	3.14	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.71	30.42	3.16	0.00	0.06	0.06
<b>Year 2023</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.09	0.92	2.45	0.06	0.11	0.10
Fork Lift > 50-120	Diesel	0.10	3.06	3.11	0.06	0.19	0.17
Fork Lift > 120-175	Diesel	0.09	2.70	2.45	0.06	0.14	0.13
Fork Lift > 175-250	Diesel	0.06	0.92	1.36	0.06	0.01	0.01
Loader > 50-120	Diesel	0.09	3.05	2.89	0.06	0.20	0.18
Loader > 175-210	Diesel	0.09	0.92	2.45	0.06	0.11	0.10
Other, General Industrial Equipment > 175-250	Diesel	0.09	0.92	2.45	0.06	0.11	0.10
Power Pack > 200	Diesel	0.19	1.01	1.35	0.01	0.04	0.04
Side Pick > 120-175	Diesel	0.09	2.70	2.45	0.06	0.14	0.13
Sweeper/Scrubber > 50-120	Diesel	0.09	3.05	2.89	0.06	0.20	0.18
Top Handler > 50-120	Diesel	0.09	3.05	2.89	0.06	0.20	0.18
Tractor/ Loader/Backhoe > 120-175	Diesel	0.09	2.70	2.45	0.06	0.14	0.13
Yard tractor > 210-400	Diesel	0.03	0.76	0.29	0.06	0.01	0.01
Yard Truck > 120-175	Diesel	0.04	2.70	0.27	0.06	0.01	0.01
Yard Truck > 175-210	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Yard Truck > 210-400	Diesel	0.04	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	LPG	0.68	28.93	3.04	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.69	30.44	3.05	0.00	0.06	0.06
<b>Year 2035</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.04	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Fork Lift > 120-175	Diesel	0.04	2.70	0.27	0.06	0.01	0.01
Fork Lift > 175-250	Diesel	0.04	0.92	0.27	0.06	0.01	0.01
Loader > 50-120	Diesel	0.06	3.05	1.40	0.06	0.01	0.01
Loader > 175-210	Diesel	0.04	0.92	0.27	0.06	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.04	0.92	0.27	0.06	0.01	0.01
Power Pack > 200	Diesel	0.12	1.00	0.33	0.01	0.01	0.01
Side Pick > 120-175	Diesel	0.04	2.70	0.27	0.06	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.06	3.05	1.40	0.06	0.01	0.01
Top Handler > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Tractor/ Loader/Backhoe > 120-175	Diesel	0.04	2.70	0.27	0.06	0.01	0.01
Yard tractor > 210-400	Diesel	0.03	0.76	0.29	0.06	0.01	0.01
Yard Truck > 120-175	Diesel	0.04	2.70	0.27	0.06	0.01	0.01
Yard Truck > 175-210	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Yard Truck > 210-400	Diesel	0.04	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	LPG	0.68	28.92	3.03	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.69	30.42	3.05	0.00	0.06	0.06

<b>Year 2046</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.04	0.92	0.27	0.06	0.01	0.01
Fork Lift > 50-120	Diesel	0.06	3.01	1.26	0.06	0.01	0.01
Fork Lift > 120-175	Diesel	0.05	2.41	0.50	0.06	0.01	0.01
Fork Lift > 175-250	Diesel	0.04	1.51	0.27	0.06	0.01	0.01
Loader > 50-120	Diesel	0.06	3.05	1.40	0.06	0.01	0.01
Loader > 175-210	Diesel	0.04	0.92	0.27	0.06	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.04	0.92	0.27	0.06	0.01	0.01
Power Pack > 200	Diesel	0.12	1.00	0.28	0.01	0.01	0.01
Side Pick > 120-175	Diesel	0.04	2.70	0.27	0.06	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.06	3.05	1.40	0.06	0.01	0.01
Top Handler > 50-120	Diesel	0.07	3.05	1.40	0.06	0.01	0.01
Tractor/ Loader/Backhoe > 120-175	Diesel	0.04	2.70	0.27	0.06	0.01	0.01
Yard tractor > 210-400	Diesel	0.03	0.76	0.29	0.06	0.01	0.01
Yard Truck > 120-175	Diesel	0.04	0.92	0.27	0.06	0.01	0.01
Yard Truck > 175-210	Diesel	0.05	0.92	0.27	0.06	0.01	0.01
Yard Truck > 210-400	Diesel	0.04	2.70	0.27	0.06	0.01	0.01
Fork Lift > 50-120	LPG	0.68	28.91	3.03	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.69	30.42	3.05	0.00	0.06	0.06
Note: Emission factors were estimated with the use of ARB CHE calculator.							

**Table C1.2-NP-19. Annual Tenant CHE Emissions - No Project Alternative**

Cargo Handling Equipment	Fuel	Annual Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2013</b>							
Container Handling Equipment > 175 - 210	Diesel	0.08	0.79	1.97	0.01	0.08	0.08
Fork Lift > 50-120	Diesel	0.11	0.75	1.52	0.00	0.05	0.05
Fork Lift > 120-175	Diesel	0.05	1.10	1.13	0.00	0.05	0.04
Fork Lift > 175-250	Diesel	0.03	0.52	0.59	0.00	0.01	0.01
Loader > 50-120	Diesel	0.01	0.22	0.20	0.00	0.01	0.01
Loader > 175-210	Diesel	0.01	0.13	0.32	0.00	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.10	0.25	0.00	0.01	0.01
Power Pack > 200	Diesel	0.01	0.32	0.28	0.00	0.02	0.02
Side Pick > 120-175	Diesel	0.02	0.44	0.38	0.00	0.02	0.02
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.03	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.02	0.48	0.43	0.00	0.03	0.02
Tractor/ Loader/Backhoe > 120-175	Diesel	0.06	1.76	1.50	0.00	0.08	0.07
Yard tractor > 210-400	Diesel	0.07	0.78	3.16	0.05	0.10	0.09
Yard Truck > 120-175	Diesel	0.04	0.35	0.86	0.00	0.04	0.04
Yard Truck > 175-210	Diesel	0.40	3.35	8.23	0.02	0.41	0.37
Yard Truck > 210-400	Diesel	0.01	0.21	0.17	0.00	0.01	0.01
Fork Lift > 50-120	LPG	7.42	254.06	31.04	0.04	0.54	0.50
Top Handler > 50-120	LPG	0.04	1.33	0.15	0.00	0.00	0.00
<b>Year 2014</b>							
Container Handling Equipment > 175 - 210	Diesel	0.08	0.80	1.99	0.01	0.08	0.08
Fork Lift > 50-120	Diesel	0.10	0.75	1.42	0.00	0.05	0.05
Fork Lift > 120-175	Diesel	0.05	1.11	1.14	0.00	0.05	0.04
Fork Lift > 175-250	Diesel	0.03	0.53	0.59	0.00	0.01	0.01
Loader > 50-120	Diesel	0.01	0.23	0.20	0.00	0.01	0.01
Loader > 175-210	Diesel	0.01	0.13	0.32	0.00	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.10	0.25	0.00	0.01	0.01
Power Pack > 200	Diesel	0.01	0.32	0.28	0.00	0.02	0.02
Side Pick > 120-175	Diesel	0.02	0.44	0.38	0.00	0.02	0.02
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.03	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.02	0.49	0.44	0.00	0.03	0.02
Tractor/ Loader/Backhoe > 120-175	Diesel	0.06	1.77	1.52	0.00	0.08	0.07
Yard tractor > 210-400	Diesel	0.07	0.78	3.18	0.05	0.10	0.09
Yard Truck > 120-175	Diesel	0.04	0.36	0.88	0.00	0.05	0.04
Yard Truck > 175-210	Diesel	0.42	3.44	8.42	0.02	0.43	0.40
Yard Truck > 210-400	Diesel	0.01	0.21	0.18	0.00	0.01	0.01
Fork Lift > 50-120	LPG	7.54	254.05	34.17	0.03	0.54	0.50
Top Handler > 50-120	LPG	0.04	1.33	0.15	0.00	0.00	0.00
<b>Year 2015</b>							
Container Handling Equipment > 175 - 210	Diesel	0.09	0.81	2.01	0.01	0.09	0.08
Fork Lift > 50-120	Diesel	0.08	0.75	1.33	0.00	0.05	0.05
Fork Lift > 120-175	Diesel	0.05	1.12	1.15	0.00	0.05	0.05
Fork Lift > 175-250	Diesel	0.03	0.54	0.60	0.00	0.01	0.01
Loader > 50-120	Diesel	0.01	0.23	0.20	0.00	0.01	0.01
Loader > 175-210	Diesel	0.01	0.13	0.32	0.00	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.10	0.26	0.00	0.01	0.01
Power Pack > 200	Diesel	0.01	0.32	0.29	0.00	0.02	0.02
Side Pick > 120-175	Diesel	0.02	0.45	0.38	0.00	0.02	0.02
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.03	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.02	0.49	0.44	0.00	0.03	0.03
Tractor/ Loader/Backhoe > 120-175	Diesel	0.06	1.79	1.53	0.00	0.08	0.07
Yard tractor > 210-400	Diesel	0.07	0.79	3.19	0.05	0.10	0.09
Yard Truck > 120-175	Diesel	0.04	0.37	0.90	0.00	0.05	0.04
Yard Truck > 175-210	Diesel	0.43	3.53	8.60	0.02	0.45	0.42
Yard Truck > 210-400	Diesel	0.01	0.21	0.18	0.00	0.01	0.01



Fork Lift > 50-120	LPG	0.66	254.16	33.33	0.03	0.54	0.50
Top Handler > 50-120	LPG	0.00	1.33	0.14	0.00	0.00	0.00
<b>Year 2016</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.10	0.90	2.23	0.01	0.10	0.09
Fork Lift > 50-120	Diesel	0.10	0.90	1.57	0.00	0.06	0.06
Fork Lift > 120-175	Diesel	0.05	1.32	1.13	0.00	0.06	0.05
Fork Lift > 175-250	Diesel	0.03	0.43	0.59	0.00	0.00	0.00
Loader > 50-120	Diesel	0.01	0.25	0.23	0.00	0.01	0.01
Loader > 175-210	Diesel	0.02	0.15	0.36	0.00	0.02	0.02
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.12	0.29	0.00	0.01	0.01
Power Pack > 200	Diesel	0.01	0.36	0.32	0.00	0.02	0.02
Side Pick > 120-175	Diesel	0.02	0.50	0.42	0.00	0.02	0.02
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.03	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.02	0.55	0.49	0.00	0.03	0.03
Tractor/ Loader/Backhoe > 120-175	Diesel	0.07	1.99	1.70	0.00	0.09	0.08
Yard tractor > 210-400	Diesel	0.06	0.88	1.62	0.06	0.06	0.05
Yard Truck > 120-175	Diesel	0.00	0.20	0.02	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.27	3.44	4.12	0.02	0.21	0.19
Yard Truck > 210-400	Diesel	0.02	0.33	0.09	0.00	0.00	0.00
Fork Lift > 50-120	LPG	7.24	279.56	31.09	0.03	0.59	0.55
Top Handler > 50-120	LPG	0.04	1.47	0.15	0.00	0.00	0.00
<b>Year 2023</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.11	0.98	2.40	0.01	0.12	0.11
Fork Lift > 50-120	Diesel	0.08	0.92	1.07	0.00	0.05	0.05
Fork Lift > 120-175	Diesel	0.05	1.39	1.18	0.00	0.07	0.06
Fork Lift > 175-250	Diesel	0.04	0.46	0.63	0.00	0.00	0.00
Loader > 50-120	Diesel	0.01	0.27	0.24	0.00	0.02	0.02
Loader > 175-210	Diesel	0.02	0.16	0.39	0.00	0.02	0.02
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.13	0.31	0.00	0.02	0.01
Power Pack > 200	Diesel	0.01	0.38	0.33	0.00	0.02	0.02
Side Pick > 120-175	Diesel	0.02	0.52	0.44	0.00	0.03	0.02
Sweeper/Scrubber > 50-120	Diesel	0.00	0.04	0.03	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.02	0.58	0.51	0.00	0.04	0.03
Tractor/ Loader/Backhoe > 120-175	Diesel	0.08	2.12	1.79	0.00	0.11	0.10
Yard tractor > 210-400	Diesel	0.04	0.86	0.38	0.06	0.01	0.01
Yard Truck > 120-175	Diesel	0.00	0.23	0.02	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.21	3.78	1.02	0.02	0.04	0.04
Yard Truck > 210-400	Diesel	0.02	0.40	0.11	0.00	0.00	0.00
Fork Lift > 50-120	LPG	6.99	279.75	30.00	0.03	0.59	0.55
Top Handler > 50-120	LPG	0.03	1.47	0.15	0.00	0.00	0.00
<b>Year 2035</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.05	0.90	0.25	0.01	0.01	0.01
Fork Lift > 50-120	Diesel	0.04	0.87	0.35	0.00	0.00	0.00
Fork Lift > 120-175	Diesel	0.02	1.30	0.12	0.00	0.00	0.00
Fork Lift > 175-250	Diesel	0.02	0.42	0.12	0.00	0.00	0.00
Loader > 50-120	Diesel	0.00	0.14	0.06	0.00	0.00	0.00
Loader > 175-210	Diesel	0.00	0.08	0.02	0.00	0.00	0.00
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.12	0.03	0.00	0.00	0.00
Power Pack > 200	Diesel	0.01	0.35	0.15	0.00	0.00	0.00
Side Pick > 120-175	Diesel	0.01	0.50	0.05	0.00	0.00	0.00
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.01	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.01	0.55	0.23	0.00	0.00	0.00
Tractor/ Loader/Backhoe > 120-175	Diesel	0.04	2.02	0.19	0.00	0.01	0.01
Yard tractor > 210-400	Diesel	0.03	0.82	0.38	0.06	0.01	0.01
Yard Truck > 120-175	Diesel	0.00	0.21	0.02	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.16	3.21	0.89	0.02	0.03	0.03
Yard Truck > 210-400	Diesel	0.02	0.34	0.09	0.00	0.00	0.00
Fork Lift > 50-120	LPG	6.99	279.59	29.98	0.03	0.59	0.55
Top Handler > 50-120	LPG	0.03	1.47	0.15	0.00	0.00	0.00

<b>Year 2046</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.06	1.02	0.28	0.01	0.01	0.01
Fork Lift > 50-120	Diesel	0.04	0.82	0.27	0.00	0.00	0.00
Fork Lift > 120-175	Diesel	0.03	1.33	0.22	0.00	0.01	0.01
Fork Lift > 175-250	Diesel	0.02	0.65	0.12	0.00	0.00	0.00
Loader > 50-120	Diesel	0.00	0.13	0.06	0.00	0.00	0.00
Loader > 175-210	Diesel	0.00	0.07	0.02	0.00	0.00	0.00
Other, General Industrial Equipment > 175-250	Diesel	0.01	0.11	0.03	0.00	0.00	0.00
Power Pack > 200	Diesel	0.01	0.38	0.16	0.00	0.00	0.00
Side Pick > 120-175	Diesel	0.01	0.46	0.04	0.00	0.00	0.00
Sweeper/Scrubber > 50-120	Diesel	0.00	0.03	0.01	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.01	0.58	0.25	0.00	0.00	0.00
Tractor/ Loader/Backhoe > 120-175	Diesel	0.03	1.91	0.18	0.00	0.01	0.01
Yard tractor > 210-400	Diesel	0.07	1.25	0.34	0.01	0.01	0.01
Yard Truck > 120-175	Diesel	0.02	0.36	0.10	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	0.22	3.87	1.04	0.02	0.04	0.04
Yard Truck > 210-400	Diesel	0.00	0.21	0.02	0.00	0.00	0.00
Fork Lift > 50-120	LPG	5.96	279.52	29.97	0.03	0.59	0.55
Top Handler > 50-120	LPG	0.03	1.47	0.15	0.00	0.00	0.00

**Table C1.2-NP-20. Peak Daily Tenant CHE Emissions - No Project Alternative**

Equipment	Fuel	Peak Daily Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
<b>Year 2013</b>							
Container Handling Equipment > 175 - 210	Diesel	0.58	5.64	14.11	0.04	0.59	0.54
Fork Lift > 50-120	Diesel	0.92	5.68	12.35	0.02	0.43	0.39
Fork Lift > 120-175	Diesel	0.34	7.89	8.10	0.02	0.34	0.32
Fork Lift > 175-250	Diesel	0.20	3.77	4.20	0.02	0.10	0.09
Loader > 50-120	Diesel	0.06	1.93	1.72	0.00	0.11	0.10
Loader > 175-210	Diesel	0.12	1.09	2.72	0.01	0.12	0.11
Other, General Industrial Equipment > 175-250	Diesel	0.08	0.72	1.80	0.00	0.08	0.07
Power Pack > 200	Diesel	0.08	2.73	2.44	0.01	0.15	0.14
Side Pick > 120-175	Diesel	0.13	3.79	3.24	0.01	0.17	0.16
Sweeper/Scrubber > 50-120	Diesel	0.01	0.21	0.19	0.00	0.01	0.01
Top Handler > 50-120	Diesel	0.11	3.27	2.92	0.01	0.18	0.16
Tractor/ Loader/Backhoe > 120-175	Diesel	0.44	12.61	10.79	0.03	0.55	0.51
Yard tractor > 210-400	Diesel	0.56	6.70	27.24	0.47	0.83	0.76
Yard Truck > 120-175	Diesel	0.28	2.52	6.17	0.01	0.31	0.28
Yard Truck > 175-210	Diesel	2.72	22.70	55.75	0.13	2.76	2.54
Yard Truck > 210-400	Diesel	0.05	1.48	1.25	0.00	0.07	0.07
Fork Lift > 50-120	LPG	52.29	1795.31	218.67	0.31	3.81	3.50
Top Handler > 50-120	LPG	0.24	9.01	1.03	0.00	0.02	0.02
<b>Year 2014</b>							
Container Handling Equipment > 175 - 210	Diesel	0.60	5.72	14.27	0.04	0.61	0.56
Fork Lift > 50-120	Diesel	0.81	5.64	11.51	0.02	0.40	0.37
Fork Lift > 120-175	Diesel	0.34	7.96	8.16	0.02	0.35	0.32
Fork Lift > 175-250	Diesel	0.20	3.80	4.24	0.02	0.10	0.09
Loader > 50-120	Diesel	0.06	1.95	1.74	0.00	0.11	0.10
Loader > 175-210	Diesel	0.12	1.11	2.75	0.01	0.12	0.11
Other, General Industrial Equipment > 175-250	Diesel	0.08	0.73	1.82	0.00	0.08	0.07
Power Pack > 200	Diesel	0.09	2.75	2.45	0.01	0.15	0.14
Side Pick > 120-175	Diesel	0.13	3.82	3.26	0.01	0.17	0.16
Sweeper/Scrubber > 50-120	Diesel	0.01	0.21	0.19	0.00	0.01	0.01
Top Handler > 50-120	Diesel	0.11	3.30	2.95	0.01	0.18	0.17
Tractor/ Loader/Backhoe > 120-175	Diesel	0.45	12.73	10.88	0.03	0.57	0.52
Yard tractor > 210-400	Diesel	0.57	6.75	27.35	0.47	0.84	0.77
Yard Truck > 120-175	Diesel	0.29	2.58	6.31	0.01	0.33	0.30
Yard Truck > 175-210	Diesel	2.83	23.29	56.99	0.13	2.91	2.68
Yard Truck > 210-400	Diesel	0.06	1.51	1.27	0.00	0.08	0.07
Fork Lift > 50-120	LPG	53.02	1795.25	239.57	0.29	3.81	3.50
Top Handler > 50-120	LPG	0.25	9.01	0.99	0.00	0.02	0.02
<b>Year 2015</b>							
Container Handling Equipment > 175 - 210	Diesel	0.61	5.79	14.42	0.04	0.62	0.57
Fork Lift > 50-120	Diesel	0.65	5.60	10.69	0.02	0.38	0.35
Fork Lift > 120-175	Diesel	0.35	8.02	8.22	0.02	0.36	0.33
Fork Lift > 175-250	Diesel	0.20	3.84	4.28	0.02	0.10	0.10
Loader > 50-120	Diesel	0.06	1.97	1.75	0.00	0.11	0.10
Loader > 175-210	Diesel	0.12	1.12	2.78	0.01	0.13	0.12
Other, General Industrial Equipment > 175-250	Diesel	0.08	0.74	1.84	0.00	0.08	0.08
Power Pack > 200	Diesel	0.09	2.77	2.47	0.01	0.16	0.14
Side Pick > 120-175	Diesel	0.14	3.85	3.29	0.01	0.18	0.16
Sweeper/Scrubber > 50-120	Diesel	0.01	0.21	0.19	0.00	0.01	0.01
Top Handler > 50-120	Diesel	0.11	3.33	2.97	0.01	0.19	0.17
Tractor/ Loader/Backhoe > 120-175	Diesel	0.45	12.85	10.97	0.03	0.58	0.54
Yard tractor > 210-400	Diesel	0.58	6.80	27.46	0.47	0.85	0.78
Yard Truck > 120-175	Diesel	0.31	2.65	6.44	0.01	0.34	0.31
Yard Truck > 175-210	Diesel	2.94	23.88	58.24	0.13	3.06	2.81
Yard Truck > 210-400	Diesel	0.06	1.53	1.29	0.00	0.08	0.07

Fork Lift > 50-120	LPG	4.63	1796.00	233.61	0.28	3.81	3.50
Top Handler > 50-120	LPG	0.02	9.02	0.96	0.00	0.02	0.02
<b>Year 2016</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.69	6.45	16.04	0.04	0.71	0.65
Fork Lift > 50-120	Diesel	0.83	6.75	12.39	0.02	0.46	0.43
Fork Lift > 120-175	Diesel	0.33	9.49	8.10	0.02	0.43	0.39
Fork Lift > 175-250	Diesel	0.22	3.06	4.25	0.02	0.03	0.03
Loader > 50-120	Diesel	0.07	2.18	1.94	0.00	0.13	0.12
Loader > 175-210	Diesel	0.14	1.25	3.10	0.01	0.14	0.13
Other, General Industrial Equipment > 175-250	Diesel	0.09	0.83	2.05	0.01	0.09	0.09
Power Pack > 200	Diesel	0.10	3.07	2.73	0.01	0.17	0.16
Side Pick > 120-175	Diesel	0.15	4.27	3.64	0.01	0.20	0.18
Sweeper/Scrubber > 50-120	Diesel	0.01	0.24	0.21	0.00	0.01	0.01
Top Handler > 50-120	Diesel	0.12	3.69	3.29	0.01	0.21	0.19
Tractor/ Loader/Backhoe > 120-175	Diesel	0.51	14.27	12.17	0.03	0.65	0.60
Yard tractor > 210-400	Diesel	0.51	7.54	13.99	0.52	0.51	0.47
Yard Truck > 120-175	Diesel	0.02	1.46	0.14	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	1.82	23.27	27.86	0.14	1.40	1.29
Yard Truck > 210-400	Diesel	0.12	2.34	0.65	0.02	0.02	0.02
Fork Lift > 50-120	LPG	50.98	1975.49	219.08	0.30	4.19	3.85
Top Handler > 50-120	LPG	0.24	9.92	1.03	0.00	0.02	0.02
<b>Year 2023</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.78	7.02	17.24	0.04	0.85	0.78
Fork Lift > 50-120	Diesel	0.65	6.79	8.04	0.02	0.37	0.34
Fork Lift > 120-175	Diesel	0.36	9.99	8.48	0.02	0.48	0.45
Fork Lift > 175-250	Diesel	0.25	3.31	4.54	0.02	0.03	0.03
Loader > 50-120	Diesel	0.08	2.32	2.05	0.00	0.15	0.14
Loader > 175-210	Diesel	0.16	1.37	3.35	0.01	0.17	0.16
Other, General Industrial Equipment > 175-250	Diesel	0.10	0.91	2.22	0.01	0.11	0.10
Power Pack > 200	Diesel	0.10	3.23	2.86	0.01	0.20	0.18
Side Pick > 120-175	Diesel	0.17	4.52	3.83	0.01	0.23	0.21
Sweeper/Scrubber > 50-120	Diesel	0.01	0.25	0.23	0.00	0.02	0.01
Top Handler > 50-120	Diesel	0.13	3.91	3.46	0.01	0.24	0.22
Tractor/ Loader/Backhoe > 120-175	Diesel	0.56	15.20	12.86	0.03	0.76	0.70
Yard tractor > 210-400	Diesel	0.31	7.42	3.32	0.52	0.08	0.08
Yard Truck > 120-175	Diesel	0.03	1.66	0.15	0.00	0.01	0.01
Yard Truck > 175-210	Diesel	1.45	25.62	6.91	0.14	0.29	0.27
Yard Truck > 210-400	Diesel	0.16	2.84	0.76	0.02	0.03	0.03
Fork Lift > 50-120	LPG	49.27	1976.80	211.42	0.29	4.19	3.85
Top Handler > 50-120	LPG	0.23	9.92	1.00	0.00	0.02	0.02
<b>Year 2035</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.34	6.45	1.77	0.04	0.06	0.06
Fork Lift > 50-120	Diesel	0.36	6.46	2.56	0.02	0.04	0.04
Fork Lift > 120-175	Diesel	0.16	9.34	0.88	0.02	0.03	0.03
Fork Lift > 175-250	Diesel	0.15	2.99	0.83	0.02	0.03	0.03
Loader > 50-120	Diesel	0.03	1.21	0.52	0.00	0.00	0.00
Loader > 175-210	Diesel	0.04	0.70	0.19	0.00	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.05	0.85	0.23	0.01	0.01	0.01
Power Pack > 200	Diesel	0.07	3.02	1.30	0.01	0.01	0.01
Side Pick > 120-175	Diesel	0.08	4.27	0.40	0.01	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.01	0.24	0.10	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.08	3.69	1.59	0.01	0.01	0.01
Tractor/ Loader/Backhoe > 120-175	Diesel	0.26	14.53	1.36	0.03	0.05	0.05
Yard tractor > 210-400	Diesel	0.28	7.07	3.23	0.52	0.08	0.07
Yard Truck > 120-175	Diesel	0.03	1.49	0.14	0.00	0.00	0.00
Yard Truck > 175-210	Diesel	1.12	21.74	6.00	0.14	0.20	0.20
Yard Truck > 210-400	Diesel	0.12	2.41	0.67	0.02	0.02	0.02
Fork Lift > 50-120	LPG	49.21	1975.70	211.26	0.29	4.19	3.85
Top Handler > 50-120	LPG	0.23	9.92	0.99	0.00	0.02	0.02

<b>Year 2046</b>		<b>VOC</b>	<b>CO</b>	<b>NOx</b>	<b>SOx</b>	<b>PM10</b>	<b>PM2.5</b>
Container Handling Equipment > 175 - 210	Diesel	0.42	7.34	1.98	0.04	0.08	0.08
Fork Lift > 50-120	Diesel	0.34	6.09	1.96	0.02	0.03	0.03
Fork Lift > 120-175	Diesel	0.22	9.51	1.60	0.02	0.04	0.04
Fork Lift > 175-250	Diesel	0.17	4.63	0.84	0.02	0.03	0.03
Loader > 50-120	Diesel	0.03	1.15	0.49	0.00	0.00	0.00
Loader > 175-210	Diesel	0.03	0.65	0.18	0.00	0.01	0.01
Other, General Industrial Equipment > 175-250	Diesel	0.04	0.78	0.22	0.01	0.01	0.01
Power Pack > 200	Diesel	0.08	3.28	1.40	0.01	0.01	0.01
Side Pick > 120-175	Diesel	0.07	3.99	0.38	0.01	0.01	0.01
Sweeper/Scrubber > 50-120	Diesel	0.00	0.23	0.10	0.00	0.00	0.00
Top Handler > 50-120	Diesel	0.09	3.91	1.67	0.01	0.01	0.01
Tractor/ Loader/Backhoe > 120-175	Diesel	0.24	13.74	1.30	0.03	0.04	0.04
Yard tractor > 210-400	Diesel	0.57	10.75	2.94	0.07	0.11	0.07
Yard Truck > 120-175	Diesel	0.14	2.55	0.70	0.02	0.03	0.02
Yard Truck > 175-210	Diesel	1.51	26.22	7.05	0.14	0.30	0.30
Yard Truck > 210-400	Diesel	0.03	1.54	0.14	0.00	0.01	0.00
Fork Lift > 50-120	LPG	42.28	1975.24	211.19	0.29	4.19	3.85
Top Handler > 50-120	LPG	0.19	9.92	0.99	0.00	0.02	0.02

**Table C1.2-NP-21. Summary of Annual Tenant CHE Emissions - No Project Alternative**

Project Study Year	Annual Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2013	8.36	266.72	52.20	0.13	1.48	1.36
Year 2014	8.50	266.87	55.52	0.13	1.51	1.38
Year 2015	1.59	267.14	54.86	0.13	1.54	1.40
Year 2016	8.05	293.35	46.44	0.14	1.30	1.20
Year 2023	7.75	294.27	40.94	0.13	1.14	1.05
Year 2035	7.45	292.91	33.09	0.14	0.68	0.62
Year 2046	6.53	294.18	33.26	0.09	0.70	0.64

**Table C1.2-NP-22. Summary of Peak Daily Tenant CHE Emissions - No Project Alternative**

Project Study Year	Daily Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Year 2013	59.20	1887.05	374.69	1.09	10.62	9.77
Year 2014	60.00	1888.10	396.70	1.07	10.84	9.91
Year 2015	11.39	1889.98	391.88	1.06	11.06	10.06
Year 2016	56.94	2075.57	332.65	1.16	9.39	8.64
Year 2023	54.81	2081.79	292.04	1.02	8.22	7.56
Year 2035	52.61	2072.10	234.03	1.14	4.78	4.41
Year 2046	46.45	2081.52	235.13	0.71	4.93	4.53

**Table C1.2-NP-23. Activity Data for Tenant Switcher Locomotives - No Project Alternative**

<b>Project Scenario</b>	<b>Number of Trips</b>	<b>Idling Time per Trip (hr)</b>	<b>On-Site Distance per Trip (mi)</b>	<b>Duration of On-Site Movement per Trip (hr)</b>
Years 2013, 2014, 2015	520	0.08	2.00	0.40
Years 2016, 2023, 2035, 2046	572	0.08	2.00	0.40
Note: (1) Assume switcher locomotive movement at notch setting of one and speed of 5mph.				



**Table C1.2-NP-24. Emission Factors for Tenant Switcher Locomotives -No Project Alternative**

Project Year - Notch Setting	Emission Factors (g/hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Idle	93.06	181.00	987.00	24.73	31.00	28.52
Movement	87.65	182.88	1239.84	39.00	23.00	21.16

Note:  
(1) Assume switcher locomotive movement at notch setting of one and speed of 5mph.

**Table C1.2-NP-25. Annual Emissions for Tenant Switcher Locomotives - No Project Alternative**

Project Year - Notch Setting	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Years 2013, 2014, 2015</b>						
Idle	0.00	0.01	0.05	0.00	0.00	0.00
Movement	0.02	0.04	0.28	0.01	0.01	0.00
<b>Years 2013, 2014, 2015</b>	<b>0.02</b>	<b>0.05</b>	<b>0.33</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>
<b>Years 2016, 2023, 2035, 2046</b>						
Idle	0.00	0.01	0.05	0.00	0.00	0.00
Movement	0.02	0.05	0.31	0.01	0.01	0.01
<b>Years 2016, 2023, 2035, 2046</b>	<b>0.03</b>	<b>0.06</b>	<b>0.36</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>

**Table C1.2-NP-26. Peak Daily Emissions for Tenant Switcher Locomotives - No Project Alternative**

Project Year - Notch Setting	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
<b>Years 2013, 2014, 2015</b>						
Idle	0.03	0.06	0.32	0.01	0.01	0.01
Movement	0.14	0.29	1.95	0.06	0.04	0.03
<b>Years 2013, 2014, 2015</b>	<b>0.17</b>	<b>0.35</b>	<b>2.28</b>	<b>0.07</b>	<b>0.05</b>	<b>0.04</b>
<b>Years 2016, 2023, 2035, 2046</b>						
Idle	0.03	0.07	0.36	0.01	0.01	0.01
Movement	0.15	0.32	2.15	0.07	0.04	0.04
<b>Years 2016, 2023, 2035, 2046</b>	<b>0.19</b>	<b>0.38</b>	<b>2.50</b>	<b>0.08</b>	<b>0.05</b>	<b>0.05</b>

**Table C1.2-NP-27. Annual Tenant Operation Emissions - No Project Alternative**

Year	Emission Source	Annual Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Tenant Trucks On-Site	3.93	11.28	27.36	0.03	5.94	1.08
	Tenant Trucks Off-Site	4.20	17.74	56.75	0.12	7.64	1.52
	Tenant Employee Commute On-Site	0.03	0.42	0.03	0.00	0.25	0.03
	Tenant Employee Commute Off-Site	0.95	28.74	2.55	0.06	16.72	1.43
	Tenant CHE	8.36	266.72	52.20	0.13	1.48	1.36
	Tenant Switcher Locomotive	0.02	0.05	0.33	0.01	0.01	0.01
	<b>TOTAL 2013</b>	<b>17.50</b>	<b>324.95</b>	<b>139.23</b>	<b>0.36</b>	<b>32.05</b>	<b>5.43</b>
2014	Tenant Trucks On-Site	3.72	10.96	25.95	0.03	5.75	0.91
	Tenant Trucks Off-Site	4.35	17.70	53.96	0.13	7.37	1.15
	Tenant Employee Commute On-Site	0.03	0.38	0.03	0.00	0.25	0.03
	Tenant Employee Commute Off-Site	0.85	26.08	2.26	0.06	16.33	1.41
	Tenant CHE	8.50	266.87	55.52	0.13	1.51	1.38
	Tenant Switcher Locomotive	0.02	0.05	0.33	0.01	0.01	0.01
	<b>TOTAL 2014</b>	<b>17.48</b>	<b>322.04</b>	<b>138.06</b>	<b>0.36</b>	<b>31.23</b>	<b>4.88</b>
2015	Tenant Trucks On-Site	3.53	10.65	26.24	0.03	5.75	0.90
	Tenant Trucks Off-Site	4.22	17.04	52.53	0.13	7.39	1.17
	Tenant Employee Commute On-Site	0.02	0.35	0.03	0.00	0.25	0.03
	Tenant Employee Commute Off-Site	0.75	23.88	2.04	0.06	16.34	1.41
	Tenant CHE	1.59	267.14	54.86	0.13	1.54	1.40
	Tenant Switcher Locomotive	0.02	0.05	0.33	0.01	0.01	0.01
	<b>TOTAL 2015</b>	<b>10.14</b>	<b>319.11</b>	<b>136.04</b>	<b>0.36</b>	<b>31.28</b>	<b>4.93</b>
2016	Trucks to Hobart Yard	22.72	105.22	300.10	0.86	53.91	9.32
	Linehaul Locomotives from Hobart Yard	8.16	24.32	279.17	0.29	5.77	5.31
	Tenant Trucks On-Site	3.70	11.42	27.72	0.03	6.32	0.99
	Tenant Trucks Off-Site	4.50	18.10	53.90	0.14	8.15	1.31
	Tenant Employee Commute On-Site	0.02	0.35	0.03	0.00	0.28	0.03
	Tenant Employee Commute Off-Site	0.74	24.25	2.05	0.07	18.04	1.62
	Tenant CHE	8.05	293.35	46.44	0.14	1.30	1.20
	Tenant Switcher Locomotive	0.03	0.06	0.36	0.01	0.01	0.01
	<b>TOTAL 2016</b>	<b>47.92</b>	<b>477.08</b>	<b>709.76</b>	<b>1.54</b>	<b>93.79</b>	<b>19.79</b>
2023	Trucks to Hobart Yard	23.04	101.92	233.42	1.20	73.92	12.69
	Linehaul Locomotives from Hobart Yard	7.15	34.04	267.53	0.38	3.76	3.46
	Tenant Trucks On-Site	2.65	9.58	16.20	0.03	6.29	0.96
	Tenant Trucks Off-Site	2.99	11.77	22.27	0.14	8.63	1.34
	Tenant Employee Commute On-Site	0.01	0.21	0.02	0.00	0.28	0.03
	Tenant Employee Commute Off-Site	0.40	14.71	1.15	0.06	18.04	1.62
	Tenant CHE	7.75	294.27	40.94	0.13	1.14	1.05
	Tenant Switcher Locomotive	0.03	0.06	0.36	0.01	0.01	0.01
	<b>TOTAL 2023</b>	<b>44.01</b>	<b>466.55</b>	<b>581.89</b>	<b>1.96</b>	<b>112.06</b>	<b>21.15</b>
2035	Trucks to Hobart Yard	22.24	99.47	235.32	1.19	73.88	12.67
	Linehaul Locomotives from Hobart Yard	2.83	23.17	113.27	0.38	1.57	1.44
	Tenant Trucks On-Site	2.38	9.11	17.38	0.03	6.26	0.94
	Tenant Trucks Off-Site	2.64	10.43	22.10	0.14	8.14	1.30
	Tenant Employee Commute On-Site	0.01	0.13	0.01	0.00	0.28	0.03
	Tenant Employee Commute Off-Site	0.22	9.44	0.67	0.06	18.04	1.62
	Tenant CHE	7.45	292.91	33.09	0.14	0.68	0.62
	Tenant Switcher Locomotive	0.03	0.06	0.36	0.01	0.01	0.01
	<b>TOTAL 2035</b>	<b>37.81</b>	<b>444.70</b>	<b>422.20</b>	<b>1.96</b>	<b>108.85</b>	<b>18.63</b>
2046	Trucks to Hobart Yard	22.22	98.54	234.48	1.20	73.71	12.51
	Linehaul Locomotives from Hobart Yard	1.86	21.54	69.29	0.38	0.93	0.86
	Tenant Trucks On-Site	2.37	9.08	17.43	0.03	6.26	0.94
	Tenant Trucks Off-Site	2.65	10.29	22.02	0.14	8.12	1.28
	Tenant Employee Commute On-Site	0.01	0.12	0.01	0.00	0.28	0.03
	Tenant Employee Commute Off-Site	0.20	8.76	0.61	0.07	18.05	1.63
	Tenant CHE	6.53	294.18	33.26	0.09	0.70	0.64
	Tenant Switcher Locomotive	0.03	0.06	0.36	0.01	0.01	0.01
	<b>TOTAL 2046</b>	<b>35.87</b>	<b>442.56</b>	<b>377.45</b>	<b>1.92</b>	<b>108.05</b>	<b>17.89</b>

**Table C1.2-NP-28. Peak Daily Tenant Operation Emissions - No Project Alternative**

Year	Emission Source	Peak Daily Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
2013	Tenant Trucks On-Site	28.29	82.18	200.79	0.19	43.42	7.83
	Tenant Trucks Off-Site	30.10	127.08	407.48	0.90	55.14	10.91
	Tenant Employee Commute On-Site	0.22	3.05	0.24	0.01	1.81	0.18
	Tenant Employee Commute Off-Site	6.90	207.61	18.41	0.43	120.63	10.37
	Tenant CHE	59.20	1887.05	374.69	1.09	10.62	9.77
	Tenant Switcher Locomotive	0.17	0.35	2.28	0.07	0.05	0.04
	<b>TOTAL 2013</b>	<b>124.89</b>	<b>2307.32</b>	<b>1003.87</b>	<b>2.69</b>	<b>231.68</b>	<b>39.10</b>
2014	Tenant Trucks On-Site	26.94	80.06	191.17	0.19	42.11	6.62
	Tenant Trucks Off-Site	31.31	127.22	389.23	0.93	53.41	8.36
	Tenant Employee Commute On-Site	0.20	2.76	0.22	0.01	1.81	0.18
	Tenant Employee Commute Off-Site	6.11	188.09	16.29	0.43	117.63	10.21
	Tenant CHE	60.00	1888.10	396.70	1.07	10.84	9.91
	Tenant Switcher Locomotive	0.17	0.35	2.28	0.07	0.05	0.04
	<b>TOTAL 2014</b>	<b>124.73</b>	<b>2286.58</b>	<b>995.89</b>	<b>2.70</b>	<b>225.85</b>	<b>35.33</b>
2015	Tenant Trucks On-Site	25.63	77.99	193.34	0.19	42.10	6.61
	Tenant Trucks Off-Site	30.41	122.79	379.54	0.93	53.58	8.51
	Tenant Employee Commute On-Site	0.18	2.52	0.20	0.01	1.81	0.18
	Tenant Employee Commute Off-Site	5.40	172.25	14.70	0.43	117.66	10.24
	Tenant CHE	11.39	1889.98	391.88	1.06	11.06	10.06
	Tenant Switcher Locomotive	0.17	0.35	2.28	0.07	0.05	0.04
	<b>TOTAL 2015</b>	<b>73.19</b>	<b>2265.88</b>	<b>981.94</b>	<b>2.69</b>	<b>226.25</b>	<b>35.64</b>
2016	Trucks to Hobart Yard	141.31	654.47	1866.63	5.35	335.33	57.98
	Linehaul Locomotives from Hobart Yard	107.29	277.96	2562.08	1.59	44.93	41.33
	Tenant Trucks On-Site	26.98	83.85	204.77	0.21	46.28	7.24
	Tenant Trucks Off-Site	32.55	130.79	390.49	1.03	59.09	9.50
	Tenant Employee Commute On-Site	0.17	2.54	0.20	0.01	1.99	0.20
	Tenant Employee Commute Off-Site	5.31	174.85	14.75	0.47	129.95	11.75
	Tenant CHE	56.94	2075.57	332.65	1.16	9.39	8.64
	Tenant Switcher Locomotive	0.19	0.38	2.50	0.08	0.05	0.05
	<b>TOTAL 2016</b>	<b>370.74</b>	<b>3400.42</b>	<b>5374.07</b>	<b>9.88</b>	<b>627.01</b>	<b>136.70</b>
2023	Trucks to Hobart Yard	143.29	633.92	1451.88	7.46	459.75	78.92
	Linehaul Locomotives from Hobart Yard	143.06	370.62	3416.10	2.12	59.90	55.11
	Tenant Trucks On-Site	19.45	70.61	122.92	0.21	46.05	7.04
	Tenant Trucks Off-Site	21.68	85.42	163.96	1.04	62.49	9.74
	Tenant Employee Commute On-Site	0.10	1.51	0.11	0.01	2.00	0.21
	Tenant Employee Commute Off-Site	2.85	106.08	8.30	0.47	129.97	11.77
	Tenant CHE	54.81	2081.79	292.04	1.02	8.22	7.56
	Tenant Switcher Locomotive	0.19	0.38	2.50	0.08	0.05	0.05
	<b>TOTAL 2023</b>	<b>385.43</b>	<b>3350.33</b>	<b>5457.82</b>	<b>12.40</b>	<b>768.44</b>	<b>170.39</b>
2035	Trucks to Hobart Yard	138.36	618.71	1463.66	7.43	459.52	78.80
	Linehaul Locomotives from Hobart Yard	89.41	370.62	2859.28	2.12	37.44	34.44
	Tenant Trucks On-Site	17.61	67.36	131.24	0.21	45.87	6.87
	Tenant Trucks Off-Site	19.25	75.96	162.90	1.03	58.99	9.41
	Tenant Employee Commute On-Site	0.06	0.95	0.07	0.01	2.00	0.21
	Tenant Employee Commute Off-Site	1.61	68.05	4.82	0.47	129.97	11.77
	Tenant CHE	52.61	2072.10	234.03	1.14	4.78	4.41
	Tenant Switcher Locomotive	0.19	0.38	2.50	0.08	0.05	0.05
	<b>TOTAL 2035</b>	<b>319.09</b>	<b>3274.13</b>	<b>4858.50</b>	<b>12.48</b>	<b>738.61</b>	<b>145.95</b>
2046	Trucks to Hobart Yard	138.18	612.93	1458.45	7.45	458.48	77.84
	Linehaul Locomotives from Hobart Yard	94.54	380.84	3039.16	2.12	45.65	42.00
	Tenant Trucks On-Site	17.50	67.15	131.57	0.21	45.86	6.86
	Tenant Trucks Off-Site	19.29	74.99	162.24	1.04	58.85	9.28
	Tenant Employee Commute On-Site	0.05	0.87	0.06	0.01	2.00	0.21
	Tenant Employee Commute Off-Site	1.46	63.16	4.41	0.47	130.01	11.80
	Tenant CHE	46.45	2081.52	235.13	0.71	4.93	4.53
	Tenant Switcher Locomotive	0.19	0.38	2.50	0.08	0.05	0.05
	<b>TOTAL 2046</b>	<b>317.65</b>	<b>3281.84</b>	<b>5033.52</b>	<b>12.08</b>	<b>745.82</b>	<b>152.55</b>

Table C1.2-NP-29. Peak Daily Operational Emissions – No Project Alternative

Source Category	Peak Daily Emissions (lb/day) <sup>a,e</sup>					
	VOC	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Project Year 2013</b>						
Trucks On-Site	28	82	201	0	43	8
Trucks Off-Site <sup>b</sup>	30	127	407	1	55	11
CHE	59	1,887	375	1	11	10
Employee Commute On-Site	0	3	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	7	208	18	0	121	10
Tenant Locomotive Activities	0	0	2	0	0	0
<b>Total - Project Year 2013 <sup>d</sup></b>	<b>125</b>	<b>2,307</b>	<b>1,004</b>	<b>3</b>	<b>232</b>	<b>39</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline <sup>c</sup>	-121	-709	-1,869	-15	-115	-90
Thresholds	55	550	55	150	150	55
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2014</b>						
Trucks On-Site	27	80	191	0	42	7
Trucks Off-Site <sup>b</sup>	31	127	389	1	53	8
CHE	60	1,888	397	1	11	10
Employee Commute On-Site	0	3	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	6	188	16	0	118	10
Tenant Locomotive Activities	0	0	2	0	0	0
<b>Total - Project Year 2014 <sup>d</sup></b>	<b>125</b>	<b>2,287</b>	<b>996</b>	<b>3</b>	<b>226</b>	<b>35</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline <sup>c</sup>	-121	-730	-1,877	-15	-120	-93
Thresholds	55	550	55	150	150	55
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2015</b>						
Trucks On-Site	26	78	193	0	42	7
Trucks Off-Site <sup>b</sup>	30	123	380	1	54	9
CHE	11	1,890	392	1	11	10
Employee Commute On-Site	0	3	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	5	172	15	0	118	10
Tenant Locomotive Activities	0	0	2	0	0	0
<b>Total - Project Year 2015 <sup>d</sup></b>	<b>73</b>	<b>2,266</b>	<b>982</b>	<b>3</b>	<b>226</b>	<b>36</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline <sup>c</sup>	-172	-750	-1,891	-15	-120	-93
Thresholds	55	550	55	150	150	55
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2016</b>						
Trucks On-Site	27	84	205	0	46	7
Trucks Off-Site <sup>b,f</sup>	174	785	2,257	6	394	67
CHE	57	2,076	333	1	9	9
Employee Commute On-Site	0	3	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	5	175	15	0	130	12
Tenant Locomotive Activities	0	0	3	0	0	0
Locomotives Off-site <sup>b</sup>	107	278	2,562	2	45	41
<b>Total - Project Year 2016 <sup>d</sup></b>	<b>371</b>	<b>3,400</b>	<b>5,374</b>	<b>10</b>	<b>627</b>	<b>137</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline <sup>c</sup>	-219	-1,535	-4,831	-134	-120	-208
Thresholds	55	550	55	150	150	55
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2023</b>						
Trucks On-Site	19	71	123	0	46	7
Trucks Off-Site <sup>b,f</sup>	165	719	1,616	8	522	89
CHE	55	2,082	292	1	8	8
Employee Commute On-Site	0	2	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	3	106	8	0	130	12

Tenant Locomotive Activities	0	0	3	0	0	0
Locomotives Off-site <sup>b</sup>	143	371	3,416	2	60	55
<b>Total - Project Year 2023<sup>d</sup></b>	<b>385</b>	<b>3,350</b>	<b>5,458</b>	<b>12</b>	<b>768</b>	<b>170</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline	-204	-1,585	-4,747	-132	22	-174
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2035</b>						
Trucks On-Site	18	67	131	0	46	7
Trucks Off-Site <sup>b, f</sup>	158	695	1,627	8	519	88
CHE	53	2,072	234	1	5	4
Employee Commute On-Site	0	1	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	2	68	5	0	130	12
Tenant Locomotive Activities	0	0	3	0	0	0
Locomotives Off-site <sup>b</sup>	89	371	2,859	2	37	34
<b>Total - Project Year 2035<sup>d</sup></b>	<b>319</b>	<b>3,274</b>	<b>4,858</b>	<b>12</b>	<b>739</b>	<b>146</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline	-271	-1,661	-5,346	-131	-8	-199
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2046</b>						
Trucks On-Site	17	67	132	0	46	7
Trucks Off-Site <sup>b, f</sup>	157	688	1,621	8	517	87
CHE	46	2,082	235	1	5	5
Employee Commute On-Site	0	1	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	1	63	4	0	130	12
Tenant Locomotive Activities	0	0	3	0	0	0
Locomotives Off-site <sup>b</sup>	95	381	3,039	2	46	42
<b>Total - Project Year 2046<sup>d</sup></b>	<b>318</b>	<b>3,282</b>	<b>5,034</b>	<b>12</b>	<b>746</b>	<b>153</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	590	4,935	10,205	144	747	345
Proposed Project minus CEQA Baseline	-272	-1,653	-5,171	-132	-1	-192
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes:

- a) Emissions represent annual emissions divided by 365 days per year of operation.
- b) Truck, train, and worker commute emissions include transport within the South Coast Air Basin.
- c) By definition, the No Project minus Baseline increment in 2013, 2014 and 2015 does not account for both the truck travel between port terminals to Hobart railyard and the rail travel from Hobart railyard to the South Coast Air Basin boundary as they are not a part of the Project and Alternatives during this period.
- d) Emissions might not precisely add due to rounding. For further explanation, refer to the discussion in Section 3.2.4.1.
- e) The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.
- f) Off-site trucks include tenant trucks and trucks that should have gone to SCIG but instead going to Hobart Yard.

Table C1.2-NP-30. Average Daily Operational Emissions – No Project Alternative

Source Category	Average Daily Emissions (lb/day) <sup>a,e</sup>					
	VOC	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Project Year 2013</b>						
Trucks On-Site	25	73	179	0	39	7
Trucks Off-Site <sup>b</sup>	27	114	364	1	49	10
CHE	53	1,685	335	1	9	9
Employee Commute On-Site	0	3	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	7	208	18	0	121	10
Tenant Locomotive Activities	0	0	2	0	0	0
<b>Total - Project Year 2013<sup>d</sup></b>	<b>112</b>	<b>2,083</b>	<b>899</b>	<b>2</b>	<b>220</b>	<b>36</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline <sup>c</sup>	-82	-535	-1,246	-10	-64	-62
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2014</b>						
Trucks On-Site	24	72	171	0	38	6
Trucks Off-Site <sup>b</sup>	28	114	348	1	48	7
CHE	54	1,686	354	1	10	9
Employee Commute On-Site	0	3	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	6	188	16	0	118	10
Tenant Locomotive Activities	0	0	2	0	0	0
<b>Total - Project Year 2014<sup>d</sup></b>	<b>112</b>	<b>2,063</b>	<b>892</b>	<b>2</b>	<b>214</b>	<b>33</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline <sup>c</sup>	-83	-556	-1,253	-10	-70	-65
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2015</b>						
Trucks On-Site	23	70	173	0	38	6
Trucks Off-Site <sup>b</sup>	27	110	339	1	48	8
CHE	10	1,688	350	1	10	9
Employee Commute On-Site	0	3	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	5	172	15	0	118	10
Tenant Locomotive Activities	0	0	2	0	0	0
<b>Total - Project Year 2015<sup>d</sup></b>	<b>66</b>	<b>2,043</b>	<b>879</b>	<b>2</b>	<b>215</b>	<b>33</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline <sup>c</sup>	-129	-576	-1,266	-10	-70	-65
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2016</b>						
Trucks On-Site	24	75	183	0	41	6
Trucks Off-Site <sup>b,f</sup>	155	701	2,016	6	352	60
CHE	51	1,854	297	1	8	8
Employee Commute On-Site	0	3	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	5	175	15	0	130	12
Tenant Locomotive Activities	0	0	3	0	0	0
Locomotives Off-site <sup>b</sup>	45	135	1,551	2	32	30
<b>Total - Project Year 2016<sup>d</sup></b>	<b>281</b>	<b>2,943</b>	<b>4,064</b>	<b>9</b>	<b>566</b>	<b>116</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline <sup>c</sup>	-258	-1,136	-4,383	-130	-119	-198
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2023</b>						
Trucks On-Site	17	63	110	0	41	6
Trucks Off-Site <sup>b,f</sup>	147	643	1,443	8	466	79
CHE	49	1,859	261	1	7	7
Employee Commute On-Site	0	2	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	3	106	8	0	130	12
Tenant Locomotive Activities	0	0	3	0	0	0



Locomotives Off-site <sup>b</sup>	40	189	1,486	2	21	19
<b>Total - Project Year 2023<sup>d</sup></b>	<b>257</b>	<b>2,862</b>	<b>3,311</b>	<b>11</b>	<b>668</b>	<b>123</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline	-283	-1,217	-5,136	-128	-17	-190
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2035</b>						
Trucks On-Site	16	60	117	0	41	6
Trucks Off-Site <sup>b, f</sup>	141	620	1,453	8	463	79
CHE	47	1,851	209	1	4	4
Employee Commute On-Site	0	1	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	2	68	5	0	130	12
Tenant Locomotive Activities	0	0	3	0	0	0
Locomotives Off-site <sup>b</sup>	16	129	629	2	9	8
<b>Total - Project Year 2035<sup>d</sup></b>	<b>221</b>	<b>2,729</b>	<b>2,416</b>	<b>11</b>	<b>649</b>	<b>109</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline	-318	-1,350	-6,032	-128	-36	-205
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Project Year 2046</b>						
Trucks On-Site	16	60	118	0	41	6
Trucks Off-Site <sup>b, f</sup>	141	614	1,448	8	462	78
CHE	41	1,859	210	1	4	4
Employee Commute On-Site	0	1	0	0	2	0
Employee Commute Off-Site <sup>b</sup>	1	63	4	0	130	12
Tenant Locomotive Activities	0	0	3	0	0	0
Locomotives Off-site <sup>b</sup>	10	120	385	2	5	5
<b>Total - Project Year 2046<sup>d</sup></b>	<b>210</b>	<b>2,718</b>	<b>2,167</b>	<b>11</b>	<b>645</b>	<b>105</b>
<b>CEQA Impacts</b>						
CEQA Baseline Emissions	539	4,079	8,447	139	685	314
Proposed Project minus CEQA Baseline	-329	-1,362	-6,280	-128	-40	-209
Thresholds	<b>55</b>	<b>550</b>	<b>55</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significance?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes:

- Emissions represent annual emissions divided by 365 days per year of operation.
- Truck, train, and worker commute emissions include transport within the South Coast Air Basin.
- By definition, the No Project minus Baseline increment in 2013, 2014 and 2015 does not account for both the truck travel between port terminals to Hobart railyard and the rail travel from Hobart railyard to the South Coast Air Basin boundary as they are not a part of the Project and Alternatives during this period.
- Emissions might not precisely add due to rounding. For further explanation, refer to the discussion in Section 3.2.4.1.
- The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

f) Off-site trucks include tenant trucks and trucks that should have gone to SCIG but instead going to Hobart Yard.

**Table C1.2-BL-1. Activity Data for Drayage Trucks Traveling to Hobart Yard - 2005 Baseline**

<b>Project Year</b>	<b>Roundtrip Distance per Trip (mi)</b>	<b>Truck Roundtrips per Year</b>
Year 2005 Baseline	38.3	814,000

**Table C1.2-BL-2. Emission Factors for Drayage Trucks Traveling to Hobart Yard - 2005 Baseline**

Year 2005 Baseline Mode of Truck Travel	Speed (mph)	Emission Factors (Grams/Mile)							
		VOC	CO	NOx	SOx	PM10	PM2.5	DPM10	DPM2.5
On-road Truck - Idle (g/hr)	0	16.16	52.99	100.38	0.55	2.85	2.62	2.85	2.62
On-road Truck Transport	5	15.74	25.21	52.26	0.32	5.40	4.17	4.45	4.09
On-road Truck Transport	10	8.96	19.63	35.40	0.26	3.98	2.87	3.03	2.79
On-road Truck Transport	15	4.40	15.10	25.35	0.22	2.95	1.91	1.99	1.83
On-road Truck Transport	20	2.31	11.81	22.00	0.18	2.35	1.36	1.40	1.29
On-road Truck Transport	25	1.86	9.92	21.36	0.17	2.13	1.16	1.17	1.08
On-road Truck Transport	30	1.51	8.30	20.88	0.16	1.95	1.00	1.00	0.92
On-road Truck Transport	35	1.25	6.96	20.56	0.15	1.83	0.88	0.87	0.80
On-road Truck Transport	40	1.08	5.88	20.40	0.15	1.75	0.81	0.80	0.74
On-road Truck Transport	45	1.01	5.09	20.41	0.14	1.73	0.79	0.78	0.71
On-road Truck Transport	50	1.04	4.56	20.58	0.14	1.75	0.81	0.80	0.74
On-road Truck Transport	55	1.16	4.31	20.91	0.14	1.83	0.88	0.88	0.81
On-road Truck Transport	60	1.37	4.34	21.41	0.14	1.95	1.00	1.00	0.92
On-road Truck Transport	65	1.68	4.63	22.07	0.14	2.13	1.16	1.18	1.08

Notes:

- (1) EMFAC2007 v2.3 with modified fleet age distribution based on Port-wide inventory (Starcrest, 2009)
- (2) EMFAC model runs assume 70F, 40% RH in the South Coast Air Basin
- (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-BL-3. Annual Emissions for Drayage Trucks Traveling to Hobart Yard - 2005 Baseline**

Project Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
Year 2005 Baseline	45.16	210.00	718.31	5.10	63.44	30.89
Note:						
(1) Annual emissions estimates for trips between port terminals and Hobart Yard during the baseline year.						

**Table C1.2-BL-4. Peak Daily Emissions for Drayage Trucks Traveling to Hobart Yard - 2005 Baseline**

Project Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
Year 2005 Baseline	280.88	1306.22	4467.86	31.70	394.57	192.15

Note:

(1) Peak daily emissions estimates for trips between port terminals and Hobart Yard during the baseline year.

**Table C1.2-BL-5. Activity Data for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - 2005 Baseline**

Off-site Activities	Roundtrip Distance (mi)	Trains per Year
From Hobart Yard to SCAB Boundary	163.8	1800
<p>Notes:</p> <p>(1) Round trip distance between Hobart Railyard and the South Coast Air Basin boundary.</p> <p>(2) Source: train trips are derived from TEU throughput</p>		

**Table C1.2-BL-6. Emission Factors for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - 2005 Baseline**

Project Year	Emission Factors (grams/mile)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
Year 2005 Baseline	51.76	162.92	1280.52	54.28	26.70	24.56
Notes:						
(1) Assume sulfur content of 1050ppm for PM EF estimates						
(2) Line-haul locomotive fleet fractions for Hobart from 2005 MOU emission inventory						

**Table C1.2-BL-7. Annual Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - 2005 Baseline**

Project Year	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
Year 2005 Baseline	16.82	52.95	416.18	17.64	8.68	7.98



**Table C1.2-BL-8. Peak Daily Emissions for Linehaul Locomotives Traveling from Hobart Yard to South Coast Air Basin Boundary - 2005 Baseline**

Project Year	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM 10	PM 2.5
Year 2005 Baseline	93.46	752.33	3341.63	98.01	48.21	44.35

**Table C1.2-BL-9. Activity Data for Tenant On-Road Vehicles - 2005 Baseline**

<b>Year 2005 Baseline Type of Vehicle</b>	<b>Number of Trips</b>	<b>Average Idling Time per Trip (hr)</b>	<b>Average On-Site Distance per Trip (mi)</b>	<b>Average Off-Site Round- Trip Distance to Port Terminals (mi)</b>	<b>Average Off-Site Round-Trip Distance Outside of Harbor District (mi)</b>
Port Drayage Trucks	336,213	0.34	1.02	10.63	
Vendor Vehicles	249,347	0.31	0.94		11.51
Employee Commute Vehicles	634,166	0.11	0.22		11.03
Medium Duty Trucks	520	0.33	0.20		12.40
Note:					
(1) On-road vehicle activity represent data averaged across all tenants.					

Table C1.2-BL-10. Emission Factors for Tenant Port Drayage Trucks - 2005 Baseline

Vehicle Type	Speed (mph)	Emission Factors (Grams/Mile)									
		VOC	CO	NOx	SOx	PM10 w/ On-site Road Dust	PM2.5 w/ On-site Road Dust	PM10 w/ Off-site Road Dust	PM2.5 w/ Off-site Road Dust	DPM10	DPM2.5
On-road Truck - Idle (g/hr)	0	16.16	52.99	100.38	0.55	2.85	2.62	2.85	2.62	2.85	2.62
On-road Truck Transport	5	15.74	25.21	52.26	0.32	16.12	5.73	5.40	4.17	4.45	4.09
On-road Truck Transport	7.5	12.35	22.42	43.83	0.29	15.41	5.08	4.69	3.52	3.74	3.44
On-road Truck Transport	10	8.96	19.63	35.40	0.26	14.70	4.43	3.98	2.87	3.03	2.79
On-road Truck Transport	15	4.40	15.10	25.35	0.22	13.66	3.47	2.95	1.91	1.99	1.83
On-road Truck Transport	20	2.31	11.81	22.00	0.18	13.07	2.93	2.35	1.36	1.40	1.29
On-road Truck Transport	25	1.86	9.92	21.36	0.17	12.84	2.72	2.13	1.16	1.17	1.08
On-road Truck Transport	30	1.51	8.30	20.88	0.16	12.67	2.56	1.95	1.00	1.00	0.92
On-road Truck Transport	35	1.25	6.96	20.56	0.15	12.54	2.44	1.83	0.88	0.87	0.80
On-road Truck Transport	40	1.08	5.88	20.40	0.15	12.47	2.37	1.75	0.81	0.80	0.74
On-road Truck Transport	45	1.01	5.09	20.41	0.14	12.44	2.35	1.73	0.79	0.78	0.71
On-road Truck Transport	50	1.04	4.56	20.58	0.14	12.47	2.38	1.75	0.81	0.80	0.74
On-road Truck Transport	55	1.16	4.31	20.91	0.14	12.54	2.45	1.83	0.88	0.88	0.81
On-road Truck Transport	60	1.37	4.34	21.41	0.14	12.67	2.56	1.95	1.00	1.00	0.92
On-road Truck Transport	65	1.68	4.63	22.07	0.14	12.85	2.72	2.13	1.16	1.18	1.08

Notes:

(1) On-site travel speed was assumed at 7.5 mph.

(2) Emission factors were derived from EMFAC2007 v2.3 with modified fleet age distribution based on Port-wide inventory (Starcrest, 2009)

(3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

Table C1.2-BL-11. Emission Factors for Tenant Vendor Vehicles - 2005 Baseline

Vehicle Type	Speed (mph)	Emission Factors (Grams/Mile)									
		VOC	CO	NOx	SOx	PM10 w/ On-site Road Dust	PM2.5 w/ On-site Road Dust	PM10 w/ Off-site Road Dust	PM2.5 w/ Off-site Road Dust	DPM10	DPM2.5
On-road Truck - Idle (g/hr)	0	16.16	52.99	100.38	0.55	2.85	2.62	2.85	2.62	2.85	2.62
On-road Truck Transport	5	15.03	24.08	51.78	0.32	15.96	5.59	5.25	4.03	4.29	3.95
On-road Truck Transport	7.5	11.79	21.42	43.43	0.29	15.28	4.96	4.56	3.40	3.61	3.32
On-road Truck Transport	10	8.56	18.75	35.08	0.26	14.59	4.33	3.88	2.77	2.92	2.69
On-road Truck Transport	15	4.20	14.42	25.12	0.22	13.59	3.41	2.88	1.85	1.92	1.77
On-road Truck Transport	20	2.20	11.28	21.80	0.18	13.02	2.88	2.30	1.32	1.35	1.24
On-road Truck Transport	25	1.78	9.47	21.17	0.17	12.80	2.68	2.08	1.12	1.13	1.04
On-road Truck Transport	30	1.44	7.93	20.69	0.16	12.63	2.53	1.92	0.96	0.96	0.89
On-road Truck Transport	35	1.19	6.64	20.37	0.15	12.51	2.42	1.80	0.85	0.84	0.78
On-road Truck Transport	40	1.04	5.62	20.22	0.15	12.44	2.35	1.72	0.79	0.77	0.71
On-road Truck Transport	45	0.97	4.86	20.23	0.14	12.42	2.33	1.70	0.77	0.75	0.69
On-road Truck Transport	50	0.99	4.36	20.39	0.14	12.44	2.35	1.73	0.79	0.77	0.71
On-road Truck Transport	55	1.10	4.12	20.72	0.14	12.51	2.42	1.80	0.86	0.85	0.78
On-road Truck Transport	60	1.31	4.14	21.21	0.14	12.64	2.53	1.92	0.97	0.97	0.89
On-road Truck Transport	65	1.60	4.43	21.87	0.14	12.81	2.69	2.09	1.13	1.14	1.05

Notes:  
 (1) On-site travel speed was assumed at 7.5 mph.  
 (2) Emission factors were generated by EMFAC2007 v2.3 model with SCAB default age distributions.  
 (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-BL-12. Emission Factors for Tenant Employee Commute Vehicles - 2005 Baseline**

Project Year/Mode	Speed (mph)	Emission Factors (Grams/Mile)							
		VOC	CO	NOx	SOx	PM10 w/ On-site Road Dust	PM2.5 w/ On-site Road Dust	PM10 w/ Off-site Road Dust	PM2.5 w/ Off-site Road Dust
On-road Truck - Idle (g/hr)	0	-	-	-	-	-	-	-	-
On-road Truck Transport	5	0.68	7.32	0.57	0.01	1.64	0.16	0.96	0.11
On-road Truck Transport	7.5	0.57	6.73	0.53	0.01	1.63	0.15	0.95	0.10
On-road Truck Transport	10	0.46	6.15	0.49	0.01	1.62	0.14	0.94	0.09
On-road Truck Transport	15	0.32	5.30	0.44	0.01	1.61	0.13	0.93	0.08
On-road Truck Transport	20	0.24	4.67	0.40	0.01	1.61	0.13	0.93	0.08
On-road Truck Transport	25	0.18	4.19	0.38	0.00	1.60	0.13	0.92	0.07
On-road Truck Transport	30	0.15	3.82	0.36	0.00	1.60	0.12	0.92	0.07
On-road Truck Transport	35	0.13	3.54	0.35	0.00	1.60	0.12	0.92	0.07
On-road Truck Transport	40	0.12	3.33	0.34	0.00	1.60	0.12	0.92	0.07
On-road Truck Transport	45	0.11	3.20	0.34	0.00	1.60	0.12	0.92	0.07
On-road Truck Transport	50	0.11	3.13	0.35	0.00	1.60	0.12	0.92	0.07
On-road Truck Transport	55	0.12	3.14	0.36	0.00	1.60	0.12	0.92	0.07
On-road Truck Transport	60	0.13	3.26	0.38	0.00	1.60	0.12	0.92	0.07
On-road Truck Transport	65	0.15	3.53	0.40	0.00	1.60	0.12	0.92	0.07

Notes:

- (1) On-site travel speed was assumed at 7.5 mph.
- (2) Emission factors were generated by EMFAC2007 v2.3 model with SCAB default age distributions.
- (3) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-BL-13. Annual Tenant Truck Emissions - 2005 Baseline**

Mode	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
On-Site	8.22	18.45	36.02	0.22	7.83	2.81
Off-Site	10.36	51.68	146.39	1.09	13.43	6.82
<b>2005 Baseline Total</b>	18.58	70.13	182.41	1.31	21.26	9.63

Notes:

(1) Trucks include Port drayage trucks, vendor trucks, and other medium-duty trucks.

(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-BL-14. Peak Daily Tenant Truck Emissions - 2005 Baseline**

Mode	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
On-Site	60.45	135.83	264.92	1.63	57.35	20.62
Off-Site	74.85	374.08	1,058.23	7.85	97.15	49.34
<b>2005 Baseline Total</b>	135.29	509.92	1,323.15	9.48	154.50	69.97

Notes:

(1) Trucks include Port drayage trucks, vendor trucks, and other medium-duty trucks.

(2) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.

**Table C1.2-BL-15. Annual Tenant Employee Commute Emissions - 2005 Baseline**

Mode	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
On-Site	0.09	1.04	0.08	0.00	0.25	0.02
Off-Site	2.86	62.85	6.26	0.06	16.39	1.48
<b>2005 Baseline Total</b>	2.95	63.89	6.34	0.06	16.64	1.50

Note:

(1) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.



**Table C1.2-BL-16. Peak Daily Tenant Employee Commute Emissions - 2005 Baseline**

Mode	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
On-Site	0.63	7.46	0.59	0.01	1.81	0.18
Off-Site	20.58	452.33	45.00	0.42	118.04	10.74
<b>2005 Baseline Total</b>	21.21	459.79	45.59	0.43	119.85	10.92

Notes:

- (1) PM emissions include emissions from vehicle exhaust, tire wear, brake wear, and paved road dust.
- (2) Peak daily emissions are equivalent to the average daily emissions.

**Table C1.2-BL-17. Activity Data for Tenant CHE - 2005 Baseline**

<b>Year 2005 Baseline Cargo Handling Equipment</b>	<b>Fuel</b>	<b>Average HP</b>	<b>Equipment Total</b>	<b>Annual Hours of Operation</b>	<b>Average Load Factor</b>	<b>Annual hp-hrs</b>
Container Handling Equipment > 175 - 210	Diesel	198	3	6,240	0.59	728,957
Fork Lift > 50-120	Diesel	100	10	7,818	0.30	243,816
Fork Lift > 120-175	Diesel	138	5	9,152	0.30	380,640
Fork Lift > 175-250	Diesel	192	3	6,240	0.30	358,800
Loader > 50-120	Diesel	110	1	1,040	0.55	62,920
Loader > 175-210	Diesel	200	1	1,040	0.55	114,400
Other, General Industrial Equipment > 175-250	Diesel	220	2	780	0.51	91,494
Power Pack > 200	Diesel	202	2	1,500	0.74	224,220
Side Pick > 120-175	Diesel	136	2	1,750	0.30	71,400
Sweeper/Scrubber > 50-120	Diesel	60	1	208	0.68	8,486
Top Handler > 50-120	Diesel	120	2	1,948	0.30	70,128
Tractor/ Loader/Backhoe > 120-175	Diesel	158	4	6,448	0.55	565,365
Yard tractor > 210-400	Diesel	250	6	6,160	0.52	1,136,200
Yard Truck > 120-175	Diesel	150	1	1,040	0.39	60,840
Yard Truck > 175-210	Diesel	209	23	33,541	0.64	4,544,885
Yard Truck > 210-400	Diesel	350	1	2,080	0.39	283,920
Fork Lift > 50-120	LPG	74	216	330,196	0.30	8,174,032
Top Handler > 50-120	LPG	92	1	1,440	0.30	39,744

**Table C1.2-BL-18. Emission Factors for Tenant CHE - 2005 Baseline**

Year 2005 Baseline Cargo Handling Equipment	Fuel	Emission Factors (grams/hp-hr)					
		VOC	CO	NOx	SOx	PM10	PM2.5
Container Handling Equipment > 175 - 210	Diesel	0.28	0.92	6.25	0.06	0.15	0.14
Fork Lift > 50-120	Diesel	0.96	3.65	8.13	0.06	0.71	0.65
Fork Lift > 120-175	Diesel	0.55	3.02	7.74	0.06	0.37	0.34
Fork Lift > 175-250	Diesel	0.28	0.92	6.25	0.06	0.15	0.14
Loader > 50-120	Diesel	0.87	3.49	8.75	0.06	0.69	0.63
Loader > 175-210	Diesel	0.60	2.70	8.17	0.06	0.38	0.35
Other, General Industrial Equipment > 175-250	Diesel	0.44	1.81	7.21	0.06	0.27	0.24
Power Pack > 200	Diesel	0.57	1.81	6.91	0.06	0.23	0.21
Side Pick > 120-175	Diesel	0.60	2.70	8.17	0.06	0.38	0.35
Sweeper/Scrubber > 50-120	Diesel	0.87	3.49	6.90	0.06	0.69	0.63
Top Handler > 50-120	Diesel	0.93	3.49	6.90	0.06	0.69	0.63
Tractor/ Loader/Backhoe > 120-175	Diesel	0.74	3.13	9.31	0.06	0.48	0.44
Yard tractor > 210-400	Diesel	0.29	1.35	7.95	0.06	0.21	0.19
Yard Truck > 120-175	Diesel	0.77	4.20	11.00	0.06	0.55	0.51
Yard Truck > 175-210	Diesel	0.59	2.37	8.22	0.06	0.35	0.32
Yard Truck > 210-400	Diesel	0.83	4.20	12.00	0.06	0.53	0.49
Fork Lift > 50-120	LPG	0.20	28.92	7.64	0.00	0.06	0.06
Top Handler > 50-120	LPG	0.20	30.43	7.53	0.00	0.06	0.06
Note: Emission factors were estimated with the use of ARB CHE calculator.							

**Table C1.2-BL-19. Annual Tenant CHE Emissions - 2005 Baseline**

Year 2005 Baseline Cargo Handling Equipment	Fuel	Annual Emissions (tons/year)					
		VOC	CO	NOx	SOx	PM10	PM2.5
Container Handling Equipment > 175 - 210	Diesel	0.29	0.83	5.26	0.05	0.13	0.12
Fork Lift > 50-120	Diesel	0.32	1.12	2.44	0.02	0.19	0.18
Fork Lift > 120-175	Diesel	0.26	1.28	3.07	0.03	0.14	0.13
Fork Lift > 175-250	Diesel	0.13	0.39	2.47	0.02	0.06	0.05
Loader > 50-120	Diesel	0.07	0.27	0.62	0.00	0.05	0.04
Loader > 175-210	Diesel	0.10	0.40	1.10	0.01	0.05	0.05
Other, General Industrial Equipment > 175-250	Diesel	0.08	0.28	0.87	0.01	0.04	0.04
Power Pack > 200	Diesel	0.15	0.45	1.71	0.01	0.06	0.05
Side Pick > 120-175	Diesel	0.12	0.47	1.30	0.01	0.06	0.05
Sweeper/Scrubber > 50-120	Diesel	0.01	0.03	0.06	0.00	0.01	0.01
Top Handler > 50-120	Diesel	0.15	0.57	1.06	0.01	0.10	0.09
Tractor/ Loader/Backhoe > 120-175	Diesel	0.49	1.94	5.18	0.04	0.26	0.24
Yard tractor > 210-400	Diesel	0.36	1.84	10.16	0.07	0.28	0.26
Yard Truck > 120-175	Diesel	0.09	0.39	0.91	0.00	0.06	0.05
Yard Truck > 175-210	Diesel	2.97	9.84	30.24	0.18	1.69	1.56
Yard Truck > 210-400	Diesel	0.69	2.46	6.05	0.02	0.42	0.38
Fork Lift > 50-120	LPG	1.81	245.09	69.95	0.10	0.54	0.50
Top Handler > 50-120	LPG	0.01	1.33	0.33	0.00	0.00	0.00
<b>Total</b>		<b>8.09</b>	<b>268.98</b>	<b>142.78</b>	<b>0.57</b>	<b>4.13</b>	<b>3.80</b>

**Table C1.2-BL-20. Peak Daily Tenant CHE Emissions - 2005 Baseline**

Year 2005 Baseline Cargo Handling Equipment	Fuel	Daily Emissions (lbs/day)					
		VOC	CO	NOx	SOx	PM10	PM2.5
Container Handling Equipment > 175 - 210	Diesel	2.05	5.96	37.72	0.34	0.95	0.87
Fork Lift > 50-120	Diesel	2.37	8.41	18.48	0.13	1.46	1.34
Fork Lift > 120-175	Diesel	1.84	9.19	22.05	0.18	1.01	0.93
Fork Lift > 175-250	Diesel	0.92	2.78	17.74	0.17	0.41	0.38
Loader > 50-120	Diesel	0.64	2.31	5.32	0.04	0.40	0.37
Loader > 175-210	Diesel	0.88	3.43	9.43	0.06	0.45	0.42
Other, General Industrial Equipment > 175-250	Diesel	0.55	2.02	6.21	0.04	0.29	0.27
Power Pack > 200	Diesel	1.29	3.85	14.71	0.12	0.49	0.45
Side Pick > 120-175	Diesel	1.00	4.04	11.22	0.08	0.51	0.47
Sweeper/Scrubber > 50-120	Diesel	0.07	0.25	0.46	0.00	0.04	0.04
Top Handler > 50-120	Diesel	1.04	3.84	7.14	0.06	0.70	0.64
Tractor/ Loader/Backhoe > 120-175	Diesel	3.52	13.92	37.15	0.27	1.85	1.70
Yard tractor > 210-400	Diesel	3.08	15.85	87.50	0.57	2.40	2.21
Yard Truck > 120-175	Diesel	0.64	2.79	6.56	0.03	0.41	0.37
Yard Truck > 175-210	Diesel	20.14	66.70	204.87	1.22	11.46	10.54
Yard Truck > 210-400	Diesel	4.93	17.67	43.45	0.13	2.98	2.75
Fork Lift > 50-120	LPG	12.79	1734.67	492.16	0.82	3.81	3.50
Top Handler > 50-120	LPG	0.06	9.02	2.23	0.00	0.02	0.02
<b>Total</b>		<b>57.81</b>	<b>1906.71</b>	<b>1024.40</b>	<b>4.27</b>	<b>29.64</b>	<b>27.26</b>

**Table C1.2-BL-21. Summary of Annual Tenant CHE Emissions - 2005 Baseline**

Year 2005 Baseline Type of Emissions	Annual Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Cargo Handling Equipment	8.09	268.98	142.78	0.57	4.13	3.80

**Table C1.2-BL-22. Summary of Peak Daily Tenant CHE Emissions - 2005 Baseline**

Year 2005 Baseline Type of Emissions	Daily Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Cargo Handling Equipment	57.81	1906.71	1024.40	4.27	29.64	27.26

**Table C1.2-BL-23. Activity Data for Tenant Switcher Locomotives - 2005 Baseline**

<b>Project Scenario</b>	<b>Number of Trips</b>	<b>Idling Time per Trip (hr)</b>	<b>On-Site Distance per Trip (mi)</b>	<b>Duration of On-Site Movement per Trip (hr)</b>
Year 2005 Baseline	520	0.08	2.00	0.40
Note: (1) Assume switcher locomotive movement at notch setting of one and speed of 5mph.				



**Table C1.2-BL-24. Emission Factors for Tenant Switcher Locomotives - 2005 Baseline**

Year 2005 Baseline Notch Setting	Emission Factors (g/hr)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Idle	93.06	181.00	987.00	24.73	31.00	28.52
Movement	87.65	182.88	1239.84	39.00	23.00	21.16
Note: (1) Assume switcher locomotive movement at notch setting of one and speed of 5mph.						

**Table C1.2-BL-25. Annual Emissions for Tenant Switcher Locomotives - 2005 Baseline**

Notch Setting	Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Idle	0.00	0.01	0.05	0.00	0.00	0.00
Movement	0.02	0.04	0.28	0.01	0.01	0.00
<b>Year 2005 Baseline</b>	<b>0.02</b>	<b>0.05</b>	<b>0.33</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>

**Table C1.2-BL-26. Peak Daily Emissions for Tenant Switcher Locomotives - 2005 Baseline**

Notch Setting	Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Idle	0.03	0.06	0.32	0.01	0.01	0.01
Movement	0.14	0.29	1.95	0.06	0.04	0.03
<b><i>Year 2005 Baseline</i></b>	<b>0.17</b>	<b>0.35</b>	<b>2.28</b>	<b>0.07</b>	<b>0.05</b>	<b>0.04</b>

**Table C1.2-BL-27. Annual Tenant Operation Emissions - 2005 Baseline**

Emission Source	Annual Emissions (tons/year)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Trucks to Hobart Yard	45.16	210.00	718.31	5.10	63.44	30.89
Linehaul Locomotives from Hobart Yard	16.82	52.95	416.18	17.64	8.68	7.98
Tenant Trucks On-Site	8.22	18.45	36.02	0.22	7.83	2.81
Tenant Trucks Off-Site	10.36	51.68	146.39	1.09	13.43	6.82
Tenant Employee Commute On-Site	0.09	1.04	0.08	0.00	0.25	0.02
Tenant Employee Commute Off-Site	2.86	62.85	6.26	0.06	16.39	1.48
Tenant CHE	8.09	268.98	142.78	0.57	4.13	3.80
Tenant Switcher Locomotive	0.02	0.05	0.33	0.01	0.01	0.01
<b>Total 2005 Baseline</b>	<b>91.62</b>	<b>666.00</b>	<b>1,466.34</b>	<b>24.68</b>	<b>114.15</b>	<b>53.82</b>

**Table C1.2-BL-28. Peak Daily Tenant Operation Emissions - 2005 Baseline**

Emission Source	Peak Daily Emissions (lbs/day)					
	VOC	CO	NOx	SOx	PM10	PM2.5
Trucks to Hobart Yard	280.88	1,306.22	4,467.86	31.70	394.57	192.15
Linehaul Locomotives from Hobart Yard	93.46	752.33	3,341.63	98.01	48.21	44.35
Tenant Trucks On-Site	60.45	135.83	264.92	1.63	57.35	20.62
Tenant Trucks Off-Site	74.85	374.08	1,058.23	7.85	97.15	49.34
Tenant Employee Commute On-Site	0.63	7.46	0.59	0.01	1.81	0.18
Tenant Employee Commute Off-Site	20.58	452.33	45.00	0.42	118.04	10.74
Tenant CHE	57.81	1,906.71	1,024.40	4.27	29.64	27.26
Tenant Switcher Locomotive	0.17	0.35	2.28	0.07	0.05	0.04
<b>Total 2005 Baseline</b>	<b>588.81</b>	<b>4,935.32</b>	<b>10,204.91</b>	<b>143.97</b>	<b>746.81</b>	<b>344.70</b>

**Table C1.2-BL-29. Peak Daily Operational Emissions - 2005 Baseline**

Source Category	Peak Daily Emissions (lb/day) <sup>a, f</sup>					
	VOC	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM10	PM2.5
Trucks On-Site <sup>b</sup>	60	136	265	2	57	21
Trucks Off-Site <sup>b, c</sup>	356	1,680	5,526	40	492	241
Locomotives Off-Site <sup>d</sup>	93	752	3,342	98	48	44
Employee Commute On-Site	1	7	1	0	2	0
Employee Commute Off-Site	21	452	45	0	118	11
CHE	59	1,907	1,024	4	30	27
Tenant Locomotive Activities	0	0	2	0	0	0
<b>Total – Baseline<sup>e</sup></b>	<b>590</b>	<b>4,935</b>	<b>10,205</b>	<b>144</b>	<b>747</b>	<b>345</b>

Notes:

- a) Emissions assume maximum theoretical daily equipment activity levels. Such levels would rarely occur during day-to-day terminal operations.
- b) Trucks include medium and heavy duty trucks.
- c) Off-site trucks emissions include trips originating from existing tenant facilities and trips between port terminals and Hobart Yard.
- d) Locomotives off-site refer to trips from the Hobart Yard to the SCAB boundary.
- e) Emissions might not add precisely due to rounding. For more explanation, refer to the discussion in Section 3.2.4.1.
- f) The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

**Table C1.2-BL-30. Average Daily Operational Emissions - 2005 Baseline**

Source Category	Average Daily Emissions (lb/day) <sup>a, f</sup>					
	VOC	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM10	PM2.5
Trucks On-Site <sup>b</sup>	54	121	237	1	51	18
Trucks Off-Site <sup>b, c</sup>	318	1,501	4,936	35	439	216
Locomotives Off-Site <sup>d</sup>	93	294	2,312	98	48	44
Employee Commute On-Site	1	7	1	0	2	0
Employee Commute Off-Site	21	452	45	0	118	11
CHE	53	1,703	915	4	26	24
Tenant Locomotive Activities	0	0	2	0	0	0
<b>Total – CEQA Baseline <sup>e</sup></b>	<b>539</b>	<b>4,079</b>	<b>8,447</b>	<b>139</b>	<b>685</b>	<b>314</b>

Notes:

- a) Emissions represent annual emissions divided by the annual operating day for each tenant.
- b) Trucks include medium and heavy duty trucks.
- c) Off-site trucks emissions include trips originating from existing tenant facilities and trips between port terminals and Hobart Yard.
- d) Locomotives off-site refer to trips from the Hobart Yard to the SCAB boundary.
- e) Emissions might not add precisely due to rounding. For more explanation, refer to the discussion in Section 3.2.4.1.
- f) The emission estimates presented in this table were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available.

## **Appendix C1.3**

# **Greenhouse Gas Emission Calculations**



**Table Of Contents - Appendix C1.3  
Greenhouse Gas Emission Calculations**

<b>TABLE</b>	<b>DESCRIPTION</b>
Table C1.3-1	Global Warming Potentials
Table C1.3-2	GHG Emission Factors for Liquid Fuels
Table C1.3-3	GHG Indirect Emission Factors for Electricity Generation
Table C1.3-4	CH <sub>4</sub> and N <sub>2</sub> O Emission Factors for On-Road Mobile Sources
Table C1.3-5	Construction GHG Emissions without Relocated Tenant Operations by Project Element and Project Scenario
Table C1.3-6	Construction GHG Emissions including Relocated Tenant Operations by Project Element and Project Scenario
Table C1.3-7	Baseline GHG Emissions
Table C1.3-8	Annual GHG Emissions for Electricity Consumption by Project Scenario
Table C1.3-9	Annual GHG Emissions for Electricity Consumption for Relocated Tenants
Table C1.3-10	Proposed Project GHG Emissions
Table C1.3-11	Alternative 1 - No Project GHG Emissions
Table C1.3-12	Alternative 2 - Reduced Project GHG Emissions

**Table C1.3-1. Global Warming Potentials**

<b>Greenhouse Gas</b>	<b>GWP (SAR, 1996)</b>
CO <sub>2</sub>	1
CH <sub>4</sub>	21
N <sub>2</sub> O	310

Source: U.S. Environmental Protection Agency, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2003 (April 2005).

Note: This information is found in Table C.1 of the CCAR protocol, Version 3.1, January 2009.

**Table C1.3-2. GHG Emission Factors for Liquid Fuels**

Fuel	Fuel Density	Emission Factor		
		CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
Propane (LPG)	4.24 lb/gal <sup>a</sup>	5.74 kg/gal	0.00009 kg/gal	0.00041 kg/gal
Diesel	7.46 bbl/metric ton	10.15 kg/gal	0.00074 kg/gal <sup>b</sup> 0.00080 kg/gal <sup>c</sup> 0.00058 kg/gal <sup>d</sup>	0.00026 kg/gal <sup>b, c, d</sup>
Liquefied Natural Gas (LNG)	11.6 bbl/metric ton	4.46 kg/gal	0.005 kg/MMBtu	0.0001 kg/MMBtu
Distillate Fuel Oil [#1, 2, 4, Diesel]	7.46 bbl/metric ton	10.15 kg/gal	0.0015 kg/gal	0.0001 kg/gal
Residual Fuel Oil [#5, 6]	6.66 bbl/metric ton	11.80 kg/gal	0.0016 kg/gal	0.0001 kg/gal

Source: California Climate Action Registry, General Reporting Protocol v3.1, January 2009. Tables C.3, C.6, C.8 and C.9 (unless otherwise noted).

<sup>a</sup> Source: AP-42 Appendix A (January 1995).

<sup>b</sup> Diesel fuel for ships and boats

<sup>c</sup> Diesel fuel for locomotives

<sup>d</sup> Diesel fuel for construction

**Table C1.3-3. GHG Indirect Emission Factors for Electricity Generation**

Region	Emission Factor (lbs/MWh)		
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
Los Angeles	724.12	0.0302	0.0081

Source: eGRID2007 Version 1.1, December 2008 (Year 2005 data), as cited in California Climate Action Registry, General Reporting Protocol v3.1, January 2009. Tables C.2.

**Table C1.3-4. CH<sub>4</sub> and N<sub>2</sub>O Emission Factors for On-Road Mobile Sources**

Vehicle Types/Model Years	Emission Factor (g/mile)	
	N <sub>2</sub> O (g/mile)	CH <sub>4</sub> (g/mile)
Gasoline Passenger Cars		
Model Years 1984-1993	0.0647	0.0704
Model Year 1994	0.0560	0.0531
Model Year 1995	0.0473	0.0358
Model Year 1996	0.0426	0.0272
Model Year 1997	0.0422	0.0268
Model Year 1998	0.0393	0.0249
Model Year 1999	0.0337	0.0216
Model Year 2000	0.0273	0.0178
Model Year 2001	0.0158	0.0110
Model Year 2002	0.0153	0.0107
Model Year 2003	0.0135	0.0114
Model Year 2004	0.0083	0.0145
Model Year 2005 - Present	0.0079	0.0147
Gasoline Light Trucks (Vans, Pickup Trucks, SUVs)		
Model Years 1987-1993	0.1035	0.0813
Model Year 1994	0.0982	0.0646
Model Year 1995	0.0908	0.0517
Model Year 1996	0.0871	0.0452
Model Year 1997	0.0871	0.0452
Model Year 1998	0.0728	0.0391
Model Year 1999	0.0564	0.0321
Model Year 2000	0.0621	0.0346
Model Year 2001	0.0164	0.0151
Model Year 2002	0.0228	0.0178
Model Year 2003	0.0114	0.0155
Model Year 2004	0.0132	0.0152
Model Year 2005 - Present	0.0101	0.0157
Diesel Heavy-Duty Vehicles		
All Model Years	0.0048	0.0051
Source: California Climate Action Registry, General Reporting Protocol v3.1, January 2009. Tables C.4.		

Table C1.3-5. Construction GHG Emissions without Relocated Tenant Operations by Project Element and Project Scenario

Project Construction Element	Proposed Project Total Project Construction Emissions 2013-2015 (MT)				Alternative 1 - No Project Total Project Construction Emissions 2013-2015 (MT)				Alternative 2 - Reduced Project Total Project Construction Emissions 2013-2015 (MT)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<i>On-Site</i>												
Primary SCIG Project Site Construction	17,789	1	0	17,954	0	0	0	0	17,789	1	0	17,954
Relocated Tenant Construction	391	0	0	399	0	0	0	0	391	0	0	399
Wall Construction	208	0	0	209	0	0	0	0	208	0	0	209
SCE Tower Relocation	168	0	0	168	0	0	0	0	168	0	0	168
<i>Off-Site</i> <sup>a</sup>												
Primary SCIG Project Site Construction	7,913	0	0	7,975	0	0	0	0	7,913	0	0	7,975
Relocated Tenant Construction	974	0	0	974	0	0	0	0	974	0	0	974
Wall Construction	18	0	0	18	0	0	0	0	18	0	0	18
SCE Tower Relocation	37	0	0	37	0	0	0	0	37	0	0	37
<b>Total Project Construction Emissions</b>	<b>27,498</b>	<b>2</b>	<b>1</b>	<b>27,735</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27,498</b>	<b>2</b>	<b>1</b>	<b>27,735</b>
Note:												
<sup>a</sup> Off-site locomotive emissions were estimated to the California State line.												

Table C1.3-6. Construction GHG Emissions including Relocated Tenant Operations by Project Element and Project Scenario

Project Construction Element	Proposed Project Total Project Construction Emissions 2013-2015 (MT)				Alternative 1 - No Project Total Project Construction Emissions 2013-2015 (MT)				Alternative 2 - Reduced Project Total Project Construction Emissions 2013-2015 (MT)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<i>On-site</i>												
Primary SCIG Project Site Construction	17,789	1	0	17,954	0	0	0	0	17,789	1	0	17,954
Relocated Tenant Construction	391	0	0	399	0	0	0	0	391	0	0	399
Wall Construction	208	0	0	209	0	0	0	0	208	0	0	209
SCE Tower Relocation	168	0	0	168	0	0	0	0	168	0	0	168
Relocated Tenant Operations	22,583	7	0	22,754	0	0	0	0	22,583	7	0	22,754
<i>Off-site<sup>a</sup></i>												
Primary SCIG Project Site Construction	7,913	0	0	7,975	0	0	0	0	7,913	0	0	7,975
Relocated Tenant Construction	974	0	0	974	0	0	0	0	974	0	0	974
Wall Construction	18	0	0	18	0	0	0	0	18	0	0	18
SCE Tower Relocation	37	0	0	37	0	0	0	0	37	0	0	37
Relocated Tenant Operations	25,723	0	0	25,820	0	0	0	0	25,723	0	0	25,820
<b>Total Project Construction Emissions</b>	<b>75,804</b>	<b>10</b>	<b>1</b>	<b>76,309</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>75,804</b>	<b>10</b>	<b>1</b>	<b>76,309</b>
Note:												
<sup>a</sup> Off-site locomotive emissions were estimated to the California State line.												

**Table C1.3-7. Baseline GHG Emissions**

Source Category	Annual Emissions (MT)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Trucks On-Site	2,298	0	0	2,299
Trucks Off-Site <sup>a</sup>	67,209	0	0	67,268
Employee Commute On-Site	120	0	0	121
Employee Commute Off-Site	5,500	1	1	5,688
CHE	10,607	15	0	10,919
Locomotives Off-Site <sup>b</sup>	69,590	6	2	70,270
Tenant Locomotive Activities	14	0	0	14
Electricity	2,448	0	0	2,459
<b>Total – Baseline</b>	<b>157,786</b>	<b>21</b>	<b>3</b>	<b>159,038</b>

Notes:

<sup>a</sup> Off-site trucks emissions include trips originating from existing tenant facilities and trips between port terminals and Hobart Yard.

<sup>b</sup> Off-site locomotives includes linehaul locomotive travel from Hobart Yard to the California State line.



Table C1.3-8. Annual GHG Emissions for Electricity Consumption by Project Scenario

Year	Proposed Project <sup>d</sup> (MT)					Alternative 1 - No Project (MT)					Alternative 2 - Reduced Project <sup>d</sup> (MT)				
	Electricity Usage <sup>a</sup> [MWh]	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	Electricity Usage <sup>b</sup> [MWh]	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	Electricity Usage <sup>c</sup> [MWh]	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
2016	5,500	1,807	0	0	1,814	8,121	2,667	0	0	2,679	4,776	1,569	0	0	1,576
2023	8,700	2,858	0	0	2,870	8,121	2,667	0	0	2,679	4,776	1,569	0	0	1,576
2035	8,700	2,858	0	0	2,870	8,121	2,667	0	0	2,679	4,776	1,569	0	0	1,576
2046	8,700	2,858	0	0	2,870	8,121	2,667	0	0	2,679	4,776	1,569	0	0	1,576

Notes:

<sup>a</sup> Expected electricity consumption for the facility at full build-out was provided by BNSF. For electricity consumption in the years before the full build-out, GHG emissions were scaled down by the ratio of the throughput of the facility in that year to the full build-out year.

<sup>b</sup> Electricity consumption assumed 10% growth in baseline activity level.

<sup>c</sup> Electricity consumption was scaled down by the throughput of the facility in that year.

<sup>d</sup> Do not include relocated tenant emissions

**Table C1.3-9. Annual GHG Emissions for Electricity Consumption for Relocated Tenants**

Year	Proposed Project - Relocated Tenants (MT)					Alternative 2 - Reduced Project - Relocated Tenants (MT)				
	Electricity Usage <sup>d</sup> [MWh]	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	Electricity Usage <sup>d</sup> [MWh]	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
2016	2,122	697	0	0	700	2,122	697	0	0	700
2023	2,122	697	0	0	700	2,122	697	0	0	700
2035	2,122	697	0	0	700	2,122	697	0	0	700
2046	2,122	697	0	0	700	2,122	697	0	0	700

Notes:

<sup>d</sup> Electricity consumption was identical to the baseline for tenants relocated to a similarly sized site and was scaled down by the ratio of the acreage of the relocation site to the acreage of the original site for tenants relocated to a smaller site.

Table C1.3-10. Proposed Project GHG Emissions

Source Category	2016 Annual Emissions (MT)				2023 Annual Emissions (MT)				2035 Annual Emissions (MT)				2046 Annual Emissions (MT)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Locomotives On-Site	1,068	0	0	1,079	1,393	0	0	1,407	1,392	0	0	1,406	1,393	0	0	1,407
Locomotives Off-Site	85,634	7	2	86,470	114,178	9	3	115,294	114,178	9	3	115,294	114,178	9	3	115,294
Trucks On-Site	9,214	0	0	9,219	12,653	0	0	12,660	12,653	0	0	12,660	12,653	0	0	12,660
Trucks Off-Site	15,008	0	0	15,020	19,803	0	0	19,820	19,263	0	0	19,279	19,190	0	0	19,206
Railyard Equipment	218	0	0	232	221	0	0	241	221	0	0	241	221	0	0	241
TRU	5	0	0	16	7	0	0	22	7	0	0	22	7	0	0	22
Employee Commute On-Site	27	0	0	27	48	0	0	48	48	0	0	48	48	0	0	48
Employee Commute Off-Site	785	0	0	795	1,383	0	0	1,395	1,391	0	0	1,398	1,377	0	0	1,384
Refueling Trucks On-Site	1	0	0	1	2	0	0	2	2	0	0	2	2	0	0	2
Refueling Trucks Off-Site	17	0	0	17	22	0	0	22	22	0	0	22	22	0	0	22
Electricity	1,807	0	0	1,814	2,858	0	0	2,870	2,858	0	0	2,870	2,858	0	0	2,870
Relocated Tenant Sources																
Trucks On-Site	1,173	0	0	1,173	1,173	0	0	1,173	1,173	0	0	1,173	1,173	0	0	1,173
Trucks Off-Site	5,093	0	0	5,097	5,088	0	0	5,093	5,140	0	0	5,144	5,111	0	0	5,115
CHE	3,407	1	0	3,432	3,407	1	0	3,430	3,407	1	0	3,430	3,407	1	0	3,430
Employee Commute On-Site	32	0	0	32	31	0	0	31	31	0	0	31	31	0	0	31
Employee Commute Off-Site	1,349	0	0	1,366	1,312	0	0	1,323	1,329	0	0	1,336	1,319	0	0	1,326
Tenant Locomotive Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Electricity	697	0	0	700	697	0	0	700	697	0	0	700	697	0	0	700
<b>Total Emissions</b>	<b>125,531</b>	<b>9</b>	<b>2</b>	<b>126,491</b>	<b>164,276</b>	<b>11</b>	<b>3</b>	<b>165,531</b>	<b>163,810</b>	<b>11</b>	<b>3</b>	<b>165,055</b>	<b>163,686</b>	<b>11</b>	<b>3</b>	<b>164,929</b>

Note:  
Truck, train, and worker commute emissions include travel within the boundaries of the State of California.

Table C1.3-11. Alternative 1 - No Project GHG Emissions

Source Category	2016 Annual Emissions (MT)				2023 Annual Emissions (MT)				2035 Annual Emissions (MT)				2046 Annual Emissions (MT)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Trucks On-Site	2,673	0	0	2,674	2,673	0	0	2,674	2,673	0	0	2,674	2,673	0	0	2,674
Trucks Off-Site <sup>a,b</sup>	95,441	0	0	95,525	127,832	0	0	127,944	127,347	0	0	127,458	127,657	0	0	127,769
CHE	10,503	5	0	10,614	10,376	5	0	10,482	10,503	5	0	10,608	10,503	5	0	10,608
Employee Commute On-Site	128	0	0	128	126	0	0	127	125	0	0	126	125	0	0	125
Employee Commute Off-Site <sup>a</sup>	6,132	0	0	6,212	6,016	0	0	6,068	5,961	0	0	5,993	6,014	0	0	6,042
Tenant Locomotive Activities	15	0	0	15	15	0	0	15	15	0	0	15	15	0	0	15
Locomotives Off-Site <sup>a</sup>	78,960	6	2	79,732	105,281	8	3	106,309	105,281	8	3	106,309	105,281	8	3	106,309
Electricity	2,667	0	0	2,679	2,667	0	0	2,679	2,667	0	0	2,679	2,667	0	0	2,679
<b>Total Emissions</b>	<b>196,520</b>	<b>12</b>	<b>3</b>	<b>197,580</b>	<b>254,987</b>	<b>14</b>	<b>3</b>	<b>256,297</b>	<b>254,572</b>	<b>14</b>	<b>3</b>	<b>255,862</b>	<b>254,936</b>	<b>14</b>	<b>3</b>	<b>256,221</b>

Note:

<sup>a</sup> Truck, train, and worker commute emissions include travel within the boundaries of the State of California.

<sup>b</sup> Off-site trucks include tenant drayage trucks and drayage trucks that travel between Hobart Yard and port terminals.

Table C1.3-12. Alternative 2 - Reduced Project GHG Emissions

Source Category	2016 Annual Emissions (MT)				2023 Annual Emissions (MT)				2035 Annual Emissions (MT)				2046 Annual Emissions (MT)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Locomotives On-Site	987	0	0	997	995	0	0	1,004	1,075	0	0	1,086	1,076	0	0	1,087
Locomotives Off-Site <sup>a</sup>	85,009	7	2	85,839	108,525	9	3	109,585	85,634	7	2	86,470	85,634	7	2	86,470
Trucks On-Site	8,435	0	0	8,440	8,435	0	0	8,440	8,435	0	0	8,440	8,435	0	0	8,440
Trucks Off-Site <sup>a, b</sup>	20,603	0	0	20,621	44,729	0	0	44,767	12,775	0	0	12,786	12,775	0	0	12,786
Railyard Equipment	218	0	0	232	218	0	0	232	218	0	0	232	218	0	0	232
TRU	5	0	0	15	7	0	0	17	7	0	0	17	7	0	0	17
Employee Commute On-Site	22	0	0	22	22	0	0	22	22	0	0	22	22	0	0	22
Employee Commute Off-Site <sup>a</sup>	644	0	0	652	630	0	0	636	634	0	0	637	627	0	0	630
Refueling Trucks On-Site	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1
Refueling Trucks Off-Site <sup>a</sup>	24	0	0	24	24	0	0	24	24	0	0	24	24	0	0	24
Electricity	1,569	0	0	1,576	1,569	0	0	1,576	1,569	0	0	1,576	1,569	0	0	1,576
Relocated Tenant Sources																
Trucks On-Site	1,173	0	0	1,173	1,173	0	0	1,173	1,173	0	0	1,173	1,173	0	0	1,173
Trucks Off-Site <sup>a</sup>	5,093	0	0	5,097	5,088	0	0	5,093	5,140	0	0	5,144	5,111	0	0	5,115
CH <sub>4</sub>	3,407	1	0	3,432	3,407	1	0	3,430	3,407	1	0	3,430	3,407	1	0	3,430
Employee Commute On-Site	32	0	0	32	31	0	0	31	31	0	0	31	31	0	0	31
Employee Commute Off-Site <sup>a</sup>	1,349	0	0	1,366	1,312	0	0	1,323	1,329	0	0	1,336	1,319	0	0	1,326
Tenant Locomotive Activities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Electricity	697	0	0	700	697	0	0	700	697	0	0	700	697	0	0	700
<b>Total Emissions</b>	<b>129,266</b>	<b>9</b>	<b>2</b>	<b>130,220</b>	<b>176,862</b>	<b>11</b>	<b>3</b>	<b>178,054</b>	<b>122,170</b>	<b>9</b>	<b>2</b>	<b>123,104</b>	<b>122,126</b>	<b>9</b>	<b>2</b>	<b>123,059</b>

Notes:

<sup>a</sup> Truck, train, and worker commute emissions include travel within the boundaries of the State of California.

<sup>b</sup> Off-site trucks include tenant drayage trucks and drayage trucks that travel between Hobart Yard and port terminals.