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## **APPENDIX A**

### **West Oakland Community Health Risk Assessment Emission Inventory Summary**

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**APPENDIX A**

**West Oakland (Diesel) HRA Emissions Summary**

**Emissions Summary Overview**

<b>PROJECT PART</b>	<b>DIESEL PM (tons per year)*</b>
<b>Estimated Total for PART I -- Port of Oakland (seaport) **</b>	<b>265</b>
<b>Estimated Total for PART II -- UP Rail Yard</b>	<b>11</b>
<b>Estimated Total for PART III -- In and Adjacent To West Oakland Community (Non Port or UP)***</b>	<b>597</b>
<b>Estimated Total for Project (Parts I, II, and III)</b>	<b>873</b>

\* Totals are rounded. Modeled emissions are different than emissions reported in Appendices A and D since the size of the modeling domain is slightly smaller than the overall region in which emissions were estimated.

\*\* Total includes emissions that were calculated in Part III of the assessment. These diesel PM emissions include the fraction of port-related on-road trucking emissions and those associated with port-associated distribution centers. The emission contributions from these sources are approximately 4.2 tons per year of diesel PM.

\*\*\* Approximately 1.2 TPY of diesel PM emissions from port-associated major construction, standby generators, and miscellaneous diesel maintenance equipment are included in this total.

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**PART I - Emissions Summary By Category\***

<b>PART I - PORT OF OAKLAND DIESEL EMISSION SOURCES</b>	<b>DIESEL PM (tons per year)</b>	<b>NUMBER AND DESCRIPTION OF EMISSION SOURCES</b>
<b>OGV</b>		
Transiting (from Outer Buoys)	104.5	1,916 vessel visits (calls)
Maneuvering	41.5	1,916 vessel visits (calls)
Hotelling (Berthing)	60.6	1,916 vessel visits (calls)
Anchorage	1.9	125 vessel anchorages
<b>Total</b>	<b>209</b>	
<b>Harbor Craft</b>		
Tug (OGV assist)	12.9	6,630 tug trips (in and out)
Dredging-including material transport	0.4	68 tug trips (in and out)
<b>Total</b>	<b>13</b>	
<b>Cargo Handling Equipment</b>		
Picks/other	6.4	149 pieces of equipment
RTG Cranes (including BNSF)	3.3	36 pieces of equipment
Yard Trucks and Other Equipment	11.5	337 pieces of equipment
<b>Total</b>	<b>21</b>	
<b>Diesel Trucking</b>		
Surface Roads On road truck movement (Freeway exits to terminals)	4.9	2,620,483 marine terminal trips (in and out)
Gate Idling (on terminal)	0.6	912,288 rail facility trips (in and out)
In Terminal Truck movement	8.8	
In Terminal Idling	1.6	
Diesel traffic on freeways associated with the Port (calculated during the Part III analysis)**	2.8	
Port-Related Distribution Center: Oakland Maritime Support Services (calculated during the Part III analysis)**	1.4	
<b>Total</b>	<b>20</b>	
<b>Rail (BNSF-excluding Rail CHE)</b>		
Refueling Area	0.1	
Train Arrival/Departure	1.0	
Switching engines	1.0	
<b>Total</b>	<b>2.0</b>	
<b>Estimated Total for PART 1 --- Port of Oakland</b>	<b>265</b>	

\* Totals are rounded.

\*\* Emissions related to Port activities.

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**PART II - Emissions Summary By Category\***

PART 2 - UNION PACIFIC RAIL YARD DIESEL EMISSION SOURCES	DIESEL PM (tons per year)	NUMBER AND DESCRIPTION OF EMISSION SOURCES
<b>Locomotives</b>		
Switchers	1.9	4 switchers
Line Hauls	1.6	(--)
Service/Testing	0.5	(--)
<b>Total</b>	<b>3.9</b>	(--)
<b>TRU and Refrigerator Cars</b>	<b>3.2</b>	(--)
<b>Diesel Trucks</b>	<b>1.9</b>	Aproximately 350,000 Trucks
<b>Cargo Handling Equipment**</b>	<b>2.2</b>	(--)
<b>Stationary/Point Sources (Emergency Generators)</b>	<b>0.019</b>	1 emergency generator
<b>Estimated Total for PART II -- UP Railyard</b>	<b>11</b>	

\* Totals are rounded.

\*\* Includes Heavy Off-road Equipment

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**PART III - Emissions Summary By Category\***

<b>PART III - WEST OAKLAND COMMUNITY DIESEL EMISSION SOURCES (PART I Subtracted)</b>	<b>DIESEL PM (tons per year)</b>	<b>NUMBER AND DESCRIPTION OF EMISSION SOURCES</b>
<b>Freeways and Roadways</b>		
Roadway Network - Diesel Heavy Duty Trucks and Buses		
Freeways 80, 580, 880, and 980		Miles Traveled per Day
Trucks	83.3	313,861
Buses	5.8	19,973
<b>Total</b>	<b>89</b>	approx. 334,000 miles per day
<b>Off-port Ocean Going Vessels</b>		
Transiting (to/from Outer Buoy)	151.3	1,637 vessel visits
Maneuvering (to/from Outer Buoy)	46.5	1,637 vessel visits
Hotelling	37.9	1637 vessel visits
Anchorage	10.6	933 vessel anchorages
<b>Total</b>	<b>246</b>	
<b>Harbor Craft - Transit and Hotelling</b>		
		Number of Vessels
Commercial Fishing	30.2	859
Charter Fishing	18.6	155
Crew and Supply	3.0	9
Ferries	36.1	21
Excursion Vessels	30.0	118
Pilot Vessels	1.0	4
Tow Boats	18.5	24
Tug Boats	87.7	49
Work Boats	1.9	35
Others	10.7	65
<b>Total</b>	<b>238</b>	1,337
<b>Cargo Handling Equipment</b>		
Schnitzer (trucks, dozers, loaders, etc.,)	3.72	
Compass Container (fork lifts and side picks)	0.29	
Port Maintenance Facility (misc. equipment)**	0.05	
Cable Moore	0.01	
East Bay Resources	0.03	
Mutual Express	0.02	
Roadway Express	0.20	
<b>Total</b>	<b>4.3</b>	approx. 80 pieces of equipment
<b>Off-Port Locomotives</b>		
		Miles Traveled per Day
Amtrak locomotives - Off-Port, Off-Railyard	0.55	33
UP locomotives - Off-Port, Off-Railyard (includes Amtrak as through trains)	0.66	approx. 175
BNSF locomotives - Off-port, Off-BNSF Railyard	0.11	approx. 23
<b>Total</b>	<b>1.3</b>	

\* Totals are rounded.

\*\* Emissions related to Port activities.

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**PART III - Emissions Summary By Category\***

<b>PART III - WEST OAKLAND COMMUNITY DIESEL EMISSION SOURCES (PART I Subtracted)</b>	<b>DIESEL PM (tons per year)</b>	<b>NUMBER AND DESCRIPTION OF EMISSION SOURCES</b>
<b>Off-Port Locomotives (continued)</b>		
Amtrak Maintenance Facility (total)		
Passenger Train Movement (inside facility)	0.17	approx. 13 trains/day M-F and 7 trains/day Sat-Sun
Switcher Activity	0.40	1 switcher on site
Shuttle Wagon Activity	0.01	1 shuttle wagon on site
Maintenance and Testing	0.14	approx. 360 trains/month
Locomotive Idling	2.67	approx. 13 trains/day M-F and 7 trains/day Sat-Sun
<b>Total</b>	<b>3.4</b>	
<b>Trucking (within facility) and Distribution Centers</b>		
A M & S Transportation Co.		Trucks per Day
Idling (in facility)	0.00159	25
Truck movement (in facility)	0.00206	25
TRU (in facility)	0.00640	20
California Cereal Products		
Idling (in facility)	0.00086	5
Truck movement (in facility)	0.00062	5
California Waste		
Idling (in facility)	0.00617	44
Truck movement (in facility)	0.00552	44
Central Concrete Co.		
Idling (in facility)	0.00874	56
Truck movement (in facility)	0.00164	56
Compass Container		
Idling (in facility)	0.00014	2
Custom Alloy and Scrap		
Idling (in facility)	0.00280	20
Truck movement (in facility)	0.00130	20
East Bay MUD		
Idling (in facility)	0.00791	84
Truck movement (in facility)	0.01164	84
East Bay Resources		
Idling (in facility)	0.00006	1
Truck movement (in facility)	0.00002	1
Eastshore Charter Lines		
Idling (in facility)	0.00084	6
Truck movement (in facility)	0.00015	6

\* Totals are rounded.

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**PART III - Emissions Summary By Category\***

<b>PART III - WEST OAKLAND COMMUNITY DIESEL EMISSION SOURCES (PART I Subtracted)</b>	<b>DIESEL PM (tons per year)</b>	<b>NUMBER AND DESCRIPTION OF EMISSION SOURCES</b>
Golden Bear Produce		Trucks per Day
Idling (in facility)	0.00252	90
Truck movement (in facility)	0.00153	90
TRU (in facility)	0.00703	22
Greyhound Bus Station		
Idling (in facility)	0.00505	55
Bus movement (in facility)	0.00032	55
J&A Truck Repair		
Idling (in facility)	0.00070	5
Truck movement (in facility)	0.00010	5
J&O Truck/Tire		
Idling (in facility)	0.00070	5
Truck movement (in facility)	0.00010	5
JAC Truck Repair		
Idling (in facility)	0.00070	5
Truck movement (in facility)	0.00010	5
JB Truck Repair		
Idling (in facility)	0.00070	5
Truck movement (in facility)	0.00010	5
KMC Paper (Chang's)		
Idling (in facility)	0.00025	2
Truck movement (in facility)	0.00004	2
Lehman Transportation		
Idling (in facility)	0.00235	12
Macy Movers Inc.		
Idling (in facility)	0.00084	6
Truck movement (in facility)	0.00018	6
Matheson Postal Service		
Idling (in facility)	0.00420	30
Truck movement (in facility)	0.00188	30
Morgan Southern		
Idling (in facility)	0.00070	5
Truck movement (in facility)	0.00019	5
Mutual Express		
Idling (in facility)	0.00308	22
Truck movement (in facility)	0.00114	22
Narayan's Trucking		
Idling (in facility)	0.00534	30
National Recycling Corp.		
Idling (in facility)	0.00009	10
Truck movement (in facility)	0.00026	10

\* Totals are rounded.



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**PART III - Emissions Summary By Category\***

<b>PART III - WEST OAKLAND COMMUNITY DIESEL EMISSION SOURCES (PART I Subtracted)</b>	<b>DIESEL PM (tons per year)</b>	<b>NUMBER AND DESCRIPTION OF EMISSION SOURCES</b>
Oakland Maritime Support Services (OMSS)**		Trucks per Day
Idling (in facility)*		1,250
Truck movement (in facility)*		1,250
Online Trucking		
Idling (in facility)	0.00420	30
Quintero Trucking		
Idling (in facility)	0.00198	30
Truck movement (in facility)	0.00087	30
Roadway Express Inc.		
Idling (in facility)	0.00074	25
Truck movement (in facility)	0.00170	25
Saroni Co.		
Idling (in facility)	0.00061	7
Truck movement (in facility)	0.00015	7
TRU (in facility)	0.00448	7
Schnitzer (idling)		
Idling (in facility)	0.09687	Approx. 230
Sutta Co.		
Idling (in facility)	0.00133	11
Truck movement (in facility)	0.00052	11
Svenhard's Bakery		
Idling (in facility)	0.00224	16
Truck movement (in facility)	0.00141	16
Tighe Drayage Co.		
Idling (in facility)	0.00126	3
Truck movement (in facility)	0.00013	3
TRU (in facility)	0.00576	3
US Postal Service		
Idling (in facility)	0.06303	1,034
Truck movement (in facility)	0.31500	1,034
VA Transportation/Joint Intermodal		
Idling (in facility)	0.00112	8
Truck movement (in facility)	0.00022	8
<b>Total Diesel Trucking (within facility) and Distribution Centers</b>	<b>0.6</b>	

\* Totals are rounded.

\*\* Emissions at this facility are Port-associated. These emissions (1.4 TPY) have been added into Part I (see pages 1 and 2).

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**PART 3 - Emissions Summary By Category\***

<b>PART III - WEST OAKLAND COMMUNITY DIESEL EMISSION SOURCES (PART I Subtracted)</b>	<b>DIESEL PM (tons per year)</b>	<b>NUMBER AND DESCRIPTION OF EMISSION SOURCES</b>
<b>Stationary Diesel Sources</b>		
Plant No.		
591 EBMUD	0.1248	8 Total: (3 prime engines, 5 standby generators)
5202 USPS-vehicle maint	0.0208	2 Total: (standby generators)
8001 EBMUD	0.0151	3 Total: (standby generators)
10997 County of Alameda	0.0113	2 Total: (2 standby generators)
10998 County of Alameda	0.0113	1 Total: (standby generator)
11887 Duke Energy	0.0100	1 Total: (standby generator)
13712 EBMUD (portable)	0.0038	3 Total: (standby generator, 2 reciprocating engines)
15538 BNSF railway**	0.0005	1 Total: (standby generator)
15760 SSA terminals**	0.0004	1 Total: (standby generator)
<b>Total</b>	<b>0.2</b>	
<b>Construction Activity</b>		
66 Franklin St.	0.06	10 Total: (drill rig, crane, 2 welders, 4 forklifts, paver, backhoe)
206 2nd St.	0.02	1 Total: (gradeall lifter)
Harbor View Lofts	0.11	9 Total: (2 dozers, concrete saw, excavator, drill rig, backhoe, welder, forklift, paver)
300 Harrison St.	0.11	9 Total: (2 dozers, concrete saw, excavator, drill rig, backhoe, welder, forklift, paver)
8 Orchids	0.11	9 Total: (2 dozers, concrete saw, excavator, drill rig, backhoe, welder, forklift, paver)
Ettie St./Mandela Parkway	0.11	9 Total: (2 dozers, concrete saw, excavator, drill rig, backhoe, welder, forklift, paver)
Wheelink	0.11	9 Total: (2 dozers, concrete saw, excavator, drill rig, backhoe, welder, forklift, paver)
Bay Bridge Construction	12.11	112 Total: (6 cranes, 24 welders, 10 forklifts, cement mixer, 24 generators, 5 crew boats, 12 light plants, 25 air compressors)

\* Totals are rounded.

\*\* Emissions related to Port activities.

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**PART III - Emissions Summary By Category\***

<b>PART III - WEST OAKLAND COMMUNITY DIESEL EMISSION SOURCES (PART I Subtracted)**</b>	<b>DIESEL PM (tons per year)</b>	<b>NUMBER AND DESCRIPTION OF EMISSION SOURCES</b>
Berth 22 Wharf Reconstruction**	0.15	38+ Total: (cranes, crushers, loaders, pavers, trucks, tugs, etc.)
Wharf and Embankment Strengthen (WESP)**	0.02	4 Total: (pile driver, hammer, misc. equipment)
Berth 32/33 Rehabilitation**	0.05	3 Total: (crane, hammers)
Demolition of Building D-833 and Berth 59**	0.16	19 Total: (Two phased project: excavators, pavers trucks, misc. equipment.)
Berth 30 Terminal Expansion**	0.18	Unspecified - scaled from Berth 22 project by material used
Former Union Pacific Roundhouse**	0.49	Unspecified - scaled from projects at Berths 22 and 59; Building D-833 demolition
Dredging and Dredge Materials Disposal**	0.16	Undefined**
<b>Total</b>	<b>14</b>	
<b>Estimated Total for PART 3 --- West Oakland</b>	<b>597</b>	

\* Totals are rounded.

\* Emissions related to Port activities. See the document of the Port's website that discusses the emissions from Port Construction Projects in 2005.