

2012 Port of Oakland Seaport Emissions Inventory Results and Comparisons

2005 Inventory (in tons)	DPM	NOx	ROG	SO2	CO
Ocean-going vessels	209	2484	117	1413	235
Harbor craft	13	345	22	3	83
Cargo-handling equipment	21	766	53	7	408
Trucks	16	334	49	2	149
Locomotives	2	76	7	2	11
Miscellaneous Off-road Equipment	N/A	N/A	N/A	N/A	N/A
Total	261	4005	248	1427	886

2012 Inventory (in tons)	DPM	NOx	ROG	SO2	CO
Ocean-going vessels	57	2591	176	289	232
Harbor craft	9	235	25	0	95
Cargo-handling equipment	8	413	35	1	207
Trucks	2	135	13	0	49
Locomotives	0	19	1	0	2
Miscellaneous Off-road Equipment	0	4	1	0	4
Total	77	3398	250	290	589

% Change from 2005	DPM	NOx	ROG	SO2	CO
Ocean-going vessels	-72.4%	4.3%	50.2%*	-79.5%	-1.3%
Harbor craft	-30.3%	-31.8%	10.6%	-94.1%	14.2%
Cargo-handling equipment	-62.8%	-46.0%	-33.3%	-92.1%	-49.2%
Trucks	-87.6%	-59.5%	-74.3%	-90.0%	-67.3%
Locomotives	-77.2%	-74.7%	-82.5%	-99.6%	-81.2%
Miscellaneous Off-road Equipment	N/A	N/A	N/A	N/A	N/A
Total	-70.3%	-15.2%	0.8%	-79.7%	-33.5%

Legend	
DPM	Diesel Particulate Matter
NOx	Oxides of Nitrogen
ROG	Reactive Organic Gases
SO2	Sulfur Dioxide
CO	Carbon Monoxide

*denotes a recent revision in CARB's emission factor for ROG, resulting in an increase of calculated emissions

2012 Diesel Particulate Matter (DPM) Results and Future DPM Projections

DPM EMISSIONS (% REDUCTION SINCE 2005)		TEU* Growth Scenario							
		None		Low		Medium		High	
Source Types	2012 Progress to Date	2015	2020	2015	2020	2015	2020	2015	2020
On & Near-Shore	-66.0%	-78.4%	-86.8%	-77.9%	-86.3%	-77.9%	-86.1%	-77.9%	-86.0%
Off-Shore	-76.6%	-81.3%	-81.4%	-81.3%	-81.4%	-81.3%	-81.4%	-81.3%	-81.4%
Total	-70.3%	-79.6%	-84.6%	-79.3%	-84.3%	-79.3%	-84.2%	-79.3%	-84.1%
		No TEU growth 2012-2020		2% annual TEU growth 2012-2020		2% annual TEU growth 2012-2016; 3% annual TEU growth 2017-2020		2% annual TEU growth 2012-2016; 4% annual TEU growth 2017-2020	

DPM EMISSIONS (IN TONS)			TEU Growth Scenario							
			None		Low		Medium		High	
Source Types	2005	2012	2015	2020	2015	2020	2015	2020	2015	2020
On & Near-Shore	155	52	33	20	34	21	34	21	34	21
Off-Shore	106	25	20	20	20	20	20	20	20	20
Total	261	77	53	40	54	41	54	41	54	41
			No TEU growth 2012-2020		2% annual TEU growth 2012-2020		2% annual TEU growth 2012-2016; 3% annual TEU growth 2017-2020		2% annual TEU growth 2012-2016; 4% annual TEU growth 2017-2020	

Key Assumptions:

On and near-shore emissions have the greatest impact to diesel particulate matter health risk exposure. On and near-shore emissions are comprised of emissions from cargo-handling, harbor craft, locomotive, miscellaneous off-road equipment, trucks, and ocean-going vessel maneuvering and berth modes.

Off-shore emissions are comprised of emissions from ocean-going vessel cruise, anchorage, and reduced speed zone modes.

Number of vessel calls remains flat.

Existing regulatory deadlines remain unchanged.

Implementation of future programs may further reduce DPM emissions but is not assumed in this analysis.

*TEU equals twenty foot equivalent unit

Analysis prepared in September 2013. Version 2