

Port of Charleston- Harbor Craft Ship Assist Emissions - 2005
Harbor Craft Emissions

2005 Assumed Sulfur Content 2283 ppm
0.23%

Terminal	Vessel Type	Number of calls	Avg Vessel Length ft	Avg Duration at Berth hrs	Avg # Sailing Tugs	Avg # Docking Tugs	Avg Tug Power (Kw)	Tug Yard to Shutes Folley Isl		Shutes Folley Island to Terminal		Terminal to Tug Yard		Maneuvering Time At Berth (hrs)	Total Time per Tug per Vessel Trip (hrs)	Total Sailing Tug Hours	Total Docking Tug Hours	Total Tug Hours	Avg Load Factor	Emission Factors (g/kw-hr) - assuming 1.5						Emissions (tons per year)					
								Dist (nmi)	Speed (knts)	Dist (nmi)	Speed (knts)	Dist (nmi)	Speed (knts)							NOX	CO	HC	PM10	PM2.5	SO2	NOX	CO	HC	PM10	PM2.5	SO2
CS	Container	251	726	18	1.7	1.8	2,200	5.00	8	1.40	8	4.50	8	0.25	1.61	700	711	1,411	31%	13.000	2.500	0.270	0.300	0.291	0.630	13.79	2.65	0.29	0.32	0.31	0.67
	Barge	5	343	17	2.0	2.0	2,200	5.00	6	1.40	8	4.50	6	0.25	2.01	20	20	40	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.39	0.08	0.01	0.01	0.01	0.02
	Cruise	1	895	46	2.0	2.0	2,200	5.00	8	1.40	8	4.50	8	0.25	1.61	3	3	6	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.06	0.01	0.00	0.00	0.00	0.00
	Ro-Ro	0					2,200	5.00	8	1.40	8	4.50	8	0.25	1.61	0	0	0	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.00	0.00	0.00	0.00	0.00	0.00
	Breakbulk	42	567	27	1.7	1.6	2,200	5.00	8	1.40	8	4.50	8	0.25	1.61	114	108	223	31%	13.000	2.500	0.270	0.300	0.291	0.630	2.17	0.42	0.05	0.05	0.05	0.11
																				16.42	3.16	0.34	0.38	0.37	0.80						
NC	Container	350	799	15	1.6	1.6	2,200	5.00	8	8.90	8	3.75	8	0.25	2.46	1,358	1,380	2,739	31%	13.000	2.500	0.270	0.300	0.291	0.630	26.77	5.15	0.56	0.62	0.60	1.30
	Barge	7	343	13	2.0	1.9	2,200	5.00	6	8.90	8	3.75	6	0.25	2.82	39	37	76	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.74	0.14	0.02	0.02	0.02	0.04
	Cruise	0	0	0	0.0	0.0	2,200	5.00	8	8.90	8	3.75	8	0.25	2.46	0	0	0	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.00	0.00	0.00	0.00	0.00	0.00
	Ro-Ro	1	623	13	1.0	1.0	2,200	5.00	8	8.90	8	3.75	8	0.25	2.46	2	2	5	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.05	0.01	0.00	0.00	0.00	0.00
	Breakbulk	4	790	25	2.0	2.3	2,200	5.00	8	8.90	8	3.75	8	0.25	2.46	20	22	42	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.41	0.08	0.01	0.01	0.01	0.02
																				27.97	5.38	0.58	0.65	0.63	1.36						
UP	Container	0	0	0	0.0	0.0	2,200	5.00	8	0.70	8	5.25	8	0.25	1.62	0	0	0	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.00	0.00	0.00	0.00	0.00	0.00
	Barge	0	0	0	0.0	0.0	2,200	5.00	6	0.70	8	5.25	6	0.25	2.05	0	0	0	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.00	0.00	0.00	0.00	0.00	0.00
	Cruise	46	610	21	2.0	2.0	2,200	5.00	8	0.70	8	5.25	8	0.25	1.62	149	147	296	31%	13.000	2.500	0.270	0.300	0.291	0.630	2.90	0.56	0.06	0.07	0.06	0.14
	Ro-Ro	170	619	15	1.5	1.6	2,200	5.00	8	0.70	8	5.25	8	0.25	1.62	403	435	839	31%	13.000	2.500	0.270	0.300	0.291	0.630	8.19	1.58	0.17	0.19	0.18	0.40
	Breakbulk	9	587	29	1.8	1.8	2,200	5.00	8	0.70	8	5.25	8	0.25	1.62	26	26	52	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.51	0.10	0.01	0.01	0.01	0.02
																				11.60	2.23	0.24	0.27	0.26	0.56						
WT	Container	1082	799	14	1.7	1.7	2,200	5.00	8	3.8	8	5.25	8	0.25	2.01	3,798	3,794	7,592	31%	13.000	2.500	0.270	0.300	0.291	0.630	74.19	14.27	1.54	1.71	1.66	3.60
	Barge	46	343	18	1.7	1.7	2,200	5.00	6	3.8	8	5.25	6	0.25	2.43	192	187	380	31%	13.000	2.500	0.270	0.300	0.291	0.630	3.71	0.71	0.08	0.09	0.08	0.18
	Cruise	0	0	0	0.0	0.0	2,200	5.00	8	3.8	8	5.25	8	0.25	2.01	0	0	0	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.00	0.00	0.00	0.00	0.00	0.00
	Ro-Ro	0	0	0	0.0	0.0	2,200	5.00	8	3.8	8	5.25	8	0.25	2.01	0	0	0	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.00	0.00	0.00	0.00	0.00	0.00
	Breakbulk	0	0	0	0.0	0.0	2,200	5.00	8	3.8	8	5.25	8	0.25	2.01	0	0	0	31%	13.000	2.500	0.270	0.300	0.291	0.630	0.00	0.00	0.00	0.00	0.00	0.00
																				77.90	14.98	1.62	1.80	1.74	3.78						
Total	Container	1,683	788	15	1.7	1.7										5,856	5,885	11,741													
	Tug & Barge	58	343	17	1.8	1.7										252	244	496													
	Cruise	47	616	22	2.0	2.0										152	151	303													
	Ro-Ro	171	619	15	1.5	1.6										406	438	843													
	Breakbulk & Other	55	587	27	1.7	1.7										160	156	316													
	Total		2,014	751	15	1.7	1.7									6,825	6,874	13,699													

