



Determination of Annual Average CO Inventories and The Mobile Source Contribution in Selected Areas Using the 1990 OAQPS Trends Data Base

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Assessment and Modeling Division
Office of Mobile Sources
U.S. Environmental Protection Agency

Prepared for EPA by
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EPA Contract No. 68-D3-0035
Work Assignment No.III-117

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**DETERMINATION OF ANNUAL
AVERAGE CO INVENTORIES AND
THE MOBILE SOURCE
CONTRIBUTION IN SELECTED
AREAS USING THE 1990
OAQPS TRENDS DATA BASE**

**FINAL REPORT
EPA420-R-97-012**

Prepared for:

**Assessment and Modeling Division
Office of Mobile Sources
U.S. Environmental Protection Agency
Ann Arbor, MI 48105**

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CONTENTS

	Page
TABLES	v
CHAPTER I	
INTRODUCTION/BACKGROUND	I-1
CHAPTER II	
DETERMINATION OF 1990 ANNUAL AVERAGE CARBON MONOXIDE INVENTORIES	II-1
CHAPTER III	
DETERMINATION OF 1990 SEASONAL DAILY AVERAGE CO INVENTORIES ...	III-1
A. ON-ROAD SEASONAL DAILY AVERAGE CO INVENTORIES	III-1
B. NON-ROAD SEASONAL DAILY AVERAGE CO INVENTORIES	III-1
CHAPTER IV	
REFERENCES	IV-1

TABLES

	Page
II-1	Evaluated Cities and Included Counties II-2
II-2	Tier 3 Summary of 1990 Carbon Monoxide Emissions II-3
II-3	Tier 1 Summary of 1990 Carbon Monoxide Emissions II-7
III-1	Seasonal Daily Average CO Inventories by City and Vehicle Type III-3
III-2	Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted) III-7
III-3	Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted) III-42
III-4	Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments III-45
III-5	Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments III-80

CHAPTER I

INTRODUCTION/BACKGROUND

The U.S. Environmental Protection Agency (EPA) is currently working to develop carbon monoxide (CO) exposure adjustment factors to be applied to the Hazardous Air Pollution Exposure Model for Mobile sources version 3 (HAPEM-MS3) modeling being conducted by the EPA Office of Research and Development's (ORD) National Exposure Research Lab (NERL) for the Office of Mobile Sources (OMS). The HAPEM-MS3 exposure modeling is being conducted in order to predict exposure to mobile source CO emissions in 13 urban areas. OMS will then be able to estimate the exposure to, and the carcinogenic risk from, exposure to motor vehicle air toxic emission by relating air toxins and CO exposure using emission data. In order to make the CO exposure results representative of the mobile source contribution to CO emissions in urban areas it is necessary to be able to apportion the Trends ambient monitoring CO data into on-road mobile source and non-road mobile source contributions for all 13 areas. Ultimately these exposure numbers will be used to determine the contributions of on-road and non-road mobile sources to the carcinogenic risk from air toxins emissions that must be regulated under Section 202(1)(2) of the Clean Air Act (CAA), as amended in 1990, and will provide a critical piece of the analysis necessary to determine the level at which air toxics regulations will be required. The one calculation necessary to OMS that HAPEM-MS3 cannot perform is allocating the CO exposures to that which is contributed separately by on-road and non-road mobile sources for specific areas.

The purpose of this project was to provide OMS with the CO emission inventory data needed for the HAPEM-MS3 modeling. This data needed includes the 1990 annual average CO emission inventories for the 13 urban areas with a breakdown of the amount contributed by on-road and non-road mobile sources, and seasonal daily average CO inventories from the mobile sources in these urban areas, broken down by on-road and off-road contributions. The data source used for this analysis was the draft 1997 National Emission Trends (NET) inventory.

CHAPTER II

DETERMINATION OF 1990 ANNUAL AVERAGE CARBON MONOXIDE INVENTORIES

Annual CO inventory data for 1990 was taken from the 1997 Trends report (Pechan, 1997). The inventory in this report is derived from State inventory data, as well as containing some Interim inventory emission data.

Thirteen urban areas were selected for evaluation. The urban areas are: Baltimore, Boston, Chicago, Denver, Houston, Los Angeles, Minneapolis, New York City, Philadelphia, Phoenix, St. Louis, Spokane, and Washington DC. These cities, as well as the included counties are shown in Table II-1. For each of the selected cities, annual CO emissions were taken from the 1997 Trends report. Annual emissions were totaled at the Tier 3 level for each city (Table II-2). Annual emissions were also totaled at the Tier 1 level (Table II-3).

**Table II-1
Evaluated Cities and Included Counties**

City	State	County	City	State	County
Baltimore	Maryland	Anne Arundel Co	New York	New Jersey	Middlesex Co
Baltimore	Maryland	Baltimore	New York	New Jersey	Monmouth Co
Baltimore	Maryland	Baltimore Co	New York	New Jersey	Morris Co
Baltimore	Maryland	Carroll Co	New York	New Jersey	Passaic Co
Baltimore	Maryland	Harford Co	New York	New Jersey	Somerset Co
Baltimore	Maryland	Howard Co	New York	New Jersey	Union Co
			New York	New York	Bronx Co
Boston	Massachusetts	Bristol Co	New York	New York	Kings Co
Boston	Massachusetts	Essex Co	New York	New York	Nassau Co
Boston	Massachusetts	Middlesex Co	New York	New York	New York Co
Boston	Massachusetts	Norfolk Co	New York	New York	Queens Co
Boston	Massachusetts	Plymouth Co	New York	New York	Richmond Co
Boston	Massachusetts	Suffolk Co	New York	New York	Rockland Co
Boston	Massachusetts	Worcester Co	New York	New York	Suffolk Co
			New York	New York	Westchester Co
Chicago	Illinois	Cook Co	Philadelphia	Delaware	New Castle Co
Chicago	Illinois	Du Page Co	Philadelphia	New Jersey	Burlington Co
Chicago	Illinois	Kane Co	Philadelphia	New Jersey	Camden Co
Chicago	Illinois	Lake Co	Philadelphia	New Jersey	Gloucester Co
Chicago	Illinois	Will Co	Philadelphia	New Jersey	Mercer Co
Chicago	Indiana	Lake Co	Philadelphia	Pennsylvania	Bucks Co
Denver	Colorado	Adams Co	Philadelphia	Pennsylvania	Chester Co
Denver	Colorado	Arapahoe Co	Philadelphia	Pennsylvania	Delaware Co
Denver	Colorado	Boulder Co	Philadelphia	Pennsylvania	Montgomery Co
Denver	Colorado	Denver Co	Philadelphia	Pennsylvania	Philadelphia Co
Denver	Colorado	Douglas Co			
Denver	Colorado	Jefferson Co	Phoenix	Arizona	Maricopa Co
Denver	Colorado	Weld Co	Phoenix	Arizona	Pinal Co
Houston	Texas	Brazoria Co	Spokane	Idaho	Kootenai Co
Houston	Texas	Fort Bend Co	Spokane	Washington	Spokane Co
Houston	Texas	Galveston Co			
Houston	Texas	Harris Co	St. Louis	Illinois	Madison Co
Houston	Texas	Liberty Co	St. Louis	Illinois	Monroe Co
Houston	Texas	Montgomery Co	St. Louis	Illinois	St. Clair Co
Houston	Texas	Waller Co	St. Louis	Missouri	Franklin Co
			St. Louis	Missouri	Jefferson Co
Los Angeles	California	Los Angeles Co	St. Louis	Missouri	St. Charles Co
Los Angeles	California	Orange Co	St. Louis	Missouri	St. Louis
Los Angeles	California	Riverside Co	St. Louis	Missouri	St. Louis Co
Los Angeles	California	San Bernardino Co			
Los Angeles	California	Ventura Co	Washington	Washington DC	Washington
			Washington	Maryland	Charles Co
Minneapolis	Minnesota	Anoka Co	Washington	Maryland	Montgomery Co
Minneapolis	Minnesota	Carver Co	Washington	Maryland	Prince Georges Co
Minneapolis	Minnesota	Dakota Co	Washington	Virginia	Alexandria
Minneapolis	Minnesota	Hennepin Co	Washington	Virginia	Arlington Co
Minneapolis	Minnesota	Ramsey Co	Washington	Virginia	Fairfax
Minneapolis	Minnesota	Scott Co	Washington	Virginia	Fairfax Co
Minneapolis	Minnesota	Washington Co	Washington	Virginia	Falls Church
			Washington	Virginia	Loudoun Co
New York	Connecticut	Fairfield Co	Washington	Virginia	Manassas
New York	New Jersey	Bergen Co	Washington	Virginia	Manassas Park
New York	New Jersey	Essex Co	Washington	Virginia	Prince William Co
New York	New Jersey	Hudson Co			

Table II-2
Tier 3 Summary of 1990 Carbon Monoxide Emissions
(tons per year)

Source Category	Baltimore	Boston	Chicago	Denver	Houston	Los Angeles	Minneapolis	New York	Philadelphia	Phoenix	Spokane	St. Louis	Washington
FUEL COMB. ELEC. UTIL.	1,924	3,862	2,181	990	9,030	6,636	1,243	22,603	4,193	823	0	3,545	2,737
Coal	936	1,126	1,768	827	2,706	0	1,214	806	641	0	0	3,394	2,128
Oil	406	1,495	27	0	4	399	1	4,686	498	1	0	9	405
Gas	133	934	142	54	3,455	3,300	21	4,608	217	130	0	41	171
Internal Combustion	449	307	244	108	2,864	2,937	8	12,504	2,837	692	0	100	32
FUEL COMB. INDUSTRIAL	1,107	12,630	10,121	8,118	24,924	22,885	1,744	9,008	12,719	4,790	558	1,573	1,117
Coal	481	55	983	416	0	176	90	297	71	312	3	399	373
Oil	166	405	395	81	427	106	163	2,681	836	190	31	48	193
Gas	216	712	8,509	2,898	15,126	4,028	1,084	1,775	10,782	4,280	181	1,010	242
Other	0	10,480	33	3	1,771	162	76	3,901	65	0	343	32	104
Internal Combustion	244	978	201	4,720	7,601	18,414	331	354	964	8	0	85	204
FUEL COMB. OTHER	15,112	25,740	18,689	8,265	7,179	40,446	8,715	33,255	19,590	5,431	21,305	14,578	13,135
Commercial/Institutional Coal	1	89	86	31	0	0	191	107	7	0	7	96	380
Commercial/Institutional Oil	444	941	334	60	89	1,006	52	1,557	1,697	30	18	26	459
Commercial/Institutional Gas	75	441	244	631	1,579	8,040	514	2,017	1,443	281	42	129	352
Misc. Fuel Comb. (Except Residential)	1	299	2	16	29	3,197	15	122	32	213	0	221	3
Residential Wood	10,225	19,100	2,230	6,775	4,916	25,641	7,051	8,097	11,137	4,761	20,660	12,837	8,312
<i>fireplaces</i>	10,225	19,100	2,230	6,775	4,916	25,641	7,051	8,097	11,137	4,761	20,660	12,837	8,312
Residential Other	4,367	4,870	15,793	753	566	2,562	892	21,354	5,274	146	578	1,269	3,629
CHEMICAL & ALLIED PRODUCT MFG	7,832	0	6,675	0	25,327	286	0	936	11,022	0	0	39	0
Organic Chemical Mfg	7	0	5,848	0	5,027	1	0	655	0	0	0	0	0
<i>maleic anhydride</i>	0	0	701	0	0	0	0	0	0	0	0	0	0
<i>cyclohexanol</i>	0	0	0	0	73	0	0	0	0	0	0	0	0
<i>other</i>	7	0	5,147	0	4,954	1	0	655	0	0	0	0	0
Inorganic Chemical Mfg	7,817	0	3	0	1,068	8	0	0	10,891	0	0	0	0
<i>pigments; TiO2 chloride process: reactor</i>	0	0	0	0	0	0	0	0	10,870	0	0	0	0
<i>other</i>	7,817	0	3	0	1,068	8	0	0	21	0	0	0	0
Polymer & Resin Mfg	0	0	51	0	834	1	0	0	5	0	0	0	0
Agricultural Chemical Mfg	1	0	0	0	295	148	0	0	0	0	0	0	0
Paint, Varnish, Lacquer, Enamel Mfg	0	0	0	0	0	1	0	0	0	0	0	0	0
Pharmaceutical Mfg	0	0	0	0	0	0	0	3	33	0	0	0	0
Other Chemical Mfg	7	0	773	0	18,104	128	0	278	93	0	0	39	0
<i>carbon black mfg</i>	0	0	0	0	63	1	0	0	0	0	0	0	0
<i>carbon black furnace: fugitives</i>	0	0	0	0	17,278	0	0	0	0	0	0	0	0
<i>other</i>	7	0	773	0	763	127	0	278	93	0	0	39	0

Table II-2 (continued)
Tier 3 Summary of 1990 Carbon Monoxide Emissions (continued)
(tons per year)

Source Category	Baltimore	Boston	Chicago	Denver	Houston	Los Angeles	Minneapolis	New York	Philadelphia	Phoenix	Spokane	St. Louis	Washington
METALS PROCESSING	86,435	119	327,357	10	113	485	3,980	0	10,848	407	26,828	2,468	0
Nonferrous Metals Processing	9	0	72	9	2	89	0	0	0	42	26,828	50	0
<i>aluminum anode baking</i>	0	0	0	0	0	0	0	0	0	0	712	0	0
<i>prebake aluminum cell</i>	0	0	0	0	0	0	0	0	0	0	24,215	0	0
<i>other</i>	9	0	72	9	2	89	0	0	0	42	1,901	50	0
Ferrous Metals Processing	86,423	119	327,274	0	98	377	3,980	0	10,847	366	0	2,418	0
<i>basic oxygen furnace</i>	34,333	0	195,172	0	0	0	0	0	0	0	0	835	0
<i>carbon steel electric arc furnace</i>	0	0	5,278	0	0	0	0	0	0	0	0	1,112	0
<i>coke oven charging</i>	99	0	318	0	0	0	0	0	0	0	0	14	0
<i>gray iron cupola</i>	0	119	50	0	0	27	1	0	3,586	0	0	9	0
<i>iron ore sinter plant windbox</i>	0	0	91,154	0	0	0	0	0	0	0	0	0	0
<i>other</i>	51,991	0	35,301	0	98	350	3,979	0	7,261	366	0	450	0
Metals Processing NEC	3	0	11	0	13	19	0	0	1	0	0	0	0
PETROLEUM & RELATED INDUSTRIES	330	36	8,837	357	5,604	1,437	59,513	19	12,368	146	0	6,952	11
Oil & Gas Production	0	0	46	9	473	45	0	0	0	146	0	0	0
Petroleum Refineries & Related Industries	179	0	8,754	286	5,058	994	59,478	0	12,325	0	0	6,944	0
<i>fcc units</i>	0	0	8,405	192	3,880	0	59,324	0	11,974	0	0	6,944	0
<i>other</i>	179	0	349	94	1,178	994	154	0	350	0	0	0	0
Asphalt Manufacturing	152	36	38	62	72	398	35	19	43	0	0	8	11
OTHER INDUSTRIAL PROCESSES	344	70	1,001	511	1,231	2,276	33	4	153	19	0	459	220
Agriculture, Food, & Kindred Products	13	0	11	30	7	4	0	0	0	8	0	0	0
Textiles, Leather, & Apparel Products	2	1	0	0	0	8	0	0	0	0	0	0	0
Wood, Pulp & Paper, & Publishing Products	0	0	0	0	1,008	0	0	0	0	0	0	0	0
<i>sulfate pulping: rec. furnace/evaporator</i>	0	0	0	0	917	0	0	0	0	0	0	0	0
<i>sulfate (kraft) pulping: lime kiln</i>	0	0	0	0	23	0	0	0	0	0	0	0	0
<i>other</i>	0	0	0	0	68	0	0	0	0	0	0	0	0
Rubber & Miscellaneous Plastic Products	0	0	16	0	0	0	0	0	0	0	0	10	0
Mineral Products	330	69	969	463	30	2,219	20	2	153	9	0	379	28
Machinery Products	0	0	4	17	42	35	0	0	0	0	0	0	0
Electronic Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Transportation Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous Industrial Processes	0	0	0	2	144	10	13	1	1	2	0	69	192
SOLVENT UTILIZATION	19	127	114	1	6	36	0	33	4	0	0	1	2
Degreasing	0	0	0	0	0	0	0	2	0	0	0	0	0
Graphic Arts	2	0	4	0	2	1	0	31	1	0	0	0	2
Surface Coating	17	0	4	0	3	2	0	0	3	0	0	1	0
Other Industrial	0	127	106	1	1	6	0	0	0	0	0	0	0
Nonindustrial	0	0	0	0	0	27	0	0	0	0	0	0	0

Table II-2 (continued)
Tier 3 Summary of 1990 Carbon Monoxide Emissions (continued)
(tons per year)

Source Category	Baltimore	Boston	Chicago	Denver	Houston	Los Angeles	Minneapolis	New York	Philadelphia	Phoenix	Spokane	St. Louis	Washington
STORAGE & TRANSPORT	55	4	1	486	82	4	0	0	0	0	0	0	0
Bulk Terminals & Plants	0	0	0	8	10	1	0	0	0	0	0	0	0
Petroleum & Petroleum Product Storage	10	0	1	0	2	0	0	0	0	0	0	0	0
Petroleum & Petroleum Product Transport	0	0	0	2	41	0	0	0	0	0	0	0	0
Organic Chemical Storage	0	4	0	0	22	0	0	0	0	0	0	0	0
Organic Chemical Transport	0	0	0	0	6	0	0	0	0	0	0	0	0
Inorganic Chemical Storage	32	0	0	0	1	1	0	0	0	0	0	0	0
Bulk Materials Storage	13	0	0	477	0	2	0	0	0	0	0	0	0
WASTE DISPOSAL & RECYCLING	10,879	1,946	3,230	13,325	1,227	754	14,667	7,941	9,775	14,045	9,157	6,827	16,587
Incineration	1,104	1,946	2,149	9,723	1,213	223	10,399	7,924	2,242	9,058	6,084	3,083	1,095
<i>conical wood burner</i>	0	0	10	0	0	0	0	0	0	0	0	0	0
<i>municipal incinerator</i>	72	1,204	107	0	0	0	353	7,046	0	0	0	0	78
<i>industrial</i>	0	2	155	4	1,054	75	240	1	123	116	2	70	0
<i>commercial/institutional</i>	930	740	1,851	59	152	146	0	104	206	83	23	256	4
<i>residential</i>	0	0	0	9,658	0	0	9,806	600	0	8,842	6,059	1,878	0
<i>other</i>	102	0	26	1	8	2	0	173	1,912	17	0	878	1,013
Open Burning	9,776	0	1,050	3,597	14	138	4,268	17	7,534	4,986	3,073	3,745	15,492
<i>industrial</i>	0	0	3	10	0	0	0	0	0	1,295	24	20	0
<i>commercial/institutional</i>	0	0	1	11	0	138	29	0	0	54	6	11	0
<i>residential</i>	0	0	1,046	3,575	0	0	4,239	0	7,084	3,638	3,043	3,714	0
<i>other</i>	9,776	0	0	0	14	0	0	17	450	0	0	0	15,492
Landfills	0	0	32	5	0	392	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	1	0	0	0	0	0
ON-ROAD VEHICLES	428,667	849,674	1,220,733	535,512	697,528	3,044,446	626,450	2,241,352	977,397	410,389	102,654	428,532	647,940
Light-Duty Gas Vehicles & Motorcycles	299,375	609,700	823,868	328,916	471,058	1,729,827	423,504	1,505,228	791,175	251,215	66,987	288,260	430,526
<i>light-duty gas vehicles</i>	297,575	606,235	819,443	326,444	468,716	1,721,197	421,803	1,496,513	782,602	249,415	66,667	286,617	427,932
<i>motorcycles</i>	1,801	3,465	4,425	2,473	2,343	8,630	1,700	8,715	8,573	1,800	320	1,643	2,594
Light-Duty Gas Trucks	92,153	182,193	293,241	142,634	168,317	736,801	149,625	551,435	134,021	90,360	24,169	101,795	138,604
<i>light-duty gas trucks 1</i>	58,147	116,592	185,407	74,632	102,037	653,199	84,525	336,247	77,440	51,454	13,985	61,452	74,415
<i>light-duty gas trucks 2</i>	34,006	65,600	107,834	68,003	66,280	83,602	65,100	215,188	56,581	38,906	10,183	40,343	64,188
Heavy-Duty Gas Vehicles	27,551	41,234	77,767	51,363	45,854	503,441	44,407	140,229	39,710	56,688	9,289	30,185	64,543
Diesels	9,586	16,547	25,858	12,598	12,297	74,377	8,914	44,461	12,491	12,126	2,209	8,291	14,268
<i>heavy-duty diesel vehicles</i>	9,305	16,031	25,025	12,256	11,886	72,091	8,621	42,946	10,863	11,811	2,153	8,016	13,846
<i>light-duty diesel trucks</i>	39	69	117	75	59	102	42	212	144	53	9	38	56
<i>light-duty diesel vehicles</i>	243	447	716	267	353	2,184	250	1,302	1,483	262	47	238	366
NON-ROAD ENGINES AND VEHICLES	135,325	267,455	297,595	164,601	389,646	434,014	154,286	683,342	331,146	187,865	29,637	335,393	264,864
Non-Road Gasoline	109,310	235,627	247,396	134,831	326,178	328,845	124,576	595,941	280,137	156,111	23,373	280,301	234,930
<i>recreational</i>	765	3,591	2,534	6,060	4,896	27,479	5,396	2,299	832	2,118	628	5,878	4,157
<i>construction</i>	3,376	5,591	8,899	4,293	13,898	0	2,452	19,209	8,175	7,427	747	6,861	5,476
<i>industrial</i>	6,459	30,109	29,453	10,831	20,747	172,280	19,625	58,861	52,159	6,899	1,922	31,377	12,590
<i>lawn & garden</i>	59,120	81,438	116,592	55,738	137,884	74,807	52,111	231,876	163,656	109,302	12,412	112,140	173,416

Table II-2 (continued)
Tier 3 Summary of 1990 Carbon Monoxide Emissions (continued)
(tons per year)

Source Category	Baltimore	Boston	Chicago	Denver	Houston	Los Angeles	Minneapolis	New York	Philadelphia	Phoenix	Spokane	St. Louis	Washington
NON-ROAD ENGINES AND VEHICLES (continued)													
Non-Road Gasoline (continued)													
<i>farm</i>	527	978	614	204	713	4,557	892	1,475	915	82	47	2,178	880
<i>light commercial</i>	16,952	77,467	64,121	49,692	110,865	0	30,424	178,888	14,558	27,434	4,438	58,028	14,943
<i>logging</i>	259	454	235	136	609	0	249	460	139	61	252	592	971
<i>airport service</i>	1,453	5,074	3,733	1,840	2,788	0	2,143	4,127	0	2,494	223	2,842	1,084
<i>recreational marine vessels</i>	20,353	30,902	21,181	6,038	33,771	45,083	11,241	98,614	39,678	293	2,696	60,348	21,393
<i>other</i>	47	22	35	0	8	83	43	132	25	0	9	57	20
Non-Road Diesel	16,477	24,001	28,909	13,511	39,444	61,702	19,913	53,158	33,670	17,417	3,102	43,793	20,227
<i>recreational</i>	57	98	186	59	115	346	61	328	121	74	12	55	86
<i>construction</i>	7,529	15,682	13,694	7,647	21,762	40,742	5,466	31,093	13,851	12,665	1,293	13,986	10,615
<i>industrial</i>	778	2,518	3,670	1,152	1,871	10,422	1,812	7,305	2,707	1,013	164	3,050	529
<i>lawn & garden</i>	300	555	560	404	727	2,438	252	1,199	741	1,763	59	485	589
<i>farm</i>	6,855	3,628	8,355	2,974	11,412	2,494	11,318	8,361	14,688	790	728	24,585	7,416
<i>light commercial</i>	425	958	1,305	827	1,987	3,603	481	3,543	1,095	497	78	915	418
<i>logging</i>	0	0	0	0	894	0	0	0	0	0	713	0	0
<i>airport service</i>	534	562	1,141	448	675	1,656	523	1,329	466	615	54	717	575
Aircraft	8,842	6,711	17,930	14,759	11,231	39,921	9,055	30,407	15,121	13,108	2,919	9,333	9,465
Marine Vessels	224	690	436	0	11,863	3,438	28	2,595	1,074	0	0	676	0
<i>diesel</i>	223	690	211	0	0	2,508	28	284	783	0	0	676	0
<i>residual oil</i>	1	0	226	0	0	78	0	2,311	291	0	0	0	0
<i>gasoline</i>	0	0	0	0	0	852	0	0	0	0	0	0	0
<i>other</i>	0	0	0	0	11,863	0	0	0	0	0	0	0	0
Railroads	473	426	2,924	1,500	930	4,664	714	1,241	1,144	1,230	243	1,290	242
MISCELLANEOUS	115	7,757	3,347	3,266	20,702	28,557	5,451	15,766	9,955	2,483	33,417	2,651	4,910
Other Combustion	115	7,757	3,347	3,266	20,702	28,551	5,451	15,766	9,955	2,483	33,417	2,651	4,910
<i>structural fires</i>	108	6,381	3,224	1,619	5	3,297	2,290	13,828	6,331	1,265	394	1,815	4,475
<i>agricultural fires</i>	0	0	0	0	0	1,001	0	0	0	0	5,045	0	0
<i>slash/prescribed burning</i>	0	0	0	0	20,381	9,293	0	1,301	3,061	1,208	27,627	0	19
<i>forest wildfires</i>	7	1,375	123	1,647	316	6,151	3,161	402	495	9	351	836	417
<i>other</i>	0	0	0	0	0	8,808	0	235	68	0	0	0	0
Fugitive Dust	0	0	0	0	0	6	0	0	0	0	0	0	0
TOTAL ALL SOURCES	688,143	1,169,419	1,899,882	735,441	1,182,599	3,582,263	876,083	3,014,259	1,399,169	626,400	223,557	803,018	951,524

Note(s):

"Other" categories may contain emissions that could not be accurately allocated to specific source categories.

Zero values represent less than 0.5 tons/year.

Table II-3

Table II-3													
Tier 1 Summary of 1990 Carbon Monoxide Emissions													
(tons per year)													
Source Category	Baltimore	Boston	Chicago	Denver	Houston	Los Angeles	Minneapolis	New York	Philadelphia	Phoenix	Spokane	St. Louis	Washington
FUEL COMB. ELEC. UTIL.	1,924	3,862	2,181	990	9,030	6,636	1,243	22,603	4,193	823	0	3,545	2,737
FUEL COMB. INDUSTRIAL	1,107	12,630	10,121	8,118	24,924	22,885	1,744	9,008	12,719	4,790	558	1,573	1,117
FUEL COMB. OTHER	15,112	25,740	18,689	8,265	7,179	40,446	8,715	33,255	19,590	5,431	21,305	14,578	13,135
CHEMICAL & ALLIED PRODUCT MFG	7,832	0	6,675	0	25,327	286	0	936	11,022	0	0	39	0
METALS PROCESSING	86,435	119	327,357	10	113	485	3,980	0	10,848	407	26,828	2,468	0
PETROLEUM & RELATED INDUSTRIES	330	36	8,837	357	5,604	1,437	59,513	19	12,368	146	0	6,952	11
OTHER INDUSTRIAL PROCESSES	344	70	1,001	511	1,231	2,276	33	4	153	19	0	459	220
SOLVENT UTILIZATION	19	127	114	1	6	36	0	33	4	0	0	1	2
STORAGE & TRANSPORT	55	4	1	486	82	4	0	0	0	0	0	0	0
WASTE DISPOSAL & RECYCLING	10879.472	1946.4179	3230.0401	13324.664	1226.8886	754	14667.062	7941.2727	9775.4312	14044.689	9157.1	6827.4081	16587.413
Stationary Source Total	124,037	44,534	378,206	32,062	74,723	75,245	89,896	73,799	80,672	25,662	57,848	36,442	33,810
ON-ROAD VEHICLES	428,667	849,674	1,220,733	535,512	697,528	3,044,446	626,450	2,241,352	977,397	410,389	102,654	428,532	647,940
NON-ROAD ENGINES AND VEHICLES	135,325	267,455	297,595	164,601	389,646	434,014	154,286	683,342	331,146	187,865	29,637	335,393	264,864
Mobile Source Total	563,992	1,117,128	1,518,329	700,113	1,087,174	3,478,460	780,736	2,924,694	1,308,542	598,255	132,292	763,924	912,804
MISCELLANEOUS	115	7,757	3,347	3,266	20,702	28,557	5,451	15,766	9,955	2,483	33,417	2,651	4,910
TOTAL ALL SOURCES	688,143	1,169,419	1,899,882	735,441	1,182,599	3,582,263	876,083	3,014,259	1,399,169	626,400	223,557	803,018	951,524
Stationary % of Total	18.024853	3.808239385	19.90682933	4.359578	6.318564339	2.100498664	10.261094	2.448335842	5.765691064	4.0967882	25.876281	4.5381821	3.5532004
Mobile % of Total	81.958468	95.52847333	79.9170189	95.196325	91.93087238	97.10231837	89.116704	97.02861837	93.52279215	95.506853	59.175661	95.131694	95.930742
Onroad	62.293252	72.65775894	64.25313107	72.815092	58.98257193	84.9866872	71.50576	74.35831462	69.85549291	65.515572	45.918577	53.36515	68.094976
Nonroad	19.665216	22.87071438	15.66388782	22.381232	32.94830045	12.11563117	17.610944	22.67030375	23.66729924	29.991281	13.257084	41.766544	27.835766
Misc. % of Total	0.016679	0.66328729	0.176151775	0.4440974	1.750563283	0.797182965	0.6222016	0.523045792	0.711516787	0.3963585	14.948058	0.3301241	0.5160575
	100	100	100	100	100	100	100	100	100	100	100	100	100

CHAPTER III

DETERMINATION OF 1990 SEASONAL DAILY AVERAGE CO INVENTORIES

For each of the cities in Chapter II, inventory data from the Trends report was used to determine seasonal daily average CO emissions for on-road and non-road sources.

A. ON-ROAD SEASONAL DAILY AVERAGE CO INVENTORIES

The on-road seasonal daily average emissions were prepared using two different methodologies as follows. (1) Monthly CO emissions for each city were totaled by vehicle type. These emissions were then used to create seasonal totals where Winter was defined as December, January, and February, Spring was defined as March, April, and May, Summer was defined as June, July, and August, and Fall was defined as September, October, and November. Seasonal totals were then divided by the number of days in the season to determine seasonal daily average CO values. (2) Monthly CO emissions for each city were totaled by vehicle type. One month in each season was used as a representative month. For Winter this was January, for Spring this was April, for Summer this was July, and for Fall this was October. Monthly totals were then divided by the number of days in the month to determine seasonal daily average CO values.

The seasonal daily average CO values by vehicle type are shown for all cities, and both methods, in Table III-1.

B. NON-ROAD SEASONAL DAILY AVERAGE CO INVENTORIES

The non-road seasonal daily average emissions were prepared using the following methodology. For each of the selected cities, annual CO emissions were totaled at the Source Classification Code (SCC) level. Temporal factors from the 1985 National Acid Precipitation Assessment Program (NAPAP) (EPA, 1990) were then applied to determine seasonal daily average emissions. These temporal factors vary only at the Tier 3 level. The unadjusted seasonal daily average emissions are shown at the SCC level in Table III-2, and at the Tier 2 level in Table III-3.

Certain equipment categories required modifications to the default temporal factors. These source categories are expected to vary more widely by season than other categories in the same Tier 3 category (the level at which the temporal factors were developed). Six source categories were adjusted in this assessment. These adjustments could only be made for those cities which had emissions broken into 10-digit SCCs.

For all non-southern cities Golfcarts (2-stroke Gasoline and 4-Stroke Gasoline) and Lawnmowers (2-stroke Gasoline and 4-Stroke Gasoline) were unlikely to have Winter emissions. Therefore, Winter emissions were set to zero, and these emissions were

redistributed among the other seasons using their current ratios. The cities affected by this were Baltimore, Boston, New York, Philadelphia, and Washington, DC. For all cities, Snowmobiles (2-stroke Gasoline and 4-Stroke Gasoline) were determined to have only Winter emissions. Winter was assigned all annual emissions, and other seasonal emissions were set to zero. The only city affected by this was Los Angeles. The adjusted seasonal daily average emissions are shown at the SCC level in Table III-4, and at the Tier 2 level in Table III-5.

**Table III-1
Seasonal Daily Average CO Inventories by City and Vehicle Type**

City	Vehicle Type	Method 1				Method 2			
		Daily CO Emissions (tons/day)				Daily CO Emissions (tons/day)			
		Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Baltimore	LDGV	958.1	872.7	675.8	757.1	967.6	926.3	689.3	708.7
Baltimore	LDGT1	183.3	169.0	137.3	148.0	185.1	177.6	140.6	139.5
Baltimore	LDGT2	106.6	98.4	81.0	86.9	107.6	102.4	82.3	82.6
Baltimore	HDGV	79.8	76.3	75.3	70.6	81.5	77.2	78.2	69.7
Baltimore	LDDV	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Baltimore	LDDT	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Baltimore	HDDV	25.9	25.4	25.2	25.4	26.0	25.4	25.1	25.4
Baltimore	MC	5.7	4.9	4.5	4.6	5.7	4.9	4.7	4.6
Baltimore	TOTAL	1,360.1	1,247.4	999.9	1,093.4	1,374.4	1,314.6	1,021.0	1,031.3
Boston	LDGV	1,975.7	1,819.2	1,251.3	1,603.8	2,023.8	1,890.0	1,215.8	1,698.5
Boston	LDGT1	369.9	348.8	253.6	306.4	378.7	359.7	246.7	320.8
Boston	LDGT2	208.4	194.8	144.1	172.1	213.1	200.2	140.3	179.0
Boston	HDGV	122.6	118.5	103.4	107.5	126.7	119.8	101.5	109.6
Boston	LDDV	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Boston	LDDT	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Boston	HDDV	44.6	43.8	43.5	43.8	44.8	43.8	43.3	43.8
Boston	MC	11.2	10.0	8.1	8.8	11.4	9.9	7.9	8.7
Boston	TOTAL	2,733.8	2,536.4	1,805.3	2,243.9	2,800.0	2,624.8	1,757.0	2,361.8
Chicago	LDGV	2,810.3	2,380.8	1,739.2	2,060.1	2,723.9	2,555.9	1,743.7	2,074.2
Chicago	LDGT1	604.6	533.5	428.3	467.1	587.7	564.3	429.2	470.5
Chicago	LDGT2	350.9	309.3	249.9	272.7	343.4	323.8	248.9	275.0
Chicago	HDGV	228.7	214.4	209.0	200.3	230.6	217.2	209.4	201.3
Chicago	LDDV	2.0	1.9	1.9	2.0	2.0	1.9	2.0	2.0
Chicago	LDDT	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Chicago	HDDV	69.7	68.4	67.9	68.3	70.0	68.4	67.6	68.3
Chicago	MC	14.6	11.9	10.6	11.4	14.2	12.0	10.7	11.6
Chicago	TOTAL	4,081.1	3,520.6	2,707.1	3,082.3	3,972.0	3,743.9	2,711.8	3,103.2
Denver	LDGV	1,094.2	941.9	733.2	811.6	1,037.1	946.2	708.2	829.0
Denver	LDGT1	243.6	213.8	174.0	187.2	231.5	214.6	168.7	190.5
Denver	LDGT2	215.8	193.9	165.3	170.7	206.8	193.3	159.8	173.3
Denver	HDGV	152.3	142.1	135.9	132.9	152.2	142.0	130.0	133.8
Denver	LDDV	0.7	0.7	0.8	0.7	0.7	0.7	0.8	0.7
Denver	LDDT	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Denver	HDDV	34.1	33.5	33.2	33.5	34.2	33.5	33.1	33.5
Denver	MC	7.6	6.8	6.3	6.4	7.2	6.8	6.2	6.5
Denver	TOTAL	1,748.5	1,532.9	1,248.9	1,343.1	1,669.8	1,537.3	1,207.0	1,367.5
Houston	LDGV	1,523.7	1,215.4	1,262.8	1,138.4	1,516.1	1,230.8	1,216.1	1,033.4
Houston	LDGT1	311.6	266.9	290.8	249.3	310.0	268.9	280.2	227.8

**Table III-1
Seasonal Daily Average CO Inventories by City and Vehicle Type**

City	Vehicle Type	Method 1				Method 2			
		Daily CO Emissions (tons/day)				Daily CO Emissions (tons/day)			
		Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Houston	LDGT2	199.7	173.8	188.1	165.0	197.9	174.2	182.4	152.8
Houston	HDGV	122.4	118.0	144.8	117.2	124.2	115.5	138.0	107.5
Houston	LDDV	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Houston	LDDT	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Houston	HDDV	33.1	32.6	32.2	32.4	33.3	32.6	32.0	32.4
Houston	MC	6.9	6.0	6.7	6.0	6.8	5.9	6.6	5.7
Houston	TOTAL	2,198.5	1,813.9	1,926.5	1,709.4	2,189.4	1,829.0	1,856.4	1,560.7
Los Angeles	LDGV	5,528.0	4,920.7	4,298.8	4,126.2	5,495.9	4,716.2	4,377.7	3,931.7
Los Angeles	LDGT1	2,005.9	1,843.8	1,701.8	1,609.5	1,991.1	1,786.8	1,745.2	1,552.5
Los Angeles	LDGT2	243.2	232.6	227.5	212.9	240.9	227.8	233.8	208.2
Los Angeles	HDGV	1,399.6	1,351.6	1,407.3	1,358.9	1,416.7	1,345.4	1,457.1	1,367.5
Los Angeles	LDDV	5.6	6.0	6.3	6.0	5.6	6.0	6.4	6.0
Los Angeles	LDDT	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Los Angeles	HDDV	200.7	197.2	195.5	196.8	201.5	197.2	194.7	196.8
Los Angeles	MC	23.1	23.6	25.0	22.8	23.0	23.4	25.8	22.8
Los Angeles	TOTAL	9,406.4	8,575.7	7,862.5	7,533.5	9,374.9	8,303.1	8,041.0	7,285.7
Minneapolis	LDGV	1,548.0	1,174.8	840.4	1,066.8	1,480.4	1,201.2	844.8	1,077.5
Minneapolis	LDGT1	300.0	235.7	177.4	214.5	286.4	239.3	178.3	216.2
Minneapolis	LDGT2	228.4	179.2	140.5	166.3	218.1	179.7	141.0	167.2
Minneapolis	HDGV	136.0	123.3	110.7	116.9	136.4	123.3	111.0	117.4
Minneapolis	LDDV	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Minneapolis	LDDT	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Minneapolis	HDDV	24.0	23.6	23.4	23.5	24.1	23.6	23.3	23.5
Minneapolis	MC	6.1	4.6	3.6	4.4	5.8	4.5	3.7	4.4
Minneapolis	TOTAL	2,243.3	1,742.0	1,296.8	1,593.2	2,152.0	1,772.3	1,302.7	1,607.1
New York	LDGV	4,856.2	4,415.3	3,169.2	3,974.5	4,892.4	4,643.3	3,188.4	4,230.9
New York	LDGT1	1,049.3	983.4	775.6	878.9	1,059.2	1,018.2	782.5	916.7
New York	LDGT2	668.0	620.5	510.2	561.0	673.6	633.6	513.7	574.2
New York	HDGV	405.9	389.2	378.2	363.7	414.3	392.5	382.8	367.3
New York	LDDV	3.6	3.5	3.5	3.6	3.6	3.5	3.6	3.6
New York	LDDT	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
New York	HDDV	119.5	117.5	116.4	117.2	120.1	117.5	116.0	117.2
New York	MC	27.6	24.2	21.4	22.3	27.9	24.0	21.8	21.8
New York	TOTAL	7,130.8	6,554.1	4,975.2	5,921.9	7,191.7	6,833.1	5,009.3	6,232.3
Philadelphia	LDGV	2,506.3	2,271.5	1,695.3	2,110.8	2,523.3	2,406.4	1,716.7	2,241.1
Philadelphia	LDGT1	239.6	223.5	182.6	203.5	241.8	233.0	185.4	209.1
Philadelphia	LDGT2	173.0	161.7	137.2	148.5	174.6	166.4	138.4	150.7
Philadelphia	HDGV	114.9	109.7	107.9	102.8	117.2	110.5	110.2	103.2

**Table III-1
Seasonal Daily Average CO Inventories by City and Vehicle Type**

City	Vehicle Type	Method 1				Method 2			
		Daily CO Emissions (tons/day)				Daily CO Emissions (tons/day)			
		Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Philadelphia	LDDV	4.1	4.0	4.0	4.1	4.1	4.0	4.0	4.1
Philadelphia	LDDT	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Philadelphia	HDDV	30.2	29.7	29.5	29.7	30.4	29.7	29.3	29.7
Philadelphia	MC	27.6	23.9	20.6	22.0	28.0	23.6	20.7	21.5
Philadelphia	TOTAL	3,096.2	2,824.4	2,177.5	2,621.6	3,119.8	2,974.1	2,205.2	2,759.8
Phoenix	LDGV	702.0	591.3	831.2	608.4	741.4	581.9	824.8	591.3
Phoenix	LDGT1	140.3	122.7	173.5	127.3	146.9	121.0	173.7	123.9
Phoenix	LDGT2	100.2	95.1	133.1	97.8	103.3	94.1	133.6	95.8
Phoenix	HDGV	131.7	142.5	199.0	147.5	134.4	142.5	198.2	147.5
Phoenix	LDDV	0.7	0.7	0.8	0.7	0.7	0.7	0.8	0.7
Phoenix	LDDT	0.1	0.1	0.2	0.1	0.1	0.1	0.2	0.1
Phoenix	HDDV	32.9	32.3	32.0	32.2	33.0	32.3	31.9	32.2
Phoenix	MC	4.2	4.4	6.4	4.7	4.2	4.4	6.5	4.6
Phoenix	TOTAL	1,112.0	989.0	1,376.3	1,018.6	1,164.0	977.0	1,369.7	996.3
Spokane	LDGV	207.8	190.4	157.1	175.7	199.1	194.9	150.2	179.3
Spokane	LDGT1	43.0	39.5	33.8	37.0	41.2	40.1	32.6	37.7
Spokane	LDGT2	30.8	28.3	25.5	27.1	29.5	28.4	24.8	27.6
Spokane	HDGV	27.4	25.8	24.0	24.6	27.4	25.8	23.8	24.8
Spokane	LDDV	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Spokane	LDDT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spokane	HDDV	6.0	5.9	5.8	5.9	6.0	5.9	5.8	5.9
Spokane	MC	0.9	0.9	0.8	0.9	0.9	0.9	0.8	0.9
Spokane	TOTAL	316.1	290.9	247.3	271.4	304.3	296.1	238.3	276.3
St. Louis	LDGV	943.1	811.9	646.0	743.0	919.3	831.6	646.4	764.4
St. Louis	LDGT1	193.8	173.4	148.1	158.5	189.5	176.9	147.9	162.3
St. Louis	LDGT2	125.8	114.1	98.4	104.1	123.8	115.7	97.8	106.4
St. Louis	HDGV	86.8	81.6	84.0	78.5	87.4	81.9	83.8	78.0
St. Louis	LDDV	0.7	0.6	0.6	0.7	0.7	0.6	0.6	0.7
St. Louis	LDDT	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
St. Louis	HDDV	22.3	21.9	21.7	21.9	22.4	21.9	21.6	21.9
St. Louis	MC	5.3	4.5	4.0	4.2	5.3	4.5	4.0	4.2
St. Louis	TOTAL	1,378.0	1,208.1	1,003.0	1,110.9	1,348.5	1,233.3	1,002.3	1,138.0
Washington	LDGV	1,404.8	1,218.1	990.4	1,080.5	1,427.9	1,234.5	1,008.6	1,008.6
Washington	LDGT1	239.9	212.9	175.3	188.0	244.0	215.2	177.5	176.2
Washington	LDGT2	198.1	181.1	161.8	162.7	201.5	182.3	164.5	155.9
Washington	HDGV	184.1	174.5	182.5	166.2	187.3	174.7	190.2	164.8
Washington	LDDV	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Washington	LDDT	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

**Table III-1
Seasonal Daily Average CO Inventories by City and Vehicle Type**

City	Vehicle Type	Method 1				Method 2			
		Daily CO Emissions (tons/day)				Daily CO Emissions (tons/day)			
		Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall
Washington	HDDV	38.5	37.9	37.5	37.8	38.7	37.9	37.4	37.8
Washington	MC	8.1	7.0	6.7	6.7	8.2	7.0	6.9	6.6
Washington	TOTAL	2,074.7	1,832.7	1,555.4	1,643.0	2,108.7	1,852.7	1,586.3	1,550.9

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Baltimore			135,325	248	372	482	386
	Non-Road Gasoline, 2-Stroke		11,008	19.36	30.24	39.92	31.45
	Recreational Vehicles	Motorcycles:Off-Road	29	0.05	0.08	0.11	0.08
	Recreational Vehicles	All Terrain Vehicles	26	0.04	0.07	0.09	0.07
	Recreational Vehicles	Golf Carts	74	0.13	0.20	0.27	0.21
	Recreational Vehicles	Specialty Vehicle Carts	30	0.05	0.08	0.11	0.08
	Construction Equipment	Tampers/Rammers	71	0.13	0.20	0.26	0.20
	Construction Equipment	Plate Compactors	111	0.20	0.31	0.40	0.32
	Construction Equipment	Paving Equipment	70	0.12	0.19	0.25	0.20
	Construction Equipment	Bore/Drill Rigs	4	0.01	0.01	0.01	0.01
	Industrial Equipment	Aerial Lifts	27	0.05	0.07	0.10	0.08
	Industrial Equipment	Forklifts	1,498	2.63	4.11	5.43	4.28
	Industrial Equipment	Sweepers/Scrubbers	51	0.09	0.14	0.18	0.14
	Industrial Equipment	Other General Industrial Equipment	39	0.07	0.11	0.14	0.11
	Lawn & Garden Equipment	Lawnmowers	2,407	4.23	6.61	8.73	6.88
	Lawn & Garden Equipment	Rotary Tillers <5HP	7	0.01	0.02	0.02	0.02
	Lawn & Garden Equipment	Chain Saws <5HP	2,315	4.07	6.36	8.40	6.62
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	2,258	3.97	6.20	8.19	6.45
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	835	1.47	2.29	3.03	2.38
	Lawn & Garden Equipment	Shredders <5HP	1	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	25	0.04	0.07	0.09	0.07
	Light Commercial Equipment	Generator Sets <50HP	716	1.26	1.97	2.60	2.05
	Light Commercial Equipment	Pumps <50HP	103	0.18	0.28	0.37	0.30
	Light Commercial Equipment	Gas Compressors <50HP	43	0.08	0.12	0.16	0.12
	Logging Equipment	Chain Saws >4HP	259	0.46	0.71	0.94	0.74
	Airport Service Equipment	Terminal Tractors	8	0.01	0.02	0.03	0.02
	Non-Road Gasoline, 4-Stroke		77,902	136.97	214.02	282.50	222.58
	Recreational Vehicles	Motorcycles:Off-Road	11	0.02	0.03	0.04	0.03
	Recreational Vehicles	All Terrain Vehicles	277	0.49	0.76	1.00	0.79
	Recreational Vehicles	Minibikes	5	0.01	0.01	0.02	0.01
	Recreational Vehicles	Golf Carts	294	0.52	0.81	1.07	0.84
	Recreational Vehicles	Specialty Vehicle Carts	19	0.03	0.05	0.07	0.05
	Construction Equipment	Asphalt Pavers	28	0.05	0.08	0.10	0.08
	Construction Equipment	Tampers/Rammers	1	0.00	0.00	0.00	0.00
	Construction Equipment	Plate Compactors	192	0.34	0.53	0.70	0.55
Baltimore (cont.)							
	Non-Road Gasoline, 4-Stroke (cont.)						

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category	Annual CO (tons/day)	Daily CO Emissions (tons/day)				
			Winter	Spring	Summer	Fall	
	Construction Equipment	Rollers	252	0.44	0.69	0.91	0.72
	Construction Equipment	Paving Equipment	528	0.93	1.45	1.92	1.51
	Construction Equipment	Surfacing Equipment	183	0.32	0.50	0.66	0.52
	Construction Equipment	Signal Boards	8	0.01	0.02	0.03	0.02
	Construction Equipment	Trenchers	239	0.42	0.66	0.87	0.68
	Construction Equipment	Bore/Drill Rigs	90	0.16	0.25	0.33	0.26
	Construction Equipment	Concrete/Industrial Saws	784	1.38	2.15	2.84	2.24
	Construction Equipment	Cement & Mortar Mixers	266	0.47	0.73	0.96	0.76
	Construction Equipment	Cranes	69	0.12	0.19	0.25	0.20
	Construction Equipment	Crushing/Proc. Equipment	32	0.06	0.09	0.12	0.09
	Construction Equipment	Rough Terrain Forklifts	59	0.10	0.16	0.21	0.17
	Construction Equipment	Rubber Tire Loaders	68	0.12	0.19	0.25	0.19
	Construction Equipment	Tractors/Loaders/Backhoes	44	0.08	0.12	0.16	0.13
	Construction Equipment	Skid Steer Loaders	168	0.30	0.46	0.61	0.48
	Construction Equipment	Dumpers/Tenders	39	0.07	0.11	0.14	0.11
	Construction Equipment	Other Construction Equipment	69	0.12	0.19	0.25	0.20
	Industrial Equipment	Aerial Lifts	608	1.07	1.67	2.20	1.74
	Industrial Equipment	Forklifts	3,740	6.58	10.28	13.56	10.69
	Industrial Equipment	Sweepers/Scrubbers	294	0.52	0.81	1.07	0.84
	Industrial Equipment	Other General Industrial Equipment	177	0.31	0.49	0.64	0.50
	Industrial Equipment	Other Material Handling Equipment	26	0.05	0.07	0.09	0.07
	Lawn & Garden Equipment	Lawnmowers	15,385	27.05	42.27	55.79	43.96
	Lawn & Garden Equipment	Rotary Tillers <5HP	1,287	2.26	3.54	4.67	3.68
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	1	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	-	-	-	-
	Lawn & Garden Equipment	Rear Engine Riding Mowers	1,441	2.53	3.96	5.23	4.12
	Lawn & Garden Equipment	Front Mowers	408	0.72	1.12	1.48	1.17
	Lawn & Garden Equipment	Shredders <5HP	46	0.08	0.13	0.17	0.13
	Lawn & Garden Equipment	Lawn & Garden Tractors	13,466	23.68	37.00	48.83	38.47
	Lawn & Garden Equipment	Wood Splitters	266	0.47	0.73	0.96	0.76
	Lawn & Garden Equipment	Chippers/Stump Grinders	1,164	2.05	3.20	4.22	3.32
	Lawn & Garden Equipment	Commercial Turf Equipment	17,750	31.21	48.76	64.37	50.72
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	57	0.10	0.16	0.21	0.16
Baltimore (cont.)							
	Non-Road Gasoline, 4-Stroke (cont.)						
	Farm Equipment	2-Wheel Tractors	10	0.02	0.03	0.04	0.03
	Farm Equipment	Agricultural Tractors	70	0.12	0.19	0.25	0.20

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Farm Equipment	Combines	13	0.02	0.04	0.05	0.04
	Farm Equipment	Agricultural Mowers	15	0.03	0.04	0.05	0.04
	Farm Equipment	Sprayers	48	0.08	0.13	0.17	0.14
	Farm Equipment	Tillers >5HP	260	0.46	0.71	0.94	0.74
	Farm Equipment	Swathers	49	0.09	0.13	0.18	0.14
	Farm Equipment	Hydro Power Units	48	0.08	0.13	0.17	0.14
	Farm Equipment	Other Agricultural Equipment	14	0.02	0.04	0.05	0.04
	Light Commercial Equipment	Generator Sets <50HP	10,143	17.83	27.87	36.78	28.98
	Light Commercial Equipment	Pumps <50HP	1,983	3.49	5.45	7.19	5.67
	Light Commercial Equipment	Air Compressors <50HP	1,330	2.34	3.66	4.82	3.80
	Light Commercial Equipment	Welders <50HP	1,983	3.49	5.45	7.19	5.67
	Light Commercial Equipment	Pressure Washers <50HP	650	1.14	1.78	2.36	1.86
	Airport Service Equipment	Airport Support Equipment	181	0.32	0.50	0.66	0.52
	Airport Service Equipment	Terminal Tractors	1,264	2.22	3.47	4.58	3.61
	Non-Road Diesel		16,477	28.97	45.27	59.75	47.08
	Recreational Vehicles	Total	57	0.10	0.16	0.21	0.16
	Construction Equipment	Total	7,529	13.24	20.68	27.30	21.51
	Industrial Equipment	Total	778	1.37	2.14	2.82	2.22
	Lawn & Garden Equipment	Total	300	0.53	0.83	1.09	0.86
	Farm Equipment	Total	6,855	12.05	18.83	24.86	19.58
	Light Commercial Equipment	Total	425	0.75	1.17	1.54	1.21
	Airport Service Equipment	Total	534	0.94	1.47	1.93	1.52
	Aircraft		8,842	24.29	24.29	24.29	24.29
	Military Aircraft	Total	2,005	5.51	5.51	5.51	5.51
	Commercial Aircraft	Total	2,868	7.88	7.88	7.88	7.88
	General Aviation	Total	3,363	9.24	9.24	9.24	9.24
	Air Taxi	Total	605	1.66	1.66	1.66	1.66
	Marine Vessels, Commercial		224	0.62	0.62	0.62	0.62
	Diesel	Total	219	0.60	0.60	0.60	0.60
	Diesel	Harbor Vessels	4	0.01	0.01	0.01	0.01
	Residual	Total	1	0.00	0.00	0.00	0.00
Baltimore (cont.)							
	Marine Vessels, Recreational		20,400	35.87	56.04	73.98	58.28
	Pleasure Craft, Gasoline 2-Stroke	Outboards	6,819	11.99	18.73	24.73	19.48
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	24	0.04	0.07	0.09	0.07
	Pleasure Craft, Gasoline 4-Stroke	Inboards	5,131	9.02	14.10	18.61	14.66
	Pleasure Craft, Gasoline 4-Stroke	Outboards	32	0.06	0.09	0.12	0.09

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Pleasure Craft, Gasoline 4-Stroke	Sterndrive	8,334	14.65	22.89	30.22	23.81
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	12	0.02	0.03	0.04	0.03
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	0	0.00	0.00	0.00	0.00
	Pleasure Craft, Diesel	Inboards	34	0.06	0.09	0.12	0.10
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	13	0.02	0.04	0.05	0.04
	Railroads		473	1.44	1.44	1.44	1.44
	Diesel	Total	473	1.44	1.44	1.44	1.44

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Boston			267,455	564	678	992	706
	Non-Road Gasoline, 2-Stroke		24,003	50.12	60.67	89.68	63.30
	Recreational Vehicles	Motorcycles:Off-Road	138	0.29	0.35	0.52	0.36
	Recreational Vehicles	All Terrain Vehicles	128	0.27	0.32	0.48	0.34
	Recreational Vehicles	Golf Carts	320	0.67	0.81	1.20	0.84
	Recreational Vehicles	Specialty Vehicle Carts	174	0.36	0.44	0.65	0.46
	Construction Equipment	Tampers/Rammers	119	0.25	0.30	0.45	0.31
	Construction Equipment	Plate Compactors	192	0.40	0.49	0.72	0.51
	Construction Equipment	Paving Equipment	104	0.22	0.26	0.39	0.27
	Construction Equipment	Bore/Drill Rigs	6	0.01	0.02	0.02	0.02
	Industrial Equipment	Aerial Lifts	175	0.37	0.44	0.65	0.46
	Industrial Equipment	Forklifts	5,720	11.94	14.46	21.37	15.09
	Industrial Equipment	Sweepers/Scrubbers	356	0.74	0.90	1.33	0.94
	Industrial Equipment	Other General Industrial Equipment	199	0.42	0.50	0.74	0.53
	Lawn & Garden Equipment	Lawnmowers	3,651	7.62	9.23	13.64	9.63
	Lawn & Garden Equipment	Rotary Tillers <5HP	13	0.03	0.03	0.05	0.03
	Lawn & Garden Equipment	Chain Saws <5HP	4,355	9.09	11.01	16.27	11.49
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	2,647	5.53	6.69	9.89	6.98
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	896	1.87	2.26	3.35	2.36
	Lawn & Garden Equipment	Shredders <5HP	2	0.00	0.00	0.01	0.01
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	48	0.10	0.12	0.18	0.13
	Light Commercial Equipment	Generator Sets <50HP	3,652	7.63	9.23	13.65	9.63
	Light Commercial Equipment	Pumps <50HP	384	0.80	0.97	1.43	1.01
	Light Commercial Equipment	Gas Compressors <50HP	240	0.50	0.61	0.90	0.63
	Logging Equipment	Chain Saws >4HP	454	0.95	1.15	1.70	1.20
	Airport Service Equipment	Terminal Tractors	29	0.06	0.07	0.11	0.08
	Non-Road Gasoline, 4-Stroke		180,700	377.29	456.71	675.14	476.57
	Recreational Vehicles	Motorcycles:Off-Road	52	0.11	0.13	0.20	0.14
	Recreational Vehicles	All Terrain Vehicles	1,377	2.87	3.48	5.14	3.63
	Recreational Vehicles	Minibikes	20	0.04	0.05	0.08	0.05
	Recreational Vehicles	Golf Carts	1,271	2.65	3.21	4.75	3.35
	Recreational Vehicles	Specialty Vehicle Carts	110	0.23	0.28	0.41	0.29
	Construction Equipment	Asphalt Pavers	48	0.10	0.12	0.18	0.13
	Construction Equipment	Tampers/Rammers	2	0.00	0.01	0.01	0.01
	Construction Equipment	Plate Compactors	332	0.69	0.84	1.24	0.88

Boston (cont.)

Non-Road Gasoline, 4-Stroke (cont.)

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Construction Equipment	Rollers	399	0.83	1.01	1.49	1.05
	Construction Equipment	Paving Equipment	780	1.63	1.97	2.91	2.06
	Construction Equipment	Surfacing Equipment	295	0.62	0.75	1.10	0.78
	Construction Equipment	Signal Boards	11	0.02	0.03	0.04	0.03
	Construction Equipment	Trenchers	407	0.85	1.03	1.52	1.07
	Construction Equipment	Bore/Drill Rigs	131	0.27	0.33	0.49	0.35
	Construction Equipment	Concrete/Industrial Saws	1,397	2.92	3.53	5.22	3.68
	Construction Equipment	Cement & Mortar Mixers	404	0.84	1.02	1.51	1.07
	Construction Equipment	Cranes	131	0.27	0.33	0.49	0.35
	Construction Equipment	Crushing/Proc. Equipment	46	0.10	0.12	0.17	0.12
	Construction Equipment	Rough Terrain Forklifts	94	0.20	0.24	0.35	0.25
	Construction Equipment	Rubber Tire Loaders	132	0.28	0.33	0.49	0.35
	Construction Equipment	Tractors/Loaders/Backhoes	76	0.16	0.19	0.28	0.20
	Construction Equipment	Skid Steer Loaders	321	0.67	0.81	1.20	0.85
	Construction Equipment	Dumpers/Tenders	47	0.10	0.12	0.18	0.13
	Construction Equipment	Other Construction Equipment	115	0.24	0.29	0.43	0.30
	Industrial Equipment	Aerial Lifts	4,014	8.38	10.15	15.00	10.59
	Industrial Equipment	Forklifts	16,515	34.48	41.74	61.70	43.55
	Industrial Equipment	Sweepers/Scrubbers	2,068	4.32	5.23	7.73	5.45
	Industrial Equipment	Other General Industrial Equipment	901	1.88	2.28	3.37	2.38
	Industrial Equipment	Other Material Handling Equipment	161	0.34	0.41	0.60	0.42
	Lawn & Garden Equipment	Lawnmowers	23,342	48.74	59.00	87.21	61.56
	Lawn & Garden Equipment	Rotary Tillers <5HP	2,540	5.30	6.42	9.49	6.70
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	2	0.00	0.01	0.01	0.01
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	-	-	-	-
	Lawn & Garden Equipment	Rear Engine Riding Mowers	2,300	4.80	5.81	8.59	6.07
	Lawn & Garden Equipment	Front Mowers	685	1.43	1.73	2.56	1.81
	Lawn & Garden Equipment	Shredders <5HP	88	0.18	0.22	0.33	0.23
	Lawn & Garden Equipment	Lawn & Garden Tractors	16,884	35.25	42.67	63.08	44.53
	Lawn & Garden Equipment	Wood Splitters	610	1.27	1.54	2.28	1.61
	Lawn & Garden Equipment	Chippers/Stump Grinders	1,971	4.11	4.98	7.36	5.20
	Lawn & Garden Equipment	Commercial Turf Equipment	21,296	44.46	53.83	79.57	56.17
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	109	0.23	0.28	0.41	0.29
Boston (cont.)							
	Non-Road Gasoline, 4-Stroke (cont.)						
	Farm Equipment	2-Wheel Tractors	5	0.01	0.01	0.02	0.01
	Farm Equipment	Agricultural Tractors	39	0.08	0.10	0.15	0.10

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Farm Equipment	Combines	2	0.00	0.00	0.01	0.01
	Farm Equipment	Agricultural Mowers	5	0.01	0.01	0.02	0.01
	Farm Equipment	Sprayers	21	0.04	0.05	0.08	0.05
	Farm Equipment	Tillers >5HP	163	0.34	0.41	0.61	0.43
	Farm Equipment	Swathers	706	1.47	1.79	2.64	1.86
	Farm Equipment	Hydro Power Units	30	0.06	0.08	0.11	0.08
	Farm Equipment	Other Agricultural Equipment	7	0.02	0.02	0.03	0.02
	Light Commercial Equipment	Generator Sets <50HP	51,709	107.96	130.69	193.20	136.37
	Light Commercial Equipment	Pumps <50HP	7,365	15.38	18.62	27.52	19.43
	Light Commercial Equipment	Air Compressors <50HP	4,902	10.23	12.39	18.31	12.93
	Light Commercial Equipment	Welders <50HP	7,212	15.06	18.23	26.95	19.02
	Light Commercial Equipment	Pressure Washers <50HP	2,003	4.18	5.06	7.48	5.28
	Airport Service Equipment	Airport Support Equipment	628	1.31	1.59	2.35	1.66
	Airport Service Equipment	Terminal Tractors	4,417	9.22	11.16	16.50	11.65
	Non-Road Diesel		24,001	50.11	60.66	89.68	63.30
	Recreational Vehicles	Total	98	0.20	0.25	0.37	0.26
	Construction Equipment	Total	15,682	32.74	39.64	58.59	41.36
	Industrial Equipment	Total	2,518	5.26	6.36	9.41	6.64
	Lawn & Garden Equipment	Total	555	1.16	1.40	2.07	1.46
	Farm Equipment	Total	3,628	7.58	9.17	13.56	9.57
	Light Commercial Equipment	Total	958	2.00	2.42	3.58	2.53
	Airport Service Equipment	Total	562	1.17	1.42	2.10	1.48
	Aircraft		6,711	18.44	18.44	18.44	18.44
	Military Aircraft	Total	51	0.14	0.14	0.14	0.14
	Commercial Aircraft	Total	6,209	17.06	17.06	17.06	17.06
	General Aviation	Total	451	1.24	1.24	1.24	1.24
	Marine Vessels, Commercial		679	1.87	1.87	1.87	1.87
	Diesel	Ocean-Going Vessels	669	1.84	1.84	1.84	1.84
	Diesel	Military Vessels	10	0.03	0.03	0.03	0.03
Boston (cont.)							
	Marine Vessels, Recreational		30,924	64.57	78.16	115.54	81.56
	Pleasure Craft, Gasoline 2-Stroke	Outboards	8,603	17.96	21.74	32.14	22.69
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	1	0.00	0.00	0.00	0.00
	Pleasure Craft, Gasoline 4-Stroke	Inboards	7,173	14.98	18.13	26.80	18.92
	Pleasure Craft, Gasoline 4-Stroke	Outboards	44	0.09	0.11	0.17	0.12

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Pleasure Craft, Gasoline 4-Stroke	Sterndrive	15,078	31.48	38.11	56.34	39.77
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	3	0.01	0.01	0.01	0.01
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	0	-	-	-	-
	Pleasure Craft, Diesel	Inboards	20	0.04	0.05	0.08	0.05
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	1	0.00	0.00	0.00	0.00
	Marine Vessels, Military		11	0.03	0.03	0.03	0.03
	Diesel	Total	11	0.03	0.03	0.03	0.03
	Railroads		426	1.29	1.29	1.29	1.29
	Diesel	Total	426	1.29	1.29	1.29	1.29

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Chicago			297,595	397.05	982.16	1,063.51	830.42
	Non-Road Gasoline, 2-Stroke		27,837	34.25	92.89	101.25	77.79
	Recreational Vehicles	Total	843	1.14	2.69	3.07	2.37
	Construction Equipment	Total	635	0.78	2.12	2.31	1.77
	Industrial Equipment	Total	6,434	7.89	21.50	23.40	17.98
	Lawn & Garden Equipment	Total	16,140	19.83	53.89	58.71	45.10
	Light Commercial Equipment	Total	3,528	4.30	11.83	12.83	9.85
	Logging Equipment	Total	235	0.29	0.79	0.86	0.66
	Airport Service Equipment	Total	21	0.03	0.07	0.08	0.06
	Non-Road Gasoline, 4-Stroke		198,344	242.81	663.31	721.45	554.09
	Recreational Vehicles	Total	1,691	2.08	5.65	6.15	4.73
	Construction Equipment	Total	8,264	10.15	27.60	30.06	23.09
	Industrial Equipment	Total	23,019	28.22	76.93	83.73	64.31
	Lawn & Garden Equipment	Total	100,452	123.34	335.50	365.38	280.68
	Farm Equipment	Total	614	0.77	2.03	2.23	1.72
	Light Commercial Equipment	Total	60,593	73.77	203.12	220.40	169.21
	Airport Service Equipment	Total	3,711	4.49	12.48	13.50	10.36
	Non-Road Diesel		28,909	35.49	96.56	105.15	80.78
	Recreational Vehicles	Total	186	0.23	0.62	0.67	0.52
	Construction Equipment	Total	13,694	16.81	45.74	49.81	38.26
	Industrial Equipment	Total	3,670	4.50	12.26	13.35	10.25
	Lawn & Garden Equipment	Total	560	0.69	1.87	2.04	1.56
	Farm Equipment	Total	8,355	10.26	27.91	30.39	23.35
	Light Commercial Equipment	Total	1,305	1.60	4.36	4.75	3.65
	Airport Service Equipment	Total	1,141	1.40	3.81	4.15	3.19
	Aircraft		17,930	49.26	49.26	49.26	49.26
	Military Aircraft	Total	499	1.37	1.37	1.37	1.37
	Commercial Aircraft	Total	12,792	35.14	35.14	35.14	35.14
	General Aviation	Total	4,058	11.15	11.15	11.15	11.15
	Air Taxi	Total	581	1.60	1.60	1.60	1.60
	Marine Vessels, Commercial		436	1.20	1.20	1.20	1.20
	Diesel	Total	211	0.58	0.58	0.58	0.58
	Residual	Total	226	0.62	0.62	0.62	0.62
Chicago (cont.)							
	Marine Vessels, Recreational		21,216	26.01	70.91	77.17	59.27

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
	Pleasure Craft, Gasoline 2-Stroke	Total	12,897	15.80	43.11	46.91	36.03
	Pleasure Craft, Gasoline 4-Stroke	Total	8,285	10.16	27.69	30.13	23.15
	Pleasure Craft, Diesel	Total	35	0.04	0.12	0.13	0.10
	Railroads		2,924	8.03	8.03	8.03	8.03
	Diesel	Total	2,924	8.03	8.03	8.03	8.03

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Denver			164,601	341	467	596	407
	Non-Road Gasoline, 2-Stroke		15,597	31.19	44.39	57.93	38.05
	Recreational Vehicles	Total	4,550	9.10	12.95	16.90	11.10
	Construction Equipment	Total	305	0.61	0.87	1.13	0.74
	Industrial Equipment	Total	2,223	4.45	6.33	8.26	5.42
	Lawn & Garden Equipment	Total	5,824	11.65	16.58	21.63	14.21
	Light Commercial Equipment	Total	2,550	5.10	7.26	9.47	6.22
	Logging Equipment	Total	136	0.27	0.39	0.50	0.33
	Airport Service Equipment	Total	10	0.02	0.03	0.04	0.03
	Non-Road Gasoline, 4-Stroke		113,196	226.39	322.17	420.44	276.15
	Recreational Vehicles	Total	1,511	3.02	4.30	5.61	3.69
	Construction Equipment	Total	3,988	7.98	11.35	14.81	9.73
	Industrial Equipment	Total	8,608	17.22	24.50	31.97	21.00
	Lawn & Garden Equipment	Total	49,913	99.83	142.06	185.39	121.77
	Farm Equipment	Total	204	0.41	0.58	0.76	0.50
	Light Commercial Equipment	Total	47,143	94.29	134.18	175.10	115.01
	Airport Service Equipment	Total	1,830	3.66	5.21	6.80	4.46
	Non-Road Diesel		13,511	27.02	38.46	50.18	32.96
	Recreational Vehicles	Total	59	0.12	0.17	0.22	0.14
	Construction Equipment	Total	7,647	15.29	21.76	28.40	18.66
	Industrial Equipment	Total	1,152	2.30	3.28	4.28	2.81
	Lawn & Garden Equipment	Total	404	0.81	1.15	1.50	0.99
	Farm Equipment	Total	2,974	5.95	8.46	11.04	7.25
	Light Commercial Equipment	Total	827	1.65	2.35	3.07	2.02
	Airport Service Equipment	Total	448	0.90	1.28	1.67	1.09
	Aircraft		14,759	40.55	40.55	40.55	40.55
	Military Aircraft	Total	418	1.15	1.15	1.15	1.15
	Commercial Aircraft	Total	7,303	20.06	20.06	20.06	20.06
	General Aviation	Total	7,038	19.34	19.34	19.34	19.34
	Marine Vessels, Recreational		6,038	12.08	17.18	22.43	14.73
	Pleasure Craft, Gasoline 2-Stroke	Total	1,064	2.13	3.03	3.95	2.60
	Pleasure Craft, Gasoline 4-Stroke	Total	4,974	9.95	14.16	18.47	12.13
	Railroads		1,500	4.12	4.12	4.12	4.12
	Diesel	Total	1,500	4.12	4.12	4.12	4.12

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Houston			389,646	1,376	829	942	1,139
	Non-Road Gasoline, 2-Stroke		29,022	103.97	60.60	69.53	85.15
	Recreational Vehicles	Motorcycles:Off-Road	184	0.66	0.38	0.44	0.54
	Recreational Vehicles	All Terrain Vehicles	154	0.55	0.32	0.37	0.45
	Recreational Vehicles	Golf Carts	497	1.78	1.04	1.19	1.46
	Recreational Vehicles	Specialty Vehicle Carts	192	0.69	0.40	0.46	0.56
	Construction Equipment	Tampers/Rammers	287	1.03	0.60	0.69	0.84
	Construction Equipment	Plate Compactors	497	1.78	1.04	1.19	1.46
	Construction Equipment	Paving Equipment	310	1.11	0.65	0.74	0.91
	Construction Equipment	Bore/Drill Rigs	18	0.06	0.04	0.04	0.05
	Industrial Equipment	Aerial Lifts	99	0.36	0.21	0.24	0.29
	Industrial Equipment	Forklifts	4,355	15.60	9.09	10.43	12.78
	Industrial Equipment	Sweepers/Scrubbers	184	0.66	0.38	0.44	0.54
	Industrial Equipment	Other General Industrial Equipment	179	0.64	0.37	0.43	0.53
	Lawn & Garden Equipment	Lawnmowers	7,299	26.15	15.24	17.48	21.41
	Lawn & Garden Equipment	Rotary Tillers <5HP	9	0.03	0.02	0.02	0.03
	Lawn & Garden Equipment	Chain Saws <5HP	3,824	13.70	7.98	9.16	11.22
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	3,899	13.97	8.14	9.34	11.44
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	1,390	4.98	2.90	3.33	4.08
	Lawn & Garden Equipment	Shredders <5HP	3	0.01	0.01	0.01	0.01
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	55	0.20	0.12	0.13	0.16
	Light Commercial Equipment	Generator Sets <50HP	4,051	14.51	8.46	9.70	11.89
	Light Commercial Equipment	Pumps <50HP	795	2.85	1.66	1.90	2.33
	Light Commercial Equipment	Gas Compressors <50HP	291	1.04	0.61	0.70	0.85
	Logging Equipment	Chain Saws >4HP	435	1.56	0.91	1.04	1.28
	Airport Service Equipment	Terminal Tractors	16	0.06	0.03	0.04	0.05
	Non-Road Gasoline, 4-Stroke		263,377	943.53	549.91	630.95	772.77
	Recreational Vehicles	Motorcycles:Off-Road	71	0.25	0.15	0.17	0.21
	Recreational Vehicles	All Terrain Vehicles	1,668	5.98	3.48	4.00	4.89
	Recreational Vehicles	Minibikes	34	0.12	0.07	0.08	0.10
	Recreational Vehicles	Golf Carts	1,974	7.07	4.12	4.73	5.79
	Recreational Vehicles	Specialty Vehicle Carts	122	0.44	0.25	0.29	0.36
	Construction Equipment	Asphalt Pavers	109	0.39	0.23	0.26	0.32
	Construction Equipment	Tampers/Rammers	5	0.02	0.01	0.01	0.02
	Construction Equipment	Plate Compactors	858	3.07	1.79	2.06	2.52

Houston (cont.)

Non-Road Gasoline, 4-Stroke (cont.)

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Construction Equipment	Rollers	950	3.40	1.98	2.28	2.79
	Construction Equipment	Paving Equipment	2,331	8.35	4.87	5.58	6.84
	Construction Equipment	Surfacing Equipment	786	2.82	1.64	1.88	2.31
	Construction Equipment	Signal Boards	35	0.13	0.07	0.08	0.10
	Construction Equipment	Trenchers	929	3.33	1.94	2.23	2.73
	Construction Equipment	Bore/Drill Rigs	392	1.40	0.82	0.94	1.15
	Construction Equipment	Concrete/Industrial Saws	3,015	10.80	6.29	7.22	8.85
	Construction Equipment	Cement & Mortar Mixers	1,135	4.07	2.37	2.72	3.33
	Construction Equipment	Cranes	238	0.85	0.50	0.57	0.70
	Construction Equipment	Crushing/Proc. Equipment	134	0.48	0.28	0.32	0.39
	Construction Equipment	Rough Terrain Forklifts	255	0.91	0.53	0.61	0.75
	Construction Equipment	Rubber Tire Loaders	266	0.95	0.55	0.64	0.78
	Construction Equipment	Tractors/Loaders/Backhoes	158	0.56	0.33	0.38	0.46
	Construction Equipment	Skid Steer Loaders	751	2.69	1.57	1.80	2.20
	Construction Equipment	Dumpers/Tenders	175	0.63	0.37	0.42	0.51
	Construction Equipment	Other Construction Equipment	265	0.95	0.55	0.63	0.78
	Industrial Equipment	Aerial Lifts	2,277	8.16	4.75	5.45	6.68
	Industrial Equipment	Forklifts	11,678	41.84	24.38	27.98	34.27
	Industrial Equipment	Sweepers/Scrubbers	1,067	3.82	2.23	2.56	3.13
	Industrial Equipment	Other General Industrial Equipment	811	2.91	1.69	1.94	2.38
	Industrial Equipment	Other Material Handling Equipment	95	0.34	0.20	0.23	0.28
	Lawn & Garden Equipment	Lawnmowers	46,642	167.09	97.38	111.74	136.85
	Lawn & Garden Equipment	Rotary Tillers <5HP	1,656	5.93	3.46	3.97	4.86
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	3	0.01	0.01	0.01	0.01
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Rear Engine Riding Mowers	3,585	12.84	7.49	8.59	10.52
	Lawn & Garden Equipment	Front Mowers	977	3.50	2.04	2.34	2.87
	Lawn & Garden Equipment	Shredders <5HP	91	0.33	0.19	0.22	0.27
	Lawn & Garden Equipment	Lawn & Garden Tractors	20,624	73.88	43.06	49.41	60.51
	Lawn & Garden Equipment	Wood Splitters	473	1.69	0.99	1.13	1.39
	Lawn & Garden Equipment	Chippers/Stump Grinders	2,757	9.88	5.76	6.60	8.09
	Lawn & Garden Equipment	Commercial Turf Equipment	44,472	159.32	92.85	106.54	130.48
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	126	0.45	0.26	0.30	0.37
Houston (cont.)							
	Non-Road Gasoline, 4-Stroke (cont.)						
	Farm Equipment	2-Wheel Tractors	15	0.05	0.03	0.04	0.04
	Farm Equipment	Agricultural Tractors	102	0.37	0.21	0.24	0.30

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Farm Equipment	Combines	20	0.07	0.04	0.05	0.06
	Farm Equipment	Agricultural Mowers	18	0.06	0.04	0.04	0.05
	Farm Equipment	Sprayers	67	0.24	0.14	0.16	0.20
	Farm Equipment	Tillers >5HP	322	1.15	0.67	0.77	0.95
	Farm Equipment	Swathers	83	0.30	0.17	0.20	0.25
	Farm Equipment	Hydro Power Units	63	0.23	0.13	0.15	0.18
	Farm Equipment	Other Agricultural Equipment	22	0.08	0.05	0.05	0.07
	Light Commercial Equipment	Generator Sets <50HP	57,354	205.46	119.75	137.40	168.28
	Light Commercial Equipment	Pumps <50HP	15,256	54.65	31.85	36.55	44.76
	Light Commercial Equipment	Air Compressors <50HP	10,595	37.96	22.12	25.38	31.09
	Light Commercial Equipment	Welders <50HP	17,572	62.95	36.69	42.10	51.56
	Light Commercial Equipment	Pressure Washers <50HP	4,951	17.74	10.34	11.86	14.53
	Logging Equipment	Shredders >5HP	174	0.62	0.36	0.42	0.51
	Airport Service Equipment	Airport Support Equipment	342	1.23	0.72	0.82	1.00
	Airport Service Equipment	Terminal Tractors	2,430	8.70	5.07	5.82	7.13
	Non-Road Diesel		39,444	141.30	82.36	94.49	115.73
	Recreational Vehicles	Total	115	0.41	0.24	0.28	0.34
	Construction Equipment	Total	21,762	77.96	45.44	52.13	63.85
	Industrial Equipment	Total	1,871	6.70	3.91	4.48	5.49
	Lawn & Garden Equipment	Total	727	2.61	1.52	1.74	2.13
	Farm Equipment	Total	11,412	40.88	23.83	27.34	33.48
	Light Commercial Equipment	Total	1,987	7.12	4.15	4.76	5.83
	Logging Equipment	Total	894	3.20	1.87	2.14	2.62
	Airport Service Equipment	Total	675	2.42	1.41	1.62	1.98
	Aircraft		11,231	30.85	30.85	30.85	30.85
	Military Aircraft	Total	241	0.66	0.66	0.66	0.66
	Commercial Aircraft	Total	5,596	15.37	15.37	15.37	15.37
	General Aviation	Total	5,394	14.82	14.82	14.82	14.82
	Marine Vessels, Commercial		11,863	32.59	32.59	32.59	32.59
	Total	Total	11,863	32.59	32.59	32.59	32.59
Houston (cont.)							
	Marine Vessels, Recreational		33,779	121.01	70.53	80.92	99.11
	Pleasure Craft, Gasoline 2-Stroke	Outboards	21,257	76.15	44.38	50.92	62.37
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	11	0.04	0.02	0.03	0.03
	Pleasure Craft, Gasoline 4-Stroke	Inboards	2,636	9.44	5.50	6.32	7.73
	Pleasure Craft, Gasoline 4-Stroke	Outboards	101	0.36	0.21	0.24	0.29

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Pleasure Craft, Gasoline 4-Stroke	Sterndrive	9,765	34.98	20.39	23.39	28.65
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	1	0.00	0.00	0.00	0.00
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	0	0.00	0.00	0.00	0.00
	Pleasure Craft, Diesel	Inboards	6	0.02	0.01	0.02	0.02
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	2	0.01	0.00	0.00	0.01
	Railroads		930	2.56	2.56	2.56	2.56
	Total	Total	930	2.56	2.56	2.56	2.56

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Los Angeles			434,014	1,098	1,221	1,199	1,246
	Non-Road Gasoline, 2-Stroke		274,433	687.59	775.05	759.97	793.14
	Recreational Vehicles	Motorcycles:Off-Road	12,286	30.78	34.70	34.02	35.51
	Recreational Vehicles	Snowmobiles	506	1.27	1.43	1.40	1.46
	Recreational Vehicles	All Terrain Vehicles	9,998	25.05	28.24	27.69	28.90
	Industrial Equipment	Total	172,280	431.64	486.55	477.08	497.91
	Lawn & Garden Equipment	Total	74,807	187.43	211.27	207.16	216.20
	Farm Equipment	Total	4,557	11.42	12.87	12.62	13.17
	Non-Road Gasoline, 4-Stroke		4,689	11.75	13.24	12.98	13.55
	Recreational Vehicles	All Terrain Vehicles	4,689	11.75	13.24	12.98	13.55
	Non-Road Diesel		61,702	154.59	174.26	170.87	178.32
	Recreational Vehicles	Total	346	0.87	0.98	0.96	1.00
	Construction Equipment	Total	40,742	102.08	115.06	112.82	117.75
	Industrial Equipment	Total	10,422	26.11	29.43	28.86	30.12
	Lawn & Garden Equipment	Total	2,438	6.11	6.88	6.75	7.05
	Farm Equipment	Total	2,494	6.25	7.04	6.91	7.21
	Light Commercial Equipment	Total	3,603	9.03	10.18	9.98	10.41
	Airport Service Equipment	Total	1,656	4.15	4.68	4.59	4.79
	Aircraft		39,921	109.67	109.67	109.67	109.67
	Military Aircraft	Total	7,736	21.25	21.25	21.25	21.25
	Commercial Aircraft	Total	12,047	33.10	33.10	33.10	33.10
	General Aviation	Total	20,138	55.32	55.32	55.32	55.32
	Marine Vessels, Commercial		3,438	8.08	8.08	8.08	8.08
	Diesel	Total	2,508	6.89	6.89	6.89	6.89
	Residual	Total	78	0.21	0.21	0.21	0.21
	Gasoline	Total	852	0.98	0.98	0.98	0.98
	Marine Vessels, Recreational		45,167	113.16	127.56	125.08	130.54
	Pleasure Craft, Gasoline 4-Stroke	Total	45,083	112.96	127.32	124.85	130.30
	Pleasure Craft, Diesel	Total	83	0.21	0.24	0.23	0.24
	Railroads		4,664	12.81	12.81	12.81	12.81
	Diesel	Total	4,664	12.81	12.81	12.81	12.81

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Minneapolis			154,286	195.22	433.39	598.52	468.32
	Non-Road Gasoline, 2-Stroke		18,007	20.98	50.66	71.24	55.01
	Recreational Vehicles	Total	4,244	4.94	11.94	16.79	12.97
	Construction Equipment	Total	175	0.20	0.49	0.69	0.53
	Industrial Equipment	Total	4,475	5.21	12.59	17.70	13.67
	Lawn & Garden Equipment	Total	7,178	8.36	20.19	28.40	21.93
	Light Commercial Equipment	Total	1,673	1.95	4.71	6.62	5.11
	Logging Equipment	Total	249	0.29	0.70	0.99	0.76
	Airport Service Equipment	Total	13	0.02	0.04	0.05	0.04
	Non-Road Gasoline, 4-Stroke		95,285	110.99	268.05	376.95	291.09
	Recreational Vehicles	Total	1,152	1.34	3.24	4.56	3.52
	Construction Equipment	Total	2,277	2.65	6.41	9.01	6.96
	Industrial Equipment	Total	15,150	17.65	42.62	59.93	46.28
	Lawn & Garden Equipment	Total	44,933	52.34	126.40	177.76	137.27
	Farm Equipment	Total	892	1.04	2.51	3.53	2.73
	Light Commercial Equipment	Total	28,751	33.49	80.88	113.74	87.83
	Airport Service Equipment	Total	2,130	2.48	5.99	8.43	6.51
	Non-Road Diesel		19,913	23.20	56.02	78.78	60.83
	Recreational Vehicles	Total	61	0.07	0.17	0.24	0.19
	Construction Equipment	Total	5,466	6.37	15.38	21.62	16.70
	Industrial Equipment	Total	1,812	2.11	5.10	7.17	5.54
	Lawn & Garden Equipment	Total	252	0.29	0.71	1.00	0.77
	Farm Equipment	Total	11,318	13.18	31.84	44.78	34.58
	Light Commercial Equipment	Total	481	0.56	1.35	1.90	1.47
	Airport Service Equipment	Total	523	0.61	1.47	2.07	1.60
	Aircraft		9,055	24.88	24.88	24.88	24.88
	Military Aircraft	Total	262	0.72	0.72	0.72	0.72
	Commercial Aircraft	Total	4,293	11.79	11.79	11.79	11.79
	General Aviation	Total	4,500	12.36	12.36	12.36	12.36
	Marine Vessels, Commercial		28	0.08	0.08	0.08	0.08
	Diesel	Total	28	0.08	0.08	0.08	0.08
	Marine Vessels, Recreational		11,284	13.14	31.74	44.64	34.47
	Pleasure Craft, Gasoline 2-Stroke	Total	9,167	10.68	25.79	36.27	28.00
	Pleasure Craft, Gasoline 4-Stroke	Total	2,074	2.42	5.83	8.20	6.34
	Pleasure Craft, Diesel	Total	43	0.05	0.12	0.17	0.13
Minneapolis (cont.)							
	Railroads		714	1.96	1.96	1.96	1.96

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category	Annual CO (tons/day)	Daily CO Emissions (tons/day)				
			Winter	Spring	Summer	Fall	
	Diesel	Total	714	1.96	1.96	1.96	1.96

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
New York			683,342	1,385	1,558	2,476	2,092
	Non-Road Gasoline, 2-Stroke		65,302	124.47	152.80	242.24	198.10
	Recreational Vehicles	Motorcycles:Off-Road	89	0.19	0.20	0.32	0.27
	Recreational Vehicles	All Terrain Vehicles	80	0.17	0.17	0.29	0.25
	Recreational Vehicles	Golf Carts	204	0.44	0.45	0.73	0.63
	Recreational Vehicles	Specialty Vehicle Carts	108	0.23	0.24	0.39	0.33
	Construction Equipment	Tampers/Rammers	418	0.82	0.95	1.54	1.29
	Construction Equipment	Plate Compactors	571	1.12	1.29	2.10	1.76
	Construction Equipment	Paving Equipment	362	0.71	0.82	1.33	1.11
	Construction Equipment	Bore/Drill Rigs	16	0.03	0.03	0.06	0.05
	Industrial Equipment	Aerial Lifts	3,576	5.35	9.63	14.02	10.30
	Industrial Equipment	Forklifts	19,156	34.39	46.87	72.13	57.12
	Industrial Equipment	Sweepers/Scrubbers	634	1.31	1.41	2.30	1.95
	Industrial Equipment	Other General Industrial Equipment	354	0.73	0.79	1.28	1.09
	Lawn & Garden Equipment	Lawnmowers	9,925	19.53	22.63	36.51	30.40
	Lawn & Garden Equipment	Rotary Tillers <5HP	26	0.05	0.06	0.10	0.08
	Lawn & Garden Equipment	Chain Saws <5HP	7,682	15.42	17.48	28.08	23.44
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	8,473	16.65	19.34	31.18	25.95
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	3,125	6.15	7.13	11.50	9.57
	Lawn & Garden Equipment	Shredders <5HP	4	0.01	0.01	0.01	0.01
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	165	0.32	0.38	0.61	0.50
	Light Commercial Equipment	Generator Sets <50HP	8,438	16.97	18.74	30.87	26.14
	Light Commercial Equipment	Pumps <50HP	883	1.78	1.96	3.23	2.74
	Light Commercial Equipment	Gas Compressors <50HP	529	1.05	1.19	1.94	1.63
	Logging Equipment	Chain Saws >4HP	460	1.01	1.00	1.64	1.41
	Airport Service Equipment	Terminal Tractors	23	0.04	0.05	0.09	0.07
	Non-Road Gasoline, 4-Stroke		431,892	866.48	967.40	1,580.46	1,331.72
	Recreational Vehicles	Motorcycles:Off-Road	34	0.07	0.08	0.12	0.11
	Recreational Vehicles	All Terrain Vehicles	887	1.90	1.94	3.18	2.73
	Recreational Vehicles	Minibikes	13	0.03	0.03	0.05	0.04
	Recreational Vehicles	Golf Carts	814	1.74	1.78	2.92	2.51
	Recreational Vehicles	Specialty Vehicle Carts	68	0.15	0.15	0.25	0.21
	Construction Equipment	Asphalt Pavers	168	0.33	0.38	0.62	0.52
	Construction Equipment	Tampers/Rammers	5	0.01	0.01	0.02	0.02
	Construction Equipment	Plate Compactors	989	1.94	2.24	3.64	3.04

New York (cont.)

Non-Road Gasoline, 4-Stroke (cont.)

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Construction Equipment	Rollers	1,388	2.72	3.14	5.12	4.27
	Construction Equipment	Paving Equipment	2,725	5.33	6.18	10.05	8.39
	Construction Equipment	Surfacing Equipment	1,029	2.01	2.33	3.79	3.17
	Construction Equipment	Signal Boards	45	0.08	0.10	0.17	0.14
	Construction Equipment	Trenchers	1,423	2.78	3.23	5.25	4.38
	Construction Equipment	Bore/Drill Rigs	458	0.90	1.04	1.69	1.41
	Construction Equipment	Concrete/Industrial Saws	4,875	9.53	11.06	17.98	15.01
	Construction Equipment	Cement & Mortar Mixers	1,415	2.76	3.21	5.22	4.35
	Construction Equipment	Cranes	448	0.88	1.01	1.65	1.38
	Construction Equipment	Crushing/Proc. Equipment	156	0.30	0.35	0.58	0.48
	Construction Equipment	Rough Terrain Forklifts	338	0.66	0.77	1.25	1.04
	Construction Equipment	Rubber Tire Loaders	452	0.88	1.02	1.67	1.39
	Construction Equipment	Tractors/Loaders/Backhoes	251	0.50	0.57	0.92	0.77
	Construction Equipment	Skid Steer Loaders	1,114	2.18	2.52	4.11	3.43
	Construction Equipment	Dumpers/Tenders	164	0.32	0.37	0.60	0.50
	Construction Equipment	Other Construction Equipment	401	0.79	0.90	1.48	1.24
	Industrial Equipment	Aerial Lifts	5,533	13.49	10.63	18.98	17.70
	Industrial Equipment	Forklifts	24,045	54.79	49.31	84.49	75.64
	Industrial Equipment	Sweepers/Scrubbers	3,671	7.60	8.16	13.30	11.28
	Industrial Equipment	Other General Industrial Equipment	1,607	3.32	3.57	5.82	4.94
	Industrial Equipment	Other Material Handling Equipment	285	0.59	0.64	1.04	0.88
	Lawn & Garden Equipment	Lawnmowers	63,440	124.84	144.65	233.35	194.29
	Lawn & Garden Equipment	Rotary Tillers <5HP	5,056	9.94	11.53	18.60	15.48
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	5	0.01	0.01	0.02	0.01
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	-	-	0.00	0.00
	Lawn & Garden Equipment	Rear Engine Riding Mowers	6,113	11.97	13.97	22.52	18.72
	Lawn & Garden Equipment	Front Mowers	1,873	3.67	4.28	6.90	5.73
	Lawn & Garden Equipment	Shredders <5HP	301	0.59	0.69	1.11	0.92
	Lawn & Garden Equipment	Lawn & Garden Tractors	40,116	78.89	91.50	147.59	122.85
	Lawn & Garden Equipment	Wood Splitters	2,113	4.15	4.82	7.78	6.47
	Lawn & Garden Equipment	Chippers/Stump Grinders	6,862	13.46	15.68	25.27	21.01
	Lawn & Garden Equipment	Commercial Turf Equipment	76,217	149.42	174.11	280.67	233.36
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	379	0.74	0.87	1.40	1.16
New York (cont.)							
	Non-Road Gasoline, 4-Stroke (cont.)						
	Farm Equipment	2-Wheel Tractors	6	0.01	0.01	0.02	0.02
	Farm Equipment	Agricultural Tractors	56	0.10	0.14	0.21	0.17

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Farm Equipment	Combines	6	0.01	0.01	0.02	0.02
	Farm Equipment	Agricultural Mowers	6	0.01	0.01	0.02	0.02
	Farm Equipment	Sprayers	31	0.06	0.08	0.12	0.09
	Farm Equipment	Tillers >5HP	235	0.41	0.58	0.89	0.70
	Farm Equipment	Swathers	1,085	1.92	2.66	4.10	3.24
	Farm Equipment	Hydro Power Units	44	0.08	0.11	0.17	0.13
	Farm Equipment	Other Agricultural Equipment	7	0.01	0.02	0.02	0.02
	Light Commercial Equipment	Generator Sets <50HP	119,417	240.17	265.22	436.88	370.00
	Light Commercial Equipment	Pumps <50HP	17,010	34.21	37.78	62.23	52.70
	Light Commercial Equipment	Air Compressors <50HP	11,328	22.78	25.16	41.44	35.10
	Light Commercial Equipment	Welders <50HP	16,656	33.50	36.99	60.94	51.61
	Light Commercial Equipment	Pressure Washers <50HP	4,627	9.31	10.28	16.93	14.34
	Airport Service Equipment	Airport Support Equipment	497	0.92	1.15	1.86	1.53
	Airport Service Equipment	Terminal Tractors	3,606	6.70	8.36	13.49	11.08
	Non-Road Diesel		53,158	107.09	118.94	194.27	163.85
	Recreational Vehicles	Total	328	0.64	0.75	1.21	1.01
	Construction Equipment	Total	31,093	62.43	69.68	113.75	95.82
	Industrial Equipment	Total	7,305	14.32	16.57	26.92	22.48
	Lawn & Garden Equipment	Total	1,199	2.42	2.68	4.38	3.70
	Farm Equipment	Total	8,361	17.79	18.18	30.03	25.87
	Light Commercial Equipment	Total	3,543	6.78	8.12	13.14	10.88
	Airport Service Equipment	Total	1,329	2.70	2.96	4.84	4.10
	Aircraft		30,407	83.53	83.53	83.53	83.53
	Military Aircraft	Total	151	0.41	0.41	0.41	0.41
	Commercial Aircraft	Total	15,856	43.56	43.56	43.56	43.56
	General Aviation	Total	10,396	28.56	28.56	28.56	28.56
	Air Taxi	Total	3,821	10.50	10.50	10.50	10.50
	Aircraft Aux. Power Units	Total	183	0.50	0.50	0.50	0.50
	Marine Vessels, Commercial		2,595	7.13	7.13	7.13	7.13
	Diesel	Total	284	0.78	0.78	0.78	0.78
	Residual	Total	2,311	6.35	6.35	6.35	6.35
New York (cont.)							
	Marine Vessels, Recreational		98,747	192.22	224.73	364.56	303.62
	Pleasure Craft, Gasoline 2-Stroke	Outboards	39,114	76.92	88.49	143.98	120.43
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	67	0.14	0.15	0.24	0.21
	Pleasure Craft, Gasoline 4-Stroke	Inboards	19,154	36.82	44.16	70.94	58.57
	Pleasure Craft, Gasoline 4-Stroke	Outboards	179	0.35	0.40	0.66	0.55

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Pleasure Craft, Gasoline 4-Stroke	Sterndrive	40,079	77.65	91.19	148.19	123.40
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	21	0.07	0.03	0.06	0.07
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	1	0.00	0.00	0.00	0.00
	Pleasure Craft, Diesel	Inboards	123	0.24	0.28	0.46	0.38
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	9	0.03	0.01	0.03	0.03
	Railroads		1,241	3.77	3.77	3.77	3.77
	Total	Total	301	0.92	0.92	0.92	0.92
	Diesel	Total	924	2.81	2.81	2.81	2.81
	Diesel	Line Haul Locomotives	15	0.05	0.05	0.05	0.05
	Diesel	Yard Locomotives	0	0.00	0.00	0.00	0.00

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Philadelphia			331,146	523	936	1,276	905
	Non-Road Gasoline, 2-Stroke		36,151	53.43	102.32	142.12	99.39
	Recreational Vehicles	Motorcycles:Off-Road	33	0.05	0.09	0.13	0.09
	Recreational Vehicles	All Terrain Vehicles	26	0.04	0.07	0.10	0.07
	Recreational Vehicles	Golf Carts	81	0.13	0.22	0.31	0.22
	Recreational Vehicles	Specialty Vehicle Carts	33	0.05	0.09	0.13	0.09
	Construction Equipment	Total	431	0.62	1.23	1.71	1.18
	Construction Equipment	Tampers/Rammers	55	0.09	0.15	0.21	0.15
	Construction Equipment	Plate Compactors	84	0.14	0.23	0.32	0.22
	Construction Equipment	Paving Equipment	52	0.09	0.15	0.20	0.14
	Construction Equipment	Bore/Drill Rigs	1	0.00	0.00	0.00	0.00
	Industrial Equipment	Total	10,278	14.68	29.37	40.66	28.24
	Industrial Equipment	Aerial Lifts	580	0.84	1.59	2.29	1.65
	Industrial Equipment	Forklifts	3,143	4.88	8.68	12.24	8.74
	Industrial Equipment	Sweepers/Scrubbers	65	0.11	0.18	0.25	0.18
	Industrial Equipment	Other General Industrial Equipment	50	0.09	0.14	0.19	0.13
	Lawn & Garden Equipment	Total	14,639	20.91	41.83	57.91	40.22
	Lawn & Garden Equipment	Lawnmowers	2,240	3.66	6.21	8.63	6.11
	Lawn & Garden Equipment	Rotary Tillers <5HP	1	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Chain Saws <5HP	1,234	1.94	3.41	4.79	3.41
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	1,736	2.84	4.81	6.69	4.74
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	508	0.83	1.41	1.96	1.39
	Lawn & Garden Equipment	Shredders <5HP	0	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	24	0.04	0.07	0.09	0.06
	Light Commercial Equipment	Generator Sets <50HP	613	0.99	1.70	2.37	1.68
	Light Commercial Equipment	Pumps <50HP	87	0.14	0.24	0.34	0.24
	Light Commercial Equipment	Gas Compressors <50HP	19	0.03	0.05	0.07	0.05
	Logging Equipment	Chain Saws >4HP	139	0.22	0.39	0.54	0.39
	Non-Road Gasoline, 4-Stroke		204,283	305.85	578.28	801.14	559.59
	Recreational Vehicles	Motorcycles:Off-Road	11	0.02	0.03	0.04	0.03
	Recreational Vehicles	All Terrain Vehicles	302	0.50	0.84	1.16	0.82
	Recreational Vehicles	Minibikes	4	0.01	0.01	0.02	0.01
	Recreational Vehicles	Golf Carts	321	0.54	0.89	1.23	0.87
	Recreational Vehicles	Specialty Vehicle Carts	22	0.04	0.06	0.08	0.06
	Construction Equipment	Total	5,213	7.45	14.89	20.62	14.32
Philadelphia (cont.)							
	Non-Road Gasoline, 4-Stroke (cont.)						

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category	Annual CO (tons/day)	Daily CO Emissions (tons/day)				
			Winter	Spring	Summer	Fall	
	Construction Equipment	Asphalt Pavers	23	0.04	0.06	0.09	0.06
	Construction Equipment	Tampers/Rammers	0	0.00	0.00	0.00	0.00
	Construction Equipment	Plate Compactors	144	0.25	0.40	0.55	0.38
	Construction Equipment	Rollers	191	0.33	0.53	0.73	0.51
	Construction Equipment	Paving Equipment	395	0.68	1.10	1.51	1.06
	Construction Equipment	Surfacing Equipment	137	0.24	0.38	0.52	0.36
	Construction Equipment	Signal Boards	5	0.01	0.01	0.02	0.01
	Construction Equipment	Trenchers	179	0.31	0.50	0.68	0.48
	Construction Equipment	Bore/Drill Rigs	67	0.12	0.19	0.26	0.18
	Construction Equipment	Concrete/Industrial Saws	587	1.01	1.63	2.23	1.57
	Construction Equipment	Cement & Mortar Mixers	199	0.34	0.56	0.76	0.53
	Construction Equipment	Cranes	49	0.09	0.14	0.19	0.13
	Construction Equipment	Crushing/Proc. Equipment	23	0.04	0.06	0.09	0.06
	Construction Equipment	Rough Terrain Forklifts	47	0.08	0.13	0.18	0.13
	Construction Equipment	Rubber Tire Loaders	53	0.09	0.15	0.20	0.14
	Construction Equipment	Tractors/Loaders/Backhoes	35	0.06	0.10	0.13	0.09
	Construction Equipment	Skid Steer Loaders	125	0.22	0.35	0.47	0.33
	Construction Equipment	Dumpers/Tenders	28	0.05	0.08	0.11	0.08
	Construction Equipment	Other Construction Equipment	51	0.09	0.14	0.20	0.14
	Industrial Equipment	Total	34,927	49.90	99.79	138.17	95.95
	Industrial Equipment	Aerial Lifts	279	0.62	0.79	0.99	0.66
	Industrial Equipment	Forklifts	2,197	4.20	6.17	8.16	5.61
	Industrial Equipment	Sweepers/Scrubbers	383	0.65	1.06	1.46	1.03
	Industrial Equipment	Other General Industrial Equipment	229	0.39	0.64	0.88	0.62
	Industrial Equipment	Other Material Handling Equipment	29	0.05	0.08	0.11	0.08
	Lawn & Garden Equipment	Total	98,612	140.87	281.75	390.11	270.91
	Lawn & Garden Equipment	Lawnmowers	14,315	23.39	39.69	55.16	39.06
	Lawn & Garden Equipment	Rotary Tillers <5HP	845	1.38	2.34	3.26	2.31
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	0	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	-	-	-	-
	Lawn & Garden Equipment	Rear Engine Riding Mowers	1,705	2.79	4.73	6.57	4.65
	Lawn & Garden Equipment	Front Mowers	483	0.79	1.34	1.86	1.32
	Lawn & Garden Equipment	Shredders <5HP	41	0.07	0.11	0.16	0.11
Philadelphia (cont.)							
	Non-Road Gasoline, 4-Stroke (cont.)						
	Lawn & Garden Equipment	Lawn & Garden Tractors	10,339	16.89	28.67	39.84	28.21
	Lawn & Garden Equipment	Wood Splitters	235	0.38	0.65	0.90	0.64

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Lawn & Garden Equipment	Chippers/Stump Grinders	1,024	1.67	2.84	3.95	2.80
	Lawn & Garden Equipment	Commercial Turf Equipment	15,625	25.53	43.33	60.21	42.64
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	49	0.08	0.14	0.19	0.13
	Farm Equipment	Total	572	0.82	1.63	2.26	1.57
	Farm Equipment	2-Wheel Tractors	6	0.01	0.02	0.03	0.02
	Farm Equipment	Agricultural Tractors	48	0.07	0.13	0.19	0.13
	Farm Equipment	Combines	5	0.01	0.01	0.02	0.02
	Farm Equipment	Agricultural Mowers	7	0.01	0.02	0.03	0.02
	Farm Equipment	Sprayers	32	0.05	0.09	0.12	0.09
	Farm Equipment	Tillers >5HP	175	0.27	0.48	0.68	0.49
	Farm Equipment	Swathers	32	0.05	0.09	0.12	0.09
	Farm Equipment	Hydro Power Units	31	0.05	0.09	0.12	0.09
	Farm Equipment	Other Agricultural Equipment	6	0.01	0.02	0.03	0.02
	Light Commercial Equipment	Generator Sets <50HP	8,726	14.04	24.17	33.73	23.95
	Light Commercial Equipment	Pumps <50HP	1,707	2.75	4.73	6.60	4.68
	Light Commercial Equipment	Air Compressors <50HP	1,142	1.84	3.16	4.41	3.13
	Light Commercial Equipment	Welders <50HP	1,705	2.74	4.72	6.59	4.68
	Light Commercial Equipment	Pressure Washers <50HP	559	0.90	1.55	2.16	1.53
	Non-Road Diesel		33,670	50.66	95.30	131.92	92.12
	Recreational Vehicles	Total	121	0.19	0.34	0.47	0.33
	Construction Equipment	Total	13,851	20.84	39.20	54.27	37.90
	Industrial Equipment	Total	2,707	4.07	7.66	10.61	7.41
	Lawn & Garden Equipment	Total	741	1.12	2.10	2.90	2.03
	Farm Equipment	Total	14,688	22.10	41.57	57.55	40.19
	Light Commercial Equipment	Total	1,095	1.65	3.10	4.29	3.00
	Airport Service Equipment	Total	466	0.70	1.32	1.83	1.28

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Philadelphia (cont.)							
	Aircraft		15,121	41.54	41.54	41.54	41.54
	All Aircraft Types & Operations	Total	9,866	27.10	27.10	27.10	27.10
	Military Aircraft	Total	42	0.12	0.12	0.12	0.12
	Commercial Aircraft	Total	4,018	11.04	11.04	11.04	11.04
	General Aviation	Total	1,127	3.10	3.10	3.10	3.10
	Air Taxi	Total	69	0.19	0.19	0.19	0.19
	Marine Vessels, Commercial		1,069	2.94	2.94	2.94	2.94
	Diesel	Total	777	2.14	2.14	2.14	2.14
	Residual	Total	291	0.80	0.80	0.80	0.80
	Marine Vessels, Recreational		39,703	65.13	112.19	152.86	106.12
	Pleasure Craft, Gasoline 2-Stroke	Total	18,773	26.82	53.64	74.27	51.58
	Pleasure Craft, Gasoline 2-Stroke	Outboards	7,686	14.44	21.55	28.67	19.79
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	2	0.00	0.00	0.01	0.00
	Pleasure Craft, Gasoline 4-Stroke	Inboards	4,070	7.19	11.35	15.41	10.77
	Pleasure Craft, Gasoline 4-Stroke	Outboards	35	0.06	0.10	0.13	0.09
	Pleasure Craft, Gasoline 4-Stroke	Sterndrive	9,109	16.55	25.47	34.27	23.81
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	3	0.01	0.01	0.01	0.01
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	0	0.00	0.00	0.00	0.00
	Pleasure Craft, Diesel	Inboards	24	0.04	0.07	0.09	0.06
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	1	0.00	0.00	0.00	0.00
	Marine Vessels, Military		5	0.01	0.01	0.01	0.01
	Diesel	Total	5	0.01	0.01	0.01	0.01
	Railroads		1,144	3.48	3.48	3.48	3.48
	Diesel	Total	1,062	3.23	3.23	3.23	3.23
	Diesel	Line Haul Locomotives	32	0.10	0.10	0.10	0.10
	Diesel	Yard Locomotives	50	0.15	0.15	0.15	0.15

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Phoenix			187,865	447	516	636	467
	Non-Road Gasoline, 2-Stroke		16,606	39.05	45.62	57.12	40.88
	Recreational Vehicles	Total	1,075	2.53	2.95	3.70	2.65
	Construction Equipment	Total	624	1.47	1.71	2.15	1.54
	Industrial Equipment	Total	1,315	3.09	3.61	4.52	3.24
	Lawn & Garden Equipment	Total	13,085	30.77	35.95	45.01	32.21
	Light Commercial Equipment	Total	431	1.01	1.18	1.48	1.06
	Logging Equipment	Total	61	0.14	0.17	0.21	0.15
	Airport Service Equipment	Total	14	0.03	0.04	0.05	0.04
	Non-Road Gasoline, 4-Stroke		139,212	327.38	382.45	478.83	342.68
	Recreational Vehicles	Total	1,043	2.45	2.87	3.59	2.57
	Construction Equipment	Total	6,803	16.00	18.69	23.40	16.75
	Industrial Equipment	Total	5,584	13.13	15.34	19.21	13.75
	Lawn & Garden Equipment	Total	96,217	226.27	264.33	330.94	236.84
	Farm Equipment	Total	82	0.19	0.23	0.28	0.20
	Light Commercial Equipment	Total	27,003	63.50	74.18	92.88	66.47
	Airport Service Equipment	Total	2,480	5.83	6.81	8.53	6.10
	Non-Road Diesel		17,417	40.96	47.85	59.91	42.87
	Recreational Vehicles	Total	74	0.17	0.20	0.26	0.18
	Construction Equipment	Total	12,665	29.78	34.79	43.56	31.18
	Industrial Equipment	Total	1,013	2.38	2.78	3.48	2.49
	Lawn & Garden Equipment	Total	1,763	4.15	4.84	6.07	4.34
	Farm Equipment	Total	790	1.86	2.17	2.72	1.94
	Light Commercial Equipment	Total	497	1.17	1.37	1.71	1.22
	Airport Service Equipment	Total	615	1.45	1.69	2.11	1.51
	Aircraft		13,108	36.01	36.01	36.01	36.01
	Military Aircraft	Total	3,463	9.51	9.51	9.51	9.51
	Commercial Aircraft	Total	4,027	11.06	11.06	11.06	11.06
	General Aviation	Total	5,617	15.43	15.43	15.43	15.43
	Marine Vessels, Recreational		294	0.69	0.81	1.01	0.72
	Pleasure Craft, Gasoline 2-Stroke	Total	116	0.27	0.32	0.40	0.28
	Pleasure Craft, Gasoline 4-Stroke	Total	178	0.42	0.49	0.61	0.44
	Pleasure Craft, Diesel	Total	0	0.00	0.00	0.00	0.00
	Railroads		1,230	3.38	3.38	3.38	3.38
	Diesel	Total	1,230	3.38	3.38	3.38	3.38
Spokane			29,637	36	78	129	84
	Non-Road Gasoline, 2-Stroke		2,749	2.79	7.19	12.45	7.78

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Recreational Vehicles	Total	203	0.21	0.53	0.92	0.57
	Construction Equipment	Total	53	0.05	0.14	0.24	0.15
	Industrial Equipment	Total	461	0.47	1.21	2.09	1.31
	Lawn & Garden Equipment	Total	1,748	1.78	4.57	7.91	4.95
	Light Commercial Equipment	Total	211	0.21	0.55	0.96	0.60
	Logging Equipment	Total	72	0.07	0.19	0.33	0.20
	Airport Service Equipment	Total	1	0.00	0.00	0.01	0.00
	Non-Road Gasoline, 4-Stroke		17,920	18.22	46.87	81.12	50.74
	Recreational Vehicles	Total	425	0.43	1.11	1.92	1.20
	Construction Equipment	Total	694	0.71	1.82	3.14	1.97
	Industrial Equipment	Total	1,461	1.49	3.82	6.61	4.14
	Lawn & Garden Equipment	Total	10,665	10.84	27.89	48.28	30.20
	Farm Equipment	Total	47	0.05	0.12	0.21	0.13
	Light Commercial Equipment	Total	4,227	4.30	11.05	19.13	11.97
	Logging Equipment	Total	180	0.18	0.47	0.81	0.51
	Airport Service Equipment	Total	221	0.22	0.58	1.00	0.63
	Non-Road Diesel		3,102	3.15	8.11	14.04	8.78
	Recreational Vehicles	Total	12	0.01	0.03	0.05	0.03
	Construction Equipment	Total	1,293	1.31	3.38	5.85	3.66
	Industrial Equipment	Total	164	0.17	0.43	0.74	0.46
	Lawn & Garden Equipment	Total	59	0.06	0.16	0.27	0.17
	Farm Equipment	Total	728	0.74	1.91	3.30	2.06
	Light Commercial Equipment	Total	78	0.08	0.20	0.35	0.22
	Logging Equipment	Total	713	0.73	1.87	3.23	2.02
	Airport Service Equipment	Total	54	0.06	0.14	0.25	0.15
	Aircraft		2,919	8.02	8.02	8.02	8.02
	Military Aircraft	Total	655	1.80	1.80	1.80	1.80
	Commercial Aircraft	Total	880	2.42	2.42	2.42	2.42
	General Aviation	Total	1,385	3.81	3.81	3.81	3.81
	Marine Vessels, Recreational		2,705	2.75	7.07	12.24	7.66
	Pleasure Craft, Gasoline 2-Stroke	Total	1,162	1.18	3.04	5.26	3.29
	Pleasure Craft, Gasoline 4-Stroke	Total	1,534	1.56	4.01	6.94	4.34
	Pleasure Craft, Diesel	Total	9	0.01	0.02	0.04	0.03
Spokane (cont.)							
	Railroads		243	0.67	0.67	0.67	0.67
	Diesel	Total	243	0.67	0.67	0.67	0.67

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
St. Louis			335,393	439	1,033	1,307	910
	Non-Road Gasoline, 2-Stroke		33,805	42.56	104.51	133.15	91.64
	Recreational Vehicles	Total	4,409	5.57	13.54	17.46	11.93
	Construction Equipment	Total	487	0.61	1.50	1.92	1.32
	Industrial Equipment	Total	6,838	8.63	21.05	27.03	18.51
	Lawn & Garden Equipment	Total	18,255	22.94	56.66	71.65	49.56
	Light Commercial Equipment	Total	3,208	4.05	9.87	12.69	8.68
	Logging Equipment	Total	592	0.75	1.83	2.33	1.61
	Airport Service Equipment	Total	16	0.02	0.05	0.06	0.04
	Non-Road Gasoline, 4-Stroke		186,091	234.32	575.11	733.15	504.41
	Recreational Vehicles	Total	1,469	1.84	4.60	5.73	4.00
	Construction Equipment	Total	6,374	8.03	19.68	25.13	17.27
	Industrial Equipment	Total	24,539	30.96	75.54	97.01	66.43
	Lawn & Garden Equipment	Total	93,884	118.04	291.09	368.84	254.76
	Farm Equipment	Total	2,178	2.72	6.86	8.44	5.94
	Light Commercial Equipment	Total	54,821	69.17	168.68	216.80	148.38
	Airport Service Equipment	Total	2,825	3.57	8.66	11.21	7.64
	Non-Road Diesel		43,793	55.15	135.30	172.58	118.69
	Recreational Vehicles	Total	55	0.07	0.17	0.21	0.15
	Construction Equipment	Total	13,986	17.61	43.21	55.12	37.91
	Industrial Equipment	Total	3,050	3.84	9.42	12.02	8.27
	Lawn & Garden Equipment	Total	485	0.61	1.50	1.91	1.31
	Farm Equipment	Total	24,585	30.96	75.96	96.89	66.63
	Light Commercial Equipment	Total	915	1.15	2.83	3.61	2.48
	Airport Service Equipment	Total	717	0.90	2.21	2.82	1.94
	Aircraft		9,333	25.64	25.64	25.64	25.64
	Military Aircraft	Total	869	2.39	2.39	2.39	2.39
	Commercial Aircraft	Total	4,084	11.22	11.22	11.22	11.22
	General Aviation	Total	4,380	12.03	12.03	12.03	12.03
	Marine Vessels, Commercial		676	1.86	1.86	1.86	1.86
	Diesel	Total	676	1.86	1.86	1.86	1.86
	Marine Vessels, Recreational		60,405	75.91	187.47	237.10	163.97
	Pleasure Craft, Gasoline 2-Stroke	Total	39,534	49.67	122.77	155.09	107.33
	Pleasure Craft, Gasoline 4-Stroke	Total	20,814	26.17	64.52	81.78	56.48
	Pleasure Craft, Diesel	Total	57	0.07	0.18	0.22	0.16
St. Louis (cont.)							
	Railroads		1,290	3.54	3.54	3.54	3.54

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category	Annual CO (tons/day)	Daily CO Emissions (tons/day)				
			Winter	Spring	Summer	Fall	
	Diesel	Total	1,290	3.54	3.54	3.54	3.54

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Washington			264,864	486	738	941	745
	Non-Road Gasoline, 2-Stroke		28,378	50.53	78.59	102.28	80.45
	Recreational Vehicles	Total	1,491	2.62	4.10	5.41	4.26
	Recreational Vehicles	Motorcycles:Off-Road	64	0.12	0.18	0.23	0.18
	Recreational Vehicles	All Terrain Vehicles	55	0.10	0.16	0.20	0.15
	Recreational Vehicles	Golf Carts	161	0.29	0.45	0.57	0.45
	Recreational Vehicles	Specialty Vehicle Carts	65	0.12	0.18	0.23	0.18
	Construction Equipment	Tampers/Rammers	113	0.20	0.32	0.40	0.32
	Construction Equipment	Plate Compactors	176	0.32	0.49	0.63	0.50
	Construction Equipment	Paving Equipment	111	0.20	0.31	0.40	0.31
	Construction Equipment	Bore/Drill Rigs	6	0.01	0.02	0.02	0.02
	Industrial Equipment	Total	2,135	3.75	5.87	7.74	6.10
	Industrial Equipment	Aerial Lifts	16	0.03	0.04	0.06	0.04
	Industrial Equipment	Forklifts	787	1.42	2.20	2.81	2.21
	Industrial Equipment	Sweepers/Scrubbers	28	0.05	0.08	0.10	0.08
	Industrial Equipment	Other General Industrial Equipment	21	0.04	0.06	0.08	0.06
	Lawn & Garden Equipment	Total	11,167	19.63	30.68	40.50	31.91
	Lawn & Garden Equipment	Lawnmowers	4,040	7.29	11.29	14.46	11.36
	Lawn & Garden Equipment	Rotary Tillers <5HP	9	0.02	0.03	0.03	0.03
	Lawn & Garden Equipment	Chain Saws <5HP	2,746	4.97	7.68	9.82	7.71
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	2,486	4.49	6.94	8.90	6.99
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	1,191	2.15	3.33	4.26	3.35
	Lawn & Garden Equipment	Shredders <5HP	2	0.00	0.01	0.01	0.01
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	35	0.06	0.10	0.13	0.10
	Light Commercial Equipment	Generator Sets <50HP	631	1.14	1.76	2.26	1.77
	Light Commercial Equipment	Pumps <50HP	91	0.16	0.25	0.33	0.26
	Light Commercial Equipment	Gas Compressors <50HP	57	0.10	0.16	0.20	0.16
	Logging Equipment	Total	384	0.67	1.05	1.39	1.10
	Logging Equipment	Chain Saws >4HP	305	0.55	0.85	1.09	0.86
	Airport Service Equipment	Terminal Tractors	5	0.01	0.01	0.02	0.01
	Non-Road Gasoline, 4-Stroke		185,139	333.02	516.13	663.88	521.46
	Recreational Vehicles	Total	1,006	1.77	2.76	3.65	2.87
	Recreational Vehicles	Motorcycles:Off-Road	24	0.04	0.07	0.09	0.07
	Recreational Vehicles	All Terrain Vehicles	600	1.10	1.69	2.13	1.67
	Recreational Vehicles	Minibikes	10	0.02	0.03	0.04	0.03

Washington (cont.)

Non-Road Gasoline, 4-Stroke (cont.)

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category	Annual CO (tons/day)	Daily CO Emissions (tons/day)				
			Winter	Spring	Summer	Fall	
	Recreational Vehicles	Golf Carts	640	1.17	1.80	2.27	1.78
	Recreational Vehicles	Specialty Vehicle Carts	41	0.07	0.12	0.15	0.11
	Construction Equipment	Total	130	0.23	0.36	0.47	0.37
	Construction Equipment	Asphalt Pavers	45	0.08	0.13	0.16	0.13
	Construction Equipment	Tampers/Rammers	2	0.00	0.01	0.01	0.01
	Construction Equipment	Plate Compactors	305	0.55	0.85	1.09	0.86
	Construction Equipment	Rollers	400	0.72	1.12	1.43	1.12
	Construction Equipment	Paving Equipment	837	1.51	2.34	3.00	2.35
	Construction Equipment	Surfacing Equipment	291	0.52	0.81	1.04	0.82
	Construction Equipment	Signal Boards	12	0.02	0.03	0.04	0.03
	Construction Equipment	Trenchers	380	0.69	1.06	1.36	1.07
	Construction Equipment	Bore/Drill Rigs	143	0.26	0.40	0.51	0.40
	Construction Equipment	Concrete/Industrial Saws	1,244	2.24	3.47	4.45	3.50
	Construction Equipment	Cement & Mortar Mixers	421	0.76	1.17	1.51	1.18
	Construction Equipment	Cranes	105	0.19	0.29	0.38	0.30
	Construction Equipment	Crushing/Proc. Equipment	48	0.09	0.14	0.17	0.14
	Construction Equipment	Rough Terrain Forklifts	96	0.17	0.27	0.34	0.27
	Construction Equipment	Rubber Tire Loaders	109	0.20	0.30	0.39	0.31
	Construction Equipment	Tractors/Loaders/Backhoes	66	0.12	0.18	0.24	0.18
	Construction Equipment	Skid Steer Loaders	267	0.48	0.75	0.96	0.75
	Construction Equipment	Dumpers/Tenders	61	0.11	0.17	0.22	0.17
	Construction Equipment	Other Construction Equipment	107	0.19	0.30	0.38	0.30
	Industrial Equipment	Total	6,984	12.28	19.19	25.33	19.95
	Industrial Equipment	Aerial Lifts	357	0.65	1.00	1.28	1.00
	Industrial Equipment	Forklifts	1,991	3.60	5.57	7.12	5.59
	Industrial Equipment	Sweepers/Scrubbers	165	0.30	0.46	0.59	0.46
	Industrial Equipment	Other General Industrial Equipment	97	0.17	0.27	0.35	0.27
	Industrial Equipment	Other Material Handling Equipment	9	0.02	0.03	0.03	0.03
	Lawn & Garden Equipment	Total	15,553	27.35	42.73	56.40	44.44
	Lawn & Garden Equipment	Lawnmowers	25,826	46.60	72.15	92.46	72.59
	Lawn & Garden Equipment	Rotary Tillers <5HP	1,754	3.17	4.90	6.28	4.93
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	2	0.00	0.01	0.01	0.01
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	-	-	-	-
Washington (cont.)							
	Non-Road Gasoline, 4-Stroke (cont.)						
	Lawn & Garden Equipment	Rear Engine Riding Mowers	1,595	2.88	4.46	5.71	4.48
	Lawn & Garden Equipment	Front Mowers	453	0.82	1.27	1.62	1.27

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Lawn & Garden Equipment	Shredders <5HP	64	0.12	0.18	0.23	0.18
	Lawn & Garden Equipment	Lawn & Garden Tractors	79,329	143.16	221.61	284.00	222.98
	Lawn & Garden Equipment	Wood Splitters	375	0.68	1.05	1.34	1.05
	Lawn & Garden Equipment	Chippers/Stump Grinders	1,640	2.96	4.58	5.87	4.61
	Lawn & Garden Equipment	Commercial Turf Equipment	25,068	45.24	70.03	89.74	70.46
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	81	0.15	0.23	0.29	0.23
	Farm Equipment	Total	232	0.41	0.64	0.84	0.66
	Farm Equipment	2-Wheel Tractors	8	0.01	0.02	0.03	0.02
	Farm Equipment	Agricultural Tractors	55	0.10	0.15	0.20	0.15
	Farm Equipment	Combines	11	0.02	0.03	0.04	0.03
	Farm Equipment	Agricultural Mowers	10	0.02	0.03	0.04	0.03
	Farm Equipment	Sprayers	35	0.06	0.10	0.13	0.10
	Farm Equipment	Tillers >5HP	200	0.36	0.56	0.72	0.56
	Farm Equipment	Swathers	283	0.51	0.79	1.01	0.80
	Farm Equipment	Hydro Power Units	36	0.06	0.10	0.13	0.10
	Farm Equipment	Other Agricultural Equipment	11	0.02	0.03	0.04	0.03
	Light Commercial Equipment	Generator Sets <50HP	8,930	16.10	24.93	31.98	25.11
	Light Commercial Equipment	Pumps <50HP	1,746	3.15	4.88	6.25	4.91
	Light Commercial Equipment	Air Compressors <50HP	1,170	2.11	3.27	4.19	3.29
	Light Commercial Equipment	Welders <50HP	1,746	3.15	4.88	6.25	4.91
	Light Commercial Equipment	Pressure Washers <50HP	572	1.03	1.60	2.05	1.61
	Logging Equipment	Total	282	0.50	0.78	1.02	0.81
	Airport Service Equipment	Total	282	0.50	0.78	1.02	0.81
	Airport Service Equipment	Airport Support Equipment	101	0.19	0.29	0.35	0.28
	Airport Service Equipment	Terminal Tractors	697	1.30	1.99	2.45	1.91
	Non-Road Diesel		20,227	36.60	56.60	72.32	56.76
	Recreational Vehicles	Total	86	0.15	0.24	0.31	0.24
	Construction Equipment	Total	10,615	19.21	29.70	37.95	29.79
	Industrial Equipment	Total	529	0.96	1.48	1.89	1.49
	Lawn & Garden Equipment	Total	589	1.07	1.65	2.11	1.65
	Farm Equipment	Total	7,416	13.42	20.75	26.51	20.81
Washington (cont.)							
	Non-Road Diesel (cont.)						
	Light Commercial Equipment	Total	418	0.76	1.17	1.49	1.17
	Airport Service Equipment	Total	575	1.04	1.61	2.05	1.61
	Aircraft		9,465	26.00	26.00	26.00	26.00
	Military Aircraft	Total	825	2.27	2.27	2.27	2.27

**Table III-2
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
	Commercial Aircraft	Total	4,584	12.59	12.59	12.59	12.59
	General Aviation	Total	4,056	11.14	11.14	11.14	11.14
	Marine Vessels, Recreational		21,413	39.16	60.34	76.14	59.67
	Pleasure Craft, Gasoline 2-Stroke	Total	6,152	10.82	16.90	22.31	17.58
	Pleasure Craft, Gasoline 2-Stroke	Outboards	7,113	13.26	20.29	25.04	19.57
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	13	0.02	0.04	0.05	0.04
	Pleasure Craft, Gasoline 4-Stroke	Total	728	1.28	2.00	2.64	2.08
	Pleasure Craft, Gasoline 4-Stroke	Inboards	436	0.79	1.22	1.56	1.23
	Pleasure Craft, Gasoline 4-Stroke	Outboards	29	0.05	0.08	0.10	0.08
	Pleasure Craft, Gasoline 4-Stroke	Sterndrive	6,914	12.89	19.72	24.34	19.02
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	6	0.01	0.02	0.02	0.02
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	0	0.00	0.00	0.00	0.00
	Pleasure Craft, Diesel	Total	14	0.03	0.04	0.05	0.04
	Pleasure Craft, Diesel	Inboards	3	0.01	0.01	0.01	0.01
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	3	0.01	0.01	0.01	0.01
	Railroads		242	0.74	0.74	0.74	0.74
	Diesel	Total	133	0.40	0.40	0.40	0.40
	Diesel	Line Haul Locomotives	109	0.33	0.33	0.33	0.33

**Table III-3
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Tier 2	Annual CO (tons/day)	Daily CO Emissions (tons/day)			
			Winter	Spring	Summer	Fall
Baltimore		135,325	248	372	482	386
	Non-Road Gasoline, 2-Stroke	11,008	19.36	30.24	39.92	31.45
	Non-Road Gasoline, 4-Stroke	77,902	136.97	214.02	282.50	222.58
	Non-Road Diesel	16,477	28.97	45.27	59.75	47.08
	Aircraft	8,842	24.29	24.29	24.29	24.29
	Marine Vessels, Commercial	224	0.62	0.62	0.62	0.62
	Marine Vessels, Recreational	20,400	35.87	56.04	73.98	58.28
	Railroads	473	1.44	1.44	1.44	1.44
Boston		267,455	564	678	992	706
	Non-Road Gasoline, 2-Stroke	24,003	50.12	60.67	89.68	63.30
	Non-Road Gasoline, 4-Stroke	180,700	377.29	456.71	675.14	476.57
	Non-Road Diesel	24,001	50.11	60.66	89.68	63.30
	Aircraft	6,711	18.44	18.44	18.44	18.44
	Marine Vessels, Commercial	679	1.87	1.87	1.87	1.87
	Marine Vessels, Recreational	30,924	64.57	78.16	115.54	81.56
	Marine Vessels, Military	11	0.03	0.03	0.03	0.03
	Railroads	426	1.29	1.29	1.29	1.29
Chicago		297,595	397	982	1,064	830
	Non-Road Gasoline, 2-Stroke	27,837	34.25	92.89	101.25	77.79
	Non-Road Gasoline, 4-Stroke	198,344	242.81	663.31	721.45	554.09
	Non-Road Diesel	28,909	35.49	96.56	105.15	80.78
	Aircraft	17,930	49.26	49.26	49.26	49.26
	Marine Vessels, Commercial	436	1.20	1.20	1.20	1.20
	Marine Vessels, Recreational	21,216	26.01	70.91	77.17	59.27
	Railroads	2,924	8.03	8.03	8.03	8.03
Denver		164,601	341	467	596	407
	Non-Road Gasoline, 2-Stroke	15,597	31.19	44.39	57.93	38.05
	Non-Road Gasoline, 4-Stroke	113,196	226.39	322.17	420.44	276.15
	Non-Road Diesel	13,511	27.02	38.46	50.18	32.96
	Aircraft	14,759	40.55	40.55	40.55	40.55
	Marine Vessels, Recreational	6,038	12.08	17.18	22.43	14.73
	Railroads	1,500	4.12	4.12	4.12	4.12
Houston		389,646	1,376	829	942	1,139
	Non-Road Gasoline, 2-Stroke	29,022	103.97	60.60	69.53	85.15
	Non-Road Gasoline, 4-Stroke	263,377	943.53	549.91	630.95	772.77
	Non-Road Diesel	39,444	141.30	82.36	94.49	115.73
	Aircraft	11,231	30.85	30.85	30.85	30.85
	Marine Vessels, Commercial	11,863	32.59	32.59	32.59	32.59
	Marine Vessels, Recreational	33,779	121.01	70.53	80.92	99.11
	Railroads	930	2.56	2.56	2.56	2.56

**Table III-3
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Tier 2	Annual CO (tons/day)	Daily CO Emissions (tons/day)			
			Winter	Spring	Summer	Fall
Los Angeles		434,014	1,098	1,221	1,199	1,246
	Non-Road Gasoline, 2-Stroke	274,433	687.59	775.05	759.97	793.14
	Non-Road Gasoline, 4-Stroke	4,689	11.75	13.24	12.98	13.55
	Non-Road Diesel	61,702	154.59	174.26	170.87	178.32
	Aircraft	39,921	109.67	109.67	109.67	109.67
	Marine Vessels, Commercial	3,438	8.08	8.08	8.08	8.08
	Marine Vessels, Recreational	45,167	113.16	127.56	125.08	130.54
	Railroads	4,664	12.81	12.81	12.81	12.81
Minneapolis		154,286	195	433	599	468
	Non-Road Gasoline, 2-Stroke	18,007	20.98	50.66	71.24	55.01
	Non-Road Gasoline, 4-Stroke	95,285	110.99	268.05	376.95	291.09
	Non-Road Diesel	19,913	23.20	56.02	78.78	60.83
	Aircraft	9,055	24.88	24.88	24.88	24.88
	Marine Vessels, Commercial	28	0.08	0.08	0.08	0.08
	Marine Vessels, Recreational	11,284	13.14	31.74	44.64	34.47
	Railroads	714	1.96	1.96	1.96	1.96
New York		683,342	1,385	1,558	2,476	2,092
	Non-Road Gasoline, 2-Stroke	65,302	124.47	152.80	242.24	198.10
	Non-Road Gasoline, 4-Stroke	431,892	866.48	967.40	1,580.46	1,331.72
	Non-Road Diesel	53,158	107.09	118.94	194.27	163.85
	Aircraft	30,407	83.53	83.53	83.53	83.53
	Marine Vessels, Commercial	2,595	7.13	7.13	7.13	7.13
	Marine Vessels, Recreational	98,747	192.22	224.73	364.56	303.62
	Railroads	1,241	3.77	3.77	3.77	3.77
Philadelphia		331,146	523	936	1,276	905
	Non-Road Gasoline, 2-Stroke	36,151	53.43	102.32	142.12	99.39
	Non-Road Gasoline, 4-Stroke	204,283	305.85	578.28	801.14	559.59
	Non-Road Diesel	33,670	50.66	95.30	131.92	92.12
	Aircraft	15,121	41.54	41.54	41.54	41.54
	Marine Vessels, Commercial	1,069	2.94	2.94	2.94	2.94
	Marine Vessels, Recreational	39,703	65.13	112.19	152.86	106.12
	Marine Vessels, Military	5	0.01	0.01	0.01	0.01
	Railroads	1,144	3.48	3.48	3.48	3.48
Phoenix		187,865	447	516	636	467
	Non-Road Gasoline, 2-Stroke	16,606	39.05	45.62	57.12	40.88
	Non-Road Gasoline, 4-Stroke	139,212	327.38	382.45	478.83	342.68
	Non-Road Diesel	17,417	40.96	47.85	59.91	42.87
	Aircraft	13,108	36.01	36.01	36.01	36.01
	Marine Vessels, Recreational	294	0.69	0.81	1.01	0.72
	Railroads	1,230	3.38	3.38	3.38	3.38
Spokane		29,637	36	78	129	84
	Non-Road Gasoline, 2-Stroke	2,749	2.79	7.19	12.45	7.78
	Non-Road Gasoline, 4-Stroke	17,920	18.22	46.87	81.12	50.74
	Non-Road Diesel	3,102	3.15	8.11	14.04	8.78
	Aircraft	2,919	8.02	8.02	8.02	8.02
	Marine Vessels, Recreational	2,705	2.75	7.07	12.24	7.66
	Railroads	243	0.67	0.67	0.67	0.67

**Table III-3
Nonroad Daily Seasonal CO Emissions by Season, City and Category (Unadjusted)**

City	Tier 2	Annual CO (tons/day)	Daily CO Emissions (tons/day)			
			Winter	Spring	Summer	Fall
St. Louis		335,393	439	1,033	1,307	910
	Non-Road Gasoline, 2-Stroke	33,805	42.56	104.51	133.15	91.64
	Non-Road Gasoline, 4-Stroke	186,091	234.32	575.11	733.15	504.41
	Non-Road Diesel	43,793	55.15	135.30	172.58	118.69
	Aircraft	9,333	25.64	25.64	25.64	25.64
	Marine Vessels, Commercial	676	1.86	1.86	1.86	1.86
	Marine Vessels, Recreational	60,405	75.91	187.47	237.10	163.97
	Railroads	1,290	3.54	3.54	3.54	3.54
Washington		264,864	486	738	941	745
	Non-Road Gasoline, 2-Stroke	28,378	50.53	78.59	102.28	80.45
	Non-Road Gasoline, 4-Stroke	185,139	333.02	516.13	663.88	521.46
	Non-Road Diesel	20,227	36.60	56.60	72.32	56.76
	Aircraft	9,465	26.00	26.00	26.00	26.00
	Marine Vessels, Recreational	21,413	39.16	60.34	76.14	59.67
	Railroads	242	0.74	0.74	0.74	0.74

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Baltimore			135,325	216	381	495	396
	Non-Road Gasoline, 2-Stroke		11,008	14.99	31.54	41.63	32.80
	Recreational Vehicles	Motorcycles:Off-Road	29	0.05	0.08	0.11	0.08
	Recreational Vehicles	All Terrain Vehicles	26	0.04	0.07	0.09	0.07
	Recreational Vehicles	Golf Carts	74	-	0.24	0.32	0.25
	Recreational Vehicles	Specialty Vehicle Carts	30	0.05	0.08	0.11	0.08
	Construction Equipment	Tampers/Rammers	71	0.13	0.20	0.26	0.20
	Construction Equipment	Plate Compactors	111	0.20	0.31	0.40	0.32
	Construction Equipment	Paving Equipment	70	0.12	0.19	0.25	0.20
	Construction Equipment	Bore/Drill Rigs	4	0.01	0.01	0.01	0.01
	Industrial Equipment	Aerial Lifts	27	0.05	0.07	0.10	0.08
	Industrial Equipment	Forklifts	1,498	2.63	4.11	5.43	4.28
	Industrial Equipment	Sweepers/Scrubbers	51	0.09	0.14	0.18	0.14
	Industrial Equipment	Other General Industrial Equipment	39	0.07	0.11	0.14	0.11
	Lawn & Garden Equipment	Lawnmowers	2,407	-	7.87	10.39	8.19
	Lawn & Garden Equipment	Rotary Tillers <5HP	7	0.01	0.02	0.02	0.02
	Lawn & Garden Equipment	Chain Saws <5HP	2,315	4.07	6.36	8.40	6.62
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	2,258	3.97	6.20	8.19	6.45
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	835	1.47	2.29	3.03	2.38
	Lawn & Garden Equipment	Shredders <5HP	1	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	25	0.04	0.07	0.09	0.07
	Light Commercial Equipment	Generator Sets <50HP	716	1.26	1.97	2.60	2.05
	Light Commercial Equipment	Pumps <50HP	103	0.18	0.28	0.37	0.30
	Light Commercial Equipment	Gas Compressors <50HP	43	0.08	0.12	0.16	0.12
	Logging Equipment	Chain Saws >4HP	259	0.46	0.71	0.94	0.74
	Airport Service Equipment	Terminal Tractors	8	0.01	0.02	0.03	0.02
	Non-Road Gasoline, 4-Stroke		77,902	109.40	222.22	293.33	231.11
	Recreational Vehicles	Motorcycles:Off-Road	11	0.02	0.03	0.04	0.03
	Recreational Vehicles	All Terrain Vehicles	277	0.49	0.76	1.00	0.79
	Recreational Vehicles	Minibikes	5	0.01	0.01	0.02	0.01
	Recreational Vehicles	Golf Carts	294	-	0.96	1.27	1.00
	Recreational Vehicles	Specialty Vehicle Carts	19	0.03	0.05	0.07	0.05
	Construction Equipment	Asphalt Pavers	28	0.05	0.08	0.10	0.08
	Construction Equipment	Tampers/Rammers	1	0.00	0.00	0.00	0.00
	Construction Equipment	Plate Compactors	192	0.34	0.53	0.70	0.55

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category	Annual CO (tons/day)	Daily CO Emissions (tons/day)				
			Winter	Spring	Summer	Fall	
Baltimore (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Construction Equipment	Rollers	252	0.44	0.69	0.91	0.72
	Construction Equipment	Paving Equipment	528	0.93	1.45	1.92	1.51
	Construction Equipment	Surfacing Equipment	183	0.32	0.50	0.66	0.52
	Construction Equipment	Signal Boards	8	0.01	0.02	0.03	0.02
	Construction Equipment	Trenchers	239	0.42	0.66	0.87	0.68
	Construction Equipment	Bore/Drill Rigs	90	0.16	0.25	0.33	0.26
	Construction Equipment	Concrete/Industrial Saws	784	1.38	2.15	2.84	2.24
	Construction Equipment	Cement & Mortar Mixers	266	0.47	0.73	0.96	0.76
	Construction Equipment	Cranes	69	0.12	0.19	0.25	0.20
	Construction Equipment	Crushing/Proc. Equipment	32	0.06	0.09	0.12	0.09
	Construction Equipment	Rough Terrain Forklifts	59	0.10	0.16	0.21	0.17
	Construction Equipment	Rubber Tire Loaders	68	0.12	0.19	0.25	0.19
	Construction Equipment	Tractors/Loaders/Backhoes	44	0.08	0.12	0.16	0.13
	Construction Equipment	Skid Steer Loaders	168	0.30	0.46	0.61	0.48
	Construction Equipment	Dumpers/Tenders	39	0.07	0.11	0.14	0.11
	Construction Equipment	Other Construction Equipment	69	0.12	0.19	0.25	0.20
	Industrial Equipment	Aerial Lifts	608	1.07	1.67	2.20	1.74
	Industrial Equipment	Forklifts	3,740	6.58	10.28	13.56	10.69
	Industrial Equipment	Sweepers/Scrubbers	294	0.52	0.81	1.07	0.84
	Industrial Equipment	Other General Industrial Equipment	177	0.31	0.49	0.64	0.50
	Industrial Equipment	Other Material Handling Equipment	26	0.05	0.07	0.09	0.07
	Lawn & Garden Equipment	Lawnmowers	15,385	-	50.32	66.42	52.33
	Lawn & Garden Equipment	Rotary Tillers <5HP	1,287	2.26	3.54	4.67	3.68
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	1	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	-	-	-	-
	Lawn & Garden Equipment	Rear Engine Riding Mowers	1,441	2.53	3.96	5.23	4.12
	Lawn & Garden Equipment	Front Mowers	408	0.72	1.12	1.48	1.17
	Lawn & Garden Equipment	Shredders <5HP	46	0.08	0.13	0.17	0.13
	Lawn & Garden Equipment	Lawn & Garden Tractors	13,466	23.68	37.00	48.83	38.47
	Lawn & Garden Equipment	Wood Splitters	266	0.47	0.73	0.96	0.76
	Lawn & Garden Equipment	Chippers/Stump Grinders	1,164	2.05	3.20	4.22	3.32
	Lawn & Garden Equipment	Commercial Turf Equipment	17,750	31.21	48.76	64.37	50.72
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	57	0.10	0.16	0.21	0.16

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Baltimore (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Farm Equipment	2-Wheel Tractors	10	0.02	0.03	0.04	0.03
	Farm Equipment	Agricultural Tractors	70	0.12	0.19	0.25	0.20
	Farm Equipment	Combines	13	0.02	0.04	0.05	0.04
	Farm Equipment	Agricultural Mowers	15	0.03	0.04	0.05	0.04
	Farm Equipment	Sprayers	48	0.08	0.13	0.17	0.14
	Farm Equipment	Tillers >5HP	260	0.46	0.71	0.94	0.74
	Farm Equipment	Swathers	49	0.09	0.13	0.18	0.14
	Farm Equipment	Hydro Power Units	48	0.08	0.13	0.17	0.14
	Farm Equipment	Other Agricultural Equipment	14	0.02	0.04	0.05	0.04
	Light Commercial Equipment	Generator Sets <50HP	10,143	17.83	27.87	36.78	28.98
	Light Commercial Equipment	Pumps <50HP	1,983	3.49	5.45	7.19	5.67
	Light Commercial Equipment	Air Compressors <50HP	1,330	2.34	3.66	4.82	3.80
	Light Commercial Equipment	Welders <50HP	1,983	3.49	5.45	7.19	5.67
	Light Commercial Equipment	Pressure Washers <50HP	650	1.14	1.78	2.36	1.86
	Airport Service Equipment	Airport Support Equipment	181	0.32	0.50	0.66	0.52
	Airport Service Equipment	Terminal Tractors	1,264	2.22	3.47	4.58	3.61
	Non-Road Diesel		16,477	28.97	45.27	59.75	47.08
	Recreational Vehicles	Total	57	0.10	0.16	0.21	0.16
	Construction Equipment	Total	7,529	13.24	20.68	27.30	21.51
	Industrial Equipment	Total	778	1.37	2.14	2.82	2.22
	Lawn & Garden Equipment	Total	300	0.53	0.83	1.09	0.86
	Farm Equipment	Total	6,855	12.05	18.83	24.86	19.58
	Light Commercial Equipment	Total	425	0.75	1.17	1.54	1.21
	Airport Service Equipment	Total	534	0.94	1.47	1.93	1.52
	Aircraft		8,842	24.29	24.29	24.29	24.29
	Military Aircraft	Total	2,005	5.51	5.51	5.51	5.51
	Commercial Aircraft	Total	2,868	7.88	7.88	7.88	7.88
	General Aviation	Total	3,363	9.24	9.24	9.24	9.24
	Air Taxi	Total	605	1.66	1.66	1.66	1.66
	Marine Vessels, Commercial		224	0.62	0.62	0.62	0.62
	Diesel	Total	219	0.60	0.60	0.60	0.60
	Diesel	Harbor Vessels	4	0.01	0.01	0.01	0.01
	Residual	Total	1	0.00	0.00	0.00	0.00

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Baltimore (cont.)							
	Marine Vessels, Recreational		20,400	35.87	56.04	73.98	58.28
	Pleasure Craft, Gasoline 2-Stroke	Outboards	6,819	11.99	18.73	24.73	19.48
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	24	0.04	0.07	0.09	0.07
	Pleasure Craft, Gasoline 4-Stroke	Inboards	5,131	9.02	14.10	18.61	14.66
	Pleasure Craft, Gasoline 4-Stroke	Outboards	32	0.06	0.09	0.12	0.09
	Pleasure Craft, Gasoline 4-Stroke	Sterndrive	8,334	14.65	22.89	30.22	23.81
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	12	0.02	0.03	0.04	0.03
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	0	0.00	0.00	0.00	0.00
	Pleasure Craft, Diesel	Inboards	34	0.06	0.09	0.12	0.10
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	13	0.02	0.04	0.05	0.04
	Railroads		473	1.44	1.44	1.44	1.44
	Diesel	Total	473	1.44	1.44	1.44	1.44

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Boston			267,455	504	695	1,017	724
	Non-Road Gasoline, 2-Stroke		24,003	41.82	63.02	93.16	65.76
	Recreational Vehicles	Motorcycles:Off-Road	138	0.29	0.35	0.52	0.36
	Recreational Vehicles	All Terrain Vehicles	128	0.27	0.32	0.48	0.34
	Recreational Vehicles	Golf Carts	320	-	1.00	1.48	1.04
	Recreational Vehicles	Specialty Vehicle Carts	174	0.36	0.44	0.65	0.46
	Construction Equipment	Tampers/Rammers	119	0.25	0.30	0.45	0.31
	Construction Equipment	Plate Compactors	192	0.40	0.49	0.72	0.51
	Construction Equipment	Paving Equipment	104	0.22	0.26	0.39	0.27
	Construction Equipment	Bore/Drill Rigs	6	0.01	0.02	0.02	0.02
	Industrial Equipment	Aerial Lifts	175	0.37	0.44	0.65	0.46
	Industrial Equipment	Forklifts	5,720	11.94	14.46	21.37	15.09
	Industrial Equipment	Sweepers/Scrubbers	356	0.74	0.90	1.33	0.94
	Industrial Equipment	Other General Industrial Equipment	199	0.42	0.50	0.74	0.53
	Lawn & Garden Equipment	Lawnmowers	3,651	-	11.39	16.84	11.89
	Lawn & Garden Equipment	Rotary Tillers <5HP	13	0.03	0.03	0.05	0.03
	Lawn & Garden Equipment	Chain Saws <5HP	4,355	9.09	11.01	16.27	11.49
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	2,647	5.53	6.69	9.89	6.98
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	896	1.87	2.26	3.35	2.36
	Lawn & Garden Equipment	Shredders <5HP	2	0.00	0.00	0.01	0.01
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	48	0.10	0.12	0.18	0.13
	Light Commercial Equipment	Generator Sets <50HP	3,652	7.63	9.23	13.65	9.63
	Light Commercial Equipment	Pumps <50HP	384	0.80	0.97	1.43	1.01
	Light Commercial Equipment	Gas Compressors <50HP	240	0.50	0.61	0.90	0.63
	Logging Equipment	Chain Saws >4HP	454	0.95	1.15	1.70	1.20
	Airport Service Equipment	Terminal Tractors	29	0.06	0.07	0.11	0.08
	Non-Road Gasoline, 4-Stroke		180,700	325.90	471.31	696.71	491.80
	Recreational Vehicles	Motorcycles:Off-Road	52	0.11	0.13	0.20	0.14
	Recreational Vehicles	All Terrain Vehicles	1,377	2.87	3.48	5.14	3.63
	Recreational Vehicles	Minibikes	20	0.04	0.05	0.08	0.05
	Recreational Vehicles	Golf Carts	1,271	-	3.97	5.86	4.14
	Recreational Vehicles	Specialty Vehicle Carts	110	0.23	0.28	0.41	0.29
	Construction Equipment	Asphalt Pavers	48	0.10	0.12	0.18	0.13
	Construction Equipment	Tampers/Rammers	2	0.00	0.01	0.01	0.01
	Construction Equipment	Plate Compactors	332	0.69	0.84	1.24	0.88

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category	Annual CO (tons/day)	Daily CO Emissions (tons/day)				
			Winter	Spring	Summer	Fall	
Boston (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Construction Equipment	Rollers	399	0.83	1.01	1.49	1.05
	Construction Equipment	Paving Equipment	780	1.63	1.97	2.91	2.06
	Construction Equipment	Surfacing Equipment	295	0.62	0.75	1.10	0.78
	Construction Equipment	Signal Boards	11	0.02	0.03	0.04	0.03
	Construction Equipment	Trenchers	407	0.85	1.03	1.52	1.07
	Construction Equipment	Bore/Drill Rigs	131	0.27	0.33	0.49	0.35
	Construction Equipment	Concrete/Industrial Saws	1,397	2.92	3.53	5.22	3.68
	Construction Equipment	Cement & Mortar Mixers	404	0.84	1.02	1.51	1.07
	Construction Equipment	Cranes	131	0.27	0.33	0.49	0.35
	Construction Equipment	Crushing/Proc. Equipment	46	0.10	0.12	0.17	0.12
	Construction Equipment	Rough Terrain Forklifts	94	0.20	0.24	0.35	0.25
	Construction Equipment	Rubber Tire Loaders	132	0.28	0.33	0.49	0.35
	Construction Equipment	Tractors/Loaders/Backhoes	76	0.16	0.19	0.28	0.20
	Construction Equipment	Skid Steer Loaders	321	0.67	0.81	1.20	0.85
	Construction Equipment	Dumpers/Tenders	47	0.10	0.12	0.18	0.13
	Construction Equipment	Other Construction Equipment	115	0.24	0.29	0.43	0.30
	Industrial Equipment	Aerial Lifts	4,014	8.38	10.15	15.00	10.59
	Industrial Equipment	Forklifts	16,515	34.48	41.74	61.70	43.55
	Industrial Equipment	Sweepers/Scrubbers	2,068	4.32	5.23	7.73	5.45
	Industrial Equipment	Other General Industrial Equipment	901	1.88	2.28	3.37	2.38
	Industrial Equipment	Other Material Handling Equipment	161	0.34	0.41	0.60	0.42
	Lawn & Garden Equipment	Lawnmowers	23,342	-	72.83	107.67	76.00
	Lawn & Garden Equipment	Rotary Tillers <5HP	2,540	5.30	6.42	9.49	6.70
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	2	0.00	0.01	0.01	0.01
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	-	-	-	-
	Lawn & Garden Equipment	Rear Engine Riding Mowers	2,300	4.80	5.81	8.59	6.07
	Lawn & Garden Equipment	Front Mowers	685	1.43	1.73	2.56	1.81
	Lawn & Garden Equipment	Shredders <5HP	88	0.18	0.22	0.33	0.23
	Lawn & Garden Equipment	Lawn & Garden Tractors	16,884	35.25	42.67	63.08	44.53
	Lawn & Garden Equipment	Wood Splitters	610	1.27	1.54	2.28	1.61
	Lawn & Garden Equipment	Chippers/Stump Grinders	1,971	4.11	4.98	7.36	5.20
	Lawn & Garden Equipment	Commercial Turf Equipment	21,296	44.46	53.83	79.57	56.17
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	109	0.23	0.28	0.41	0.29

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Boston (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Farm Equipment	2-Wheel Tractors	5	0.01	0.01	0.02	0.01
	Farm Equipment	Agricultural Tractors	39	0.08	0.10	0.15	0.10
	Farm Equipment	Combines	2	0.00	0.00	0.01	0.01
	Farm Equipment	Agricultural Mowers	5	0.01	0.01	0.02	0.01
	Farm Equipment	Sprayers	21	0.04	0.05	0.08	0.05
	Farm Equipment	Tillers >5HP	163	0.34	0.41	0.61	0.43
	Farm Equipment	Swathers	706	1.47	1.79	2.64	1.86
	Farm Equipment	Hydro Power Units	30	0.06	0.08	0.11	0.08
	Farm Equipment	Other Agricultural Equipment	7	0.02	0.02	0.03	0.02
	Light Commercial Equipment	Generator Sets <50HP	51,709	107.96	130.69	193.20	136.37
	Light Commercial Equipment	Pumps <50HP	7,365	15.38	18.62	27.52	19.43
	Light Commercial Equipment	Air Compressors <50HP	4,902	10.23	12.39	18.31	12.93
	Light Commercial Equipment	Welders <50HP	7,212	15.06	18.23	26.95	19.02
	Light Commercial Equipment	Pressure Washers <50HP	2,003	4.18	5.06	7.48	5.28
	Airport Service Equipment	Airport Support Equipment	628	1.31	1.59	2.35	1.66
	Airport Service Equipment	Terminal Tractors	4,417	9.22	11.16	16.50	11.65
	Non-Road Diesel		24,001	50.11	60.66	89.68	63.30
	Recreational Vehicles	Total	98	0.20	0.25	0.37	0.26
	Construction Equipment	Total	15,682	32.74	39.64	58.59	41.36
	Industrial Equipment	Total	2,518	5.26	6.36	9.41	6.64
	Lawn & Garden Equipment	Total	555	1.16	1.40	2.07	1.46
	Farm Equipment	Total	3,628	7.58	9.17	13.56	9.57
	Light Commercial Equipment	Total	958	2.00	2.42	3.58	2.53
	Airport Service Equipment	Total	562	1.17	1.42	2.10	1.48
	Aircraft		6,711	18.44	18.44	18.44	18.44
	Military Aircraft	Total	51	0.14	0.14	0.14	0.14
	Commercial Aircraft	Total	6,209	17.06	17.06	17.06	17.06
	General Aviation	Total	451	1.24	1.24	1.24	1.24
	Marine Vessels, Commercial		679	1.87	1.87	1.87	1.87
	Diesel	Ocean-Going Vessels	669	1.84	1.84	1.84	1.84
	Diesel	Military Vessels	10	0.03	0.03	0.03	0.03

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Boston (cont.)							
	Marine Vessels, Recreational		30,924	64.57	78.16	115.54	81.56
	Pleasure Craft, Gasoline 2-Stroke	Outboards	8,603	17.96	21.74	32.14	22.69
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	1	0.00	0.00	0.00	0.00
	Pleasure Craft, Gasoline 4-Stroke	Inboards	7,173	14.98	18.13	26.80	18.92
	Pleasure Craft, Gasoline 4-Stroke	Outboards	44	0.09	0.11	0.17	0.12
	Pleasure Craft, Gasoline 4-Stroke	Stern drive	15,078	31.48	38.11	56.34	39.77
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	3	0.01	0.01	0.01	0.01
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	0	-	-	-	-
	Pleasure Craft, Diesel	Inboards	20	0.04	0.05	0.08	0.05
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	1	0.00	0.00	0.00	0.00
	Marine Vessels, Military		11	0.03	0.03	0.03	0.03
	Diesel	Total	11	0.03	0.03	0.03	0.03
	Railroads		426	1.29	1.29	1.29	1.29
	Diesel	Total	426	1.29	1.29	1.29	1.29

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Chicago			297,595	397	982	1,064	830
	Non-Road Gasoline, 2-Stroke		27,837	34.25	92.89	101.25	77.79
	Recreational Vehicles	Total	843	1.14	2.69	3.07	2.37
	Construction Equipment	Total	635	0.78	2.12	2.31	1.77
	Industrial Equipment	Total	6,434	7.89	21.50	23.40	17.98
	Lawn & Garden Equipment	Total	16,140	19.83	53.89	58.71	45.10
	Light Commercial Equipment	Total	3,528	4.30	11.83	12.83	9.85
	Logging Equipment	Total	235	0.29	0.79	0.86	0.66
	Airport Service Equipment	Total	21	0.03	0.07	0.08	0.06
	Non-Road Gasoline, 4-Stroke		198,344	242.81	663.31	721.45	554.09
	Recreational Vehicles	Total	1,691	2.08	5.65	6.15	4.73
	Construction Equipment	Total	8,264	10.15	27.60	30.06	23.09
	Industrial Equipment	Total	23,019	28.22	76.93	83.73	64.31
	Lawn & Garden Equipment	Total	100,452	123.34	335.50	365.38	280.68
	Farm Equipment	Total	614	0.77	2.03	2.23	1.72
	Light Commercial Equipment	Total	60,593	73.77	203.12	220.40	169.21
	Airport Service Equipment	Total	3,711	4.49	12.48	13.50	10.36
	Non-Road Diesel		28,909	35.49	96.56	105.15	80.78
	Recreational Vehicles	Total	186	0.23	0.62	0.67	0.52
	Construction Equipment	Total	13,694	16.81	45.74	49.81	38.26
	Industrial Equipment	Total	3,670	4.50	12.26	13.35	10.25
	Lawn & Garden Equipment	Total	560	0.69	1.87	2.04	1.56
	Farm Equipment	Total	8,355	10.26	27.91	30.39	23.35
	Light Commercial Equipment	Total	1,305	1.60	4.36	4.75	3.65
	Airport Service Equipment	Total	1,141	1.40	3.81	4.15	3.19
	Aircraft		17,930	49.26	49.26	49.26	49.26
	Military Aircraft	Total	499	1.37	1.37	1.37	1.37
	Commercial Aircraft	Total	12,792	35.14	35.14	35.14	35.14
	General Aviation	Total	4,058	11.15	11.15	11.15	11.15
	Air Taxi	Total	581	1.60	1.60	1.60	1.60
	Marine Vessels, Commercial		436	1.20	1.20	1.20	1.20
	Diesel	Total	211	0.58	0.58	0.58	0.58
	Residual	Total	226	0.62	0.62	0.62	0.62

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Chicago (cont.)							
	Marine Vessels, Recreational		21,216	26.01	70.91	77.17	59.27
	Pleasure Craft, Gasoline 2-Stroke	Total	12,897	15.80	43.11	46.91	36.03
	Pleasure Craft, Gasoline 4-Stroke	Total	8,285	10.16	27.69	30.13	23.15
	Pleasure Craft, Diesel	Total	35	0.04	0.12	0.13	0.10
	Railroads		2,924	8.03	8.03	8.03	8.03
	Diesel	Total	2,924	8.03	8.03	8.03	8.03

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Denver			164,601	341	467	596	407
	Non-Road Gasoline, 2-Stroke		15,597	31.19	44.39	57.93	38.05
	Recreational Vehicles	Total	4,550	9.10	12.95	16.90	11.10
	Construction Equipment	Total	305	0.61	0.87	1.13	0.74
	Industrial Equipment	Total	2,223	4.45	6.33	8.26	5.42
	Lawn & Garden Equipment	Total	5,824	11.65	16.58	21.63	14.21
	Light Commercial Equipment	Total	2,550	5.10	7.26	9.47	6.22
	Logging Equipment	Total	136	0.27	0.39	0.50	0.33
	Airport Service Equipment	Total	10	0.02	0.03	0.04	0.03
	Non-Road Gasoline, 4-Stroke		113,196	226.39	322.17	420.44	276.15
	Recreational Vehicles	Total	1,511	3.02	4.30	5.61	3.69
	Construction Equipment	Total	3,988	7.98	11.35	14.81	9.73
	Industrial Equipment	Total	8,608	17.22	24.50	31.97	21.00
	Lawn & Garden Equipment	Total	49,913	99.83	142.06	185.39	121.77
	Farm Equipment	Total	204	0.41	0.58	0.76	0.50
	Light Commercial Equipment	Total	47,143	94.29	134.18	175.10	115.01
	Airport Service Equipment	Total	1,830	3.66	5.21	6.80	4.46
	Non-Road Diesel		13,511	27.02	38.46	50.18	32.96
	Recreational Vehicles	Total	59	0.12	0.17	0.22	0.14
	Construction Equipment	Total	7,647	15.29	21.76	28.40	18.66
	Industrial Equipment	Total	1,152	2.30	3.28	4.28	2.81
	Lawn & Garden Equipment	Total	404	0.81	1.15	1.50	0.99
	Farm Equipment	Total	2,974	5.95	8.46	11.04	7.25
	Light Commercial Equipment	Total	827	1.65	2.35	3.07	2.02
	Airport Service Equipment	Total	448	0.90	1.28	1.67	1.09
	Aircraft		14,759	40.55	40.55	40.55	40.55
	Military Aircraft	Total	418	1.15	1.15	1.15	1.15
	Commercial Aircraft	Total	7,303	20.06	20.06	20.06	20.06
	General Aviation	Total	7,038	19.34	19.34	19.34	19.34
	Marine Vessels, Recreational		6,038	12.08	17.18	22.43	14.73
	Pleasure Craft, Gasoline 2-Stroke	Total	1,064	2.13	3.03	3.95	2.60
	Pleasure Craft, Gasoline 4-Stroke	Total	4,974	9.95	14.16	18.47	12.13
	Railroads		1,500	4.12	4.12	4.12	4.12
	Diesel	Total	1,500	4.12	4.12	4.12	4.12

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Houston			389,646	1,376	829	942	1,139
	Non-Road Gasoline, 2-Stroke		29,022	103.97	60.60	69.53	85.15
	Recreational Vehicles	Motorcycles:Off-Road	184	0.66	0.38	0.44	0.54
	Recreational Vehicles	All Terrain Vehicles	154	0.55	0.32	0.37	0.45
	Recreational Vehicles	Golf Carts	497	1.78	1.04	1.19	1.46
	Recreational Vehicles	Specialty Vehicle Carts	192	0.69	0.40	0.46	0.56
	Construction Equipment	Tampers/Rammers	287	1.03	0.60	0.69	0.84
	Construction Equipment	Plate Compactors	497	1.78	1.04	1.19	1.46
	Construction Equipment	Paving Equipment	310	1.11	0.65	0.74	0.91
	Construction Equipment	Bore/Drill Rigs	18	0.06	0.04	0.04	0.05
	Industrial Equipment	Aerial Lifts	99	0.36	0.21	0.24	0.29
	Industrial Equipment	Forklifts	4,355	15.60	9.09	10.43	12.78
	Industrial Equipment	Sweepers/Scrubbers	184	0.66	0.38	0.44	0.54
	Industrial Equipment	Other General Industrial Equipment	179	0.64	0.37	0.43	0.53
	Lawn & Garden Equipment	Lawnmowers	7,299	26.15	15.24	17.48	21.41
	Lawn & Garden Equipment	Rotary Tillers <5HP	9	0.03	0.02	0.02	0.03
	Lawn & Garden Equipment	Chain Saws <5HP	3,824	13.70	7.98	9.16	11.22
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	3,899	13.97	8.14	9.34	11.44
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	1,390	4.98	2.90	3.33	4.08
	Lawn & Garden Equipment	Shredders <5HP	3	0.01	0.01	0.01	0.01
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	55	0.20	0.12	0.13	0.16
	Light Commercial Equipment	Generator Sets <50HP	4,051	14.51	8.46	9.70	11.89
	Light Commercial Equipment	Pumps <50HP	795	2.85	1.66	1.90	2.33
	Light Commercial Equipment	Gas Compressors <50HP	291	1.04	0.61	0.70	0.85
	Logging Equipment	Chain Saws >4HP	435	1.56	0.91	1.04	1.28
	Airport Service Equipment	Terminal Tractors	16	0.06	0.03	0.04	0.05
	Non-Road Gasoline, 4-Stroke		263,377	943.53	549.91	630.95	772.77
	Recreational Vehicles	Motorcycles:Off-Road	71	0.25	0.15	0.17	0.21
	Recreational Vehicles	All Terrain Vehicles	1,668	5.98	3.48	4.00	4.89
	Recreational Vehicles	Minibikes	34	0.12	0.07	0.08	0.10
	Recreational Vehicles	Golf Carts	1,974	7.07	4.12	4.73	5.79
	Recreational Vehicles	Specialty Vehicle Carts	122	0.44	0.25	0.29	0.36
	Construction Equipment	Asphalt Pavers	109	0.39	0.23	0.26	0.32
	Construction Equipment	Tampers/Rammers	5	0.02	0.01	0.01	0.02
	Construction Equipment	Plate Compactors	858	3.07	1.79	2.06	2.52

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category	Annual CO (tons/day)	Daily CO Emissions (tons/day)				
			Winter	Spring	Summer	Fall	
Houston (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Construction Equipment	Rollers	950	3.40	1.98	2.28	2.79
	Construction Equipment	Paving Equipment	2,331	8.35	4.87	5.58	6.84
	Construction Equipment	Surfacing Equipment	786	2.82	1.64	1.88	2.31
	Construction Equipment	Signal Boards	35	0.13	0.07	0.08	0.10
	Construction Equipment	Trenchers	929	3.33	1.94	2.23	2.73
	Construction Equipment	Bore/Drill Rigs	392	1.40	0.82	0.94	1.15
	Construction Equipment	Concrete/Industrial Saws	3,015	10.80	6.29	7.22	8.85
	Construction Equipment	Cement & Mortar Mixers	1,135	4.07	2.37	2.72	3.33
	Construction Equipment	Cranes	238	0.85	0.50	0.57	0.70
	Construction Equipment	Crushing/Proc. Equipment	134	0.48	0.28	0.32	0.39
	Construction Equipment	Rough Terrain Forklifts	255	0.91	0.53	0.61	0.75
	Construction Equipment	Rubber Tire Loaders	266	0.95	0.55	0.64	0.78
	Construction Equipment	Tractors/Loaders/Backhoes	158	0.56	0.33	0.38	0.46
	Construction Equipment	Skid Steer Loaders	751	2.69	1.57	1.80	2.20
	Construction Equipment	Dumpers/Tenders	175	0.63	0.37	0.42	0.51
	Construction Equipment	Other Construction Equipment	265	0.95	0.55	0.63	0.78
	Industrial Equipment	Aerial Lifts	2,277	8.16	4.75	5.45	6.68
	Industrial Equipment	Forklifts	11,678	41.84	24.38	27.98	34.27
	Industrial Equipment	Sweepers/Scrubbers	1,067	3.82	2.23	2.56	3.13
	Industrial Equipment	Other General Industrial Equipment	811	2.91	1.69	1.94	2.38
	Industrial Equipment	Other Material Handling Equipment	95	0.34	0.20	0.23	0.28
	Lawn & Garden Equipment	Lawnmowers	46,642	167.09	97.38	111.74	136.85
	Lawn & Garden Equipment	Rotary Tillers <5HP	1,656	5.93	3.46	3.97	4.86
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	3	0.01	0.01	0.01	0.01
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Rear Engine Riding Mowers	3,585	12.84	7.49	8.59	10.52
	Lawn & Garden Equipment	Front Mowers	977	3.50	2.04	2.34	2.87
	Lawn & Garden Equipment	Shredders <5HP	91	0.33	0.19	0.22	0.27
	Lawn & Garden Equipment	Lawn & Garden Tractors	20,624	73.88	43.06	49.41	60.51
	Lawn & Garden Equipment	Wood Splitters	473	1.69	0.99	1.13	1.39
	Lawn & Garden Equipment	Chippers/Stump Grinders	2,757	9.88	5.76	6.60	8.09
	Lawn & Garden Equipment	Commercial Turf Equipment	44,472	159.32	92.85	106.54	130.48
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	126	0.45	0.26	0.30	0.37

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Houston (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Farm Equipment	2-Wheel Tractors	15	0.05	0.03	0.04	0.04
	Farm Equipment	Agricultural Tractors	102	0.37	0.21	0.24	0.30
	Farm Equipment	Combines	20	0.07	0.04	0.05	0.06
	Farm Equipment	Agricultural Mowers	18	0.06	0.04	0.04	0.05
	Farm Equipment	Sprayers	67	0.24	0.14	0.16	0.20
	Farm Equipment	Tillers >5HP	322	1.15	0.67	0.77	0.95
	Farm Equipment	Swathers	83	0.30	0.17	0.20	0.25
	Farm Equipment	Hydro Power Units	63	0.23	0.13	0.15	0.18
	Farm Equipment	Other Agricultural Equipment	22	0.08	0.05	0.05	0.07
	Light Commercial Equipment	Generator Sets <50HP	57,354	205.46	119.75	137.40	168.28
	Light Commercial Equipment	Pumps <50HP	15,256	54.65	31.85	36.55	44.76
	Light Commercial Equipment	Air Compressors <50HP	10,595	37.96	22.12	25.38	31.09
	Light Commercial Equipment	Welders <50HP	17,572	62.95	36.69	42.10	51.56
	Light Commercial Equipment	Pressure Washers <50HP	4,951	17.74	10.34	11.86	14.53
	Logging Equipment	Shredders >5HP	174	0.62	0.36	0.42	0.51
	Airport Service Equipment	Airport Support Equipment	342	1.23	0.72	0.82	1.00
	Airport Service Equipment	Terminal Tractors	2,430	8.70	5.07	5.82	7.13
	Non-Road Diesel		39,444	141.30	82.36	94.49	115.73
	Recreational Vehicles	Total	115	0.41	0.24	0.28	0.34
	Construction Equipment	Total	21,762	77.96	45.44	52.13	63.85
	Industrial Equipment	Total	1,871	6.70	3.91	4.48	5.49
	Lawn & Garden Equipment	Total	727	2.61	1.52	1.74	2.13
	Farm Equipment	Total	11,412	40.88	23.83	27.34	33.48
	Light Commercial Equipment	Total	1,987	7.12	4.15	4.76	5.83
	Logging Equipment	Total	894	3.20	1.87	2.14	2.62
	Airport Service Equipment	Total	675	2.42	1.41	1.62	1.98
	Aircraft		11,231	30.85	30.85	30.85	30.85
	Military Aircraft	Total	241	0.66	0.66	0.66	0.66
	Commercial Aircraft	Total	5,596	15.37	15.37	15.37	15.37
	General Aviation	Total	5,394	14.82	14.82	14.82	14.82
	Marine Vessels, Commercial		11,863	32.59	32.59	32.59	32.59
	Total	Total	11,863	32.59	32.59	32.59	32.59

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Houston (cont.)							
	Marine Vessels, Recreational		33,779	121.01	70.53	80.92	99.11
	Pleasure Craft, Gasoline 2-Stroke	Outboards	21,257	76.15	44.38	50.92	62.37
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	11	0.04	0.02	0.03	0.03
	Pleasure Craft, Gasoline 4-Stroke	Inboards	2,636	9.44	5.50	6.32	7.73
	Pleasure Craft, Gasoline 4-Stroke	Outboards	101	0.36	0.21	0.24	0.29
	Pleasure Craft, Gasoline 4-Stroke	Sterndrive	9,765	34.98	20.39	23.39	28.65
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	1	0.00	0.00	0.00	0.00
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	0	0.00	0.00	0.00	0.00
	Pleasure Craft, Diesel	Inboards	6	0.02	0.01	0.02	0.02
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	2	0.01	0.00	0.00	0.01
	Railroads		930	2.56	2.56	2.56	2.56
	Total	Total	930	2.56	2.56	2.56	2.56

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Los Angeles			434,014	1,102	1,219	1,198	1,245
	Non-Road Gasoline, 2-Stroke		274,433	691.88	773.62	758.57	791.68
	Recreational Vehicles	Motorcycles:Off-Road	12,286	30.78	34.70	34.02	35.51
	Recreational Vehicles	Snowmobiles	506	5.56	-	-	-
	Recreational Vehicles	All Terrain Vehicles	9,998	25.05	28.24	27.69	28.90
	Industrial Equipment	Total	172,280	431.64	486.55	477.08	497.91
	Lawn & Garden Equipment	Total	74,807	187.43	211.27	207.16	216.20
	Farm Equipment	Total	4,557	11.42	12.87	12.62	13.17
	Non-Road Gasoline, 4-Stroke		4,689	11.75	13.24	12.98	13.55
	Recreational Vehicles	All Terrain Vehicles	4,689	11.75	13.24	12.98	13.55
	Non-Road Diesel		61,702	154.59	174.26	170.87	178.32
	Recreational Vehicles	Total	346	0.87	0.98	0.96	1.00
	Construction Equipment	Total	40,742	102.08	115.06	112.82	117.75
	Industrial Equipment	Total	10,422	26.11	29.43	28.86	30.12
	Lawn & Garden Equipment	Total	2,438	6.11	6.88	6.75	7.05
	Farm Equipment	Total	2,494	6.25	7.04	6.91	7.21
	Light Commercial Equipment	Total	3,603	9.03	10.18	9.98	10.41
	Airport Service Equipment	Total	1,656	4.15	4.68	4.59	4.79
	Aircraft		39,921	109.67	109.67	109.67	109.67
	Military Aircraft	Total	7,736	21.25	21.25	21.25	21.25
	Commercial Aircraft	Total	12,047	33.10	33.10	33.10	33.10
	General Aviation	Total	20,138	55.32	55.32	55.32	55.32
	Marine Vessels, Commercial		3,438	8.08	8.08	8.08	8.08
	Diesel	Total	2,508	6.89	6.89	6.89	6.89
	Residual	Total	78	0.21	0.21	0.21	0.21
	Gasoline	Total	852	0.98	0.98	0.98	0.98
	Marine Vessels, Recreational		45,167	113.16	127.56	125.08	130.54
	Pleasure Craft, Gasoline 4-Stroke	Total	45,083	112.96	127.32	124.85	130.30
	Pleasure Craft, Diesel	Total	83	0.21	0.24	0.23	0.24
	Railroads		4,664	12.81	12.81	12.81	12.81
	Diesel	Total	4,664	12.81	12.81	12.81	12.81

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Minneapolis			154,286	195	433	599	468
	Non-Road Gasoline, 2-Stroke		18,007	20.98	50.66	71.24	55.01
	Recreational Vehicles	Total	4,244	4.94	11.94	16.79	12.97
	Construction Equipment	Total	175	0.20	0.49	0.69	0.53
	Industrial Equipment	Total	4,475	5.21	12.59	17.70	13.67
	Lawn & Garden Equipment	Total	7,178	8.36	20.19	28.40	21.93
	Light Commercial Equipment	Total	1,673	1.95	4.71	6.62	5.11
	Logging Equipment	Total	249	0.29	0.70	0.99	0.76
	Airport Service Equipment	Total	13	0.02	0.04	0.05	0.04
	Non-Road Gasoline, 4-Stroke		95,285	110.99	268.05	376.95	291.09
	Recreational Vehicles	Total	1,152	1.34	3.24	4.56	3.52
	Construction Equipment	Total	2,277	2.65	6.41	9.01	6.96
	Industrial Equipment	Total	15,150	17.65	42.62	59.93	46.28
	Lawn & Garden Equipment	Total	44,933	52.34	126.40	177.76	137.27
	Farm Equipment	Total	892	1.04	2.51	3.53	2.73
	Light Commercial Equipment	Total	28,751	33.49	80.88	113.74	87.83
	Airport Service Equipment	Total	2,130	2.48	5.99	8.43	6.51
	Non-Road Diesel		19,913	23.20	56.02	78.78	60.83
	Recreational Vehicles	Total	61	0.07	0.17	0.24	0.19
	Construction Equipment	Total	5,466	6.37	15.38	21.62	16.70
	Industrial Equipment	Total	1,812	2.11	5.10	7.17	5.54
	Lawn & Garden Equipment	Total	252	0.29	0.71	1.00	0.77
	Farm Equipment	Total	11,318	13.18	31.84	44.78	34.58
	Light Commercial Equipment	Total	481	0.56	1.35	1.90	1.47
	Airport Service Equipment	Total	523	0.61	1.47	2.07	1.60
	Aircraft		9,055	24.88	24.88	24.88	24.88
	Military Aircraft	Total	262	0.72	0.72	0.72	0.72
	Commercial Aircraft	Total	4,293	11.79	11.79	11.79	11.79
	General Aviation	Total	4,500	12.36	12.36	12.36	12.36
	Marine Vessels, Commercial		28	0.08	0.08	0.08	0.08
	Diesel	Total	28	0.08	0.08	0.08	0.08
	Marine Vessels, Recreational		11,284	13.14	31.74	44.64	34.47
	Pleasure Craft, Gasoline 2-Stroke	Total	9,167	10.68	25.79	36.27	28.00
	Pleasure Craft, Gasoline 4-Stroke	Total	2,074	2.42	5.83	8.20	6.34
	Pleasure Craft, Diesel	Total	43	0.05	0.12	0.17	0.13

**Table III-4
 Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Minneapolis (cont.)	Railroads		714	1.96	1.96	1.96	1.96
	Diesel	Total	714	1.96	1.96	1.96	1.96

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
New York			683,342	1,238	1,595	2,536	2,142
	Non-Road Gasoline, 2-Stroke		65,302	104.50	157.84	250.38	204.88
	Recreational Vehicles	Motorcycles:Off-Road	89	0.19	0.20	0.32	0.27
	Recreational Vehicles	All Terrain Vehicles	80	0.17	0.17	0.29	0.25
	Recreational Vehicles	Golf Carts	204	-	0.55	0.91	0.78
	Recreational Vehicles	Specialty Vehicle Carts	108	0.23	0.24	0.39	0.33
	Construction Equipment	Tampers/Rammers	418	0.82	0.95	1.54	1.29
	Construction Equipment	Plate Compactors	571	1.12	1.29	2.10	1.76
	Construction Equipment	Paving Equipment	362	0.71	0.82	1.33	1.11
	Construction Equipment	Bore/Drill Rigs	16	0.03	0.03	0.06	0.05
	Industrial Equipment	Aerial Lifts	3,576	5.35	9.63	14.02	10.30
	Industrial Equipment	Forklifts	19,156	34.39	46.87	72.13	57.12
	Industrial Equipment	Sweepers/Scrubbers	634	1.31	1.41	2.30	1.95
	Industrial Equipment	Other General Industrial Equipment	354	0.73	0.79	1.28	1.09
	Lawn & Garden Equipment	Lawnmowers	9,925	-	27.57	44.47	37.03
	Lawn & Garden Equipment	Rotary Tillers <5HP	26	0.05	0.06	0.10	0.08
	Lawn & Garden Equipment	Chain Saws <5HP	7,682	15.42	17.48	28.08	23.44
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	8,473	16.65	19.34	31.18	25.95
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	3,125	6.15	7.13	11.50	9.57
	Lawn & Garden Equipment	Shredders <5HP	4	0.01	0.01	0.01	0.01
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	165	0.32	0.38	0.61	0.50
	Light Commercial Equipment	Generator Sets <50HP	8,438	16.97	18.74	30.87	26.14
	Light Commercial Equipment	Pumps <50HP	883	1.78	1.96	3.23	2.74
	Light Commercial Equipment	Gas Compressors <50HP	529	1.05	1.19	1.94	1.63
	Logging Equipment	Chain Saws >4HP	460	1.01	1.00	1.64	1.41
	Airport Service Equipment	Terminal Tractors	23	0.04	0.05	0.09	0.07
	Non-Road Gasoline, 4-Stroke		431,892	739.90	999.39	1,632.07	1,374.71
	Recreational Vehicles	Motorcycles:Off-Road	34	0.07	0.08	0.12	0.11
	Recreational Vehicles	All Terrain Vehicles	887	1.90	1.94	3.18	2.73
	Recreational Vehicles	Minibikes	13	0.03	0.03	0.05	0.04
	Recreational Vehicles	Golf Carts	814	-	2.21	3.62	3.11
	Recreational Vehicles	Specialty Vehicle Carts	68	0.15	0.15	0.25	0.21
	Construction Equipment	Asphalt Pavers	168	0.33	0.38	0.62	0.52
	Construction Equipment	Tampers/Rammers	5	0.01	0.01	0.02	0.02
	Construction Equipment	Plate Compactors	989	1.94	2.24	3.64	3.04

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
New York (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Construction Equipment	Rollers	1,388	2.72	3.14	5.12	4.27
	Construction Equipment	Paving Equipment	2,725	5.33	6.18	10.05	8.39
	Construction Equipment	Surfacing Equipment	1,029	2.01	2.33	3.79	3.17
	Construction Equipment	Signal Boards	45	0.08	0.10	0.17	0.14
	Construction Equipment	Trenchers	1,423	2.78	3.23	5.25	4.38
	Construction Equipment	Bore/Drill Rigs	458	0.90	1.04	1.69	1.41
	Construction Equipment	Concrete/Industrial Saws	4,875	9.53	11.06	17.98	15.01
	Construction Equipment	Cement & Mortar Mixers	1,415	2.76	3.21	5.22	4.35
	Construction Equipment	Cranes	448	0.88	1.01	1.65	1.38
	Construction Equipment	Crushing/Proc. Equipment	156	0.30	0.35	0.58	0.48
	Construction Equipment	Rough Terrain Forklifts	338	0.66	0.77	1.25	1.04
	Construction Equipment	Rubber Tire Loaders	452	0.88	1.02	1.67	1.39
	Construction Equipment	Tractors/Loaders/Backhoes	251	0.50	0.57	0.92	0.77
	Construction Equipment	Skid Steer Loaders	1,114	2.18	2.52	4.11	3.43
	Construction Equipment	Dumpers/Tenders	164	0.32	0.37	0.60	0.50
	Construction Equipment	Other Construction Equipment	401	0.79	0.90	1.48	1.24
	Industrial Equipment	Aerial Lifts	5,533	13.49	10.63	18.98	17.70
	Industrial Equipment	Forklifts	24,045	54.79	49.31	84.49	75.64
	Industrial Equipment	Sweepers/Scrubbers	3,671	7.60	8.16	13.30	11.28
	Industrial Equipment	Other General Industrial Equipment	1,607	3.32	3.57	5.82	4.94
	Industrial Equipment	Other Material Handling Equipment	285	0.59	0.64	1.04	0.88
	Lawn & Garden Equipment	Lawnmowers	63,440	-	176.21	284.26	236.67
	Lawn & Garden Equipment	Rotary Tillers <5HP	5,056	9.94	11.53	18.60	15.48
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	5	0.01	0.01	0.02	0.01
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	-	-	0.00	0.00
	Lawn & Garden Equipment	Rear Engine Riding Mowers	6,113	11.97	13.97	22.52	18.72
	Lawn & Garden Equipment	Front Mowers	1,873	3.67	4.28	6.90	5.73
	Lawn & Garden Equipment	Shredders <5HP	301	0.59	0.69	1.11	0.92
	Lawn & Garden Equipment	Lawn & Garden Tractors	40,116	78.89	91.50	147.59	122.85
	Lawn & Garden Equipment	Wood Splitters	2,113	4.15	4.82	7.78	6.47
	Lawn & Garden Equipment	Chippers/Stump Grinders	6,862	13.46	15.68	25.27	21.01
	Lawn & Garden Equipment	Commercial Turf Equipment	76,217	149.42	174.11	280.67	233.36
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	379	0.74	0.87	1.40	1.16

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
New York (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Farm Equipment	2-Wheel Tractors	6	0.01	0.01	0.02	0.02
	Farm Equipment	Agricultural Tractors	56	0.10	0.14	0.21	0.17
	Farm Equipment	Combines	6	0.01	0.01	0.02	0.02
	Farm Equipment	Agricultural Mowers	6	0.01	0.01	0.02	0.02
	Farm Equipment	Sprayers	31	0.06	0.08	0.12	0.09
	Farm Equipment	Tillers >5HP	235	0.41	0.58	0.89	0.70
	Farm Equipment	Swathers	1,085	1.92	2.66	4.10	3.24
	Farm Equipment	Hydro Power Units	44	0.08	0.11	0.17	0.13
	Farm Equipment	Other Agricultural Equipment	7	0.01	0.02	0.02	0.02
	Light Commercial Equipment	Generator Sets <50HP	119,417	240.17	265.22	436.88	370.00
	Light Commercial Equipment	Pumps <50HP	17,010	34.21	37.78	62.23	52.70
	Light Commercial Equipment	Air Compressors <50HP	11,328	22.78	25.16	41.44	35.10
	Light Commercial Equipment	Welders <50HP	16,656	33.50	36.99	60.94	51.61
	Light Commercial Equipment	Pressure Washers <50HP	4,627	9.31	10.28	16.93	14.34
	Airport Service Equipment	Airport Support Equipment	497	0.92	1.15	1.86	1.53
	Airport Service Equipment	Terminal Tractors	3,606	6.70	8.36	13.49	11.08
	Non-Road Diesel		53,158	107.09	118.94	194.27	163.85
	Recreational Vehicles	Total	328	0.64	0.75	1.21	1.01
	Construction Equipment	Total	31,093	62.43	69.68	113.75	95.82
	Industrial Equipment	Total	7,305	14.32	16.57	26.92	22.48
	Lawn & Garden Equipment	Total	1,199	2.42	2.68	4.38	3.70
	Farm Equipment	Total	8,361	17.79	18.18	30.03	25.87
	Light Commercial Equipment	Total	3,543	6.78	8.12	13.14	10.88
	Airport Service Equipment	Total	1,329	2.70	2.96	4.84	4.10
	Aircraft		30,407	83.53	83.53	83.53	83.53
	Military Aircraft	Total	151	0.41	0.41	0.41	0.41
	Commercial Aircraft	Total	15,856	43.56	43.56	43.56	43.56
	General Aviation	Total	10,396	28.56	28.56	28.56	28.56
	Air Taxi	Total	3,821	10.50	10.50	10.50	10.50
	Aircraft Aux. Power Units	Total	183	0.50	0.50	0.50	0.50
	Marine Vessels, Commercial		2,595	7.13	7.13	7.13	7.13
	Diesel	Total	284	0.78	0.78	0.78	0.78
	Residual	Total	2,311	6.35	6.35	6.35	6.35

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
New York (cont.)							
	Marine Vessels, Recreational		98,747	192.22	224.73	364.56	303.62
	Pleasure Craft, Gasoline 2-Stroke	Outboards	39,114	76.92	88.49	143.98	120.43
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	67	0.14	0.15	0.24	0.21
	Pleasure Craft, Gasoline 4-Stroke	Inboards	19,154	36.82	44.16	70.94	58.57
	Pleasure Craft, Gasoline 4-Stroke	Outboards	179	0.35	0.40	0.66	0.55
	Pleasure Craft, Gasoline 4-Stroke	Sterndrive	40,079	77.65	91.19	148.19	123.40
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	21	0.07	0.03	0.06	0.07
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	1	0.00	0.00	0.00	0.00
	Pleasure Craft, Diesel	Inboards	123	0.24	0.28	0.46	0.38
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	9	0.03	0.01	0.03	0.03
	Railroads		1,241	3.77	3.77	3.77	3.77
	Total	Total	301	0.92	0.92	0.92	0.92
	Diesel	Total	924	2.81	2.81	2.81	2.81
	Diesel	Line Haul Locomotives	15	0.05	0.05	0.05	0.05
	Diesel	Yard Locomotives	0	0.00	0.00	0.00	0.00

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Philadelphia			331,146	495	944	1,287	913
	Non-Road Gasoline, 2-Stroke		36,151	49.63	103.45	143.69	100.50
	Recreational Vehicles	Motorcycles:Off-Road	33	0.05	0.09	0.13	0.09
	Recreational Vehicles	All Terrain Vehicles	26	0.04	0.07	0.10	0.07
	Recreational Vehicles	Golf Carts	81	-	0.26	0.36	0.26
	Recreational Vehicles	Specialty Vehicle Carts	33	0.05	0.09	0.13	0.09
	Construction Equipment	Total	431	0.62	1.23	1.71	1.18
	Construction Equipment	Tampers/Rammers	55	0.09	0.15	0.21	0.15
	Construction Equipment	Plate Compactors	84	0.14	0.23	0.32	0.22
	Construction Equipment	Paving Equipment	52	0.09	0.15	0.20	0.14
	Construction Equipment	Bore/Drill Rigs	1	0.00	0.00	0.00	0.00
	Industrial Equipment	Total	10,278	14.68	29.37	40.66	28.24
	Industrial Equipment	Aerial Lifts	580	0.84	1.59	2.29	1.65
	Industrial Equipment	Forklifts	3,143	4.88	8.68	12.24	8.74
	Industrial Equipment	Sweepers/Scrubbers	65	0.11	0.18	0.25	0.18
	Industrial Equipment	Other General Industrial Equipment	50	0.09	0.14	0.19	0.13
	Lawn & Garden Equipment	Total	14,639	20.91	41.83	57.91	40.22
	Lawn & Garden Equipment	Lawnmowers	2,240	-	7.30	10.14	7.18
	Lawn & Garden Equipment	Rotary Tillers <5HP	1	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Chain Saws <5HP	1,234	1.94	3.41	4.79	3.41
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	1,736	2.84	4.81	6.69	4.74
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	508	0.83	1.41	1.96	1.39
	Lawn & Garden Equipment	Shredders <5HP	0	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	24	0.04	0.07	0.09	0.06
	Light Commercial Equipment	Generator Sets <50HP	613	0.99	1.70	2.37	1.68
	Light Commercial Equipment	Pumps <50HP	87	0.14	0.24	0.34	0.24
	Light Commercial Equipment	Gas Compressors <50HP	19	0.03	0.05	0.07	0.05
	Logging Equipment	Chain Saws >4HP	139	0.22	0.39	0.54	0.39
	Non-Road Gasoline, 4-Stroke		204,283	281.93	585.37	811.00	566.57
	Recreational Vehicles	Motorcycles:Off-Road	11	0.02	0.03	0.04	0.03
	Recreational Vehicles	All Terrain Vehicles	302	0.50	0.84	1.16	0.82
	Recreational Vehicles	Minibikes	4	0.01	0.01	0.02	0.01
	Recreational Vehicles	Golf Carts	321	-	1.05	1.45	1.03
	Recreational Vehicles	Specialty Vehicle Carts	22	0.04	0.06	0.08	0.06
	Construction Equipment	Total	5,213	7.45	14.89	20.62	14.32

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category	Annual CO (tons/day)	Daily CO Emissions (tons/day)				
			Winter	Spring	Summer	Fall	
Philadelphia (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Construction Equipment	Asphalt Pavers	23	0.04	0.06	0.09	0.06
	Construction Equipment	Tampers/Rammers	0	0.00	0.00	0.00	0.00
	Construction Equipment	Plate Compactors	144	0.25	0.40	0.55	0.38
	Construction Equipment	Rollers	191	0.33	0.53	0.73	0.51
	Construction Equipment	Paving Equipment	395	0.68	1.10	1.51	1.06
	Construction Equipment	Surfacing Equipment	137	0.24	0.38	0.52	0.36
	Construction Equipment	Signal Boards	5	0.01	0.01	0.02	0.01
	Construction Equipment	Trenchers	179	0.31	0.50	0.68	0.48
	Construction Equipment	Bore/Drill Rigs	67	0.12	0.19	0.26	0.18
	Construction Equipment	Concrete/Industrial Saws	587	1.01	1.63	2.23	1.57
	Construction Equipment	Cement & Mortar Mixers	199	0.34	0.56	0.76	0.53
	Construction Equipment	Cranes	49	0.09	0.14	0.19	0.13
	Construction Equipment	Crushing/Proc. Equipment	23	0.04	0.06	0.09	0.06
	Construction Equipment	Rough Terrain Forklifts	47	0.08	0.13	0.18	0.13
	Construction Equipment	Rubber Tire Loaders	53	0.09	0.15	0.20	0.14
	Construction Equipment	Tractors/Loaders/Backhoes	35	0.06	0.10	0.13	0.09
	Construction Equipment	Skid Steer Loaders	125	0.22	0.35	0.47	0.33
	Construction Equipment	Dumpers/Tenders	28	0.05	0.08	0.11	0.08
	Construction Equipment	Other Construction Equipment	51	0.09	0.14	0.20	0.14
	Industrial Equipment	Total	34,927	49.90	99.79	138.17	95.95
	Industrial Equipment	Aerial Lifts	279	0.62	0.79	0.99	0.66
	Industrial Equipment	Forklifts	2,197	4.20	6.17	8.16	5.61
	Industrial Equipment	Sweepers/Scrubbers	383	0.65	1.06	1.46	1.03
	Industrial Equipment	Other General Industrial Equipment	229	0.39	0.64	0.88	0.62
	Industrial Equipment	Other Material Handling Equipment	29	0.05	0.08	0.11	0.08
	Lawn & Garden Equipment	Total	98,612	140.87	281.75	390.11	270.91
	Lawn & Garden Equipment	Lawnmowers	14,315	-	46.63	64.80	45.89
	Lawn & Garden Equipment	Rotary Tillers <5HP	845	1.38	2.34	3.26	2.31
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	0	0.00	0.00	0.00	0.00
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	-	-	-	-
	Lawn & Garden Equipment	Rear Engine Riding Mowers	1,705	2.79	4.73	6.57	4.65
	Lawn & Garden Equipment	Front Mowers	483	0.79	1.34	1.86	1.32
	Lawn & Garden Equipment	Shredders <5HP	41	0.07	0.11	0.16	0.11

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Philadelphia (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Lawn & Garden Equipment	Lawn & Garden Tractors	10,339	16.89	28.67	39.84	28.21
	Lawn & Garden Equipment	Wood Splitters	235	0.38	0.65	0.90	0.64
	Lawn & Garden Equipment	Chippers/Stump Grinders	1,024	1.67	2.84	3.95	2.80
	Lawn & Garden Equipment	Commercial Turf Equipment	15,625	25.53	43.33	60.21	42.64
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	49	0.08	0.14	0.19	0.13
	Farm Equipment	Total	572	0.82	1.63	2.26	1.57
	Farm Equipment	2-Wheel Tractors	6	0.01	0.02	0.03	0.02
	Farm Equipment	Agricultural Tractors	48	0.07	0.13	0.19	0.13
	Farm Equipment	Combines	5	0.01	0.01	0.02	0.02
	Farm Equipment	Agricultural Mowers	7	0.01	0.02	0.03	0.02
	Farm Equipment	Sprayers	32	0.05	0.09	0.12	0.09
	Farm Equipment	Tillers >5HP	175	0.27	0.48	0.68	0.49
	Farm Equipment	Swathers	32	0.05	0.09	0.12	0.09
	Farm Equipment	Hydro Power Units	31	0.05	0.09	0.12	0.09
	Farm Equipment	Other Agricultural Equipment	6	0.01	0.02	0.03	0.02
	Light Commercial Equipment	Generator Sets <50HP	8,726	14.04	24.17	33.73	23.95
	Light Commercial Equipment	Pumps <50HP	1,707	2.75	4.73	6.60	4.68
	Light Commercial Equipment	Air Compressors <50HP	1,142	1.84	3.16	4.41	3.13
	Light Commercial Equipment	Welders <50HP	1,705	2.74	4.72	6.59	4.68
	Light Commercial Equipment	Pressure Washers <50HP	559	0.90	1.55	2.16	1.53
	Non-Road Diesel		33,670	50.66	95.30	131.92	92.12
	Recreational Vehicles	Total	121	0.19	0.34	0.47	0.33
	Construction Equipment	Total	13,851	20.84	39.20	54.27	37.90
	Industrial Equipment	Total	2,707	4.07	7.66	10.61	7.41
	Lawn & Garden Equipment	Total	741	1.12	2.10	2.90	2.03
	Farm Equipment	Total	14,688	22.10	41.57	57.55	40.19
	Light Commercial Equipment	Total	1,095	1.65	3.10	4.29	3.00
	Airport Service Equipment	Total	466	0.70	1.32	1.83	1.28

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Philadelphia (cont.)							
	Aircraft		15,121	41.54	41.54	41.54	41.54
	All Aircraft Types & Operations	Total	9,866	27.10	27.10	27.10	27.10
	Military Aircraft	Total	42	0.12	0.12	0.12	0.12
	Commercial Aircraft	Total	4,018	11.04	11.04	11.04	11.04
	General Aviation	Total	1,127	3.10	3.10	3.10	3.10
	Air Taxi	Total	69	0.19	0.19	0.19	0.19
	Marine Vessels, Commercial		1,069	2.94	2.94	2.94	2.94
	Diesel	Total	777	2.14	2.14	2.14	2.14
	Residual	Total	291	0.80	0.80	0.80	0.80
	Marine Vessels, Recreational		39,703	65.13	112.19	152.86	106.12
	Pleasure Craft, Gasoline 2-Stroke	Total	18,773	26.82	53.64	74.27	51.58
	Pleasure Craft, Gasoline 2-Stroke	Outboards	7,686	14.44	21.55	28.67	19.79
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	2	0.00	0.00	0.01	0.00
	Pleasure Craft, Gasoline 4-Stroke	Inboards	4,070	7.19	11.35	15.41	10.77
	Pleasure Craft, Gasoline 4-Stroke	Outboards	35	0.06	0.10	0.13	0.09
	Pleasure Craft, Gasoline 4-Stroke	Sterndrive	9,109	16.55	25.47	34.27	23.81
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	3	0.01	0.01	0.01	0.01
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	0	0.00	0.00	0.00	0.00
	Pleasure Craft, Diesel	Inboards	24	0.04	0.07	0.09	0.06
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	1	0.00	0.00	0.00	0.00
	Marine Vessels, Military		5	0.01	0.01	0.01	0.01
	Diesel	Total	5	0.01	0.01	0.01	0.01
	Railroads		1,144	3.48	3.48	3.48	3.48
	Diesel	Total	1,062	3.23	3.23	3.23	3.23
	Diesel	Line Haul Locomotives	32	0.10	0.10	0.10	0.10
	Diesel	Yard Locomotives	50	0.15	0.15	0.15	0.15

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Phoenix			187,865	447	516	636	467
	Non-Road Gasoline, 2-Stroke		16,606	39.05	45.62	57.12	40.88
	Recreational Vehicles	Total	1,075	2.53	2.95	3.70	2.65
	Construction Equipment	Total	624	1.47	1.71	2.15	1.54
	Industrial Equipment	Total	1,315	3.09	3.61	4.52	3.24
	Lawn & Garden Equipment	Total	13,085	30.77	35.95	45.01	32.21
	Light Commercial Equipment	Total	431	1.01	1.18	1.48	1.06
	Logging Equipment	Total	61	0.14	0.17	0.21	0.15
	Airport Service Equipment	Total	14	0.03	0.04	0.05	0.04
	Non-Road Gasoline, 4-Stroke		139,212	327.38	382.45	478.83	342.68
	Recreational Vehicles	Total	1,043	2.45	2.87	3.59	2.57
	Construction Equipment	Total	6,803	16.00	18.69	23.40	16.75
	Industrial Equipment	Total	5,584	13.13	15.34	19.21	13.75
	Lawn & Garden Equipment	Total	96,217	226.27	264.33	330.94	236.84
	Farm Equipment	Total	82	0.19	0.23	0.28	0.20
	Light Commercial Equipment	Total	27,003	63.50	74.18	92.88	66.47
	Airport Service Equipment	Total	2,480	5.83	6.81	8.53	6.10
	Non-Road Diesel		17,417	40.96	47.85	59.91	42.87
	Recreational Vehicles	Total	74	0.17	0.20	0.26	0.18
	Construction Equipment	Total	12,665	29.78	34.79	43.56	31.18
	Industrial Equipment	Total	1,013	2.38	2.78	3.48	2.49
	Lawn & Garden Equipment	Total	1,763	4.15	4.84	6.07	4.34
	Farm Equipment	Total	790	1.86	2.17	2.72	1.94
	Light Commercial Equipment	Total	497	1.17	1.37	1.71	1.22
	Airport Service Equipment	Total	615	1.45	1.69	2.11	1.51
	Aircraft		13,108	36.01	36.01	36.01	36.01
	Military Aircraft	Total	3,463	9.51	9.51	9.51	9.51
	Commercial Aircraft	Total	4,027	11.06	11.06	11.06	11.06
	General Aviation	Total	5,617	15.43	15.43	15.43	15.43
	Marine Vessels, Recreational		294	0.69	0.81	1.01	0.72
	Pleasure Craft, Gasoline 2-Stroke	Total	116	0.27	0.32	0.40	0.28
	Pleasure Craft, Gasoline 4-Stroke	Total	178	0.42	0.49	0.61	0.44
	Pleasure Craft, Diesel	Total	0	0.00	0.00	0.00	0.00
	Railroads		1,230	3.38	3.38	3.38	3.38
	Diesel	Total	1,230	3.38	3.38	3.38	3.38

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Spokane			29,637	36	78	129	84
	Non-Road Gasoline, 2-Stroke		2,749	2.79	7.19	12.45	7.78
	Recreational Vehicles	Total	203	0.21	0.53	0.92	0.57
	Construction Equipment	Total	53	0.05	0.14	0.24	0.15
	Industrial Equipment	Total	461	0.47	1.21	2.09	1.31
	Lawn & Garden Equipment	Total	1,748	1.78	4.57	7.91	4.95
	Light Commercial Equipment	Total	211	0.21	0.55	0.96	0.60
	Logging Equipment	Total	72	0.07	0.19	0.33	0.20
	Airport Service Equipment	Total	1	0.00	0.00	0.01	0.00
	Non-Road Gasoline, 4-Stroke		17,920	18.22	46.87	81.12	50.74
	Recreational Vehicles	Total	425	0.43	1.11	1.92	1.20
	Construction Equipment	Total	694	0.71	1.82	3.14	1.97
	Industrial Equipment	Total	1,461	1.49	3.82	6.61	4.14
	Lawn & Garden Equipment	Total	10,665	10.84	27.89	48.28	30.20
	Farm Equipment	Total	47	0.05	0.12	0.21	0.13
	Light Commercial Equipment	Total	4,227	4.30	11.05	19.13	11.97
	Logging Equipment	Total	180	0.18	0.47	0.81	0.51
	Airport Service Equipment	Total	221	0.22	0.58	1.00	0.63
	Non-Road Diesel		3,102	3.15	8.11	14.04	8.78
	Recreational Vehicles	Total	12	0.01	0.03	0.05	0.03
	Construction Equipment	Total	1,293	1.31	3.38	5.85	3.66
	Industrial Equipment	Total	164	0.17	0.43	0.74	0.46
	Lawn & Garden Equipment	Total	59	0.06	0.16	0.27	0.17
	Farm Equipment	Total	728	0.74	1.91	3.30	2.06
	Light Commercial Equipment	Total	78	0.08	0.20	0.35	0.22
	Logging Equipment	Total	713	0.73	1.87	3.23	2.02
	Airport Service Equipment	Total	54	0.06	0.14	0.25	0.15
	Aircraft		2,919	8.02	8.02	8.02	8.02
	Military Aircraft	Total	655	1.80	1.80	1.80	1.80
	Commercial Aircraft	Total	880	2.42	2.42	2.42	2.42
	General Aviation	Total	1,385	3.81	3.81	3.81	3.81
	Marine Vessels, Recreational		2,705	2.75	7.07	12.24	7.66
	Pleasure Craft, Gasoline 2-Stroke	Total	1,162	1.18	3.04	5.26	3.29
	Pleasure Craft, Gasoline 4-Stroke	Total	1,534	1.56	4.01	6.94	4.34
	Pleasure Craft, Diesel	Total	9	0.01	0.02	0.04	0.03

**Table III-4
 Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Spokane (cont.)	Railroads		243	0.67	0.67	0.67	0.67
	Diesel	Total	243	0.67	0.67	0.67	0.67

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
St. Louis			335,393	439	1,033	1,307	910
	Non-Road Gasoline, 2-Stroke		33,805	42.56	104.51	133.15	91.64
	Recreational Vehicles	Total	4,409	5.57	13.54	17.46	11.93
	Construction Equipment	Total	487	0.61	1.50	1.92	1.32
	Industrial Equipment	Total	6,838	8.63	21.05	27.03	18.51
	Lawn & Garden Equipment	Total	18,255	22.94	56.66	71.65	49.56
	Light Commercial Equipment	Total	3,208	4.05	9.87	12.69	8.68
	Logging Equipment	Total	592	0.75	1.83	2.33	1.61
	Airport Service Equipment	Total	16	0.02	0.05	0.06	0.04
	Non-Road Gasoline, 4-Stroke		186,091	234.32	575.11	733.15	504.41
	Recreational Vehicles	Total	1,469	1.84	4.60	5.73	4.00
	Construction Equipment	Total	6,374	8.03	19.68	25.13	17.27
	Industrial Equipment	Total	24,539	30.96	75.54	97.01	66.43
	Lawn & Garden Equipment	Total	93,884	118.04	291.09	368.84	254.76
	Farm Equipment	Total	2,178	2.72	6.86	8.44	5.94
	Light Commercial Equipment	Total	54,821	69.17	168.68	216.80	148.38
	Airport Service Equipment	Total	2,825	3.57	8.66	11.21	7.64
	Non-Road Diesel		43,793	55.15	135.30	172.58	118.69
	Recreational Vehicles	Total	55	0.07	0.17	0.21	0.15
	Construction Equipment	Total	13,986	17.61	43.21	55.12	37.91
	Industrial Equipment	Total	3,050	3.84	9.42	12.02	8.27
	Lawn & Garden Equipment	Total	485	0.61	1.50	1.91	1.31
	Farm Equipment	Total	24,585	30.96	75.96	96.89	66.63
	Light Commercial Equipment	Total	915	1.15	2.83	3.61	2.48
	Airport Service Equipment	Total	717	0.90	2.21	2.82	1.94
	Aircraft		9,333	25.64	25.64	25.64	25.64
	Military Aircraft	Total	869	2.39	2.39	2.39	2.39
	Commercial Aircraft	Total	4,084	11.22	11.22	11.22	11.22
	General Aviation	Total	4,380	12.03	12.03	12.03	12.03
	Marine Vessels, Commercial		676	1.86	1.86	1.86	1.86
	Diesel	Total	676	1.86	1.86	1.86	1.86
	Marine Vessels, Recreational		60,405	75.91	187.47	237.10	163.97
	Pleasure Craft, Gasoline 2-Stroke	Total	39,534	49.67	122.77	155.09	107.33
	Pleasure Craft, Gasoline 4-Stroke	Total	20,814	26.17	64.52	81.78	56.48
	Pleasure Craft, Diesel	Total	57	0.07	0.18	0.22	0.16

**Table III-4
 Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
St. Louis (cont.)	Railroads		1,290	3.54	3.54	3.54	3.54
	Diesel	Total	1,290	3.54	3.54	3.54	3.54

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO	Daily CO Emissions (tons/day)			
			(tons/day)	Winter	Spring	Summer	Fall
Washington			264,864	431	755	963	762
	Non-Road Gasoline, 2-Stroke		28,378	42.94	80.90	105.23	82.77
	Recreational Vehicles	Total	1,491	2.62	4.10	5.41	4.26
	Recreational Vehicles	Motorcycles:Off-Road	64	0.12	0.18	0.23	0.18
	Recreational Vehicles	All Terrain Vehicles	55	0.10	0.16	0.20	0.15
	Recreational Vehicles	Golf Carts	161	-	0.54	0.69	0.54
	Recreational Vehicles	Specialty Vehicle Carts	65	0.12	0.18	0.23	0.18
	Construction Equipment	Tampers/Rammers	113	0.20	0.32	0.40	0.32
	Construction Equipment	Plate Compactors	176	0.32	0.49	0.63	0.50
	Construction Equipment	Paving Equipment	111	0.20	0.31	0.40	0.31
	Construction Equipment	Bore/Drill Rigs	6	0.01	0.02	0.02	0.02
	Industrial Equipment	Total	2,135	3.75	5.87	7.74	6.10
	Industrial Equipment	Aerial Lifts	16	0.03	0.04	0.06	0.04
	Industrial Equipment	Forklifts	787	1.42	2.20	2.81	2.21
	Industrial Equipment	Sweepers/Scrubbers	28	0.05	0.08	0.10	0.08
	Industrial Equipment	Other General Industrial Equipment	21	0.04	0.06	0.08	0.06
	Lawn & Garden Equipment	Total	11,167	19.63	30.68	40.50	31.91
	Lawn & Garden Equipment	Lawnmowers	4,040	-	13.50	17.31	13.59
	Lawn & Garden Equipment	Rotary Tillers <5HP	9	0.02	0.03	0.03	0.03
	Lawn & Garden Equipment	Chain Saws <5HP	2,746	4.97	7.68	9.82	7.71
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	2,486	4.49	6.94	8.90	6.99
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	1,191	2.15	3.33	4.26	3.35
	Lawn & Garden Equipment	Shredders <5HP	2	0.00	0.01	0.01	0.01
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	35	0.06	0.10	0.13	0.10
	Light Commercial Equipment	Generator Sets <50HP	631	1.14	1.76	2.26	1.77
	Light Commercial Equipment	Pumps <50HP	91	0.16	0.25	0.33	0.26
	Light Commercial Equipment	Gas Compressors <50HP	57	0.10	0.16	0.20	0.16
	Logging Equipment	Total	384	0.67	1.05	1.39	1.10
	Logging Equipment	Chain Saws >4HP	305	0.55	0.85	1.09	0.86
	Airport Service Equipment	Terminal Tractors	5	0.01	0.01	0.02	0.01
	Non-Road Gasoline, 4-Stroke		185,139	285.25	530.66	682.50	536.08
	Recreational Vehicles	Total	1,006	1.77	2.76	3.65	2.87
	Recreational Vehicles	Motorcycles:Off-Road	24	0.04	0.07	0.09	0.07
	Recreational Vehicles	All Terrain Vehicles	600	1.10	1.69	2.13	1.67
	Recreational Vehicles	Minibikes	10	0.02	0.03	0.04	0.03

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Washington (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Recreational Vehicles	Golf Carts	640	-	2.16	2.73	2.14
	Recreational Vehicles	Specialty Vehicle Carts	41	0.07	0.12	0.15	0.11
	Construction Equipment	Total	130	0.23	0.36	0.47	0.37
	Construction Equipment	Asphalt Pavers	45	0.08	0.13	0.16	0.13
	Construction Equipment	Tampers/Rammers	2	0.00	0.01	0.01	0.01
	Construction Equipment	Plate Compactors	305	0.55	0.85	1.09	0.86
	Construction Equipment	Rollers	400	0.72	1.12	1.43	1.12
	Construction Equipment	Paving Equipment	837	1.51	2.34	3.00	2.35
	Construction Equipment	Surfacing Equipment	291	0.52	0.81	1.04	0.82
	Construction Equipment	Signal Boards	12	0.02	0.03	0.04	0.03
	Construction Equipment	Trenchers	380	0.69	1.06	1.36	1.07
	Construction Equipment	Bore/Drill Rigs	143	0.26	0.40	0.51	0.40
	Construction Equipment	Concrete/Industrial Saws	1,244	2.24	3.47	4.45	3.50
	Construction Equipment	Cement & Mortar Mixers	421	0.76	1.17	1.51	1.18
	Construction Equipment	Cranes	105	0.19	0.29	0.38	0.30
	Construction Equipment	Crushing/Proc. Equipment	48	0.09	0.14	0.17	0.14
	Construction Equipment	Rough Terrain Forklifts	96	0.17	0.27	0.34	0.27
	Construction Equipment	Rubber Tire Loaders	109	0.20	0.30	0.39	0.31
	Construction Equipment	Tractors/Loaders/Backhoes	66	0.12	0.18	0.24	0.18
	Construction Equipment	Skid Steer Loaders	267	0.48	0.75	0.96	0.75
	Construction Equipment	Dumpers/Tenders	61	0.11	0.17	0.22	0.17
	Construction Equipment	Other Construction Equipment	107	0.19	0.30	0.38	0.30
	Industrial Equipment	Total	6,984	12.28	19.19	25.33	19.95
	Industrial Equipment	Aerial Lifts	357	0.65	1.00	1.28	1.00
	Industrial Equipment	Forklifts	1,991	3.60	5.57	7.12	5.59
	Industrial Equipment	Sweepers/Scrubbers	165	0.30	0.46	0.59	0.46
	Industrial Equipment	Other General Industrial Equipment	97	0.17	0.27	0.35	0.27
	Industrial Equipment	Other Material Handling Equipment	9	0.02	0.03	0.03	0.03
	Lawn & Garden Equipment	Total	15,553	27.35	42.73	56.40	44.44
	Lawn & Garden Equipment	Lawnmowers	25,826	-	86.32	110.62	86.85
	Lawn & Garden Equipment	Rotary Tillers <5HP	1,754	3.17	4.90	6.28	4.93
	Lawn & Garden Equipment	Trimmers/Edgers/Brush Cutters	2	0.00	0.01	0.01	0.01
	Lawn & Garden Equipment	Leaf Blowers/Vacuums	0	-	-	-	-

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Washington (cont.)							
Non-Road Gasoline, 4-Stroke (cont.)							
	Lawn & Garden Equipment	Rear Engine Riding Mowers	1,595	2.88	4.46	5.71	4.48
	Lawn & Garden Equipment	Front Mowers	453	0.82	1.27	1.62	1.27
	Lawn & Garden Equipment	Shredders <5HP	64	0.12	0.18	0.23	0.18
	Lawn & Garden Equipment	Lawn & Garden Tractors	79,329	143.16	221.61	284.00	222.98
	Lawn & Garden Equipment	Wood Splitters	375	0.68	1.05	1.34	1.05
	Lawn & Garden Equipment	Chippers/Stump Grinders	1,640	2.96	4.58	5.87	4.61
	Lawn & Garden Equipment	Commercial Turf Equipment	25,068	45.24	70.03	89.74	70.46
	Lawn & Garden Equipment	Other Lawn & Garden Equipment	81	0.15	0.23	0.29	0.23
	Farm Equipment	Total	232	0.41	0.64	0.84	0.66
	Farm Equipment	2-Wheel Tractors	8	0.01	0.02	0.03	0.02
	Farm Equipment	Agricultural Tractors	55	0.10	0.15	0.20	0.15
	Farm Equipment	Combines	11	0.02	0.03	0.04	0.03
	Farm Equipment	Agricultural Mowers	10	0.02	0.03	0.04	0.03
	Farm Equipment	Sprayers	35	0.06	0.10	0.13	0.10
	Farm Equipment	Tillers >5HP	200	0.36	0.56	0.72	0.56
	Farm Equipment	Swathers	283	0.51	0.79	1.01	0.80
	Farm Equipment	Hydro Power Units	36	0.06	0.10	0.13	0.10
	Farm Equipment	Other Agricultural Equipment	11	0.02	0.03	0.04	0.03
	Light Commercial Equipment	Generator Sets <50HP	8,930	16.10	24.93	31.98	25.11
	Light Commercial Equipment	Pumps <50HP	1,746	3.15	4.88	6.25	4.91
	Light Commercial Equipment	Air Compressors <50HP	1,170	2.11	3.27	4.19	3.29
	Light Commercial Equipment	Welders <50HP	1,746	3.15	4.88	6.25	4.91
	Light Commercial Equipment	Pressure Washers <50HP	572	1.03	1.60	2.05	1.61
	Logging Equipment	Total	282	0.50	0.78	1.02	0.81
	Airport Service Equipment	Total	282	0.50	0.78	1.02	0.81
	Airport Service Equipment	Airport Support Equipment	101	0.19	0.29	0.35	0.28
	Airport Service Equipment	Terminal Tractors	697	1.30	1.99	2.45	1.91
	Non-Road Diesel		20,227	36.60	56.60	72.32	56.76
	Recreational Vehicles	Total	86	0.15	0.24	0.31	0.24
	Construction Equipment	Total	10,615	19.21	29.70	37.95	29.79
	Industrial Equipment	Total	529	0.96	1.48	1.89	1.49
	Lawn & Garden Equipment	Total	589	1.07	1.65	2.11	1.65
	Farm Equipment	Total	7,416	13.42	20.75	26.51	20.81

**Table III-4
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional Seasonal Adjustments**

City	Source Category		Annual CO (tons/day)	Daily CO Emissions (tons/day)			
				Winter	Spring	Summer	Fall
Washington (cont.)							
	Non-Road Diesel (cont.)						
	Light Commercial Equipment	Total	418	0.76	1.17	1.49	1.17
	Airport Service Equipment	Total	575	1.04	1.61	2.05	1.61
	Aircraft		9,465	26.00	26.00	26.00	26.00
	Military Aircraft	Total	825	2.27	2.27	2.27	2.27
	Commercial Aircraft	Total	4,584	12.59	12.59	12.59	12.59
	General Aviation	Total	4,056	11.14	11.14	11.14	11.14
	Marine Vessels, Recreational		21,413	39.16	60.34	76.14	59.67
	Pleasure Craft, Gasoline 2-Stroke	Total	6,152	10.82	16.90	22.31	17.58
	Pleasure Craft, Gasoline 2-Stroke	Outboards	7,113	13.26	20.29	25.04	19.57
	Pleasure Craft, Gasoline 2-Stroke	Sailboard Aux. Outboard	13	0.02	0.04	0.05	0.04
	Pleasure Craft, Gasoline 4-Stroke	Total	728	1.28	2.00	2.64	2.08
	Pleasure Craft, Gasoline 4-Stroke	Inboards	436	0.79	1.22	1.56	1.23
	Pleasure Craft, Gasoline 4-Stroke	Outboards	29	0.05	0.08	0.10	0.08
	Pleasure Craft, Gasoline 4-Stroke	Sterndrive	6,914	12.89	19.72	24.34	19.02
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Inboard	6	0.01	0.02	0.02	0.02
	Pleasure Craft, Gasoline 4-Stroke	Sailboard Aux. Outboard	0	0.00	0.00	0.00	0.00
	Pleasure Craft, Diesel	Total	14	0.03	0.04	0.05	0.04
	Pleasure Craft, Diesel	Inboards	3	0.01	0.01	0.01	0.01
	Pleasure Craft, Diesel	Sailboard Aux. Inboard	3	0.01	0.01	0.01	0.01
	Railroads		242	0.74	0.74	0.74	0.74
	Diesel	Total	133	0.40	0.40	0.40	0.40
	Diesel	Line Haul Locomotives	109	0.33	0.33	0.33	0.33

Note: The following adjustments were made.

In Baltimore, Boston, New York, Philadelphia and Washington Golf Carts and Lawnmowers were adjusted.

Winter emissions were set to zero, and these emissions were distributed among the other seasons using their current ratios.

In Los Angeles Snowmobiles were adjusted.

Winter was assigned all annual emissions, and other seasonal emissions were set to zero emissions.

**Table III-5
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional
Seasonal Adjustments**

City	Tier 2	Annual CO (tons/day)	Daily CO Emissions (tons/day)			
			Winter	Spring	Summer	Fall
Baltimore		135,325	216	381	495	396
	Non-Road Gasoline, 2-Stroke	11,008	14.99	31.54	41.63	32.80
	Non-Road Gasoline, 4-Stroke	77,902	109.40	222.22	293.33	231.11
	Non-Road Diesel	16,477	28.97	45.27	59.75	47.08
	Aircraft	8,842	24.29	24.29	24.29	24.29
	Marine Vessels, Commercial	224	0.62	0.62	0.62	0.62
	Marine Vessels, Recreational	20,400	35.87	56.04	73.98	58.28
	Railroads	473	1.44	1.44	1.44	1.44
Boston		267,455	504	695	1,017	724
	Non-Road Gasoline, 2-Stroke	24,003	41.82	63.02	93.16	65.76
	Non-Road Gasoline, 4-Stroke	180,700	325.90	471.31	696.71	491.80
	Non-Road Diesel	24,001	50.11	60.66	89.68	63.30
	Aircraft	6,711	18.44	18.44	18.44	18.44
	Marine Vessels, Commercial	679	1.87	1.87	1.87	1.87
	Marine Vessels, Recreational	30,924	64.57	78.16	115.54	81.56
	Marine Vessels, Military	11	0.03	0.03	0.03	0.03
	Railroads	426	1.29	1.29	1.29	1.29
Chicago		297,595	397	982	1,064	830
	Non-Road Gasoline, 2-Stroke	27,837	34.25	92.89	101.25	77.79
	Non-Road Gasoline, 4-Stroke	198,344	242.81	663.31	721.45	554.09
	Non-Road Diesel	28,909	35.49	96.56	105.15	80.78
	Aircraft	17,930	49.26	49.26	49.26	49.26
	Marine Vessels, Commercial	436	1.20	1.20	1.20	1.20
	Marine Vessels, Recreational	21,216	26.01	70.91	77.17	59.27
	Railroads	2,924	8.03	8.03	8.03	8.03
Denver		164,601	341	467	596	407
	Non-Road Gasoline, 2-Stroke	15,597	31.19	44.39	57.93	38.05
	Non-Road Gasoline, 4-Stroke	113,196	226.39	322.17	420.44	276.15
	Non-Road Diesel	13,511	27.02	38.46	50.18	32.96
	Aircraft	14,759	40.55	40.55	40.55	40.55
	Marine Vessels, Recreational	6,038	12.08	17.18	22.43	14.73
	Railroads	1,500	4.12	4.12	4.12	4.12
Houston		389,646	1,376	829	942	1,139
	Non-Road Gasoline, 2-Stroke	29,022	103.97	60.60	69.53	85.15
	Non-Road Gasoline, 4-Stroke	263,377	943.53	549.91	630.95	772.77
	Non-Road Diesel	39,444	141.30	82.36	94.49	115.73
	Aircraft	11,231	30.85	30.85	30.85	30.85
	Marine Vessels, Commercial	11,863	32.59	32.59	32.59	32.59
	Marine Vessels, Recreational	33,779	121.01	70.53	80.92	99.11
	Railroads	930	2.56	2.56	2.56	2.56

**Table III-5
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional
Seasonal Adjustments**

City	Tier 2	Annual CO (tons/day)	Daily CO Emissions (tons/day)			
			Winter	Spring	Summer	Fall
Los Angeles		434,014	1,102	1,219	1,198	1,245
	Non-Road Gasoline, 2-Stroke	274,433	691.88	773.62	758.57	791.68
	Non-Road Gasoline, 4-Stroke	4,689	11.75	13.24	12.98	13.55
	Non-Road Diesel	61,702	154.59	174.26	170.87	178.32
	Aircraft	39,921	109.67	109.67	109.67	109.67
	Marine Vessels, Commercial	3,438	8.08	8.08	8.08	8.08
	Marine Vessels, Recreational	45,167	113.16	127.56	125.08	130.54
	Railroads	4,664	12.81	12.81	12.81	12.81
Minneapolis		154,286	195	433	599	468
	Non-Road Gasoline, 2-Stroke	18,007	20.98	50.66	71.24	55.01
	Non-Road Gasoline, 4-Stroke	95,285	110.99	268.05	376.95	291.09
	Non-Road Diesel	19,913	23.20	56.02	78.78	60.83
	Aircraft	9,055	24.88	24.88	24.88	24.88
	Marine Vessels, Commercial	28	0.08	0.08	0.08	0.08
	Marine Vessels, Recreational	11,284	13.14	31.74	44.64	34.47
	Railroads	714	1.96	1.96	1.96	1.96
New York		683,342	1,238	1,595	2,536	2,142
	Non-Road Gasoline, 2-Stroke	65,302	104.50	157.84	250.38	204.88
	Non-Road Gasoline, 4-Stroke	431,892	739.90	999.39	1,632.07	1,374.71
	Non-Road Diesel	53,158	107.09	118.94	194.27	163.85
	Aircraft	30,407	83.53	83.53	83.53	83.53
	Marine Vessels, Commercial	2,595	7.13	7.13	7.13	7.13
	Marine Vessels, Recreational	98,747	192.22	224.73	364.56	303.62
	Railroads	1,241	3.77	3.77	3.77	3.77
Philadelphia		331,146	495	944	1,287	913
	Non-Road Gasoline, 2-Stroke	36,151	49.63	103.45	143.69	100.50
	Non-Road Gasoline, 4-Stroke	204,283	281.93	585.37	811.00	566.57
	Non-Road Diesel	33,670	50.66	95.30	131.92	92.12
	Aircraft	15,121	41.54	41.54	41.54	41.54
	Marine Vessels, Commercial	1,069	2.94	2.94	2.94	2.94
	Marine Vessels, Recreational	39,703	65.13	112.19	152.86	106.12
	Marine Vessels, Military	5	0.01	0.01	0.01	0.01
	Railroads	1,144	3.48	3.48	3.48	3.48
Phoenix		187,865	447	516	636	467
	Non-Road Gasoline, 2-Stroke	16,606	39.05	45.62	57.12	40.88
	Non-Road Gasoline, 4-Stroke	139,212	327.38	382.45	478.83	342.68
	Non-Road Diesel	17,417	40.96	47.85	59.91	42.87
	Aircraft	13,108	36.01	36.01	36.01	36.01
	Marine Vessels, Recreational	294	0.69	0.81	1.01	0.72
	Railroads	1,230	3.38	3.38	3.38	3.38
Spokane		29,637	36	78	129	84
	Non-Road Gasoline, 2-Stroke	2,749	2.79	7.19	12.45	7.78
	Non-Road Gasoline, 4-Stroke	17,920	18.22	46.87	81.12	50.74
	Non-Road Diesel	3,102	3.15	8.11	14.04	8.78
	Aircraft	2,919	8.02	8.02	8.02	8.02
	Marine Vessels, Recreational	2,705	2.75	7.07	12.24	7.66
	Railroads	243	0.67	0.67	0.67	0.67
St. Louis		335,393	439	1,033	1,307	910
	Non-Road Gasoline, 2-Stroke	33,805	42.56	104.51	133.15	91.64
	Non-Road Gasoline, 4-Stroke	186,091	234.32	575.11	733.15	504.41

**Table III-5
Nonroad Daily Seasonal CO Emissions by Season, City and Category with Additional
Seasonal Adjustments**

City	Tier 2	Annual CO (tons/day)	Daily CO Emissions (tons/day)			
			Winter	Spring	Summer	Fall
	Non-Road Diesel	43,793	55.15	135.30	172.58	118.69
	Aircraft	9,333	25.64	25.64	25.64	25.64
	Marine Vessels, Commercial	676	1.86	1.86	1.86	1.86
	Marine Vessels, Recreational	60,405	75.91	187.47	237.10	163.97
	Railroads	1,290	3.54	3.54	3.54	3.54
Washington		264,864	431	755	963	762
	Non-Road Gasoline, 2-Stroke	28,378	42.94	80.90	105.23	82.77
	Non-Road Gasoline, 4-Stroke	185,139	285.25	530.66	682.50	536.08
	Non-Road Diesel	20,227	36.60	56.60	72.32	56.76
	Aircraft	9,465	26.00	26.00	26.00	26.00
	Marine Vessels, Recreational	21,413	39.16	60.34	76.14	59.67
	Railroads	242	0.74	0.74	0.74	0.74

Note: The following adjustments were made.

In Baltimore, Boston, New York, Philadelphia and Washington Golf Carts and Lawnmowers were adjusted. Winter emissions were set to zero, and these emissions were distributed among the other seasons using their current ratios.

In Los Angeles Snowmobiles were adjusted.

Winter was assigned all annual emissions, and other seasonal emissions were set to zero emissions.

CHAPTER IV REFERENCES

EPA, 1990: U.S. Environmental Protection Agency, "The 1985 NAPAP Emissions Inventory: Development of Temporal Allocation Factors," EPA-600/7-89-010d, prepared for the National Acid Precipitation Assessment Program, April 1990.

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TECHNICAL REPORT ABSTRACT

REPORT TITLE: Determination of Annual Average CO Inventories and the Mobile Source Contribution in Selected Areas Using the 1990 OAQPS Trends Data Base - Draft Report

REPORT DATE: September 1997

CONTRACT NO.: 68-D3-0035

PRIME CONTRACTOR: E.H. Pechan & Associates, Inc.

WORK ASSIGNMENT NO./DELIVERY ORDER NO. (if applicable): III-117

PROJECT OFFICER: Mary Wilkins

PROJECT OFFICER ADDRESS: U.S. EPA, MD-12, Research Triangle Park, NC 27711
TEL: (919) 541-5229

PROGRAM OFFICE: Office of Mobile Sources

DOES THIS REPORT CONTAIN CONFIDENTIAL BUSINESS INFORMATION

YES _____ NO _____ X _____

REPORT ABSTRACT - Include a brief (200 words or less) factual summary of the scope and nature of the work performed and referenced in the report.

The U.S. Environmental Protection Agency (EPA) is currently working to develop carbon monoxide (CO) exposure adjustment factors to be applied to the Hazardous Air Pollution Exposure Model for Mobile sources version 3 (HAPEM-MS3) modeling being conducted by the EPA Office of Research and Development's (ORD) National Exposure Research Lab (NERL) for the Office of Mobile Sources (OMS). The HAPEM-MS3 exposure modeling is being conducted in order to predict exposure to mobile source CO emissions in 13 urban areas. OMS will then be able to estimate the exposure to, and the carcinogenic risk from, exposure to motor vehicle air toxic emission by relating air toxins and CO exposure using emission data. In order to make the CO exposure results representative of the mobile source contribution to CO emissions in urban areas it is necessary to be able to apportion the Trends ambient monitoring CO data into on-road mobile source and non-road mobile source contributions for all 13 areas. Ultimately these exposure numbers will be used to determine the contributions of on-road and non-road mobile sources to the carcinogenic risk from air toxins emissions that must be regulated under Section 202(1)(2) of the Clean Air Act (CAA), as amended in 1990, and will provide a critical piece of the analysis necessary to determine the level at which air toxics regulations will be required. The one calculation necessary to OMS that HAPEM-MS3 cannot perform is allocating the CO exposures to that which is contributed separately by on-road and non-road mobile sources for specific areas.

KEY WORDS/DESCRIPTORS - Select the scientific or engineering terms that identify the major concept of the research and are sufficiently specific and precise to be used as index entries for cataloging: CO, on-road emissions, nonroad emissions