1. Introduction

1.1 Overview

This 2011 periodic ozone emissions inventory was developed to meet requirements set forth in Title I of the Clean Air Act Amendments of 1990 (CAAA). The CAAA require development of a baseline emissions inventory and periodic revisions for areas that fail to meet the National Ambient Air Quality Standards (NAAQS). A portion of Maricopa County is classified as nonattainment for the eight-hour ozone standard.

This inventory includes emission estimates for three ozone precursors: volatile organic compounds (VOCs), carbon monoxide (CO) and nitrogen oxides (NO_x). VOC is defined by Maricopa County's Rule 100 as "any organic compound, which participates in atmospheric photochemical reactions, except the non-precursor organic compounds". The inventory provides emission estimates from point, area, nonroad mobile, onroad mobile, and biogenic sources. Note that totals shown in tables may not equal the sum of individual values due to independent rounding.

1.2 Agencies responsible for the emissions inventory

Maricopa County Air Quality Department (MCAQD) has primary responsibility for preparing and submitting the 2011 Periodic Emissions Inventory for Ozone Precursors for Maricopa County. Point, area, and some nonroad mobile source emission estimates were prepared by MCAQD. The Maricopa Association of Governments (MAG) prepared the emission estimates for onroad mobile, biogenic, and the majority of nonroad mobile sources. Table 1.2–1 lists those responsible for inventory preparation and quality assurance/quality control activities, which are described in the respective chapters.

Table 1.2–1. Chapter authors and QA/QC contacts for this report.

Chapter	Author(s)	QA/QC contact persons
2. Point sources	Bob Downing, MCAQD (602) 506-6790	Eric Raisanen, MCAQD (602) 506-6790 Matt Poppen, MAG (602) 254-6300
3. Area sources	Eric Raisanen, Tom Ekren and Dena Konopka, MCAQD (602) 506-6790	Bob Downing, MCAQD (602) 506-6790 Matt Poppen, MAG (602) 254-6300 Cathy Arthur, MAG (602) 254-6300
4. Nonroad mobile sources	Matt Poppen, MAG (602) 254-6300 Dena Konopka, MCAQD (602) 506-6790	Bob Downing, MCAQD (602) 506-6790 Cathy Arthur, MAG (602) 254-6300
5. Onroad mobile sources	Ieesuck Jung, MAG (602) 254-6300	Matt Poppen, MAG (602) 254-6300 Cathy Arthur, MAG (602) 254-6300
6. Biogenic sources	Feng Liu, MAG (602) 254-6300	Matt Poppen, MAG (602) 254-6300 Cathy Arthur, MAG (602) 254-6300

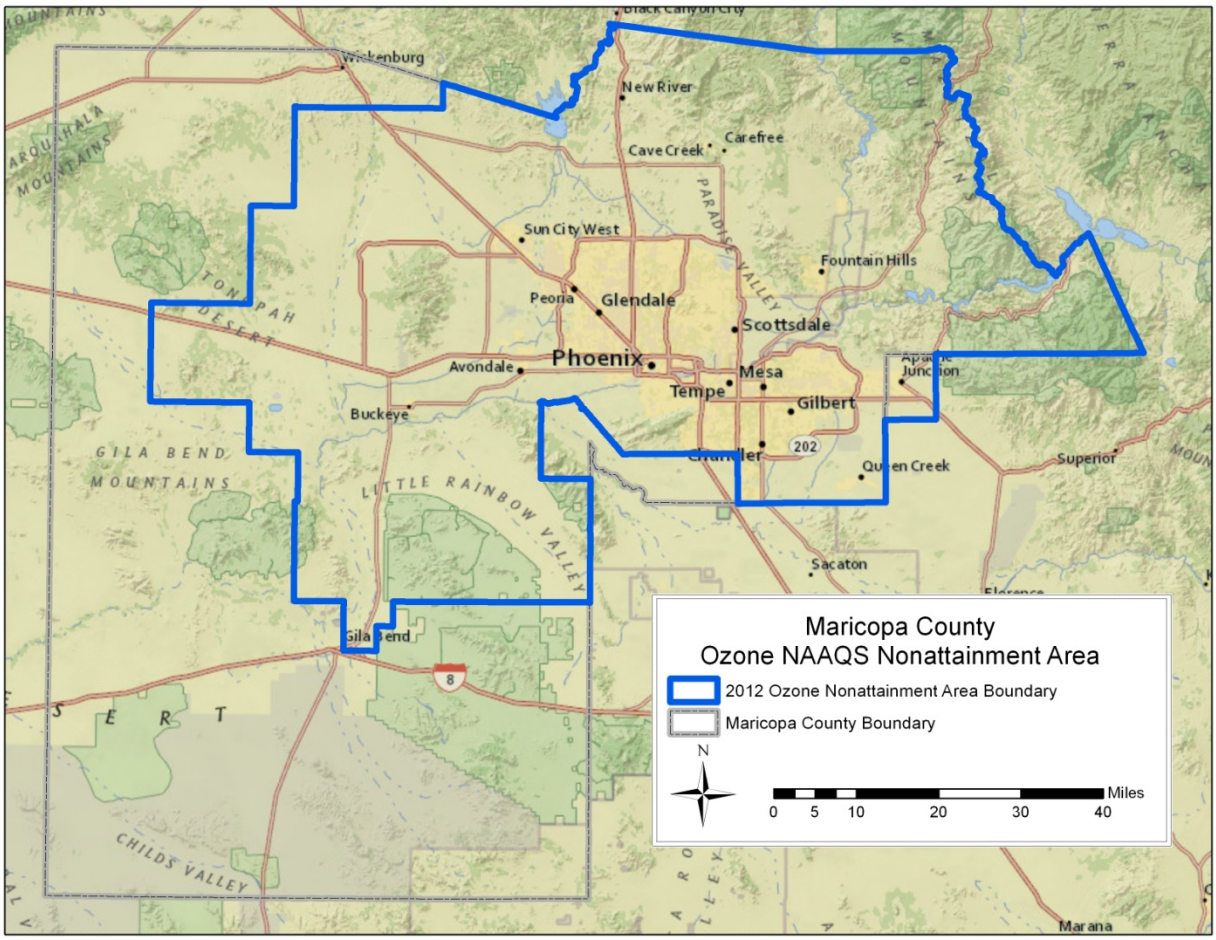
1.3 Temporal scope

Annual and ozone season-day emissions were estimated for the year 2011, for Maricopa County and the Maricopa County eight-hour ozone nonattainment area (NAA). The three-month peak ozone season for the Maricopa County nonattainment area has been defined as July 1 through September 30, based on the 1981–1991 pattern of ozone exceedances.

1.4 Geographic scope

This inventory includes emission estimates for Maricopa County and for the Maricopa County eight-hour ozone nonattainment area. Maricopa County encompasses approximately 9,223 square miles of land area, while the Maricopa County eight-hour ozone nonattainment area is approximately 5,018 square miles or about 54 percent of the Maricopa County land area.[1] A portion of the southeastern boundary of the eight-hour ozone nonattainment area includes areas of Pinal County totaling 48 square miles or 0.96% of the nonattainment area. A map of Maricopa County and the eight-hour ozone nonattainment area is provided in Figure 1.4–1.

Figure 1.4–1. Map of Maricopa County and the eight-hour ozone nonattainment area.



1. In May 2012, EPA designated a new eight-hour ozone nonattainment area based on the 2008 eight-hour ozone NAAQS (***77 FR 30088***, May 12, 2012). The previous eight-hour ozone nonattainment area was based on the 1997 eight-hour ozone NAAQS. The 2012 nonattainment area boundary was used for this 2011 inventory, as it is expected to be used as a base-year inventory for a future state implementation plan.

1.5 Overview of local demographic and land use data

Many of the emissions estimates generated in this report were calculated using demographic and land use data provided by the Maricopa Association of Governments (MAG). These data were used to apportion and/or scale Maricopa County emissions estimates to the nonattainment area and vice versa. (For example, county-level emissions from residential natural gas usage in Maricopa County were apportioned to the nonattainment area using the ratio of total population in each area). Detailed explanations of how emission estimates were apportioned or scaled are presented in each of the following chapters, along with the data sources used.

1.5.1 Demographic profile

The demographic data provided by MAG included population, employment data, and single family/multi-family splits for calendar year 2011, for both Maricopa County and the eight-hour ozone nonattainment area. Table 1.5–1 provides an overview of the key demographic data used in this report. As noted throughout the text, these data are frequently used to derive estimates of activity or emissions within the eight-hour ozone nonattainment area from county-level calculations. It is important to note, however, that the nonattainment area includes a portion of Pinal County, AZ as shown in Figure 1.4–1. Thus in some cases (e.g., those source categories calculated based on total population), the multiplier used to derive nonattainment area estimates from County-level values may be greater than 1, and thus the resulting NAA emission totals are larger than the County-level estimates from which they are derived.

Table 1.5–1. Demographic profile of Maricopa County and the eight-hour ozone NAA.

Demographic variable	Maricopa County	8-hr ozone NAA	Percentage within 8-hr ozone NAA
Total resident population	3,843,370	3,873,528	100.78%
Total non-resident population	286,276	303,342	105.96%
Total population:	**4,129,646**	**4,176,870**	**101.14%**
Retail employment	414,477	415,672	100.29%
Office employment	320,536	320,189	99.89%
Industrial employment	374,338	372,731	99.57%
Public employment	240,952	241,429	100.20%
Other employment	261,769	258,963	98.93%
Construction	24,026	24,791	103.18%
Work at home	100,016	100,617	100.60%
Total employment:	**1,736,114**	**1,734,392**	**99.90%**
Single-family/multi-family household split:			
Single-family	77%	77%	
Multi-family	23%	23%	

1.5.2 Land use data

MAG provided draft 2010 land use data. The 2010 land use data was assumed to be representative of 2011. Table 1.5–2 presents a summary of the land use categories and acreage used to develop emission estimates for this inventory.

Table 1.5–2. Land use categories used to apportion emissions.

Land use category	Acreage within Maricopa County	Acreage within 8-hour ozone NAA	Percentage within 8-hour ozone NAA
General/active open space/golf course (e.g., parks)	210,159	211,297	100.54%
Passive/restricted open space, washes	2,614,870	1,188,251	45.44%
Lakes	12,525	12,525	100.00%
Agriculture	276,016	161,371	58.46%
Vacant (e.g., developable land)	2,045,587	911,304	44.55%

1.6 Emissions overview by source category

1.6.1 Point sources

The point source category includes those stationary sources that emit a significant amount of pollution into the air such as power plants, petroleum product storage and transfer facilities, and large industrial facilities. MCAQD utilizes the US EPA's Annual Emissions Reporting Requirements (AERR) rule to define which stationary sources are listed as point sources. A detailed definition of a point source can be found in Section 2.1 of Chapter 2.

Table 1.6–1 summarizes annual and season-day emissions from point sources (including emission reduction credits) in Maricopa County and the eight-hour ozone nonattainment area, respectively. A detailed breakdown of emissions calculations for all point sources is contained in Chapter 2.

Table 1.6–1. Annual and season-day emissions from point sources.

	Annual emissions (tons/yr)			Season-day emissions (lbs/day)		
Geographic area	**VOC**	**NO_x**	**CO**	**VOC**	**NO_x**	**CO**
Maricopa County	768.54	1,754.12	1,078.48	4,908.3	15,407.1	9,715.8
8-hour ozone NAA	768.54	1,754.12	1,078.48	4,908.3	15,407.1	9,715.8

1.6.2 Area sources

Area sources are facilities or activities whose individual emissions do not qualify them as point sources. Area sources represent numerous facilities or activities that individually release small amounts of a given pollutant, but collectively they can release significant amounts of a pollutant. Emissions from stationary sources that were not identified as point sources in this report have been included in the area source inventory. Examples of area source categories include residential wood burning, commercial cooking, waste incineration and wildfires.

Tables 1.6–2 and 1.6–3 summarize annual and season-day emissions of the chief area source categories, for Maricopa County and the eight-hour ozone nonattainment area, respectively. A detailed breakdown of emissions calculations for each area source category is contained in Chapter 3.

Table 1.6–2. Annual and season-day emissions from area sources in Maricopa County.

	Annual emissions (tons/yr)			Season-day emissions (lbs/day)		
Source category	**VOC**	**NO_x**	**CO**	**VOC**	**NO_x**	**CO**
Fuel combustion	653.61	4,675.41	4,866.67	593.3	23,544.5	9,255.2
Industrial processes	2,284.00	263.41	585.79	17,516.5	1,489.5	3,396.2
Solvent use	28,153.45			167,043.9		
Storage/transport	5,176.39			28,577.9		
Waste treatment/disposal	115.61	56.21	193.56	842.6	320.7	1,227.1
Misc. area sources	271.58	166.54	4,765.93	13,982.3	6,680.5	281,693.1
All area sources:	**36,654.65**	**5,161.56**	**10,411.95**	**228,556.4**	**32,035.2**	**295,571.5**

Table 1.6–3. Annual and season-day emissions from area sources in the eight-hour ozone NAA.

	Annual emissions (tons/yr)			Season-day emissions (lbs/day)		
Source category	**VOC**	**NO_x**	**CO**	**VOC**	**NO_x**	**CO**
Fuel combustion	659.63	4,670.68	4,898.99	593.0	23,483.5	9,235.4
Industrial processes	2,276.48	263.41	590.27	17,452.4	1,489.5	3,420.8
Solvent use	28,139.77			166,557.4		
Storage/transport	5,211.35			28,766.2		
Waste treatment/disposal	116.10	56.04	190.06	837.8	315.6	1,119.6
Misc. area sources	261.09	161.70	4,664.71	13,650.0	6,531.8	278,544.9
All area sources:	**36,664.42**	**5,151.83**	**10,344.03**	**227,856.8**	**31,820.5**	**292,320.7**

1.6.3 Nonroad mobile sources

Nonroad mobile sources include off-highway vehicles and engines that move or are moved within a 12-month period. Tables 1.6–4 and 1.6–5 summarize annual and season-day emissions from nonroad mobile sources, for Maricopa County and the eight-hour ozone nonattainment area, respectively. A detailed breakdown of emissions calculations for each source category is contained in Chapter 4.

Table 1.6–4. Annual and season-day emissions from nonroad mobile sources in Maricopa County.

	Annual emissions (tons/yr)			Season-day emissions (lbs/day)		
Source category	**VOC**	**NO_x**	**CO**	**VOC**	**NO_x**	**CO**
Agricultural equipment	38.53	330.49	303.71	329.3	2,762.6	2,584.4
Airport GSE (+APU)	111.98	406.04	3,275.98	587.3	2,136.6	17,155.0
Commercial equipment	1,924.41	1,361.42	30,224.21	14,537.1	8,334.7	203,404.4
Construction & mining	1,881.88	12,937.30	14,396.92	13,116.9	87,972.9	99,942.8
Industrial equipment	341.25	1,839.35	7,140.99	2,212.6	11,763.4	46,138.5
Lawn & garden	4,913.96	866.64	54,798.41	51,990.4	6,998.4	523,235.5
Pleasure craft	530.39	96.56	1,249.66	11,527.0	1,996.8	26,738.3
Railway maintenance	1.94	8.55	16.48	14.2	59.0	117.8
Recreational equipment	1,518.97	66.10	6,373.46	17,804.4	679.3	74,424.8
Aircraft	1,719.33	2,588.82	11,781.38	8,451.0	12,548.2	65,325.4
Locomotives	77.60	1,406.08	245.74	425.2	7,704.5	1,346.5
All nonroad mobile sources:	**13,060.24**	**21,907.35**	**129,806.94**	**120,995.4**	**142,956.4**	**1,060,413.4**

Table 1.6–5. Annual and season-day emissions from nonroad mobile sources in the eight-hour ozone NAA.

	Annual emissions (tons/yr)			Season-day emissions (lbs/day)		
Source category	**VOC**	**NO_x**	**CO**	**VOC**	**NO_x**	**CO**
Agricultural equipment	22.52	193.22	177.56	192.5	1,615.1	1,510.9
Airport GSE (+APU)	111.43	404.49	3,259.08	584.5	2,128.9	17,071.7
Commercial equipment	1,916.15	1,355.57	30,094.46	14,474.7	8,299.0	202,531.2
Construction & mining	1,941.80	13,349.23	14,855.32	13,534.5	90,774.0	103,125.0
Industrial equipment	339.78	1,831.45	7,110.33	2,203.1	11,712.9	45,940.4
Lawn & garden	4,970.15	876.55	55,425.05	52,584.9	7,078.4	529,218.9
Pleasure craft	530.39	96.56	1,249.66	11,527.0	1,996.8	26,738.3
Railway maintenance	1.96	8.64	16.67	14.4	59.7	119.1
Recreational equipment	684.30	29.78	2,871.27	8,020.9	306.0	33,528.7
Aircraft	1,705.43	2,585.98	11,719.36	8,385.8	12,535.3	64,993.6
Locomotives	50.15	901.12	153.29	274.8	4,937.7	839.9
All nonroad mobile sources:	**12,274.06**	**21,632.59**	**126,932.05**	**111,797.1**	**141,443.8**	**1,025,617.7**

1.6.4 Onroad mobile sources

Emissions from onroad mobile sources were calculated for Maricopa County and the eight-hour ozone nonattainment area. A detailed description of emissions calculations is contained in Chapter 5.

Table 1.6–6 summarizes annual and season-day emissions from onroad mobile sources in Maricopa County and the eight-hour ozone nonattainment area, respectively.

Table 1.6–6. Annual and season-day emissions from onroad mobile sources in Maricopa County and the eight-hour ozone NAA.

	Annual emissions (tons/yr)			Season-day emissions (lbs/day)		
Geographic area	**VOC**	**NO_x**	**CO**	**VOC**	**NO_x**	**CO**
Maricopa County	24,556.85	60,269.94	235,088.25	150,603.7	319,470.2	1,378,165.5
8-hour ozone NAA	24,110.04	56,861.82	226,581.20	148,186.2	301,823.7	1,321,680.2

1.6.5 Biogenic sources

The biogenic source category includes emissions from all vegetation (e.g., crops, indigenous vegetation, landscaping, etc.) in Maricopa County and the eight-hour ozone nonattainment area. Emissions were estimated using the Model of Emissions of Gases and Aerosols from Nature (MEGAN). MEGAN is a state-of-the-art biogenic emissions model developed by the National Center for Atmospheric Research (NCAR). Some corrections and improvements were made in the latest version of MEGAN2.1. MEGAN2.1 was used to compute biogenic emissions in Maricopa County and the eight-hour ozone nonattainment area. Annual and season-day emissions from biogenic sources are shown in Table 1.6–7 for Maricopa County and the eight-hour ozone nonattainment area.

Table 1.6–7. Annual and season-day emissions from biogenic sources in Maricopa County and the eight-hour ozone NAA.

	Annual emissions (tons/yr)			Season-day emissions (lbs/day)		
Geographic area	**VOC**	**NO_x**	**CO**	**VOC**	**NO_x**	**CO**
Maricopa County	79,714.87	779.52	11,548.84	895,860.0	9,199.0	122,186.2
8-hour ozone NAA	55,311.84	527.18	5,934.55	624,395.0	6,231.7	62,584.2

1.6.6 Summary of all source categories

Tables 1.6–8 and 1.6–9 provide summary totals of annual and season-day emissions from all emission sources in Maricopa County and the eight-hour ozone nonattainment area, respectively.

Table 1.6–8. Annual and season-day emissions from all sources in Maricopa County.

	Annual emissions (tons/year)			Season-day emissions (lbs/day)		
Section	**VOC**	**NO_x**	**CO**	**VOC**	**NO_x**	**CO**
POINT SOURCES:	**768.54**	**1,754.12**	**1,078.48**	**4,908.3**	**15,407.1**	**9,715.8**
AREA SOURCES:						
Fuel combustion:						
Industrial distillate oil: Boilers	0.61	60.87	15.22	3.9	390.2	97.5
Industrial distillate oil: Engines	0.00	1,838.26	395.65	0.0	11,783.7	2,536.2
Industrial natural gas	36.99	730.94	455.30	217.8	4,303.8	2,680.8
Comm./inst. distillate oil: Boilers	0.00	0.12	0.03	0.0	0.8	0.2
Comm./inst. distillate oil: Engines	0.00	3.72	0.80	0.0	23.8	5.1
Comm./inst. natural gas	54.48	1,080.73	662.84	252.0	4,998.0	3,065.4
Residential distillate oil	0.01	0.35	0.10	0.0	0.0	0.0
Residential natural gas	49.81	851.32	362.26	119.6	2,044.2	869.9
Residential LPG	2.00	51.35	14.56	0.0	0.0	0.0
Residential wood combustion	509.7	57.72	2,959.91	0.0	0.0	0.0
Residential kerosene	0.00	0.03	0.01	0.0	0.0	0.0
All Fuel Combustion	**653.61**	**4,675.41**	**4,866.67**	**593.3**	**23,544.5**	**9,255.2**
Industrial Processes:						
Chemical manufacturing	77.42			599.0		
Commercial cooking	149.33		392.60	820.5		2,157.1
Bakeries	78.18			547.8		
Secondary metal production	41.01	15.02	98.36	306.4	107.9	697.4
Rubber/plastic product mfg.	1,766.75			14,171.0		
Electrical equipment mfg.	122.80	23.47	2.98	746.2	135.8	16.4
Industrial processes, NEC	48.51	224.92	91.84	325.6	1,245.8	525.2
All Industrial Processes	**2,284.00**	**263.41**	**585.79**	**17,516.5**	**1,489.5**	**3,396.2**
Solvent Use:						
Architectural coatings	4,976.22			30,622.9		
Auto refinishing	1,333.26			10,255.9		
Traffic markings	179.60			1,823.6		
Factory finished wood	137.72			1,396.7		
Wood furniture	416.56			3,434.7		
Aircraft surface coating	65.84			473.1		
Miscellaneous surface coating	316.38			2,450.5		
Degreasing	217.55			1,451.4		
Dry cleaning	23.15			178.1		
Graphics arts	290.98			2,225.7		
Miscellaneous industrial solvent use	721.85			5,126.6		
Consumer and commercial products	17,406.46			95,377.9		
Cutback asphalt	835.84			4,567.4		
Emulsified asphalt	866.06			4,732.6		
Roofing asphalt	3.04			23.4		
Agricultural pesticides	362.93			2,903.4		
All Solvent Use	**28,153.45**			**167,043.9**		

Table 1.6–8. Annual and season-day emissions from all sources in Maricopa County (continued).

	Annual emissions (tons/year)			Season-day emissions (lbs/day)		
Section	**VOC**	**NOx**	**CO**	**VOC**	**NOx**	**CO**
Storage/Transport:						
Residential portable gas cans	2,935.09			16,126.8		
Commercial portable gas cans	564.43			3,101.2		
Bulk plants	120.91			659.3		
Gas stations Stage I: Submerged fill	85.08			528.7		
Gas stations Stage I: Bal. submerged fill	229.60			1,426.8		
Gas stations Stage II	0.00			0.0		
Underground tanks: Breathing/emptying	777.00			4,138.6		
Airports: aviation gasoline Stage I	347.57			1,904.5		
Airports: aviation gasoline Stage II	18.04			98.8		
Truck: gasoline (tank trucks in transit)	50.82			315.8		
Pipeline gasoline	17.32			94.5		
Volatile organic liquids storage/transport	30.54			182.7		
All Storage/Transport	**5,176.39**			**28,577.9**		
Waste Treatment/Disposal:						
On-site incineration	0.17	3.31	0.79	1.1	21.4	5.3
Open burning: Land clearing debris	0.67	0.30	6.30	20.5	9.1	193.8
Landfills	36.59	30.40	108.55	200.7	167.4	596.4
Publicly owned treatment works	75.02			577.1		
Leaking underground storage tanks	1.05			32.3		
Other waste	2.12	22.19	77.93	10.9	122.8	431.4
All Waste Treatment/Disposal	**115.61**	**56.21**	**193.56**	**842.6**	**320.7**	**1,227.1**
Miscellaneous Area Sources:						
Agricultural field burning	26.14	11.62	246.85	804.2	357.4	7,595.5
Structure fires	14.78	1.88	80.63	72.4	9.2	395.2
Aircraft engine testing	4.72	46.36	16.16	26.1	259.3	91.2
Vehicle fires	9.27	1.16	36.23	50.8	6.4	198.5
Crematories	1.18	11.19	2.23	51.1	88.5	17.3
Accidental releases	0.45	0.00	0.00	2.1	0.0	0.0
Hospitals	8.57			52.3		
Wildfires	206.08	93.95	4,379.29	12,794.0	5,832.6	271,872.2
Prescribed fires	0.39	0.38	4.54	129.2	127.1	1,523.2
All Misc. Area Sources	**271.58**	**166.54**	**4,765.93**	**13,982.3**	**6,680.5**	**281,693.1**
ALL AREA SOURCES	**36,654.65**	**5,161.56**	**10,411.95**	**228,556.4**	**32,035.2**	**295,571.5**
NONROAD MOBILE SOURCES:						
Agricultural equipment	38.53	330.49	303.71	329.3	2,762.6	2,584.4
Airport GSE (+APU)	111.98	406.04	3,275.98	587.3	2,136.6	17,155.0
Commercial equipment	1,924.41	1,361.42	30,224.21	14,537.1	8,334.7	203,404.4
Construction & mining equipment	1,881.88	12,937.30	14,396.92	13,116.9	87,972.9	99,942.8
Industrial equipment	341.25	1,839.35	7,140.99	2,212.6	11,763.4	46,138.5
Lawn and garden equipment	4,913.96	866.64	54,798.41	51,990.4	6,998.4	523,235.5
Pleasure craft	530.39	96.56	1,249.66	11,527.0	1,996.8	26,738.3
Railway maintenance equipment	1.94	8.55	16.48	14.2	59.0	117.8
Recreational equipment	1,518.97	66.10	6,373.46	17,804.4	679.3	74,424.8
Aircraft	1,719.33	2,588.82	11,781.38	8,451.0	12,548.2	65,325.4
Locomotives	77.60	1,406.08	245.74	425.2	7,704.6	1,346.5
ALL NONROAD MOBILE	**13,060.24**	**21,907.35**	**129,806.94**	**120,995.4**	**142,956.4**	**1,060,413.4**
ONROAD MOBILE SOURCES	24,556.85	60,269.94	235,088.25	150,603.7	319,470.2	1,378,165.5
BIOGENIC SOURCES	79,714.87	779.52	11,548.84	895,860.0	9,199.0	122,186.2
TOTAL, ALL SOURCE CATEGORIES	**154,755.15**	**89,872.48**	**387,934.46**	**1,400,923.9**	**519,067.9**	**2,866,052.4**

Table 1.6–9. Annual and season-day emissions from all sources in the eight-hour ozone nonattainment area.

	Annual emissions (tons/year)			Season-day emissions (lbs/day)		
Section	**VOC**	**NO_x**	**CO**	**VOC**	**NO_x**	**CO**
POINT SOURCES:	**768.54**	**1,754.12**	**1,078.48**	**4,908.3**	**15,407.1**	**9,715.8**
AREA SOURCES:						
Fuel combustion:						
Industrial distillate oil: Boilers	0.61	60.61	15.15	3.9	388.5	97.1
Industrial distillate oil: Engines	0.00	1,830.35	393.95	0.0	11,733.0	2,525.3
Industrial natural gas	36.83	727.80	453.34	216.9	4,285.3	2,669.3
Comm./inst. distillate oil: Boilers	0.00	0.12	0.03	0.0	0.8	0.2
Comm./inst. distillate oil: Engines	0.00	3.70	0.80	0.0	23.7	5.1
Comm./inst. natural gas	54.42	1,079.44	662.05	251.7	4,992.0	3,061.7
Residential distillate oil	0.01	0.35	0.10	0.0	0.0	0.0
Residential natural gas	50.20	857.96	365.09	120.5	2,060.1	876.7
Residential LPG	2.02	51.93	14.73	0.0	0.0	0.0
Residential wood combustion	515.53	58.38	2,993.75	0.0	0.0	0.0
Residential kerosene	0.00	0.03	0.01	0.0	0.0	0.0
All Fuel Combustion:	**659.63**	**4,670.68**	**4,898.99**	**593.0**	**23,483.5**	**9,235.4**
Industrial processes:						
Chemical manufacturing	77.09			596.5		
Commercial cooking	151.03		397.07	829.8		2,181.7
Bakeries	77.85			545.4		
Secondary metal production	41.01	15.02	98.36	306.4	107.9	697.4
Rubber/plastic product manufacturing	1,759.15			14,110.1		
Electrical equipment manufacturing	122.80	23.47	2.98	746.2	135.8	16.4
Industrial processes, NEC	47.55	224.92	91.84	318.0	1,245.8	525.2
All Industrial Processes:	**2,276.48**	**263.41**	**590.27**	**17,452.4**	**1,489.5**	**3,420.8**
Solvent use:						
Architectural coatings	5,033.13			30,973.1		
Auto refinishing	1,327.53			10,211.8		
Traffic markings	171.12			1,737.5		
Factory finished wood	137.12			1,390.7		
Wood furniture	414.77			3,419.9		
Aircraft surface coating	65.84			473.1		
Miscellaneous surface coating	315.02			2,440.0		
Degreasing	216.62			1,445.1		
Dry cleaning	23.42			180.1		
Graphics arts	289.73			2,216.1		
Miscellaneous industrial solvent use	718.75			5,104.6		
Consumer and commercial products	17,605.51			96,468.5		
Cutback asphalt	788.72			4,309.9		
Emulsified asphalt	817.24			4,465.8		
Roofing asphalt	3.08			23.7		
Agricultural pesticides	212.18			1,697.5		
All Solvent Use:	**28,139.77**			**166,557.4**		

Table 1.6–9. Annual and season-day emissions from all sources in the eight-hour ozone nonattainment area (continued).

	Annual emissions (tons/year)			Season-day emissions (lbs/day)		
Section	**VOC**	**NOx**	**CO**	**VOC**	**NOx**	**CO**
Storage/transport:						
Residential portable gas cans	2,968.67			16,311.39		
Commercial portable gas cans	570.89			3,136.73		
Bulk plants	120.91			659.3		
Gas stations Stage I: Submerged fill	85.08			528.7		
Gas stations Stage I: Bal. submerged fill	229.60			1,426.8		
Gas stations Stage II	0.00			0.0		
Underground tanks: Breathing/emptying	777.00			4,138.6		
Airports: Aviation gasoline Stage I	344.41			1,887.2		
Airports: Aviation gasoline Stage II	17.87			97.9		
Truck: Gasoline (tank trucks in transit)	50.82			315.8		
Pipeline gasoline	17.32			94.5		
Volatile organic liquids storage/transport	28.80			169.3		
All Storage/Transport:	**5,211.35**			**28,766.2**		
Waste treatment/disposal:						
On-site incineration	0.17	3.31	0.79	1.1	21.4	5.3
Open Burning: Land clearing debris	0.30	0.13	2.81	9.1	4.1	86.4
Landfills	36.59	30.40	108.55	200.7	167.4	596.4
Publicly owned treatment works	75.88			583.7		
Leaking underground storage tanks	1.05			32.3		
Other waste	2.12	22.19	77.93	10.9	122.8	431.4
All Waste Treatment/Disposal:	**116.10**	**56.04**	**190.06**	**837.8**	**315.6**	**1,119.6**
Misc. area sources:						
Agricultural field burning	15.28	6.79	144.32	470.2	209.0	4,440.7
Structure fires	14.95	1.90	81.55	73.3	9.3	399.7
Aircraft engine testing	4.72	46.36	16.16	26.1	259.3	91.2
Vehicle fires	9.38	1.17	36.64	51.4	6.4	200.8
Crematories	1.18	11.14	2.22	50.9	88.1	17.2
Accidental releases	0.45	0.00	0.00	2.1	0.0	0.0
Hospitals	8.66			52.9		
Wildfires	206.08	93.95	4,379.28	12,794.0	5,832.6	271,872.2
Prescribed fires	0.39	0.38	4.54	129.2	127.1	1,523.2
All Misc. Area Sources	**261.09**	**161.70**	**4,664.71**	**13,650.0**	**6,531.8**	**278,544.9**
ALL AREA SOURCES:	**36,664.42**	**5,151.83**	**10,344.03**	**227,856.8**	**31,820.5**	**292,320.7**
NONROAD MOBILE SOURCES:						
Agricultural equipment	22.52	193.22	177.56	192.5	1,615.1	1,510.9
Airport ground support equipment (+APU)	111.43	404.49	3,259.08	584.5	2,128.9	17,071.7
Commercial equipment	1,916.15	1,355.57	30,094.46	14,474.7	8,299.0	202,531.2
Construction & mining equipment	1,941.80	13,349.23	14,855.32	13,534.5	90,774.0	103,125.0
Industrial equipment	339.78	1,831.45	7,110.33	2,203.1	11,712.9	45,940.4
Lawn and garden equipment	4,970.15	876.55	55,425.05	52,584.9	7,078.4	529,218.9
Pleasure craft	530.39	96.56	1,249.66	11,527.0	1,996.8	26,738.3
Railway maintenance equipment	1.96	8.64	16.67	14.4	59.7	119.1
Recreational equipment	684.30	29.78	2,871.27	8,020.9	306.0	33,528.7
Aircraft	1,705.43	2,585.98	11,719.36	8,385.8	12,535.3	64,993.6
Locomotives	50.15	901.12	153.29	274.8	4,937.7	839.9
ALL NONROAD MOBILE SOURCES:	**12,274.06**	**21,632.59**	**126,932.05**	**111,797.1**	**141,443.8**	**1,025,617.7**
ONROAD MOBILE SOURCES:	**24,110.04**	**56,861.82**	**226,581.20**	**148,186.2**	**301,823.7**	**1,321,680.2**
BIOGENIC SOURCES:	**55,311.84**	**527.18**	**5,934.55**	**624,395.0**	**6,231.7**	**62,584.2**
TOTAL, ALL SOURCE CATEGORIES:	**129,128.91**	**85,927.54**	**370,870.31**	**1,117,143.4**	**496,726.7**	**2,711,918.6**