Air Quality Data Update
1999-2001 Ozone Air Quality Data

The following is a brief summary of EPA's 2001 air quality update for ozone air quality monitoring data for the three year period, 1999-2001. During this current three year period,

- 30 of the original 98 areas designated nonattainment for the 1-hour O_3 National Ambient Air Quality Standard (NAAQS) in 1991 failed to meet the NAAQS in 1999-2001 (Table 1).
- 5 additional counties failed to meet the 1-hour O_3 NAAQS in 1999-2001 (Table 2).
- 3 additional counties have an expected exceedance greater than the level associated with the 1-hour O_3 NAAQS but require further review before determining the applicability of the estimate (Table 3).
- 291 counties have average annual 4th maximum 8-hour daily maximum O_3 concentrations in 1999-2001 greater than the level of the 8-hour O_3 NAAQS (Table 4).

The EPA set the 1-hour O_3 standard at 0.12 parts per million (ppm) daily maximum 1-hour average concentration not to be exceeded more than once per year on average. Compliance with the 1-hour ozone standard is judged on the basis of the most recent three years of ambient air quality monitoring data. The 1-hour ozone standard is not met at a monitoring site if the average number of estimated exceedances of the ozone standard is greater than 1.0 (1.05 rounds up). The level of the 8-hour O_3 NAAQS is 0.08 ppm. The 8-hour O_3 standard is not met if the 3-year average of the annual 4th highest daily maximum 8-hour O_3 concentration is greater than 0.08 ppm (0.085 rounds up).

In 1997, EPA revised the national ambient air quality standards for ozone. The standards were challenged by several business and state groups who claimed that EPA misinterpreted the Clean Air Act to give itself unlimited discretion to set air standards. On February 27, 2001, the U.S. Supreme Court unanimously upheld the constitutionality of the Clean Air Act as EPA had interpreted it in setting those health-protective air quality standards. Updates on this action can be found at http://www.epa.gov/airlinks .

Air quality data from EPA's Air Quality System (AQS) was used to calculate expected exceedances and design values. The specific calculation is explained in the notes for each table. The data used for these calculation was obtained from AQS on July 8, 2002. No regulatory decisions on attainment status have been made for areas based upon these specific calculations. In some cases the data is still under review. In addition, for regulatory decisions, data not in AQS may be informative. Accordingly, further analysis will occur before these design values are used in implementing the national ambient air quality standards for ozone.

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Table 1. Areas designated nonattainment in 1991[(1)] that fail to meet the 1-hr ozone NAAQS in 1999-2001

State	Designated Area	O3 Design Value (ppm)[2]	Average Estimated Exceedance Rate[3]
Alabama	Birmingham, AL	0.127	1.4
California	Los Angeles South Coast Air Basin, CA	0.170	24.9
California	Sacramento Metro, CA	0.133	2.5
California	San Francisco Bay Area, CA	0.126	1.3
California	San Joaquin Valley, CA	0.146	15
California	Southeast Desert Modified AQMA, CA	0.143	8.4
California	Ventura Co, CA	0.128	1.7
Connecticut	Greater Connecticut, CT	0.147	4.4
Georgia	Atlanta, GA	0.156	6.8(7.0)
Illinois	Jersey Co, IL	0.127	1.3
Louisiana	Baton Rouge, LA	0.128	1.3
Louisiana	Lake Charles, LA	0.127	1.7
Maryland	Baltimore, MD	0.149	3.1(5.0)
Maryland	Kent & Queen Anne's Cos, MD	0.128	1.3
Maryland	Washington, DC-MD-VA	0.130	2.1
Massachusetts	Boston-Lawrence-Worcester (E. MA), MA-NH	0.138	1.7
Missouri	St Louis, MO-IL	0.126	1.7
New York	New York-N. New Jersey-Long Island,NY-NJ-CT	0.143	3.0(3.7)
New York	Poughkeepsie, NY	0.126	1.7
North Carolina	Charlotte-Gastonia, NC	0.127	1.5
Pennsylvania	Allentown-Bethlehem-Easton, PA-NJ	0.125	1.4
Pennsylvania	Lancaster, PA	0.127	1.3
Pennsylvania	Philadelphia-Wilmington-Trenton,PA-NJ-DE-MD	0.145	3.3
Rhode Island	Providence (All RI), RI	0.144	1.7
Tennessee	Knoxville, TN	0.128	1.3
Tennessee	Memphis, TN	0.128	2
Texas	Dallas-Fort Worth, TX	0.137[4]	1.7
Texas	Houston-Galveston-Brazoria, TX	0.182	11.2(12.2)
Virginia	Norfolk-Virginia Beach-Newport News, VA	0.127	1.3
Virginia	Richmond-Petersburg, VA	0.126	1.7

Notes for Table 1:

1. Designations and classifications for ozone nonattainment areas as published in the Federal Register, 40 CFR Part 81. Unclassified and transitional nonattainment areas are not included in Table 1.

2. The updated air quality design value is estimated for the 1999-2001 period using all air quality data reported to EPA's Air Quality System (AQS). The computation procedures follow EPA guidance for calculating design values (Laxton Memorandum, June 18, 1990). For sites with three complete years of monitoring data, the air quality design value is the fourth highest daily maximum 1-hour ozone concentration, because the standard allows one exceedance per year on average. It is important to note that the 1990 Clean Air Act Amendments required that nonattainment areas be classified on the basis of the design value at the time the Amendments were passed, generally the 1987-89 period was used.

3. The level of the 1-hour ozone Ambient Air Quality standard is 0.12 parts per million (ppm) daily maximum 1-hour average concentration not to be exceeded more than once per year on average. The average estimated number of exceedances column shows the number of days the 0.12 ppm 1-hour ozone standard was exceeded on average at the site recording the highest updated air quality value. This computation is performed after adjustment for any missing sampling days during the 3-year period, 1999-2001. The values in parentheses are associated with the monitor with highest average estimated number of exceedances within the designated area; sometimes this statistic is associated with a different site than the site recording the highest updated air quality value.

4. This value is based on data for a site that was shutdown late in 1999. An estimate of the design value using more complete data in the Dallas-Fort Worth area is 0.130 ppm. However, other ambient ozone measurements in the Dallas-Fort Worth area indicate that the site with the 0.137 ppm design value remains representative at this time.

Table 2. Additional counties failing to meet the 1-hour ozone NAAQS in 1999-2001

State	County	O3 Design Value (ppm) [1]	Average Estimated Exceedance Rate [2]
California	Imperial Co, CA[3]	0.166	6.2
Georgia	Bibb Co[4]	0.133	3.3
North Carolina	Rowan Co[4]	0.128	1.4
Tennessee	Jefferson Co[4]	0.126	2.2
Texas	Gregg Co[4]	0.132	2.1

Notes for Table 2:

1. The updated air quality design value is estimated for the 1999-2001 period using all air quality data reported to EPA's Aerometric Information Retrieval System (AIRS). The computation procedures follow EPA guidance for calculating design values (Laxton Memorandum, June 18, 1990). For sites with three complete years of monitoring data, the air quality design value is the fourth highest daily maximum 1-hour ozone concentration, because the standard allows one exceedance per year on average. It is important to note that the 1990 Clean Air Act Amendments required that nonattainment areas be classified on the basis of the design value at the time the Amendments were passed, generally the 1987-89 period was used.

2. The level of the 1-hour ozone Ambient Air Quality standard is 0.12 parts per million (ppm) daily maximum 1-hour average concentration not to be exceeded more than once per year on average. The average estimated number of exceedances column shows the number of days the 0.12 ppm 1-hour ozone standard was exceeded on average at the site recording the highest updated air quality value. This computation is performed after adjustment for any missing sampling days during the 3-year period,
1999-2001.

3. Section 185a nonattainment area that fails to meet the standard in 1999-2001.

4. Areas presently designated attainment for the 1-hour ozone NAAQS that fail to meet the standard in 1999-2001.

Table 3. Areas with sites that need further review due to incomplete data

State	Designated Area [1]	O3 Design Value (ppm)[2]	Average Estimated Exceedance Rate[3]
Oklahoma	McClain Co	0.097	1.1
Tennessee	Sevier Co	0.116	1.4
Texas	Beaumont-Port Arthur, TX	0.121	1.1

Notes for Table 3:

1. Designations and classifications for ozone nonattainment areas as published in the Federal Register, 40 CFR Part 81. Unclassified and transitional nonattainment areas are not included in Table 1.

2. The updated air quality design value is estimated for the 1999-2001 period using all air quality data reported to EPA's Air Quality System (AQS). The computation procedures follow EPA guidance for calculating design values (Laxton Memorandum, June 18, 1990). For sites with three complete years of monitoring data, the air quality design value is the fourth highest daily

maximum 1-hour ozone concentration, because the standard allows one exceedance per year on average. It is important to note that the 1990 Clean Air Act Amendments required that nonattainment areas be classified on the basis of the design value at the time the Amendments were passed, generally the 1987-89 period was used.

3. The level of the 1-hour ozone Ambient Air Quality standard is 0.12 parts per million (ppm) daily maximum 1-hour average concentration not to be exceeded more than once per year on average. The average estimated number of exceedances column shows the number of days the 0.12 ppm 1-hour ozone standard was exceeded on average at the site recording the highest updated air quality value. This computation is performed after adjustment for any missing sampling days during the 3-year period, 1999-2001. However, due to the incompleteness of the data for these sites, these sites need further review. For example, the Sevier County monitor was operated for a short period and perhaps as a special purpose monitor. In addition for McClain county OK, the site has only one year of data in the three year period and the last full period (1997-1999) had a design value of 100 and an average expected exceedance of 0.4.

Table 4. Counties failing to meet the 8-hr ozone NAAQS, 1999-2001

STATE	COUNTY	DESIGN VALUE [1]
ALABAMA	JEFFERSON	0.089
ALABAMA	MADISON	0.087
ALABAMA	MONTGOMERY	0.085
ALABAMA	SHELBY	0.096
ARIZONA	MARICOPA	0.085
ARKANSAS	CRITTENDEN	0.092
ARKANSAS	PULASKI	0.087
CALIFORNIA	AMADOR	0.091
CALIFORNIA	CALAVERAS	0.094
CALIFORNIA	EL DORADO	0.104
CALIFORNIA	FRESNO	0.108
CALIFORNIA	IMPERIAL	0.092
CALIFORNIA	KERN	0.109
CALIFORNIA	KINGS	0.098
CALIFORNIA	LOS ANGELES	0.105
CALIFORNIA	MADERA	0.088
CALIFORNIA	MARIPOSA	0.091
CALIFORNIA	MERCED	0.101
CALIFORNIA	NEVADA	0.096
CALIFORNIA	PLACER	0.101
CALIFORNIA	RIVERSIDE	0.111
CALIFORNIA	SACRAMENTO	0.099
CALIFORNIA	SAN BERNARDINO	0.129
CALIFORNIA	SAN DIEGO	0.094

STATE	COUNTY	DESIGN VALUE [1]
CALIFORNIA	STANISLAUS	0.091
CALIFORNIA	TEHAMA	0.086
CALIFORNIA	TULARE	0.104
CALIFORNIA	TUOLUMNE	0.092
CALIFORNIA	VENTURA	0.101
CONNECTICUT	FAIRFIELD	0.097
CONNECTICUT	HARTFORD	0.088
CONNECTICUT	MIDDLESEX	0.099
CONNECTICUT	NEW HAVEN	0.097
CONNECTICUT	NEW LONDON	0.09
CONNECTICUT	TOLLAND	0.09
DELAWARE	KENT	0.093
DELAWARE	NEW CASTLE	0.097
DELAWARE	SUSSEX	0.095
DISTRICT OF COLUMBIA	WASHINGTON	0.094
FLORIDA	ESCAMBIA	0.088
FLORIDA	SARASOTA	0.085
GEORGIA	BIBB	0.098
GEORGIA	COBB	0.096
GEORGIA	COWETA	0.096
GEORGIA	DE KALB	0.102
GEORGIA	DOUGLAS	0.098
GEORGIA	FAYETTE	0.099
GEORGIA	FULTON	0.107
GEORGIA	GWINNETT	0.094
GEORGIA	HENRY	0.107
GEORGIA	MUSCOGEE	0.09
GEORGIA	PAULDING	0.092
GEORGIA	RICHMOND	0.087
GEORGIA	ROCKDALE	0.104
GEORGIA	SUMTER	0.086
ILLINOIS	COOK	0.088
ILLINOIS	JERSEY	0.089
INDIANA	ALLEN	0.087
INDIANA	CLARK	0.086
INDIANA	HAMILTON	0.091
INDIANA	HANCOCK	0.089
INDIANA	JOHNSON	0.087
INDIANA	LA PORTE	0.085
INDIANA	LAKE	0.09
INDIANA	MADISON	0.087
INDIANA	MARION	0.088

STATE	COUNTY	DESIGN VALUE [1]
INDIANA	MORGAN	0.087
INDIANA	PERRY	0.09
INDIANA	PORTER	0.09
INDIANA	POSEY	0.086
KENTUCKY	BOONE	0.085
KENTUCKY	BOYD	0.086
KENTUCKY	BULLITT	0.085
KENTUCKY	CHRISTIAN	0.085
KENTUCKY	EDMONSON	0.088
KENTUCKY	GREENUP	0.086
KENTUCKY	JEFFERSON	0.089
KENTUCKY	KENTON	0.086
KENTUCKY	LIVINGSTON	0.087
KENTUCKY	MC LEAN	0.086
KENTUCKY	OLDHAM	0.091
KENTUCKY	PULASKI	0.086
KENTUCKY	SIMPSON	0.088
LOUISIANA	ASCENSION	0.086
LOUISIANA	BOSSIER	0.09
LOUISIANA	CALCASIEU	0.086
LOUISIANA	EAST BATON ROUGE	0.091
LOUISIANA	IBERVILLE	0.086
LOUISIANA	JEFFERSON	0.089
LOUISIANA	LIVINGSTON	0.088
LOUISIANA	ST CHARLES	0.086
LOUISIANA	ST JOHN THE BAPTIST PAR	0.086
LOUISIANA	WEST BATON ROUGE	0.088
MAINE	HANCOCK	0.089
MAINE	YORK	0.086
MARYLAND	ANNE ARUNDEL	0.103
MARYLAND	BALTIMORE	0.093
MARYLAND	CALVERT	0.089
MARYLAND	CARROLL	0.093
MARYLAND	CECIL	0.106
MARYLAND	CHARLES	0.096
MARYLAND	FREDERICK	0.091
MARYLAND	HARFORD	0.104
MARYLAND	KENT	0.1
MARYLAND	MONTGOMERY	0.089

STATE	COUNTY	DESIGN VALUE [1]
MARYLAND	PRINCE GEORGES	0.097
MARYLAND	WASHINGTON	0.085
MASSACHUSETTS	BARNSTABLE	0.096
MASSACHUSETTS	BRISTOL	0.093
MASSACHUSETTS	ESSEX	0.086
MASSACHUSETTS	HAMPDEN	0.085
MASSACHUSETTS	HAMPSHIRE	0.087
MASSACHUSETTS	MIDDLESEX	0.088
MASSACHUSETTS	WORCESTER	0.085
MICHIGAN	ALLEGAN	0.087
MICHIGAN	BENZIE	0.089
MICHIGAN	BERRIEN	0.087
MICHIGAN	CASS	0.087
MICHIGAN	GENESEE	0.086
MICHIGAN	MACOMB	0.088
MICHIGAN	MASON	0.091
MICHIGAN	MUSKEGON	0.092
MICHIGAN	ST CLAIR	0.085
MICHIGAN	WAYNE	0.088
MISSISSIPPI	DE SOTO	0.086
MISSISSIPPI	HANCOCK	0.087
MISSISSIPPI	HARRISON	0.089
MISSISSIPPI	JACKSON	0.087
MISSISSIPPI	LEE	0.086
MISSOURI	JEFFERSON	0.089
MISSOURI	ST CHARLES	0.09
MISSOURI	ST LOUIS	0.088
MISSOURI	STE GENEVIEVE	0.085
NEW JERSEY	ATLANTIC	0.091
NEW JERSEY	CAMDEN	0.103
NEW JERSEY	CUMBERLAND	0.097
NEW JERSEY	GLOUCESTER	0.101
NEW JERSEY	HUDSON	0.093
NEW JERSEY	HUNTERDON	0.1
NEW JERSEY	MERCER	0.105
NEW JERSEY	MIDDLESEX	0.103
NEW JERSEY	MONMOUTH	0.094
NEW JERSEY	MORRIS	0.097
NEW JERSEY	OCEAN	0.109
NEW JERSEY	PASSAIC	0.089
NEW YORK	CHAUTAUQUA	0.089
NEW YORK	DUTCHESS	0.087

STATE	COUNTY	DESIGN VALUE [1]
NEW YORK	ERIE	0.092
NEW YORK	JEFFERSON	0.087
NEW YORK	NIAGARA	0.087
NEW YORK	ORANGE	0.087
NEW YORK	PUTNAM	0.089
NEW YORK	QUEENS	0.086
NEW YORK	RICHMOND	0.098
NEW YORK	SUFFOLK	0.091
NEW YORK	WESTCHESTER	0.092
NORTH CAROLINA	ALEXANDER	0.087
NORTH CAROLINA	CALDWELL	0.087
NORTH CAROLINA	CASWELL	0.09
NORTH CAROLINA	CUMBERLAND	0.088
NORTH CAROLINA	DAVIE	0.096
NORTH CAROLINA	DURHAM	0.087
NORTH CAROLINA	EDGECOMBE	0.087
NORTH CAROLINA	FORSYTH	0.094
NORTH CAROLINA	FRANKLIN	0.086
NORTH CAROLINA	GRANVILLE	0.088
NORTH CAROLINA	GUILFORD	0.09
NORTH CAROLINA	HAYWOOD	0.087
NORTH CAROLINA	JACKSON	0.085
NORTH CAROLINA	JOHNSTON	0.087
NORTH CAROLINA	LINCOLN	0.091
NORTH CAROLINA	MECKLENBURG	0.101
NORTH CAROLINA	PERSON	0.089
NORTH CAROLINA	ROCKINGHAM	0.085
NORTH CAROLINA	ROWAN	0.099
NORTH CAROLINA	UNION	0.087
NORTH CAROLINA	WAKE	0.095
NORTH CAROLINA	YANCEY	0.089
OHIO	ALLEN	0.086
OHIO	ASHTABULA	0.089
OHIO	BUTLER	0.089
OHIO	CLARK	0.087
OHIO	CLINTON	0.095
OHIO	DELAWARE	0.091
OHIO	GEAUGA	0.093
OHIO	GREENE	0.085
OHIO	HAMILTON	0.086
OHIO	KNOX	0.09
OHIO	LAKE	0.091

STATE	COUNTY	DESIGN VALUE [1]
OHIO	LAWRENCE	0.086
OHIO	LICKING	0.088
OHIO	LUCAS	0.085
OHIO	MADISON	0.088
OHIO	MEDINA	0.086
OHIO	MONTGOMERY	0.087
OHIO	PORTAGE	0.092
OHIO	STARK	0.088
OHIO	SUMMIT	0.092
OHIO	TRUMBULL	0.088
OHIO	WARREN	0.088
OHIO	WASHINGTON	0.088
OHIO	WOOD	0.085
OKLAHOMA	TULSA	0.087(0.090) [2]
PENNSYLVANIA	ALLEGHENY	0.092
PENNSYLVANIA	ARMSTRONG	0.092
PENNSYLVANIA	BEAVER	0.089
PENNSYLVANIA	BERKS	0.095
PENNSYLVANIA	BUCKS	0.105
PENNSYLVANIA	CAMBRIA	0.088
PENNSYLVANIA	DAUPHIN	0.094
PENNSYLVANIA	DELAWARE	0.094
PENNSYLVANIA	ERIE	0.087
PENNSYLVANIA	FRANKLIN	0.092
PENNSYLVANIA	GREENE	0.092
PENNSYLVANIA	LACKAWANNA	0.086
PENNSYLVANIA	LANCASTER	0.096
PENNSYLVANIA	LEHIGH	0.096
PENNSYLVANIA	MERCER	0.088
PENNSYLVANIA	MONTGOMERY	0.1
PENNSYLVANIA	NORTHAMPTON	0.097
PENNSYLVANIA	PHILADELPHIA	0.088
PENNSYLVANIA	WASHINGTON	0.088
PENNSYLVANIA	WESTMORELAND	0.086
PENNSYLVANIA	YORK	0.09
RHODE ISLAND	KENT	0.094
RHODE ISLAND	PROVIDENCE	0.087
RHODE ISLAND	WASHINGTON	0.092
SOUTH CAROLINA	ABBEVILLE	0.085
SOUTH CAROLINA	AIKEN	0.086
SOUTH CAROLINA	ANDERSON	0.09
SOUTH CAROLINA	CHEROKEE	0.087

STATE	COUNTY	DESIGN VALUE [1]
SOUTH CAROLINA	CHESTER	0.085
SOUTH CAROLINA	DARLINGTON	0.086
SOUTH CAROLINA	PICKENS	0.087
SOUTH CAROLINA	RICHLAND	0.093
SOUTH CAROLINA	SPARTANBURG	0.093
TENNESSEE	ANDERSON	0.09
TENNESSEE	BLOUNT	0.096
TENNESSEE	DAVIDSON	0.087
TENNESSEE	HAMILTON	0.092
TENNESSEE	HAYWOOD	0.089
TENNESSEE	JEFFERSON	0.096
TENNESSEE	KNOX	0.096
TENNESSEE	PUTNAM	0.087
TENNESSEE	RUTHERFORD	0.086
TENNESSEE	SEVIER	0.098
TENNESSEE	SHELBY	0.093
TENNESSEE	SULLIVAN	0.09
TENNESSEE	SUMNER	0.093
TENNESSEE	WILLIAMSON	0.088
TENNESSEE	WILSON	0.087
TEXAS	BRAZORIA	0.091
TEXAS	COLLIN	0.099
TEXAS	DALLAS	0.093
TEXAS	DENTON	0.101
TEXAS	ELLIS	0.088
TEXAS	GALVESTON	0.098
TEXAS	GREGG	0.095
TEXAS	HARRIS	0.11
TEXAS	JEFFERSON	0.085
TEXAS	MONTGOMERY	0.091
TEXAS	TARRANT	0.097
TEXAS	TRAVIS	0.088
VIRGINIA	ALEXANDRIA	0.088
VIRGINIA	ARLINGTON	0.092
VIRGINIA	CAROLINE	0.085
VIRGINIA	CHARLES CITY	0.087
VIRGINIA	CHESTERFIELD	0.086
VIRGINIA	FAIRFAX	0.095
VIRGINIA	HAMPTON	0.087
VIRGINIA	HENRICO	0.09
VIRGINIA	LOUDOUN	0.086
VIRGINIA	MADISON	0.087

STATE	COUNTY	DESIGN VALUE [1]
VIRGINIA	PRINCE WILLIAM	0.085
VIRGINIA	ROANOKE	0.086
VIRGINIA	STAFFORD	0.085
VIRGINIA	SUFFOLK	0.086
WEST VIRGINIA	CABELL	0.088
WEST VIRGINIA	KANAWHA	0.09
WEST VIRGINIA	WOOD	0.088
WISCONSIN	DOOR	0.093
WISCONSIN	JEFFERSON	0.086
WISCONSIN	KENOSHA	0.095
WISCONSIN	KEWAUNEE	0.089
WISCONSIN	MANITOWOC	0.092
WISCONSIN	MILWAUKEE	0.089
WISCONSIN	OZAUKEE	0.095
WISCONSIN	RACINE	0.087
WISCONSIN	ROCK	0.086
WISCONSIN	SHEBOYGAN	0.095
WISCONSIN	WAUKESHA	0.086

Notes:

[1] The level of the 8-hour ozone (O_3) National Ambient Air Quality Standard (NAAQS) is 0.08 parts per million (ppm). The air quality design value for the 8-hour O_3 NAAQS is the 3-year average of the annual 4th highest daily maximum 8-hour average O3 concentration. The 8-hour O_3 NAAQS is not met when the 8-hour ozone design value is greater than 0.08 ppm (85 ppb rounds up).

[2] The design value for Tulsa County is 0.090 ppm if, as presented on the Oklahoma's Department of Environmental Quality website, flagged data is considered in the calculation. See: the Skiatook site listed in the table at http://www.deq.state.ok.us/AQDNew/monitoring/charts/oz8hr-02.htm .