

Table 3: People at Risk in 25 Counties Most Polluted by Short-term Particle Pollution (24-hour PM_{2.5})

2008 Rank ¹	County	ST	Total Population ²	At-Risk Groups								High PM _{2.5} Days in Unhealthy Ranges 2004-2006	
				Under 18 ³	65 and Over ³	Pediatric Asthma ^{4,10}	Adult Asthma ^{5,10}	Chronic Bronchitis ^{6,10}	Emphysema ^{7,10}	CV Disease ⁸	Diabetes ⁹	Weighted Avg. ¹¹	Grade ¹²
1	ALLEGHENY	PA	1,223,411	260,084	208,070	24,136	82,980	43,618	21,048	369,779	84,488	62.0	F
2	RIVERSIDE	CA	2,026,803	558,015	227,387	51,784	108,629	60,147	24,481	458,324	104,810	46.7	F
3	FRESNO	CA	891,756	269,100	85,720	24,972	46,386	25,537	10,107	191,302	43,908	40.5	F
4	KERN	CA	780,117	231,876	68,328	21,518	40,509	22,115	8,401	161,673	37,147	40.2	F
5	LOS ANGELES	CA	9,948,081	2,680,206	1,013,531	248,723	546,345	301,816	121,319	2,282,052	524,249	35.3	F
6	JEFFERSON	AL	656,700	160,016	88,032	14,849	43,602	21,773	9,736	175,808	40,310	32.7	F
7	CACHE	UT	98,662	31,775	7,617	2,949	5,633	2,582	912	18,098	4,149	31.0	F
8	SALT LAKE	UT	978,701	290,056	82,647	26,917	57,387	28,043	10,674	205,228	47,248	28.7	F
9	SACRAMENTO	CA	1,374,724	362,210	151,043	33,613	76,326	42,383	17,447	325,142	74,607	20.5	F
10	WAYNE	MI	1,971,853	540,672	229,421	50,174	135,600	61,865	26,673	488,251	112,146	17.0	F
11	BALTIMORE CITY	MD	631,366	156,522	76,639	14,525	41,752	20,297	8,682	159,419	36,569	16.7	F
12	LANE	OR	337,870	69,407	47,140	6,441	26,191	11,694	5,190	93,986	21,543	16.0	F
13	SAN BERNARDINO	CA	1,999,332	594,264	162,012	55,148	104,080	56,618	21,114	409,388	94,247	15.5	F
14	ORANGE	CA	3,002,048	790,483	323,452	73,357	167,648	93,117	38,360	714,617	164,166	15.0	F
15	UTAH	UT	464,760	162,860	30,491	15,113	25,529	11,464	3,855	78,138	17,935	13.8	F
16	COOK	IL	5,288,655	1,357,756	617,749	126,000	325,805	167,028	70,605	1,302,314	298,808	13.7	F
16	UNION	NJ	531,088	133,705	66,633	12,408	30,347	17,246	7,544	137,345	31,515	13.7	F
18	CUYAHOGA	OH	1,314,241	320,716	198,458	29,762	95,075	44,424	20,803	369,393	84,525	13.3	F
19	SANTA CLARA	CA	1,731,281	431,737	181,904	40,065	98,498	54,554	22,180	415,324	95,503	13.0	F
20	KINGS	CA	146,153	40,276	10,847	3,738	7,621	4,083	1,406	28,207	6,483	11.0	F
21	MARION	IN	865,504	232,607	94,263	21,586	53,195	26,791	11,140	206,781	47,503	10.7	F
21	NEW HAVEN	CT	845,244	195,321	115,929	18,126	59,858	28,275	12,590	227,710	52,161	10.7	F
21	TULARE	CA	419,909	134,299	38,836	12,463	21,210	11,657	4,577	86,913	19,945	10.7	F
21	WASHINGTON	PA	206,432	42,415	35,223	3,936	14,134	7,418	3,571	62,792	14,348	10.7	F
25	CUMBERLAND	PA	226,117	46,055	33,969	4,274	15,696	7,893	3,588	64,400	14,736	10.3	F

Notes:

- (1) Counties are ranked by weighted average. See note 11 below.
- (2) **Total Population** represents the at-risk populations in counties with PM_{2.5} monitors.
- (3) Those **18 & under** and **65 & over** are vulnerable to PM_{2.5} and are, therefore, included. They should not be used as population denominators for disease estimates.
- (4) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2006 based on national rates (NHIS) applied to county population estimates (U.S. Census).
- (5) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2006 based on state rates (BRFSS) applied to county population estimates (U.S. Census).
- (6) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2006, based on national rates (NHIS) applied to county population estimates (U.S. Census).
- (7) **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to county population estimates (U.S. Census).
- (8) **CV disease** estimates are for adults 18 and over who had been diagnosed in 2006, based on national rates (NHIS) applied to county population estimates (U.S. Census). CV disease includes coronary heart disease, hypertension, stroke, angina pectoris and heart attack.
- (9) **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to county population estimates (U.S. Census).
- (10) Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
- (11) The **Weighted Average** was derived by counting the number of days in each unhealthy range (orange, red, purple, maroon) in each year (2004-2006), multiplying the total in each range by the assigned standard weights (i.e., 1 for orange, 1.5 for red, 2.0 for purple, 2.5 for maroon), and calculating the average.
- (12) **Grade** is assigned by weighted average as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.

Table 3a: People at Risk In 25 Counties Most Polluted by Long-term Particle Pollution (Annual PM_{2.5})

2008 Rank ¹	County	ST	Total Population ²	At-Risk Groups								PM _{2.5} Annual, 2004-2006	
				Under 18 ³	65 and Over ³	Pediatric Asthma ^{4,10}	Adult Asthma ^{5,10}	Chronic Bronchitis ^{6,10}	Emphysema ^{7,10}	CV Disease ⁸	Diabetes ⁹	Design Value ¹¹	Pass/Fail ¹²
1	RIVERSIDE	CA	2,026,803	558,015	227,387	51,784	108,629	60,147	24,481	458,324	104,810	20.6	FAIL
2	ALLEGHENY	PA	1,223,411	260,084	208,070	24,136	82,980	43,618	21,048	369,779	84,488	20.4	FAIL
3	SAN BERNARDINO	CA	1,999,332	594,264	162,012	55,148	104,080	56,618	21,114	409,388	94,247	19.4	FAIL
4	KERN	CA	780,117	231,876	68,328	21,518	40,509	22,115	8,401	161,673	37,147	18.9	FAIL
5	JEFFERSON	AL	656,700	160,016	88,032	14,849	43,602	21,773	9,736	175,808	40,310	18.6	FAIL
6	TULARE	CA	419,909	134,299	38,836	12,463	21,210	11,657	4,577	86,913	19,945	18.2	FAIL
7	LOS ANGELES	CA	9,948,081	2,680,206	1,013,531	248,723	546,345	301,816	121,319	2,282,052	524,249	17.9	FAIL
8	FULTON	GA	960,009	242,854	77,072	22,537	57,171	29,712	11,266	216,904	50,154	17.6	FAIL
9	HAMILTON	OH	822,596	206,309	110,796	19,145	59,408	27,026	12,134	218,783	50,142	17.4	FAIL
10	FRESNO	CA	891,756	269,100	85,720	24,972	46,386	25,537	10,107	191,302	43,908	17.2	FAIL
10	KINGS	CA	146,153	40,276	10,847	3,738	7,621	4,083	1,406	28,207	6,483	17.2	FAIL
10	WAYNE	MI	1,971,853	540,672	229,421	50,174	135,600	61,865	26,673	488,251	112,146	17.2	FAIL
10	CUYAHOGA	OH	1,314,241	320,716	198,458	29,762	95,075	44,424	20,803	369,393	84,525	17.2	FAIL
14	BIBB	GA	154,903	42,130	19,712	3,910	8,948	4,905	2,172	39,372	9,024	16.8	FAIL
15	CLAYTON	GA	271,240	81,630	18,080	7,575	15,129	7,606	2,714	53,602	12,391	16.7	FAIL
16	MADISON	IL	265,303	61,579	36,877	5,715	16,877	8,840	3,944	71,281	16,316	16.6	FAIL
17	GWINNETT	GA	757,104	215,360	44,825	19,985	43,263	21,850	7,657	152,370	35,344	16.4	FAIL
17	BROOKE	WV	24,132	4,668	4,563	433	1,671	897	448	7,781	1,776	16.4	FAIL
17	KANAWHA	WV	192,419	41,265	31,648	3,829	12,938	6,878	3,302	58,111	13,298	16.4	FAIL
20	JEFFERSON	OH	70,125	14,124	13,077	1,311	5,294	2,573	1,281	22,267	5,081	16.3	FAIL
20	BEAVER	PA	175,736	36,819	31,854	3,417	11,912	6,369	3,151	54,876	12,527	16.3	FAIL
20	LANCASTER	PA	494,486	124,995	70,706	11,600	32,198	16,215	7,405	132,700	30,353	16.3	FAIL
20	YORK	PA	416,322	94,921	56,154	8,809	27,996	14,080	6,270	113,393	26,009	16.3	FAIL
24	CLARK	IN	103,569	24,373	12,865	2,262	6,644	3,413	1,473	26,951	6,186	16.2	FAIL
25	COBB	GA	679,325	179,373	54,874	16,646	39,849	20,858	8,002	153,327	35,459	16.1	FAIL
25	FLOYD	GA	95,322	23,599	13,394	2,190	5,686	3,102	1,392	25,105	5,739	16.1	FAIL
25	CABELL	WV	93,904	19,357	15,251	1,796	6,347	3,279	1,528	27,186	6,206	16.1	FAIL

Notes:

- (1) Counties are ranked by design value. See note 11 below.
- (2) **Total Population** represents the at-risk populations in counties with PM_{2.5} monitors.
- (3) Those **18 & under** and **65 & over** are vulnerable to PM_{2.5} and are, therefore, included. They should not be used as population denominators for disease estimates.
- (4) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2006 based on national rates (NHIS) applied to county population estimates (U.S. Census).
- (5) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2006 based on state rates (BRFSS) applied to county population estimates (U.S. Census).
- (6) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2006, based on national rates (NHIS) applied to county population estimates (U.S. Census).
- (7) **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to county population estimates (U.S. Census).
- (8) **CV disease** estimates are for adults 18 and over who had been diagnosed in 2006, based on national rates (NHIS) applied to county population estimates (U.S. Census). CV disease includes coronary heart disease, hypertension, stroke, angina pectoris and heart attack.
- (9) **Diabetes** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to county population estimates (U.S. Census).
- (10) Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
- (11) The **Design Value** is the calculated concentration of a pollutant based on the form of the National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality in a county meets the standard. The source for the Design Values is EPA, communication from the Office of Air Quality Planning & Standards, Mark Schmidt, October 31, 2007.
- (12) **Grades** are based on EPA's determination of meeting or failure to meet the NAAQS for annual PM_{2.5} levels during 2004-2006. Counties meeting the NAAQS received grades of Pass; counties not meeting the NAAQS received grades of Fail.

Table 3b: People at Risk in 25 Most Ozone-Polluted Counties

2008 Rank ¹	County	ST	At-Risk Groups							High Ozone Days in Unhealthy Ranges 2004-2006	
			Total Population ²	Under 18 ³	65 and Over ³	Pediatric Asthma ^{4,8}	Adult Asthma ^{5,8}	Chronic Bronchitis ^{6,8}	Emphysema ^{7,8}	Weighted Avg. ⁹	Grade ¹⁰
1	SAN BERNARDINO	CA	1,999,332	594,264	162,012	55,148	104,080	56,618	21,114	90.3	F
2	KERN	CA	780,117	231,876	68,328	21,518	40,509	22,115	8,401	83.3	F
3	RIVERSIDE	CA	2,026,803	558,015	227,387	51,784	108,629	60,147	24,481	76.8	F
4	TULARE	CA	419,909	134,299	38,836	12,463	21,210	11,657	4,577	67.8	F
5	LOS ANGELES	CA	9,948,081	2,680,206	1,013,531	248,723	546,345	301,816	121,319	64.7	F
6	HARRIS	TX	3,886,207	1,124,974	297,691	104,398	198,772	113,022	42,306	36.0	F
7	FRESNO	CA	891,756	269,100	85,720	24,972	46,386	25,537	10,107	34.0	F
8	PLACER	CA	326,242	71,679	46,616	6,652	19,423	10,983	4,892	25.2	F
9	EL DORADO	CA	178,066	39,130	20,011	3,631	10,832	6,057	2,566	22.7	F
10	TARRANT	TX	1,671,295	466,165	139,685	43,260	86,968	49,475	18,858	22.0	F
11	SACRAMENTO	CA	1,374,724	362,210	151,043	33,613	76,326	42,383	17,447	21.5	F
12	NEVADA	CA	98,764	18,649	16,844	1,731	6,355	3,670	1,771	20.7	F
13	DENTON	TX	584,238	156,494	31,916	14,523	30,400	16,817	5,601	16.5	F
14	BRAZORIA	TX	287,898	78,398	25,582	7,275	15,157	8,681	3,379	15.8	F
15	VENTURA	CA	799,720	212,956	86,816	19,762	44,895	25,020	10,456	15.0	F
16	DALLAS	TX	2,345,815	670,778	195,320	62,248	120,807	68,194	25,789	13.0	F
17	FAIRFIELD	CT	900,440	226,859	116,628	21,053	62,135	29,651	13,225	12.2	F
18	HARFORD	MD	241,402	60,433	26,413	5,608	15,951	7,777	3,263	11.2	F
19	FAIRFAX	VA	1,010,443	253,542	92,711	23,529	63,006	32,930	13,465	10.8	F
19	EAST BATON ROUGE PARISH	LA	429,073	107,217	45,592	9,950	18,974	13,504	5,503	10.8	F
21	COLLIN	TX	698,851	190,388	45,215	17,668	36,347	20,401	7,191	10.7	F
22	OCEAN	NJ	562,335	127,136	116,577	11,798	33,026	19,734	10,171	10.2	F
23	CAMDEN	NJ	517,001	129,114	62,724	11,982	29,648	16,725	7,211	10.0	F
24	ROWAN	NC	136,254	32,437	19,049	3,010	7,036	4,534	2,040	9.0	F
24	SAN DIEGO	CA	2,941,454	745,182	327,369	69,153	164,778	91,371	37,390	9.0	F
24	FULTON	GA	960,009	242,854	77,072	22,537	57,171	29,712	11,266	9.0	F

Notes:

- (1) Counties are ranked by weighted average. See note 10 below.
- (2) **Total Population** represents the at-risk populations in counties with ozone monitors.
- (3) Those **18 & under** and **65 & over** are vulnerable to ozone and are, therefore, included. They should not be used as population denominators for disease estimates.
- (4) **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2006 based on national rates (NHIS) applied to county population estimates (U.S. Census).
- (5) **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2006 based on state rates (BRFSS) applied to county population estimates (U.S. Census).
- (6) **Chronic bronchitis** estimates are for adults 18 and over who had been diagnosed in 2006, based on national rates (NHIS) applied to county population estimates (U.S. Census).
- (7) **Emphysema** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on national rates (NHIS) applied to county population estimates (U.S. Census).
- (8) Adding across rows does not produce valid estimates, e.g., summing pediatric and adult asthma and/or emphysema and chronic bronchitis.
- (9) The **Weighted Average** was derived by counting the number of days in each unhealthy range (orange, red, purple) in each year (2004-2006), multiplying the total in each range by the assigned standard weights (i.e., 1 for orange, 1.5 for red, 2.0 for purple), and calculating the average.
- (10) **Grade** is assigned by weighted average as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.