SECTION 7.1 APPENDIX A

RESIDENTIAL WOOD COMBUSTION – DETAILED TABLES

This Appendix presents the summary of 2005 residential wood use and associated emissions for Residential Wood Combustion in the state.

List of Tables

Table A-1: FIREPLACES - Number of Devices

AB	Dis	County (AB)	H_{total} # of homes in 2005	P_{fp} % of homes with wood burning fireplaces	$P_{fp,u}$ % of homes that use their wood burning fireplace	$[P_{fp}]x[P_{fp,u}]$ % of homes with wood burning fireplaces that are in use	$H_{fp,u}$ # of homes with fireplaces in use	M_{fp} # of fireplaces per home	FP # of fireplaces in use	Reference	Ref.
GBV	GBU	Alpine	528	66.0	-	66.0	348	1.1	383	NCRA, 1988; Tables II, VIII	2
GBV	GBU	Inyo	7,808	47.7	-	47.7	3,724	1.1	4,096	NCRA, 1988; Tables II, VIII	2
GBV	GBU	Mono	5,774	69.7	-	69.7	4,025	1.1	4,427	NCRA, 1988; Tables II, VIII	2
LC	LAK	Lake	24,790	46	77	35.4	8,781	1.1	9,659	OMNI, 2003; 2.3a, 3.1	3
LT	ED	El Dorado (LT)	14,220	39.0	71	27.7	3,938	1.1	4,331	OMNI, 2003; 2.3a, 3.1	3
LT	PLA	Placer (LT)	6,000	39.0	71	27.7	1,661	1.1	1,827	OMNI, 2003; 2.3a, 3.1	3
MC	AMA	Amador	13,961	50.6	-	50.6	7,060	1.1	7,766	NCRA, 1988; Tables II, VIII	2
MC	CAL	Calaveras	18,573	46	77	35.4	6,579	1.1	7,236	OMNI, 2003; 2.3a, 3.1	3
MC	ED	El Dorado (MC)	51,742	39.0	71	27.7	14,327	1.1	15,760	OMNI, 2003; 2.3a, 3.1	3
MC	MPA	Mariposa	7,276	46	77	35.4	2,577	1.1	2,835	OMNI, 2003; 2.3a, 3.1	3
MC	NSI	Nevada	40,157	46	77	35.4	14,224	1.1	15,646	OMNI, 2003; 2.3a, 3.1	3
MC	NSI	Plumas	9,775	64.2	-	64.2	6,274	1.1	6,901	NCRA, 1988; Tables II, VIII	2
MC	NSI	Sierra	1,568	58.4	-	58.4	915	1.1	1,006	NCRA, 1988; Tables II, VIII	2
MC	PLA	Placer (MC)	10,799	39.0	71	27.7	2,990	1.1	3,289	OMNI, 2003; 2.3a, 3.1	3
MC	TUO	Tuolumne	22,056	46	77	35.4	7,812	1.1	8,593	OMNI, 2003; 2.3a, 3.1	3
MD	AV	Los Angeles (MD)	96,033		-	0.0	0		19,062	Census, 2004a, Table 1-4; Census, 2009	4, 8
MD	KER	Kern (MD)	37,223	32	37	11.8	4,407	1.1	4,848	SJVUAPCD, 2010; QH, QI	9
MD	MOJ	Riverside (MD)	6,583		-	0.0	0		1,729	Census, 2003b, Table 1-4; Census, 2009	6, 8
MD	MOJ	San Bernardino (MD)	125,319		-	0.0	0		36,488	Census, 2003b, Table 1-4; Census, 2009	6, 8
MD	SC	Riverside (MD)	3,591		-	0.0	0		1,038	Census, 2003b, Table 1-4; Census, 2009	6, 8
NC	MEN	Mendocino	34,798	51.2	-	51.2	17,814	1.1	19,595	NCRA, 1988; Tables II, VIII	2
NC	NCU	Del Norte	9,513	58.0	-	58.0	5,521	1.1	6,073	NCRA, 1988; Tables II, VIII	2
NC	NCU	Humboldt	53,152	42.4	-	42.4	22,537	1.1	24,791	NCRA, 1988; Tables II, VIII	2
NC	NCU	Trinity	5,739	71.2	-	71.2	4,085	1.1	4,494	NCRA, 1988; Tables II, VIII	2
NC	NS	Sonoma (NC)	23,511	55.8	40.9	22.8	5,366	1.1	5,902	BAAQMD, 2006; Figs. 2, 15	1
NCC	MBU	Monterey	126,559	30.7	-	30.7	38,794	1.1	42,674	NCRA, 1988; Tables II, VIII	2
NCC	MBU	San Benito	16,980	32.1	-	32.1	5,443	1.1	5,987	NCRA, 1988; Tables II, VIII	2
NCC	MBU	Santa Cruz	94,693	43.1	-	43.1	40,814	1.1	44,895	NCRA, 1988; Tables II, VIII	2
NEP	LAS	Lassen	10,214	61.0	-	61.0	6,230	1.1	6,853	NCRA, 1988; Tables II, VIII	2
NEP	MOD	Modoc	3,978	53.4	-	53.4	2,123	1.1	2,335	NCRA, 1988; Tables II, VIII	2
NEP	SIS	Siskiyou	19,472	61.2	-	61.2	11,922	1.1	13,115	NCRA, 1988; Tables II, VIII	2
SC	SC	Los Angeles (SC)	3,105,059		-	0.0	0		616,322	Census, 2004a, Table 1-4; Census, 2009	4, 8
SC	SC	Orange	977,547		-	0.0	0		307,999	Census, 2003a, Table 1-4; Census, 2009	5, 8
SC	SC	Riverside (SC)	463,188		-	0.0	0		132,124	Census, 2003b, Table 1-4; Census, 2009	6, 8
SC	SC	San Bernardino (SC)	444,312			0.0	0		127,223	Census, 2003b, Table 1-4; Census, 2009	6, 8
SCC	SB	Santa Barbara	143,106	38.0	-	38.0	54,380	1.0	54,380	Sierra, 1989; Table E-3	10
SCC	SLO	San Luis Obispo	100,494	37.4	-	37.4	37,607	1.1	41,367	NCRA, 1988; Tables II, VIII	2
SCC	VEN	Ventura	258,483	27.1	-	27.1	69,983	1.1	76,981	NCRA, 1988; Tables II, VIII	2
SD	SD	San Diego	1,056,548			0.0	0		266,077	Census, 2004b, Table 1-4; Census, 2009	7, 8
SF	BA	Alameda	542,540	54.0	32.2	17.4	94,337	1.1	103,771	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Contra Costa	368,770	67.0	35.7	23.9	88,206	1.1	97,027	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Marin	103,250	63.8	46.6	29.7	30,697	1.1	33,767	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Napa	49,290	61.2	39.1	23.9	11,795	1.1	12,974	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	San Francisco	338,700	45.0	27.8	12.5	42,371	1.1	46,609	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	San Mateo	261,280	68.8	40.2	27.7	72,264	1.1	79,490	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Santa Clara	595,550	60.6	27.9	16.9	100,692	1.1	110,761	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Solano (SF)	101,410	62.5	33.9	21.2	21,486	1.1	23,635	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Sonoma (SF)	158,970	55.8	40.9	22.8	36,280	1.1	39,908	BAAQMD, 2006; Figs. 2, 15	1
SJV	SJU	Fresno	261,554	41	34	13.9	36,461	1.1	40,107	SJVUAPCD, 2010; QH, QI	9
SJV	SJU	Kern (SJV)	181,734	32	37	11.8	21,517	1.1	23,669	SJVUAPCD, 2010; QH, QI	9
SJV	SJU	Kings	35,812	32	37	11.8	4,240	1.1	4,664	SJVUAPCD, 2010; QH, QI	9
SJV	SJU	Madera	38,051	33	43	14.2	5,399	1.1	5,939	SJVUAPCD, 2010; QH, QI	9
SJV	SJU	Merced	67,116	33	43	14.2	9,524	1.1	10,476	SJVUAPCD, 2010; QH, QI	9
SJV	SJU	San Joaquin	193,423	54	49	26.5	51,180	1.1	56,298	SJVUAPCD, 2010; QH, QI	9
SJV	SJU	Stanislaus	153,742	46	43	19.8	30,410	1.1	33,451	SJVUAPCD, 2010; QH, QI	9
SJV	SJU	Tulare	114,640	33	57	18.8	21,564	1.1	23,720	SJVUAPCD, 2010; QH, QI	9
SS	IMP	Imperial	43,771	6.9	-	6.9	3,020	1.1	3,322	Sierra, 1989; Table E-3	10

Table A-1: FIREPLACES - Number of Devices

AB	Dis	County (AB)	H_{total} # of homes in 2005	P_{fp} % of homes with wood burning fireplaces	$P_{fp,u}$ % of homes that use their wood burning fireplace	$[P_{fp}]x[P_{fp,u}]$ % of homes with wood burning fireplaces that are in use	$H_{fp,u}$ # of homes with fireplaces in use	M_{fp} # of fireplaces per home	FP # of fireplaces in use	Reference	Ref.
SS	SC	Riverside (SS)	125,073		-	0.0	0		35,975	Census, 2003b, Table 1-4; Census, 2009	6, 8
SV	BUT	Butte	85,478	39.0	71	27.7	23,669	1.1	26,036	OMNI, 2003; 2.3a, 3.1	3
SV	COL	Colusa	6,617	39.0	71	27.7	1,832	1.1	2,015	OMNI, 2003; 2.3a, 3.1	3
SV	FR	Sutter	29,776	39	71	27.7	8,245	1.1	9,069	OMNI, 2003; 2.3a, 3.1	3
SV	FR	Yuba	22,021	39	71	27.7	6,098	1.1	6,707	OMNI, 2003; 2.3a, 3.1	3
SV	GLE	Glenn	9,506	39.0	71	27.7	2,632	1.1	2,895	OMNI, 2003; 2.3a, 3.1	3
SV	PLA	Placer (SV)	103,191	31	63	19.5	20,153	1.1	22,169	SMAQMD, 2007; App. D, Fig. 3, Fig. 11	11
SV	SAC	Sacramento	500,604	31	63	19.5	97,768	1.1	107,545	SMAQMD, 2007; App. D, Fig. 3, Fig. 11	11
SV	SHA	Shasta	68,220	39.0	71	27.7	18,890	1.1	20,779	OMNI, 2003; 2.3a, 3.1	3
SV	TEH	Tehama	22,410	39	71	27.7	6,205	1.1	6,826	OMNI, 2003; 2.3a, 3.1	3
SV	YS	Solano (SV)	49,415	31	63	19.5	9,651	1.1	10,616	OMNI, 2003; 2.3a, 3.1	3
SV	YS	Yolo	66,027	31	63	19.5	12,895	1.1	14,185	SMAQMD, 2007; App. D, Fig. 3, Fig. 11	11
			12,149,062						**2,970,515**		

Notes:
H_{total}: Number of occupied housing units/homes in 2005.
P_{fp}: Percent of homes with wood burning fireplaces.
$P_{fp,u}$: Percent of homes with a fireplace, where the fireplace was actually used during the burn season.
$H_{fp,u}$: Number of homes with fireplaces that are actually being used. $H_{fp,u} = [H_{total}]*[P_{fp}]*[P_{fp,u}]$
M_{fp} = 1.1 fireplaces per home
FP_{all} = Total number of fireplaces that are actually being used. $FP_{all} = [H_{total}]*[P_{fp}]*[P_{fp,u}] *[M_{fp}]$
Note: Estimates for San Diego and South Coast counties are based on U.S. Census American Housing Survey and alternative method.

References:

1 BAAQMD, 2006. Bay Area Air Quality Management District; "Spare the Air Tonight Study, 2005-2006 Winter Wood Smoke Season", Figures 2 and 15; April 2006; http://sparetheair.org/~/media/STA/Files/3/STA/2005WinterReport.ashx

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For the NCRA report, [% of Homes with a Wood-Burning Fireplace] = [% of Wood-Burning Households, Table II]*[% of Wood-Burning Devices that are Fireplaces = 77.8%, Table VIII]

3 OMNI, 2003. D. Broderick and J. Houck; OMNI Consulting Services, Inc.; "Results of Wood Burning Survey - Sacramento, San Joaquin, and San Francisco Areas, University of California Berkeley/California Air Resources Board - GIS Study", Sections 2.3a and 3.1; Jan. 15, 2003; http://www.omni-test.com/publications/final.pdf

4 Census, 2004a. U.S. Census Bureau; "American Housing Survey for the Los Angeles-Long Beach Metropolitan Area: 2003"; Table 1-4; Issued December 2004; http://www.census.gov/hhes/www/housing/ahs/metropolitandata.html

5 Census, 2003a. U.S. Census Bureau; "American Housing Survey for the Anaheim-Santa Ana Metropolitan Area: 2002"; Table 1-4; Issued July 2003; http://www.census.gov/hhes/www/housing/ahs/metropolitandata.html

6 Census, 2003b. U.S. Census Bureau; "American Housing Survey for the Riverside-San Bernardino-Ontario Metropolitan Area: 2002"; Table 1-4; Issued July 2003; http://www.census.gov/hhes/www/housing/ahs/metropolitandata.html

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8 Census, 2009. U.S. Census Bureau; Characteristics of New Housing; "Characteristics of New One-Family Houses Completed, Number of Fireplaces" (1973 - 2008) and "Characteristics of New One-Family Houses Sold, Presence of Fireplace" (1999 - 2008); released July 2009; http://www.census.gov/const/www/charindex_excel.html#singlecomplete

9 SJVUAPCD, 2010. San Joaquin Valley Air Pollution Control District; "District's Comprehensive Public Outreach and Education Program"; summary of survey conducted by CC&G (Feb.-May 2010); presented at the September 29-30, 2010 board hearing.
County-level data provided by SJV/Jessica Fierro on 06/07/2011.

10 Sierra, 1989. Sierra Research, Inc.; "Draft Report, Residential Wood Use in California", prepared for the U.S. Environmental Protection Agency; October 20, 1989.

11 SMAQMD, 2007. Sacramento Metropolitan Air Quality Management District; "Staff Report, Rule 421, Mandatory Episodic Curtailment of Wood and Other Solid Fuel Burning ", App. D, Fig. 3, Fig. 11; September 7, 2007; http://www.airquality.org/notices/Rules2007/Rule421StaffReport27Sep2007-Final.pdf

12 Total Homes Data Obtained From:
State of California, Department of Finance; E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark; May 2010; http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2001-10/documents/E-5_2010.xls
Data represent the number of Occupied Housing Units during 2005.
For the San Joaquin district, the data represent the number of Occupied Housing Units during 2003, because they had a moratorium on new wood-burning fireplaces after 2003.
For the Bay Area AQMD, housing unit data is from the Association of Bay Area Governments (ABAG), provided by e-mail from BAAQMD/Eric Pop to ARB/Monique Davis on 10/5/09.

13 Population split for Solano County obtained from YSAQMD/Matt Jones via e-mail to ARB/M. Davis on 8/11/09:
35% in Sacramento Valley air basin; 65% in San Francisco air basin.

14 Population split for Sonoma County obtained from:
BAAQMD, 2007. Bay Area Air Quality Management District; "Workshop Report, Wood Smoke Reduction Program, Proposed Regulation 6, Rule 3 to Control Particulate Matter and Visible Emissions from Wood-Burning Devices", page 14; November, 2007. 87% of Sonoma County in San Francisco air basin.
http://hank.baaqmd.gov/pln/ruledev/6-3/0603_wkrpt_100507.pdf

15 Population split for El Dorado County provided by El Dorado County APCD, via 10/10/08 e-mail from Marcella McTaggart.
16 Population split for Placer County provided by Placer County APCD, via 10/10/08 e-mail from Heather Kuklo.
17 For other counties, the split county fractions were derived using census 2000 data. Current air basin and county map layers were overlaid onto the Census 2000 county tract populations. See ARB/Vivian Lerch e-mail dated 2/23/09 with file "Population trends 2008.xls".
18 Number of fireplaces per home (Mfp) accounts for the fact that some homes have multiple fireplaces. The estimate of 1.1 fireplaces per home was obtained from the (OMNI, 2003) reference.

Table A-2: Fireplaces – Amount of Cord Wood Burned

AB	Dis	County (AB)	$P_{fp,cord}$ % of people who used their fireplaces and primarily burned cord wood	$P_{fp,aes}$ % of fireplace use that is for aesthetic purposes	$P_{fp,heat}$ % of fireplace use that is for heating purposes	FP_{aes} # of fireplaces being used for aesthetic purposes	$N_{cord,aes}$ # of cords burned in fireplaces – aesthetics (cord/ fireplace/yr)	F_{aes} Cord wood burned in fireplaces for aesthetics, tons/yr	FP_{heat} # of fireplaces being used for heating purposes	$N_{cord,heat}$ # of cords burned in fireplaces – heating (cord/ fireplace/yr)	F_{heat} Cord wood burned in fireplaces for heating, tons/yr	$F_{aes}+F_{heat}$ Total cord wood burned in fireplaces, tons/yr	Reference	Ref.
GBV	GBU	Alpine	88.0	59	41	199	0.069	21	138	0.656	140	161	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
GBV	GBU	Inyo	88.0	59	41	2,127	0.069	226	1,478	0.656	1,493	1,719	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
GBV	GBU	Mono	88.0	59	41	2,299	0.069	244	1,597	0.656	1,614	1,858	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
LC	LAK	Lake	88.0	59	41	5,015	0.069	533	3,485	0.656	3,521	4,053	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
LT	ED	El Dorado (LT)	88.0	56	44	2,134	0.069	227	1,677	0.656	1,694	1,921	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
LT	PLA	Placer (LT)	88.0	56	44	901	0.069	96	708	0.656	715	811	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
MC	AMA	Amador	88.0	59	41	4,032	0.069	428	2,802	0.656	2,831	3,259	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
MC	CAL	Calaveras	88.0	59	41	3,757	0.069	399	2,611	0.656	2,638	3,037	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
MC	ED	El Dorado (MC)	88.0	56	44	7,767	0.069	825	6,102	0.656	6,165	6,990	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
MC	MPA	Mariposa	88.0	59	41	1,472	0.069	156	1,023	0.656	1,033	1,190	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
MC	NSI	Nevada	88.0	59	41	8,123	0.069	863	5,645	0.656	5,703	6,566	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
MC	NSI	Plumas	88.0	59	41	3,583	0.069	381	2,490	0.656	2,516	2,896	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
MC	NSI	Sierra	88.0	59	41	523	0.069	56	363	0.656	367	422	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
MC	PLA	Placer (MC)	88.0	56	44	1,621	0.069	172	1,274	0.656	1,287	1,459	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
MC	TUO	Tuolumne	88.0	59	41	4,462	0.069	474	3,101	0.656	3,132	3,606	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
MD	AV	Los Angeles (MD)				19,005			57			367	Census, 2004a, Tables 1-4; OMNI, 2006, Tables 3.22, 4.4	4, 8
MD	KER	Kern (MD)	88.0	50.8	49.2	2,167	0.069	230	2,099	0.656	2,120	2,351	Sierra, 1989, Table D-3	9
MD	MOJ	Riverside (MD)				1,712			17			39	Census, 2003B, Table 1-4; OMNI, 2006, Tables 3.22, 4.4	6, 8
MD	MOJ	San Bernardino (MD)				36,129			359			819	Census, 2003B, Table 1-4; OMNI, 2006, Tables 3.22, 4.4	6, 8
MD	SC	Riverside (MD)				1,027			10			23	Census, 2003b, Tables 1-4; OMNI, 2006, Tables 3.22, 4.4	6, 8
NC	MEN	Mendocino	88.0	59	41	10,174	0.069	1,081	7,070	0.656	7,142	8,223	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
NC	NCU	Del Norte	88.0	59	41	3,153	0.069	335	2,191	0.656	2,214	2,549	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
NC	NCU	Humboldt	88.0	59	41	12,871	0.069	1,368	8,944	0.656	9,036	10,404	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
NC	NCU	Trinity	88.0	59	41	2,333	0.069	248	1,621	0.656	1,638	1,886	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
NC	NS	Sonoma (NC)	83.9	54	46	2,670	0.619	2,544	2,284	0.619	2,176	4,720	BAAQMD, 2006, Fig. 5, Fig. 12; BAAQMD, 2009	1, 2
NCC	MBU	Monterey	88.0	59	41	22,156	0.069	2,354	15,397	0.656	15,554	17,909	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
NCC	MBU	San Benito	88.0	59	41	3,108	0.069	330	2,160	0.656	2,182	2,513	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
NCC	MBU	Santa Cruz	88.0	59	41	23,310	0.069	2,477	16,198	0.656	16,364	18,841	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
NEP	LAS	Lassen	88.0	59	41	3,558	0.069	378	2,473	0.656	2,498	2,876	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
NEP	MOD	Modoc	88.0	59	41	1,213	0.069	129	843	0.656	851	980	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
NEP	SIS	Siskiyou	88.0	59	41	6,809	0.069	724	4,732	0.656	4,780	5,504	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
SC	SC	Los Angeles (SC)				614,483			1,839			12,031	Census, 2004a, Tables 1-4; OMNI, 2006, Tables 3.22, 4.4	4, 8
SC	SC	Orange				307,328			671			5,907	Census, 2003a, Tables 1-4; OMNI, 2006, Tables 3.22, 4.4	5, 8
SC	SC	Riverside (SC)				130,823			1,300			2,965	Census, 2003b, Tables 1-4; OMNI, 2006, Tables 3.22, 4.4	6, 8
SC	SC	San Bernardino (SC)				125,971			1,252			2,855	Census, 2003b, Tables 1-4; OMNI, 2006, Tables 3.22, 4.4	6, 8
SCC	SB	Santa Barbara	88.0	88	12	42,112	0.069	4,475	5,743	0.656	5,801	10,276	Sierra, 1989, Table D-3; Houck, 2001, p. 1	9, 11

Table A-2: Fireplaces – Amount of Cord Wood Burned

AB	Dis	County (AB)	$P_{fp,cord}$ % of people who used their fireplaces and primarily burned cord wood	$P_{fp,aes}$ % of fireplace use that is for aesthetic purposes	$P_{fp,heat}$ % of fireplace use that is for heating purposes	FP_{aes} # of fireplaces being used for aesthetic purposes	$N_{cord,aes}$ # of cords burned in fireplaces – aesthetics (cord/ fireplace/yr)	F_{aes} Cord wood burned in fireplaces for aesthetics, tons/yr	FP_{heat} # of fireplaces being used for heating purposes	$N_{cord,heat}$ # of cords burned in fireplaces – heating (cord/ fireplace/yr)	F_{heat} Cord wood burned in fireplaces for heating, tons/yr	$F_{aes}+F_{heat}$ Total cord wood burned in fireplaces, tons/yr	Reference	Ref.
SCC	SLO	San Luis Obispo	88.0	59	41	21,478	0.069	2,282	14,925	0.656	15,078	17,360	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
SCC	VEN	Ventura	88.0	59	41	39,969	0.069	4,247	27,775	0.656	28,059	32,306	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
SD	SD	San Diego				264,722			1,354			5,683	Census, 2004b, Tables 1-4; OMNI, 2006, Tables 3.22, 4.4	7, 8
SF	BA	Alameda	83.9	54	46	46,943	0.369	26,684	40,150	0.369	22,823	49,507	BAAQMD, 2006, Fig. 5, Fig. 12; BAAQMD, 2009	1, 2
SF	BA	Contra Costa	83.9	54	46	43,892	0.751	50,785	37,541	0.751	43,436	94,221	BAAQMD, 2006, Fig. 5, Fig. 12; BAAQMD, 2009	1, 2
SF	BA	Marin	83.9	54	46	15,275	0.194	4,570	13,065	0.194	3,909	8,479	BAAQMD, 2006, Fig. 5, Fig. 12; BAAQMD, 2009	1, 2
SF	BA	Napa	83.9	54	46	5,869	0.536	4,849	5,020	0.536	4,147	8,995	BAAQMD, 2006, Fig. 5, Fig. 12; BAAQMD, 2009	1, 2
SF	BA	San Francisco	83.9	54	46	21,085	0.103	3,332	18,033	0.103	2,850	6,181	BAAQMD, 2006, Fig. 5, Fig. 12; BAAQMD, 2009	1, 2
SF	BA	San Mateo	83.9	54	46	35,959	0.162	8,996	30,756	0.162	7,694	16,689	BAAQMD, 2006, Fig. 5, Fig. 12; BAAQMD, 2009	1, 2
SF	BA	Santa Clara	83.9	54	46	50,106	0.493	38,079	42,855	0.493	32,568	70,647	BAAQMD, 2006, Fig. 5, Fig. 12; BAAQMD, 2009	1, 2
SF	BA	Solano (SF)	83.9	54	46	10,692	0.636	10,474	9,145	0.636	8,958	19,433	BAAQMD, 2006, Fig. 5, Fig. 12; BAAQMD, 2009	1, 2
SF	BA	Sonoma (SF)	83.9	54	46	18,054	0.619	17,201	15,441	0.619	14,712	31,913	BAAQMD, 2006, Fig. 5, Fig. 12; BAAQMD, 2009	1, 2
SJV	SJU	Fresno	88.0	59.7	40.3	21,070	0.91	29,528	14,223	0.91	19,933	49,461	Sierra, 1989, Table D-3; Houck, 2001; Franz, 1997	9, 11, 12
SJV	SJU	Kern (SJV)	88.0	50.8	49.2	10,581	0.91	14,828	10,248	0.91	14,361	29,189	Sierra, 1989, Table D-3; Houck, 2001; Franz, 1997	9, 11, 12
SJV	SJU	Kings	88.0	52.6	47.4	2,159	0.91	3,026	1,946	0.91	2,726	5,752	Sierra, 1989, Table D-3; Houck, 2001; Franz, 1997	9, 11, 12
SJV	SJU	Madera	88.0	21.6	78.4	1,129	0.91	1,582	4,098	0.91	5,743	7,325	Sierra, 1989, Table D-3; Houck, 2001; Franz, 1997	9, 11, 12
SJV	SJU	Merced	88.0	50.0	50.0	4,610	0.91	6,460	4,610	0.91	6,460	12,920	Sierra, 1989, Table D-3; Houck, 2001; Franz, 1997	9, 11, 12
SJV	SJU	San Joaquin	88.0	52.6	47.4	26,059	0.91	36,519	23,483	0.91	32,909	69,428	Sierra, 1989, Table D-3; Houck, 2001; Franz, 1997	9, 11, 12
SJV	SJU	Stanislaus	88.0	61.5	38.5	18,104	0.91	25,371	11,333	0.91	15,882	41,253	Sierra, 1989, Table D-3; Houck, 2001; Franz, 1997	9, 11, 12
SJV	SJU	Tulare	88.0	52.6	47.4	10,980	0.91	15,387	9,894	0.91	13,866	29,252	Sierra, 1989, Table D-3; Houck, 2001; Franz, 1997	9, 11, 12
SS	IMP	Imperial	88.0	79	21	2,298	0.069	244	626	0.656	632	876	Sierra, 1989, Table D-3	9
SS	SC	Riverside (SS)				35,621			354			807	Census, 2003b, Tables 1-4; OMNI, 2006, Tables 3.22, 4.4	6, 8
SV	BUT	Butte	88.0	56	44	12,830	0.069	1,363	10,081	0.656	10,184	11,548	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
SV	COL	Colusa	88.0	56	44	993	0.069	106	780	0.656	788	894	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
SV	FR	Sutter	88.0	56	44	4,469	0.069	475	3,512	0.656	3,548	4,023	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
SV	FR	Yuba	88.0	56	44	3,305	0.069	351	2,597	0.656	2,624	2,975	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
SV	GLE	Glenn	88.0	56	44	1,427	0.069	152	1,121	0.656	1,133	1,284	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11

Table A-2: Fireplaces – Amount of Cord Wood Burned

AB	Dis	County (AB)	$P_{fp,cord}$ % of people who used their fireplaces and primarily burned cord wood	$P_{fp,aes}$ % of fireplace use that is for aesthetic purposes	$P_{fp,heat}$ % of fireplace use that is for heating purposes	FP_{aes} # of fireplaces being used for aesthetic purposes	$N_{cord,aes}$ # of cords burned in fireplaces – aesthetics (cord/ fireplace/yr)	F_{aes} Cord wood burned in fireplaces for aesthetics, tons/yr	FP_{heat} # of fireplaces being used for heating purposes	$N_{cord,heat}$ # of cords burned in fireplaces – heating (cord/ fireplace/yr)	F_{heat} Cord wood burned in fireplaces for heating, tons/yr	$F_{aes}+F_{heat}$ Total cord wood burned in fireplaces, tons/yr	Reference	Ref.
SV	PLA	Placer (SV)	80.0	69	31	12,237	0.069	1,300	5,498	0.656	5,554	6,854	SMAQMD, 2007; App. D, Fig. 16, Fig. 18	10
SV	SAC	Sacramento	80.0	69	31	59,365	0.069	6,308	26,671	0.656	26,944	33,252	SMAQMD, 2007; App. D, Fig. 16, Fig. 18	10
SV	SHA	Shasta	88.0	56	44	10,240	0.069	1,088	8,046	0.656	8,128	9,216	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
SV	TEH	Tehama	88.0	56	44	3,364	0.069	357	2,643	0.656	2,670	3,027	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
SV	YS	Solano (SV)	80.0	69	31	5,860	0.069	623	2,633	0.656	2,660	3,282	BAAQMD, 2006, Fig. 5, Fig. 12; OMNI, 2003, 3.2	1, 3
SV	YS	Yolo	80.0	69	31	7,830	0.069	832	3,518	0.656	3,554	4,386	OMNI, 2003, 2.5, 3.2; Houck, 2001, p. 1	3, 11
												842,407		

Notes:

$P_{fp,cord}$: Percent of people who used their fireplaces who primarily used cord wood.

$P_{fp,aes}$: Percent of fireplace use that is for aesthetic purposes.

$P_{fp,heat}$: Percent of fireplace use that is for heating purposes.

FP_{aes}: Number of fireplaces used for aesthetic purposes

F_{aes}: Amount of cord wood burned in fireplaces for aesthetics, tons/yr ($F_{aes} = [FP_{all}]*[P_{fp,cord}]*[P_{fp,aes}]*[N_{cord,aes}]*[W_{cord}]$) ,where $N_{cord,aes}$ = 0.069 cords/fireplace/year; W_{cord} = 1.54 tons/cord

FP_{heat}: Number of fireplaces used for heating

F_{heat}: Amount of cord wood burned in fireplaces for heating, tons/yr ($F_{heat} = [FP_{all}]*[P_{fp,cord}]*[P_{fp,heat}]*[N_{cord,heat}]*[W_{cord}]$), where; $N_{cord,heat}$ = 0.656 cords/fireplace/year; W_{cord} = 1.54 tons/cord

$[F_{aes}]+[F_{heat}]$: Total amount of cord wood burned in fireplaces, tons/yr.

Estimates for South Coast counties based on U.S. Census American Housing Survey and alternative method.

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Table A-3: Fireplaces – Amount of Manufactured Logs Burned

AB	Dis	County (AB)	P_{ml} % of people who used their fireplaces who primarily used manufactured logs	$H_{fp,ml}$ # of homes with fireplaces that burn manufactured logs	COABDIS share of all CA homes that burn manufactured logs	F_{ml} Manufactured logs burned in fireplaces, tons/year	Reference	Ref.
GBV	GBU	Alpine	12.0	42	0%	7	Houck, 2001a, p.1	2
GBV	GBU	Inyo	12.0	447	0%	73	Houck, 2001a, p.1	2
GBV	GBU	Mono	12.0	483	0%	79	Houck, 2001a, p.1	2
LC	LAK	Lake	12.0	1,054	0%	172	Houck, 2001a, p.1	2
LT	ED	El Dorado (LT)	12.0	473	0%	77	Houck, 2001a, p.1	2
LT	PLA	Placer (LT)	12.0	199	0%	33	Houck, 2001a, p.1	2
MC	AMA	Amador	12.0	847	0%	138	Houck, 2001a, p.1	2
MC	CAL	Calaveras	12.0	789	0%	129	Houck, 2001a, p.1	2
MC	ED	El Dorado (MC)	12.0	1,719	0%	281	Houck, 2001a, p.1	2
MC	MPA	Mariposa	12.0	309	0%	51	Houck, 2001a, p.1	2
MC	NSI	Nevada	12.0	1,707	0%	279	Houck, 2001a, p.1	2
MC	NSI	Plumas	12.0	753	0%	123	Houck, 2001a, p.1	2
MC	NSI	Sierra	12.0	110	0%	18	Houck, 2001a, p.1	2
MC	PLA	Placer (MC)	12.0	359	0%	59	Houck, 2001a, p.1	2
MC	TUO	Tuolumne	12.0	937	0%	153	Houck, 2001a, p.1	2
MD	AV	Los Angeles (MD)	12.0	2,287	1%	374	Houck, 2001a, p.1	2
MD	KER	Kern (MD)	12.0	529	0%	86	Houck, 2001a, p.1	2
MD	MOJ	Riverside (MD)	12.0	205	0%	34	Houck, 2001a, p.1	2
MD	MOJ	San Bernardino (MD)	12.0	4,335	1%	708	Houck, 2001a, p.1	2
MD	SC	Riverside (MD)	12.0	123	0%	20	Houck, 2001a, p.1	2
NC	MEN	Mendocino	12.0	2,138	1%	349	Houck, 2001a, p.1	2
NC	NCU	Del Norte	12.0	663	0%	108	Houck, 2001a, p.1	2
NC	NCU	Humboldt	12.0	2,704	1%	442	Houck, 2001a, p.1	2
NC	NCU	Trinity	12.0	490	0%	80	Houck, 2001a, p.1	2
NC	NS	Sonoma (NC)	16.1	862	0%	141	BAAQMD, 2006, Fig. 5	1
NCC	MBU	Monterey	12.0	4,655	1%	760	Houck, 2001a, p.1	2
NCC	MBU	San Benito	12.0	653	0%	107	Houck, 2001a, p.1	2
NCC	MBU	Santa Cruz	12.0	4,898	1%	800	Houck, 2001a, p.1	2
NEP	LAS	Lassen	12.0	748	0%	122	Houck, 2001a, p.1	2
NEP	MOD	Modoc	12.0	255	0%	42	Houck, 2001a, p.1	2
NEP	SIS	Siskiyou	12.0	1,431	0%	234	Houck, 2001a, p.1	2
SC	SC	Los Angeles (SC)	12.0	73,738	20%	12,045	Houck, 2001a, p.1	2
SC	SC	Orange	12.0	36,879	10%	6,024	Houck, 2001a, p.1	2
SC	SC	Riverside (SC)	12.0	15,699	4%	2,564	Houck, 2001a, p.1	2
SC	SC	San Bernardino (SC)	12.0	15,117	4%	2,469	Houck, 2001a, p.1	2
SCC	SB	Santa Barbara	12.0	6,526	2%	1,066	Houck, 2001a, p.1	2
SCC	SLO	San Luis Obispo	12.0	4,513	1%	737	Houck, 2001a, p.1	2
SCC	VEN	Ventura	12.0	8,398	2%	1,372	Houck, 2001a, p.1	2
SD	SD	San Diego	12.0	31,767	9%	5,189	Houck, 2001a, p.1	2
SF	BA	Alameda	16.1	15,161	4%	2,477	BAAQMD, 2006, Fig. 5	1
SF	BA	Contra Costa	16.1	14,176	4%	2,316	BAAQMD, 2006, Fig. 5	1
SF	BA	Marin	16.1	4,933	1%	806	BAAQMD, 2006, Fig. 5	1
SF	BA	Napa	16.1	1,896	1%	310	BAAQMD, 2006, Fig. 5	1
SF	BA	San Francisco	16.1	6,810	2%	1,112	BAAQMD, 2006, Fig. 5	1
SF	BA	San Mateo	16.1	11,614	3%	1,897	BAAQMD, 2006, Fig. 5	1
SF	BA	Santa Clara	16.1	16,183	4%	2,643	BAAQMD, 2006, Fig. 5	1
SF	BA	Solano (SF)	16.1	3,453	1%	564	BAAQMD, 2006, Fig. 5	1
SF	BA	Sonoma (SF)	16.1	5,831	2%	952	BAAQMD, 2006, Fig. 5	1
SJV	SJU	Fresno	12.0	4,375	1%	715	Houck, 2001a, p.1	2
SJV	SJU	Kern (SJV)	12.0	2,582	1%	422	Houck, 2001a, p.1	2
SJV	SJU	Kings	12.0	509	0%	83	Houck, 2001a, p.1	2
SJV	SJU	Madera	12.0	648	0%	106	Houck, 2001a, p.1	2
SJV	SJU	Merced	12.0	1,143	0%	187	Houck, 2001a, p.1	2
SJV	SJU	San Joaquin	12.0	6,142	2%	1,003	Houck, 2001a, p.1	2
SJV	SJU	Stanislaus	12.0	3,649	1%	596	Houck, 2001a, p.1	2
SJV	SJU	Tulare	12.0	2,588	1%	423	Houck, 2001a, p.1	2
SS	IMP	Imperial	12.0	362	0%	59	Houck, 2001a, p.1	2
SS	SC	Riverside (SS)	12.0	4,274	1%	698	Houck, 2001a, p.1	2
SV	BUT	Butte	12.0	2,840	1%	464	Houck, 2001a, p.1	2

Table A-3: Fireplaces – Amount of Manufactured Logs Burned

AB	Dis	County (AB)	P_{ml} % of people who used their fireplaces who primarily used manufactured logs	$H_{fp,ml}$ # of homes with fireplaces that burn manufactured logs	COABDIS share of all CA homes that burn manufactured logs	F_{ml} Manufactured logs burned in fireplaces, tons/year	Reference	Ref.
SV	COL	Colusa	12.0	220	0%	36	Houck, 2001a, p.1	2
SV	FR	Sutter	12.0	989	0%	162	Houck, 2001a, p.1	2
SV	FR	Yuba	12.0	732	0%	120	Houck, 2001a, p.1	2
SV	GLE	Glenn	12.0	316	0%	52	Houck, 2001a, p.1	2
SV	PLA	Placer (SV)	20.0	4,031	1%	658	SMAQMD, 2007, Fig. 18	3
SV	SAC	Sacramento	20.0	19,554	5%	3,194	SMAQMD, 2007, Fig. 18	3
SV	SHA	Shasta	12.0	2,267	1%	370	Houck, 2001a, p.1	2
SV	TEH	Tehama	12.0	745	0%	122	Houck, 2001a, p.1	2
SV	YS	Solano (SV)	20.0	1,930	1%	315	SMAQMD, 2007, Fig. 18	3
SV	YS	Yolo	20.0	2,579	1%	421	SMAQMD, 2007, Fig. 18	3
				372,371	**100%**	**60,825**		

Notes:
Estimated Statewide Total Sales in 2005 (60,825 tons/yr) was distributed to counties based on "% of Homes with FPs That Burn Mfd. Logs".

P_{ml}: Percent of people who used their fireplaces who used manufactured logs.
$H_{fp,ml}$: Number of homes with fireplaces that burn manufactured wax/sawdust logs. $[H_{fp,ml}] = [H_{fp,u}]*[P_{ml}]$, where $H_{fp,u}$ is number of homes with fireplaces that are actually being used.
[COABDIS Share] = $[H_{fp,ml,\ each\ COABDIS\ combination}]/[H_{fp,ml,\ statewide\ total}]$
F_{ml}: Amount of manufactured wax/sawdust logs burned in fireplaces, tons/year = [Statewide Total Sales, tpy]*[COABDIS Share].

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Table A-4: Wood Stoves – Number of Devices

AB	Dis	County (AB)	H_{total} # of homes in 2005	P_w % of homes with wood stoves	$P_{w,u}$ % of homes that use their wood stoves	$[P_w]x[P_{w,u}]$ % of homes with wood stoves that are in use	$H_{w,u}$ # of homes with wood stoves in use	Reference	Ref.
GBV	GBU	Alpine	528	11.4	-	11.4	60	NCRA, 1988; Tables II, VIII	2
GBV	GBU	Inyo	7,808	8.2	-	8.2	641	NCRA, 1988; Tables II, VIII	2
GBV	GBU	Mono	5,774	12.0	-	12.0	693	NCRA, 1988; Tables II, VIII	2
LC	LAK	Lake	24,790	12.2	-	12.2	3,024	Census, 2007; Table B25040	3
LT	ED	El Dorado (LT)	14,220	18.0	85	15.3	2,176	OMNI, 2003; 2.3b, 4.1	4
LT	PLA	Placer (LT)	6,000	18.0	85	15.3	918	OMNI, 2003; 2.3b, 4.1	4
MC	AMA	Amador	13,961	19.9	-	19.9	2,778	Census, 2007; Table B25040	3
MC	CAL	Calaveras	18,573	24.3	-	24.3	4,513	Census, 2007; Table B25040	3
MC	ED	El Dorado (MC)	51,742	18.0	85	15.3	7,917	OMNI, 2003; 2.3b, 4.1	4
MC	MPA	Mariposa	7,276	15	83	12.5	906	OMNI, 2003; 2.3b, 4.1	4
MC	NSI	Nevada	40,157	15.5	-	15.5	6,224	Census, 2007; Table B25040	3
MC	NSI	Plumas	9,775	28.0	-	28.0	2,737	Census, 2007; Table B25040	3
MC	NSI	Sierra	1,568	10.1	-	10.1	158	NCRA, 1988; Tables II, VIII	2
MC	PLA	Placer (MC)	10,799	18.0	85	15.3	1,652	OMNI, 2003; 2.3b, 4.1	4
MC	TUO	Tuolumne	22,056	25.8	-	25.8	5,690	Census, 2007; Table B25040	3
MD	AV	Los Angeles (MD)	96,033				488	Census, 2004a, Table 1-4; Census, 2009	8,10
MD	KER	Kern (MD)	37,223	4.0	37	1.5	551	SJVUAPCD, 2010; QH, QI	5
MD	MOJ	Riverside (MD)	6,583				136	Census, 2003b, Table 1-4; Census, 2009	7,10
MD	MOJ	San Bernardino (MD)	125,319				3,070	Census, 2003b, Table 1-4; Census, 2009	7,10
MD	SC	Riverside (MD)	3,591				82	Census, 2003b, Table 1-4; Census, 2009	7,10
NC	MEN	Mendocino	34,798	22.8	-	22.8	7,934	Census, 2007; Table B25040	3
NC	NCU	Del Norte	9,513	16.5	-	16.5	1,570	Census, 2007; Table B25040	3
NC	NCU	Humboldt	53,152	17.0	-	17.0	9,036	Census, 2007; Table B25040	3
NC	NCU	Trinity	5,739	12.3	-	12.3	704	NCRA, 1988; Tables II, VIII	2
NC	NS	Sonoma (NC)	23,511	21.5	40.9	8.8	2,067	BAAQMD, 2006; Fig. 2	1
NCC	MBU	Monterey	126,559	3.0	-	1.2	3,797	Census, 2007; Table B25040	3
NCC	MBU	San Benito	16,980	5.2	-	5.2	883	Census, 2007; Table B25040	3
NCC	MBU	Santa Cruz	94,693	6.7	-	6.7	6,344	Census, 2007; Table B25040	3
NEP	LAS	Lassen	10,214	26.5	-	26.5	2,707	Census, 2007; Table B25040	3
NEP	MOD	Modoc	3,978	9.2	-	9.2	366	NCRA, 1988; Tables II, VIII	2
NEP	SIS	Siskiyou	19,472	25.3	-	25.3	4,926	Census, 2007; Table B25040	3
SC	SC	Los Angeles (SC)	3,105,059				15,792	Census, 2004a, Table 1-4; Census, 2009	8,10
SC	SC	Orange	977,547				2,640	Census, 2003a, Table 1-4; Census, 2009	6,10
SC	SC	Riverside (SC)	463,188				10,379	Census, 2003b, Table 1-4; Census, 2009	7,10
SC	SC	San Bernardino (SC)	444,312				10,705	Census, 2003b, Table 1-4; Census, 2009	7,10
SCC	SB	Santa Barbara	143,106	4.2	-	4.2	6,010	Sierra, 1989; Table E-3	12
SCC	SLO	San Luis Obispo	100,494	4.2	-	4.2	4,221	Census, 2007; Table B25040	3
SCC	VEN	Ventura	258,483	0.5	-	0.5	1,292	Census, 2007; Table B25040	3
SD	SD	San Diego	1,056,548				20,790	Census, 2004b, Table 1-4; Census, 2009	9,10
SF	BA	Alameda	542,540	2.7	32.2	0.9	4,717	BAAQMD, 2006; Fig. 2	1
SF	BA	Contra Costa	368,770	4.7	35.7	1.7	6,188	BAAQMD, 2006; Fig. 2	1
SF	BA	Marin	103,250	14.2	46.6	6.6	6,832	BAAQMD, 2006; Fig. 2	1
SF	BA	Napa	49,290	9.7	39.1	9.7	1,869	BAAQMD, 2006; Fig. 2	1
SF	BA	San Francisco	338,700	2.6	27.8	0.7	2,448	BAAQMD, 2006; Fig. 2	1
SF	BA	San Mateo	261,280	7.0	40.2	2.8	7,352	BAAQMD, 2006; Fig. 2	1
SF	BA	Santa Clara	595,550	6.7	27.9	1.9	11,133	BAAQMD, 2006; Fig. 2	1
SF	BA	Solano (SF)	101,410	7.0	33.9	2.4	2,406	BAAQMD, 2006; Fig. 2	1
SF	BA	Sonoma (SF)	158,970	21.5	40.9	8.8	13,979	BAAQMD, 2006; Fig. 2	1
SJV	SJU	Fresno	261,554	5.0	34	1.7	4,446	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Kern (SJV)	181,734	4.0	37	1.5	2,690	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Kings	35,812	4.0	37	1.5	530	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Madera	38,051	9.0	43	3.9	1,473	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Merced	67,116	9.0	43	3.9	2,597	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	San Joaquin	193,423	4.0	49	2.0	3,791	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Stanislaus	153,742	8.0	43	3.4	5,289	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Tulare	114,640	11.0	57	6.3	7,188	SJVUAPCD, 2010; QH, QI	5
SS	IMP	Imperial	43,771	0.3	-	0.3	131	Census, 2007; Table B25040	3
SS	SC	Riverside (SS)	125,073				2,799	Census, 2003b, Table 1-4; Census, 2009	7,10
SV	BUT	Butte	85,478	18.0	85	15.3	13,078	OMNI, 2003; 2.3b, 4.1	4
SV	COL	Colusa	6,617	18.0	85	15.3	1,012	OMNI, 2003; 2.3b, 4.1	4
SV	FR	Sutter	29,776	18.0	85	15.3	4,556	OMNI, 2003; 2.3b, 4.1	4
SV	FR	Yuba	22,021	18.0	85	15.3	3,369	OMNI, 2003; 2.3b, 4.1	4
SV	GLE	Glenn	9,506	18.0	85	15.3	1,454	OMNI, 2003; 2.3b, 4.1	4
SV	PLA	Placer (SV)	103,191	5	63	3.2	3,251	SMAQMD, 2007; App. D, Fig. 3, Fig. 11	11
SV	SAC	Sacramento	500,604	5	63	3.2	15,769	SMAQMD, 2007; App. D, Fig. 3, Fig. 11	11
SV	SHA	Shasta	68,220	18.0	85	15.3	10,438	OMNI, 2003; 2.3b, 4.1	4

Table A-4: Wood Stoves – Number of Devices

AB	Dis	County (AB)	H_{total} # of homes in 2005	P_w % of homes with wood stoves	$P_{w,u}$ % of homes that use their wood stoves	$[P_w]x[P_{w,u}]$ % of homes with wood stoves that are in use	$H_{w,u}$ # of homes with wood stoves in use	Reference	Ref.
SV	TEH	Tehama	22,410	18.0	85	15.3	3,429	OMNI, 2003; 2.3b, 4.1	4
SV	YS	Solano (SV)	49,415	5	63	3.2	1,557	SMAQMD, 2007; App. D, Fig. 3, Fig. 11	11
SV	YS	Yolo	66,027	5	63	3.2	2,080	SMAQMD, 2007; App. D, Fig. 3, Fig. 11	11
			12,149,062				**304,428**		

Notes:
P_w: Percent of homes with wood stoves.
$P_{w,u}$: Percent of homes that use their wood stove.
$H_{w,u}$: Number of homes with wood stoves actually being used. $H_{w,u} = [H_{total}]*[P_w]*[P_{w,u}]$
Note: Estimates for South Coast counties based on U.S. Census American Housing Survey and alternative method.

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2 NCRA, 1988. Northern California Research Associates; "Draft Report, The California Residential Wood Consumption Survey", Tables II and VIII; May 1988.
For the NCRA report, [% of Homes with a Wood Stove] = [% of Wood-Burning Households, Table II]*[% of Wood-Burning Devices that are Wood Stoves = 13.4%, Table VIII]

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5 SJVUAPCD, 2010. San Joaquin Valley Air Pollution Control District; "District's Comprehensive Public Outreach and Education Program"; summary of survey conducted by CC&G (Feb.-May 2010); presented at the September 29-30, 2010 board hearing. County-level data provided by SJV/Jessica Fierro on 06/07/2011.

6 Census, 2003a. U.S. Census Bureau; "American Housing Survey for the Anaheim-Santa Ana Metropolitan Area: 2002"; Table 1-4; Issued July 2003; http://www.census.gov/hhes/www/housing/ahs/metropolitandata.html

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10 Census, 2009. U.S. Census Bureau; Characteristics of New Housing; "Characteristics of New One-Family Houses Completed, Number of Fireplaces" (1973 - 2008) and "Characteristics of New One-Family Houses Sold, Presence of Fireplace" (1999 - 2008); released July 2009; http://www.census.gov/const/www/charindex_excel.html#singlecomplete

11 SMAQMD, 2007. Sacramento Metropolitan Air Quality Management District; "Staff Report, Rule 421, Mandatory Episodic Curtailment of Wood and Other Solid Fuel Burning ", App. D, Fig. 3, Fig. 11; September 7, 2007; http://www.airquality.org/notices/Rules2007/Rule421StaffReport27Sep2007-Final.pdf

12 Total Homes Data Obtained From:
State of California, Department of Finance; E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark; May 2010; http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2001-10/documents/E-5_2010.xls
Data represent the number of Occupied Housing Units during 2005
For the San Joaquin district, the data represent the number of Occupied Housing Units during 2003, because they had a moratorium on new wood-burning fireplaces after 2003.

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Table A-5: Wood Stoves – Amount of Cord Wood Burned

AB	Dis	County (AB)	P_{ph} % of wood stoves that are Phase II (i.e., purchased after 1 July 1990)	P_c % of Phase II wood stoves that are catalytic	N_{cord} # of cords of wood burned in wood stoves (cords/home/yr)	F_w Total cord wood burned in wood stoves, tons/year	$F_{w,con}$ Cord wood burned in conventional wood stoves, tons/year	$F_{w,cat}$ Cord wood burned in Phase II catalytic wood stoves, tons/year	$F_{w,ncat}$ Cord wood burned in Phase II non-catalytic wood stoves, tons/year	Reference	Ref.
GBV	GBU	Alpine	46.0	24.0	1.5	139	75	15	48	OMNI, 2003; 4.5, 4.6, 4.2	2
GBV	GBU	Inyo	46.0	24.0	1.5	1,482	800	164	518	OMNI, 2003; 4.5, 4.6, 4.2	2
GBV	GBU	Mono	46.0	24.0	1.5	1,601	865	177	560	OMNI, 2003; 4.5, 4.6, 4.2	2
LC	LAK	Lake	46.0	24.0	1.5	6,986	3,773	771	2,442	OMNI, 2003; 4.5, 4.6, 4.2	2
LT	ED	El Dorado (LT)	43.0	17.0	1.5	5,026	2,865	367	1,794	OMNI, 2003; 4.5, 4.6, 4.2	2
LT	PLA	Placer (LT)	43.0	17.0	1.5	2,120	1,209	155	757	OMNI, 2003; 4.5, 4.6, 4.2	2
MC	AMA	Amador	46.0	24.0	1.5	6,418	3,466	709	2,244	OMNI, 2003; 4.5, 4.6, 4.2	2
MC	CAL	Calaveras	46.0	24.0	1.5	10,426	5,630	1,151	3,645	OMNI, 2003; 4.5, 4.6, 4.2	2
MC	ED	El Dorado (MC)	43.0	17.0	1.5	18,287	10,424	1,337	6,527	OMNI, 2003; 4.5, 4.6, 4.2	2
MC	MPA	Mariposa	46.0	24.0	1.5	2,093	1,130	231	732	OMNI, 2003; 4.5, 4.6, 4.2	2
MC	NSI	Nevada	46.0	24.0	1.5	14,378	7,764	1,587	5,027	OMNI, 2003; 4.5, 4.6, 4.2	2
MC	NSI	Plumas	46.0	24.0	1.5	6,322	3,414	698	2,210	OMNI, 2003; 4.5, 4.6, 4.2	2
MC	NSI	Sierra	46.0	24.0	1.5	364	197	40	127	OMNI, 2003; 4.5, 4.6, 4.2	2
MC	PLA	Placer (MC)	43.0	17.0	1.5	3,817	2,176	279	1,362	OMNI, 2003; 4.5, 4.6, 4.2	2
MC	TUO	Tuolumne	46.0	24.0	1.5	13,145	7,098	1,451	4,595	OMNI, 2003; 4.5, 4.6, 4.2	2
MD	AV	Los Angeles (MD)	21.0	33	0.95	715	564	50	101	OMNI, 2006; 3.17, 4.1	3
MD	KER	Kern (MD)	35.2	8.7	1.57	1,332	863	41	428	Franz, 1997, Tables 6, 7; Sierra, 1989, Table E-6	4, 5
MD	MOJ	Riverside (MD)	21.0	33	0.95	199	157	14	28	OMNI, 2006; 3.17, 4.1	3
MD	MOJ	San Bernardino (MD)	21.0	33	0.95	4,492	3,548	311	632	OMNI, 2006; 3.17, 4.1	3
MD	SC	Riverside (MD)	21.0	33	0.95	119	94	8	17	OMNI, 2006; 3.17, 4.1	3
NC	MEN	Mendocino	46.0	24.0	1.5	18,327	9,897	2,023	6,407	OMNI, 2003; 4.5, 4.6, 4.2	2
NC	NCU	Del Norte	46.0	24.0	1.5	3,626	1,958	400	1,268	OMNI, 2003; 4.5, 4.6, 4.2	2
NC	NCU	Humboldt	43.0	17.0	1.5	20,873	11,897	1,526	7,449	OMNI, 2003; 4.5, 4.6, 4.2	2
NC	NCU	Trinity	46.0	24.0	1.5	1,625	878	179	568	OMNI, 2003; 4.5, 4.6, 4.2	2
NC	NS	Sonoma (NC)	62.6	29.0	2.18	6,951	2,600	1,262	3,089	BAAQMD, 2009; OMNI, 2003; 4.5, 4.6, 4.2	1, 2
NCC	MBU	Monterey	46.0	24.0	1.5	8,771	4,736	968	3,066	OMNI, 2003; 4.5, 4.6, 4.2	2
NCC	MBU	San Benito	46.0	24.0	1.5	2,040	1,101	225	713	OMNI, 2003; 4.5, 4.6, 4.2	2
NCC	MBU	Santa Cruz	46.0	24.0	1.5	14,656	7,914	1,618	5,124	OMNI, 2003; 4.5, 4.6, 4.2	2
NEP	LAS	Lassen	46.0	24.0	1.5	6,253	3,376	690	2,186	OMNI, 2003; 4.5, 4.6, 4.2	2
NEP	MOD	Modoc	46.0	24.0	1.5	845	456	93	295	OMNI, 2003; 4.5, 4.6, 4.2	2
NEP	SIS	Siskiyou	46.0	24.0	1.5	11,380	6,145	1,256	3,978	OMNI, 2003; 4.5, 4.6, 4.2	2
SC	SC	Los Angeles (SC)	21.0	33	0.95	23,103	18,251	1,601	3,251	OMNI, 2006; 3.17, 4.1	3
SC	SC	Orange	21.0	33	0.95	3,862	3,051	268	543	OMNI, 2006; 3.17, 4.1	3
SC	SC	Riverside (SC)	21.0	33	0.95	15,184	11,996	1,052	2,136	OMNI, 2006; 3.17, 4.1	3
SC	SC	San Bernardino (SC)	21.0	33	0.95	15,661	12,372	1,085	2,204	OMNI, 2006; 3.17, 4.1	3
SCC	SB	Santa Barbara	46.0	24.0	1.5	13,884	7,497	1,533	4,854	OMNI, 2003; 4.5, 4.6, 4.2	2
SCC	SLO	San Luis Obispo	46.0	24.0	1.5	9,750	5,265	1,076	3,409	OMNI, 2003; 4.5, 4.6, 4.2	2
SCC	VEN	Ventura	46.0	24.0	1.5	2,985	1,612	330	1,044	OMNI, 2003; 4.5, 4.6, 4.2	2
SD	SD	San Diego	21.0	33	0.95	30,416	24,028	2,108	4,279	OMNI, 2006; 3.17, 4.1	3
SF	BA	Alameda	62.6	29.0	0.14	990	370	180	440	BAAQMD, 2009; OMNI, 2003; 4.5, 4.6, 4.2	1, 2
SF	BA	Contra Costa	62.6	29.0	3.04	28,939	10,823	5,254	12,862	BAAQMD, 2009; OMNI, 2003; 4.5, 4.6, 4.2	1, 2
SF	BA	Marin	62.6	29.0	3.44	36,179	13,531	6,568	16,080	BAAQMD, 2009; OMNI, 2003; 4.5, 4.6, 4.2	1, 2
SF	BA	Napa	62.6	29.0	4.31	12,414	4,643	2,254	5,517	BAAQMD, 2009; OMNI, 2003; 4.5, 4.6, 4.2	1, 2
SF	BA	San Francisco	62.6	29.0	0.25	927	347	168	412	BAAQMD, 2009; OMNI, 2003; 4.5, 4.6, 4.2	1, 2
SF	BA	San Mateo	62.6	29.0	1.05	11,921	4,458	2,164	5,298	BAAQMD, 2009; OMNI, 2003; 4.5, 4.6, 4.2	1, 2

Table A-5: Wood Stoves – Amount of Cord Wood Burned

AB	Dis	County (AB)	P_{ph} % of wood stoves that are Phase II (i.e., purchased after 1 July 1990)	P_c % of Phase II wood stoves that are catalytic	N_{cord} # of cords of wood burned in wood stoves (cords/home/yr)	F_w Total cord wood burned in wood stoves, tons/year	$F_{w,con}$ Cord wood burned in conventional wood stoves, tons/year	$F_{w,cat}$ Cord wood burned in Phase II catalytic wood stoves, tons/year	$F_{w,ncat}$ Cord wood burned in Phase II non-catalytic wood stoves, tons/year	Reference	Ref.
SF	BA	Santa Clara	62.6	29.0	1.24	21,194	7,927	3,848	9,420	BAAQMD, 2009; OMNI, 2003; 4.5, 4.6, 4.2	1, 2
SF	BA	Solano (SF)	62.6	29.0	0.50	1,851	692	336	823	BAAQMD, 2009; OMNI, 2003; 4.5, 4.6, 4.2	1, 2
SF	BA	Sonoma (SF)	62.6	29.0	2.18	46,999	17,578	8,532	20,889	BAAQMD, 2009; OMNI, 2003; 4.5, 4.6, 4.2	1, 2
SJV	SJU	Fresno	35.2	8.7	2.09	14,311	9,274	438	4,599	Franz, 1997, Tables 6, 7; Sierra, 1989, Table E-4	4, 5
SJV	SJU	Kern (SJV)	35.2	8.7	1.57	6,503	4,214	199	2,090	Franz, 1997, Tables 6, 7; Sierra, 1989, Table E-6	4, 5
SJV	SJU	Kings	35.2	8.7	1.16	947	614	29	304	Franz, 1997, Tables 6, 7; Sierra, 1989, Table E-4	4, 5
SJV	SJU	Madera	35.2	8.7	2.61	5,919	3,835	181	1,902	Franz, 1997, Tables 6, 7; Sierra, 1989, Table E-4	4, 5
SJV	SJU	Merced	35.2	8.7	2.67	10,680	6,921	327	3,432	Franz, 1997, Tables 6, 7; Sierra, 1989, Table E-4	4, 5
SJV	SJU	San Joaquin	35.2	8.7	1.15	6,714	4,351	206	2,158	Franz, 1997, Tables 6, 7; Sierra, 1989, Table E-4	4, 5
SJV	SJU	Stanislaus	35.2	8.7	1.55	12,624	8,180	387	4,057	Franz, 1997, Tables 6, 7; Sierra, 1989, Table E-4	4, 5
SJV	SJU	Tulare	35.2	8.7	2.40	26,567	17,215	814	8,538	Franz, 1997, Tables 6, 7; Sierra, 1989, Table E-4	4, 5
SS	IMP	Imperial	21.0	33.0	0.07	14	11	1	2	OMNI, 2006; 3.17; Sierra, 1989, Table E-4	3, 5
SS	SC	Riverside (SS)	21.0	33	0.95	4,094	3,234	284	576	OMNI, 2006; 3.17, 4.1	3
SV	BUT	Butte	43.0	17.0	1.5	30,210	17,220	2,208	10,782	OMNI, 2003; 4.5, 4.6, 4.2	2
SV	COL	Colusa	43.0	17.0	1.5	2,339	1,333	171	835	OMNI, 2003; 4.5, 4.6, 4.2	2
SV	FR	Sutter	43.0	17.0	1.5	10,524	5,999	769	3,756	OMNI, 2003; 4.5, 4.6, 4.2	2
SV	FR	Yuba	43.0	17.0	1.5	7,783	4,436	569	2,778	OMNI, 2003; 4.5, 4.6, 4.2	2
SV	GLE	Glenn	43.0	17.0	1.5	3,360	1,915	246	1,199	OMNI, 2003; 4.5, 4.6, 4.2	2
SV	PLA	Placer (SV)	43.0	17.0	1.5	7,509	4,280	549	2,680	OMNI, 2003; 4.5, 4.6, 4.2	2
SV	SAC	Sacramento	43.0	17.0	1.5	36,426	20,763	2,663	13,001	OMNI, 2003; 4.5, 4.6, 4.2	2
SV	SHA	Shasta	43.0	17.0	1.5	24,111	13,743	1,763	8,605	OMNI, 2003; 4.5, 4.6, 4.2	2
SV	TEH	Tehama	43.0	17.0	1.5	7,920	4,515	579	2,827	OMNI, 2003; 4.5, 4.6, 4.2	2
SV	YS	Solano (SV)	43.0	17.0	1.5	3,596	2,050	263	1,283	OMNI, 2003; 4.5, 4.6, 4.2	2
SV	YS	Yolo	43.0	17.0	1.5	4,804	2,739	351	1,715	OMNI, 2003; 4.5, 4.6, 4.2	2
						698,021	**388,353**	**71,150**	**238,518**		

Notes:

P_{ph}: Percent of wood stoves that are EPA certified Phase II (i.e., purchased after 1 July 1990).

P_c: Percent of Phase II wood stoves that are catalytic.

N_{cord}: Number of cords of wood burned in wood stoves (cords/home/yr).

W_{cord} = Weight of an average cord of wood in California = 1.54 tons/cord (OMNI, 2006)

F_w: Total amount of cord wood burned in wood stoves, tons/year. $[F_w] = [H_{w,u}]*[N_{cord}]*[W_{cord}]$, where $H_{w,u}$ is the number of homes with wood stoves actually being used.

$F_{w,con}$: Amount of cord wood burned in conventional wood stoves, tons/year. $[F_{w,con}] = [F_w]*[100\% - P_{ph}]$

$F_{w,cat}$: Amount of cord wood burned in EPA certified Phase II catalytic wood stoves, tons/year. $[F_{w,cat}] = [F_w]*[P_{ph}]*[P_c]$

$F_{w,ncat}$: Amount of cord wood burned in EPA certified Phase II non-catalytic wood stoves, tons/year. $[F_{w,ncat}] = [F_w]*[P_{ph}]*[100\% - P_c]$

Estimates for South Coast counties based on U.S. Census American Housing Survey and alternative method.

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Table A-6: Fireplace Inserts – Number of Devices

AB	Dis	County (AB)	H_{total} # of homes in 2005	P_{fi} % of homes w/fireplace inserts	$P_{fi,u}$ % of homes that use their fireplace inserts	$[P_{fi}]x[P_{fi,u}]$ % of homes w/fireplace inserts in use	$H_{fi,u}$ # of homes w/fireplace inserts in use	Reference	Ref.
GBV	GBU	Alpine	528	6.4	-	6.4	34	NCRA, 1988; Tables II, VIII	2
GBV	GBU	Inyo	7,808	4.7	-	4.7	364	NCRA, 1988; Tables II, VIII	2
GBV	GBU	Mono	5,774	6.8	-	6.8	393	NCRA, 1988; Tables II, VIII	2
LC	LAK	Lake	24,790	4.9	97	4.8	1,178	OMNI, 2003; 2.3c, 5.1	3
LT	ED	El Dorado (LT)	14,220	6.0	100	6.0	853	OMNI, 2003; 2.3c, 5.1	3
LT	PLA	Placer (LT)	6,000	6.0	100	6.0	360	OMNI, 2003; 2.3c, 5.1	3
MC	AMA	Amador	13,961	4.9	-	4.9	690	NCRA, 1988; Tables II, VIII	2
MC	CAL	Calaveras	18,573	4.9	97	4.8	883	OMNI, 2003; 2.3c, 5.1	3
MC	ED	El Dorado (MC)	51,742	6.0	100	6.0	3,105	OMNI, 2003; 2.3c, 5.1	3
MC	MPA	Mariposa	7,276	4.9	97	4.8	346	OMNI, 2003; 2.3c, 5.1	3
MC	NSI	Nevada	40,157	4.9	97	4.8	1,909	OMNI, 2003; 2.3c, 5.1	3
MC	NSI	Plumas	9,775	6.3	-	6.3	613	NCRA, 1988; Tables II, VIII	2
MC	NSI	Sierra	1,568	5.7	-	5.7	89	NCRA, 1988; Tables II, VIII	2
MC	PLA	Placer (MC)	10,799	6.0	100	6.0	648	OMNI, 2003; 2.3c, 5.1	3
MC	TUO	Tuolumne	22,056	4.9	97	4.8	1,048	OMNI, 2003; 2.3c, 5.1	3
MD	AV	Los Angeles (MD)	96,033				2,247	Census, 2004a; Table 1-4; Census, 2009	6,8
MD	KER	Kern (MD)	37,223	0	-	0.0	0	SJVUAPCD, 2010; QH, QI	11
MD	MOJ	Riverside (MD)	6,583				336	Census, 2003b, Table 1-4; Census, 2009	5,8
MD	MOJ	San Bernardino (MD)	125,319				7,582	Census, 2003b, Table 1-4; Census, 2009	5,8
MD	SC	Riverside (MD)	3,591				201	Census, 2003b, Table 1-4; Census, 2009	5,8
NC	MEN	Mendocino	34,798	5.0	-	5.0	1,740	NCRA, 1988; Tables II, VIII	2
NC	NCU	Del Norte	9,513	5.7	-	5.7	539	NCRA, 1988; Tables II, VIII	2
NC	NCU	Humboldt	53,152	4.1	-	4.1	2,202	NCRA, 1988; Tables II, VIII	2
NC	NCU	Trinity	5,739	7.0	-	7.0	399	NCRA, 1988; Tables II, VIII	2
NC	NS	Sonoma (NC)	23,511	0	-	0.0	0	BAAQMD, 2006; Figs. 2, 15	1
NCC	MBU	Monterey	126,559	3.0	-	3.0	3,790	NCRA, 1988; Tables II, VIII	2
NCC	MBU	San Benito	16,980	3.1	-	3.1	532	NCRA, 1988; Tables II, VIII	2
NCC	MBU	Santa Cruz	94,693	4.2	-	4.2	3,987	NCRA, 1988; Tables II, VIII	2
NEP	LAS	Lassen	10,214	6.0	-	6.0	609	NCRA, 1988; Tables II, VIII	2
NEP	MOD	Modoc	3,978	5.2	-	5.2	207	NCRA, 1988; Tables II, VIII	2
NEP	SIS	Siskiyou	19,472	6.0	-	6.0	1,165	NCRA, 1988; Tables II, VIII	2
SC	SC	Los Angeles (SC)	3,105,059				72,653	Census, 2004a; Table 1-4; Census, 2009	6,8
SC	SC	Orange	977,547				32,100	Census, 2003a, Table 1-4; Census, 2009	4,8
SC	SC	Riverside (SC)	463,188				25,632	Census, 2003b, Table 1-4; Census, 2009	5,8
SC	SC	San Bernardino (SC)	444,312				26,437	Census, 2003b, Table 1-4; Census, 2009	5,8
SCC	SB	Santa Barbara	143,106	0.8	-	0.8	1,145	Sierra, 1989; Table E-3	9
SCC	SLO	San Luis Obispo	100,494	3.7	-	3.7	3,674	NCRA, 1988; Tables II, VIII	2
SCC	VEN	Ventura	258,483	2.6	-	2.6	6,836	NCRA, 1988; Tables II, VIII	2
SD	SD	San Diego	1,056,548				56,540	Census, 2004b, Table 1-4; Census, 2009	7,8
SF	BA	Alameda	542,540	0	-	0.0	0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Contra Costa	368,770	0	-	0.0	0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Marin	103,250	0	-	0.0	0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Napa	49,290	0	-	0.0	0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	San Francisco	338,700	0	-	0.0	0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	San Mateo	261,280	0	-	0.0	0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Santa Clara	595,550	0	-	0.0	0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Solano (SF)	101,410	0	-	0.0	0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Sonoma (SF)	158,970	0	-	0.0	0	BAAQMD, 2006; Figs. 2, 15	1
SJV	SJU	Fresno	261,554	0	-	0.0	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Kern (SJV)	181,734	0	-	0.0	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Kings	35,812	0	-	0.0	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Madera	38,051	0	-	0.0	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Merced	67,116	0	-	0.0	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	San Joaquin	193,423	0	-	0.0	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Stanislaus	153,742	0	-	0.0	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Tulare	114,640	0	-	0.0	0	SJVUAPCD, 2010; QH, QI	11
SS	IMP	Imperial	43,771	0.6	-	0.6	263	Sierra, 1989; Table E-3	9
SS	SC	Riverside (SS)	125,073				6,911	Census, 2003b, Table 1-4; Census, 2009	5,8
SV	BUT	Butte	85,478	6.0	100	6.0	5,129	OMNI, 2003; 2.3c, 5.1	3
SV	COL	Colusa	6,617	6.0	100	6.0	397	OMNI, 2003; 2.3c, 5.1	3
SV	FR	Sutter	29,776	6.0	100	6.0	1,787	OMNI, 2003; 2.3c, 5.1	3
SV	FR	Yuba	22,021	6.0	100	6.0	1,321	OMNI, 2003; 2.3c, 5.1	3
SV	GLE	Glenn	9,506	6.0	100	6.0	570	OMNI, 2003; 2.3c, 5.1	3
SV	PLA	Placer (SV)	103,191	16	63	10.1	10,402	SMAQMD, 2007; App. D, Fig. 3, Fig. 11	10
SV	SAC	Sacramento	500,604	16	63	10.1	50,461	SMAQMD, 2007; App. D, Fig. 3, Fig. 11	10
SV	SHA	Shasta	68,220	6.0	100	6.0	4,093	OMNI, 2003; 2.3c, 5.1	3
SV	TEH	Tehama	22,410	6.0	100	6.0	1,345	OMNI, 2003; 2.3c, 5.1	3

Table A-6: Fireplace Inserts – Number of Devices

AB	Dis	County (AB)	H_{total} # of homes in 2005	P_{fi} % of homes w/fireplace inserts	$P_{fi,u}$ % of homes that use their fireplace inserts	$[P_{fi}]x[P_{fi,u}]$ % of homes w/fireplace inserts in use	$H_{fi,u}$ # of homes w/fireplace inserts in use	Reference	Ref.
SV	YS	Solano (SV)	49,415	16	63	10.1	4,981	SMAQMD, 2007; App. D, Fig. 3, Fig. 11	10
SV	YS	Yolo	66,027	16	63	10.1	6,656	SMAQMD, 2007; App. D, Fig. 3, Fig. 11	10
			12,149,062				**357,380**		

Notes:
P_{fi}: Percent of homes with fireplace inserts.
$P_{fi,u}$: Percent of homes that use their fireplace insert.
$H_{fi,u}$: Number of homes with fireplace inserts actually being used. $H_{fi,u} = [H_{total}]*[P_{fi}]*[P_{fi,u}]$
Note: Estimates for South Coast counties based on U.S. Census American Housing Survey and alternative method.

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5 Census, 2003b. U.S. Census Bureau; "American Housing Survey for the Riverside-San Bernardino-Ontario Metropolitan Area: 2002"; Table 1-4; Issued July 2003; http://www.census.gov/hhes/www/housing/ahs/metropolitandata.html Assume "Wood Stoves" include Fireplace Inserts.

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Table A-7: Fireplace Inserts – Amount of Cord Wood & Bundle Wood Burned

AB	Dis	County (AB)	P_{ph} % of fireplace inserts that are Phase II (purchased after 1 July 1990)	P_c % of Phase II fireplace inserts that are catalytic	N_{cord} # of cords of wood burned in fireplace inserts (cords/ home/yr)	$P_{fi,bundle}$ % of people with fireplace inserts who use bundles in addition to cord wood	N_{bundle} # of bundles of wood burned in fireplace inserts (bundles/ home/yr)	$F_{fi,cord}$ Total cord wood burned in fireplace inserts, tons/year	$F_{fi,con}$ Cord wood burned in conventional fireplace inserts, tons/year	$F_{fi,cat}$ Cord wood burned in Phase II catalytic fireplace inserts, tons/year	$F_{fi,ncat}$ Cord wood burned in Phase II non-catalytic fireplace inserts, tons/year	$F_{fi,bundle}$ Total bundles burned in fireplace inserts, tons/year	$F_{fi,con}$ Bundles burned in conventional fireplace inserts, tons/year	$F_{fi,cat}$ Bundles burned in Phase II catalytic fireplace inserts, tons/year	$F_{fi,ncat}$ Bundles burned in Phase II non-catalytic fireplace inserts, tons/year	Reference	Ref.
GBV	GBU	Alpine	46.0	31.0	1.4	9.4	2.2	73	40	10	23	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
GBV	GBU	Inyo	46.0	31.0	1.4	9.4	2.2	784	424	112	249	2	1	0	1	OMNI, 2003; 5.5, 5.6, 5.2	2
GBV	GBU	Mono	46.0	31.0	1.4	9.4	2.2	848	458	121	269	2	1	0	1	OMNI, 2003; 5.5, 5.6, 5.2	2
LC	LAK	Lake	46.0	31.0	1.4	9.4	2.2	2,540	1,372	362	806	6	3	1	2	OMNI, 2003; 5.5, 5.6, 5.2	2
LT	ED	El Dorado (LT)	45.0	50.0	1.2	0	0	1,577	867	355	355	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
LT	PLA	Placer (LT)	45.0	50.0	1.2	0	0	665	366	150	150	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
MC	AMA	Amador	46.0	31.0	1.4	9.4	2.2	1,487	803	212	472	3	2	0	1	OMNI, 2003; 5.5, 5.6, 5.2	2
MC	CAL	Calaveras	46.0	31.0	1.4	9.4	2.2	1,903	1,028	271	604	4	2	1	1	OMNI, 2003; 5.5, 5.6, 5.2	2
MC	ED	El Dorado (MC)	45.0	50.0	1.2	0	0	5,737	3,155	1,291	1,291	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
MC	MPA	Mariposa	46.0	31.0	1.4	9.4	2.2	746	403	106	237	2	1	0	1	OMNI, 2003; 5.5, 5.6, 5.2	2
MC	NSI	Nevada	46.0	31.0	1.4	9.4	2.2	4,115	2,222	587	1,306	9	5	1	3	OMNI, 2003; 5.5, 5.6, 5.2	2
MC	NSI	Plumas	46.0	31.0	1.4	9.4	2.2	1,321	714	188	419	3	2	0	1	OMNI, 2003; 5.5, 5.6, 5.2	2
MC	NSI	Sierra	46.0	31.0	1.4	9.4	2.2	193	104	27	61	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
MC	PLA	Placer (MC)	45.0	50.0	1.2	0	0	1,197	659	269	269	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
MC	TUO	Tuolumne	46.0	31.0	1.4	9.4	2.2	2,260	1,220	322	717	5	3	1	2	OMNI, 2003; 5.5, 5.6, 5.2	2
MD	AV	Los Angeles (MD)	21.0	33				549	434	38	77	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
MD	KER	Kern (MD)						0	0	0	0	0	0	0	0	SJVUAPCD, 2010; QH, QI	5
MD	MOJ	Riverside (MD)	21.0	33				53	42	4	7	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
MD	MOJ	San Bernardino (MD)	21.0	33				1,190	940	82	167	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
MD	SC	Riverside (MD)	21.0	33				32	25	2	4	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
NC	MEN	Mendocino	46.0	31.0	1.4	9.4	2.2	3,752	2,026	535	1,191	9	5	1	3	OMNI, 2003; 5.5, 5.6, 5.2	2
NC	NCU	Del Norte	46.0	31.0	1.4	9.4	2.2	1,163	628	166	369	3	1	0	1	OMNI, 2003; 5.5, 5.6, 5.2	2
NC	NCU	Humboldt	46.0	31.0	1.4	9.4	2.2	4,747	2,563	677	1,507	11	6	2	3	OMNI, 2003; 5.5, 5.6, 5.2	2
NC	NCU	Trinity	46.0	31.0	1.4	9.4	2.2	860	465	123	273	2	1	0	1	OMNI, 2003; 5.5, 5.6, 5.2	2
NC	NS	Sonoma (NC)						0	0	0	0	0	0	0	0	BAAQMD, 2006; Figs. 2,15	1
NCC	MBU	Monterey	46.0	31.0	1.4	9.4	2.2	8,171	4,412	1,165	2,593	19	10	3	6	OMNI, 2003; 5.5, 5.6, 5.2	2
NCC	MBU	San Benito	46.0	31.0	1.4	9.4	2.2	1,146	619	163	364	3	1	0	1	OMNI, 2003; 5.5, 5.6, 5.2	2
NCC	MBU	Santa Cruz	46.0	31.0	1.4	9.4	2.2	8,596	4,642	1,226	2,728	20	11	3	6	OMNI, 2003; 5.5, 5.6, 5.2	2
NEP	LAS	Lassen	46.0	31.0	1.4	9.4	2.2	1,312	709	187	416	3	2	0	1	OMNI, 2003; 5.5, 5.6, 5.2	2
NEP	MOD	Modoc	46.0	31.0	1.4	9.4	2.2	447	241	64	142	1	1	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
NEP	SIS	Siskiyou	46.0	31.0	1.4	9.4	2.2	2,511	1,356	358	797	6	3	1	2	OMNI, 2003; 5.5, 5.6, 5.2	2
SC	SC	Los Angeles (SC)	21.0	33				17,757	14,028	1,231	2,498	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
SC	SC	Orange	21.0	33				3,752	2,964	260	528	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
SC	SC	Riverside (SC)	21.0	33				4,022	3,178	279	566	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
SC	SC	San Bernardino (SC)	21.0	33				4,149	3,277	287	584	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
SCC	SB	Santa Barbara	46.0	31.0	1.4	0	0	2,468	1,333	352	783	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
SCC	SLO	San Luis Obispo	46.0	31.0	1.4	9.4	2.2	7,920	4,277	1,129	2,514	18	10	3	6	OMNI, 2003; 5.5, 5.6, 5.2	2
SCC	VEN	Ventura	46.0	31.0	1.4	9.4	2.2	14,739	7,959	2,102	4,678	34	18	5	11	OMNI, 2003; 5.5, 5.6, 5.2	2
SD	SD	San Diego	21.0	33				9,440	7,458	654	1,328	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
SF	BA	Alameda						0	0	0	0	0	0	0	0	BAAQMD, 2006; Figs. 2,15	1
SF	BA	Contra Costa						0	0	0	0	0	0	0	0	BAAQMD, 2006; Figs. 2,15	1
SF	BA	Marin						0	0	0	0	0	0	0	0	BAAQMD, 2006; Figs. 2,15	1
SF	BA	Napa						0	0	0	0	0	0	0	0	BAAQMD, 2006; Figs. 2,15	1
SF	BA	San Francisco						0	0	0	0	0	0	0	0	BAAQMD, 2006; Figs. 2,15	1

Table A-7: Fireplace Inserts – Amount of Cord Wood & Bundle Wood Burned

AB	Dis	County (AB)	P_{ph} % of fireplace inserts that are Phase II (purchased after 1 July 1990)	P_c % of Phase II fireplace inserts that are catalytic	N_{cord} # of cords of wood burned in fireplace inserts (cords/ home/yr)	$P_{fi,bundle}$ % of people with fireplace inserts who use bundles in addition to cord wood	N_{bundle} # of bundles of wood burned in fireplace inserts (bundles/ home/yr)	$F_{fi,cord}$ Total cord wood burned in fireplace inserts, tons/year	$F_{fi,con}$ Cord wood burned in conventional fireplace inserts, tons/year	$F_{fi,cat}$ Cord wood burned in Phase II catalytic fireplace inserts, tons/year	$F_{fi,ncat}$ Cord wood burned in Phase II non-catalytic fireplace inserts, tons/year	$F_{fi,bundle}$ Total bundles burned in fireplace inserts, tons/year	$F_{fi,con}$ Bundles burned in conventional fireplace inserts, tons/year	$F_{fi,cat}$ Bundles burned in Phase II catalytic fireplace inserts, tons/year	$F_{fi,ncat}$ Bundles burned in Phase II non-catalytic fireplace inserts, tons/year	Reference	Ref.
SF	BA	San Mateo						0	0	0	0	0	0	0	0	BAAQMD, 2006; Figs. 2,15	1
SF	BA	Santa Clara						0	0	0	0	0	0	0	0	BAAQMD, 2006; Figs. 2,15	1
SF	BA	Solano (SF)						0	0	0	0	0	0	0	0	BAAQMD, 2006; Figs. 2,15	1
SF	BA	Sonoma (SF)						0	0	0	0	0	0	0	0	BAAQMD, 2006; Figs. 2,15	1
SJV	SJU	Fresno						0	0	0	0	0	0	0	0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Kern (SJV)						0	0	0	0	0	0	0	0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Kings						0	0	0	0	0	0	0	0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Madera						0	0	0	0	0	0	0	0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Merced						0	0	0	0	0	0	0	0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	San Joaquin						0	0	0	0	0	0	0	0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Stanislaus						0	0	0	0	0	0	0	0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Tulare						0	0	0	0	0	0	0	0	SJVUAPCD, 2010; QH, QI	5
SS	IMP	Imperial	21.0	33.0	0.25	0	0	101	80	7	14	0	0	0	0	OMNI, 2006; 3.17; Sierra, 1989, Table E-4	3, 4
SS	SC	Riverside (SS)	21.0	33				1,085	857	75	153	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
SV	BUT	Butte	45.0	50.0	1.2	0	0	9,478	5,213	2,133	2,133	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
SV	COL	Colusa	45.0	50.0	1.2	0	0	734	404	165	165	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
SV	FR	Sutter	45.0	50.0	1.2	0	0	3,302	1,816	743	743	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
SV	FR	Yuba	45.0	50.0	1.2	0	0	2,442	1,343	549	549	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
SV	GLE	Glenn	45.0	50.0	1.2	0	0	1,054	580	237	237	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
SV	PLA	Placer (SV)	45.0	50.0	1.2	0	0	19,222	10,572	4,325	4,325	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
SV	SAC	Sacramento	45.0	50.0	1.2	0	0	93,252	51,288	20,982	20,982	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
SV	SHA	Shasta	45.0	50.0	1.2	0	0	7,564	4,160	1,702	1,702	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
SV	TEH	Tehama	45.0	50.0	1.2	0	0	2,485	1,367	559	559	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
SV	YS	Solano (SV)	45.0	50.0	1.2	0	0	9,205	5,063	2,071	2,071	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
SV	YS	Yolo	45.0	50.0	1.2	0	0	12,299	6,765	2,767	2,767	0	0	0	0	OMNI, 2003; 5.5, 5.6, 5.2	2
								286,445	**166,915**	**51,785**	**67,746**						

Notes:

P_{ph}: Percent of fireplace inserts that are EPA certified Phase II (i.e., purchased after 1 July 1990).

P_c: Percent of fireplace inserts that are catalytic.

N_{cord}: Number of cords of wood burned in fireplace inserts (cords/home/yr).

W_{cord} = Weight of an average cord of wood in California = 1.54 tons/cord (OMNI, 2006)

$P_{fi,bundle}$: Percent of people with fireplaces who use bundles in addition to cord wood.

N_{bundle}: Number of bundles of wood burned in fireplace inserts (bundles/home/yr).

W_{bundle} = Weight of an Average Bundle of Wood (ton/bundle) (assuming 1 bundle = 1/64 of a cord) = 0.024 ton/bundle (OMNI, 2003)

$F_{fi,cord}$: Total amount of cord wood burned in fireplace inserts, tons/year. $[F_{fi,cord}] = [H_{fi,u}]*[N_{cord}]*[W_{cord}]$, where $H_{fi,u}$ is number of homes with fireplace inserts actually being used.

$F_{fi,con}$: Amount of cord wood burned in conventional fireplace inserts, tons/year. $[F_{fi,con}] = [F_{fi,cord}]*[100\% - P_{ph}]$

$F_{fi,cat}$: Amount of cord wood burned in EPA certified Phase II catalytic fireplace inserts, tons/year. $[F_{fi,cat}] = [F_{fi,cord}]*[P_{ph}]*[P_c]$

$F_{fi,ncat}$: Amount of cord wood burned in EPA certified Phase II non-catalytic fireplace inserts, tons/year. $[F_{fi,ncat}] = [F_{fi,cord}]*[P_{ph}]*[100\% - P_c]$

$F_{fi,bundle}$: Total amount of bundle wood burned in fireplace inserts, tons/year. $[F_{fi,bundle}] = [H_{fi,u}]*[N_{bundle}]*[W_{bundle}]$, where $H_{fi,u}$ is number of homes with fireplace inserts actually being used.

$F_{fi,con,b}$: Amount of bundle wood burned in conventional fireplace inserts, tons/year. $[F_{fi,con,b}] = [F_{fi,bundle}]*[100\% - P_{ph}]$

$F_{fi,cat,b}$: Amount of bundle wood burned in EPA certified Phase II catalytic fireplace inserts, tons/year. $[F_{fi,cat,b}] = [F_{fi,bundle}]*[P_{ph}]*[P_c]$

$F_{fi,ncat,b}$: Amount of bundle wood burned in EPA certified Phase II non-catalytic fireplace inserts, tons/year. $[F_{fi,ncat,b}] = [F_{fi,bundle}]*[P_{ph}]*[100\% - P_c]$

Reference:

1 BAAQMD, 2006. Bay Area Air Quality Management District; “Spare the Air Tonight Study, 2005-2006 Winter Wood Smoke Season", Figures 2 and 15; April 2006; http://sparetheair.org/~/media/STA/Files/3/STA/2005WinterReport.ashx
Assume cord wood usage for "Wood Stoves" includes all fuel usage for Fireplace Inserts.

2 OMNI, 2003. D. Broderick and J. Houck; OMNI Consulting Services, Inc.; "Results of Wood Burning Survey - Sacramento, San Joaquin, and San Francisco Areas, University of California Berkeley/California Air Resources Board - GIS Study", Sections 5.5, 5.6, 5.2; Jan. 15, 2003; http://www.omni-test.com/publications/final.pdf

3 OMNI, 2006. J.E. Houck and B.N. Eagle; OMNI Environmental Services, Inc.; "Residential Wood Combustion Emission Inventory South Coast Air Basin and Coachella Valley Portion of Salton Sea Air Basin, 2002 Base Year", Tables 2.2 and 3.21; October 24, 2006; http://www.omni-test.com/publications/SCAQMD-RWC4.pdf
Note: Estimates for San Diego and South Coast counties are based on U.S. Census American Housing Survey and alternative method.
Assume cord wood usage for "Wood Stoves" includes all fuel usage for Fireplace Inserts.

4 Sierra, 1989. Sierra Research, Inc.; "Draft Report, Residential Wood Use in California", prepared for the U.S. Environmental Protection Agency; October 20, 1989.

5 SJVUAPCD, 2010. San Joaquin Valley Air Pollution Control District; "District's Comprehensive Public Outreach and Education Program"; summary of survey conducted by CC&G (Feb.-May 2010); presented at the September 29-30, 2010 board hearing. Assume cord wood usage for "Wood Stoves" includes all fuel usage for Fireplace Inserts.

Table A-8: Fireplace Inserts – Amount of Compressed Wood Logs Burned

AB	Dis	County (AB)	P_{cwl} % of people who used their fireplace inserts with compressed wood logs	N_{cwl} # of compressed wood logs burned in fireplace inserts (logs/home/yr)	$H_{fi,cwl}$ # of homes with fireplace inserts that burn compressed wood logs	$F_{fi,cwl}$ Compressed wood logs burned in fireplace inserts, tons/year	Reference	Ref.
GBV	GBU	Alpine	3.1	30	1	0.1	OMNI, 2003; 5.2	2
GBV	GBU	Inyo	3.1	30	11	0.8	OMNI, 2003; 5.2	2
GBV	GBU	Mono	3.1	30	12	0.9	OMNI, 2003; 5.2	2
LC	LAK	Lake	3.1	30	37	2.7	OMNI, 2003; 5.2	2
LT	ED	El Dorado (LT)	7.7	30	66	4.9	OMNI, 2003; 5.2	2
LT	PLA	Placer (LT)	7.7	30	28	2.1	OMNI, 2003; 5.2	2
MC	AMA	Amador	3.1	30	21	1.6	OMNI, 2003; 5.2	2
MC	CAL	Calaveras	3.1	30	27	2.1	OMNI, 2003; 5.2	2
MC	ED	El Dorado (MC)	7.7	30	239	17.9	OMNI, 2003; 5.2	2
MC	MPA	Mariposa	3.1	30	11	0.8	OMNI, 2003; 5.2	2
MC	NSI	Nevada	3.1	30	59	4.4	OMNI, 2003; 5.2	2
MC	NSI	Plumas	3.1	30	19	1.4	OMNI, 2003; 5.2	2
MC	NSI	Sierra	3.1	30	3	0.2	OMNI, 2003; 5.2	2
MC	PLA	Placer (MC)	7.7	30	50	3.7	OMNI, 2003; 5.2	2
MC	TUO	Tuolumne	3.1	30	32	2.4	OMNI, 2003; 5.2	2
MD	AV	Los Angeles (MD)	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
MD	KER	Kern (MD)	0	0	0	0.0	SJVUAPCD, 2010; QH, QI	5
MD	MOJ	Riverside (MD)	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
MD	MOJ	San Bernardino (MD)	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
MD	SC	Riverside (MD)	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
NC	MEN	Mendocino	3.1	30	54	4.0	OMNI, 2003; 5.2	2
NC	NCU	Del Norte	3.1	30	17	1.3	OMNI, 2003; 5.2	2
NC	NCU	Humboldt	3.1	30	68	5.1	OMNI, 2003; 5.2	2
NC	NCU	Trinity	3.1	30	12	0.9	OMNI, 2003; 5.2	2
NC	NS	Sonoma (NC)	0	0	0	0.0	BAAQMD, 2006; Figs. 2, 15	1
NCC	MBU	Monterey	3.1	30	117	8.8	OMNI, 2003; 5.2	2
NCC	MBU	San Benito	3.1	30	16	1.2	OMNI, 2003; 5.2	2
NCC	MBU	Santa Cruz	3.1	30	124	9.3	OMNI, 2003; 5.2	2
NEP	LAS	Lassen	3.1	30	19	1.4	OMNI, 2003; 5.2	2
NEP	MOD	Modoc	3.1	30	6	0.5	OMNI, 2003; 5.2	2
NEP	SIS	Siskiyou	3.1	30	36	2.7	OMNI, 2003; 5.2	2
SC	SC	Los Angeles (SC)	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
SC	SC	Orange	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
SC	SC	Riverside (SC)	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
SC	SC	San Bernardino (SC)	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
SCC	SB	Santa Barbara	0.0	0	0	0.0	Sierra, 1989	4
SCC	SLO	San Luis Obispo	3.1	30	114	8.5	OMNI, 2003; 5.2	2
SCC	VEN	Ventura	3.1	30	212	15.9	OMNI, 2003; 5.2	2
SD	SD	San Diego	0	0	0	0.0	OMNI, 2006; 3.17, 4.1	3
SF	BA	Alameda	0	0	0	0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Contra Costa	0	0	0	0.0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Marin	0	0	0	0.0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Napa	0	0	0	0.0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	San Francisco	0	0	0	0.0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	San Mateo	0	0	0	0.0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Santa Clara	0	0	0	0.0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Solano (SF)	0	0	0	0.0	BAAQMD, 2006; Figs. 2, 15	1
SF	BA	Sonoma (SF)	0	0	0	0.0	BAAQMD, 2006; Figs. 2, 15	1
SJV	SJU	Fresno	0	0	0	0.0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Kern (SJV)	0	0	0	0.0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Kings	0	0	0	0.0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Madera	0	0	0	0.0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Merced	0	0	0	0.0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	San Joaquin	0	0	0	0.0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Stanislaus	0	0	0	0.0	SJVUAPCD, 2010; QH, QI	5
SJV	SJU	Tulare	0	0	0	0.0	SJVUAPCD, 2010; QH, QI	5
SS	IMP	Imperial	0.0	0	0	0.0	Sierra, 1989	4
SS	SC	Riverside (SS)	0	0	0	0	OMNI, 2006; 3.17, 4.1	3
SV	BUT	Butte	7.7	30	395	29.6	OMNI, 2003; 5.2	2
SV	COL	Colusa	7.7	30	31	2.3	OMNI, 2003; 5.2	2
SV	FR	Sutter	7.7	30	138	10.3	OMNI, 2003; 5.2	2
SV	FR	Yuba	7.7	30	102	7.6	OMNI, 2003; 5.2	2
SV	GLE	Glenn	7.7	30	44	3.3	OMNI, 2003; 5.2	2
SV	PLA	Placer (SV)	7.7	30	801	60.1	OMNI, 2003; 5.2	2
SV	SAC	Sacramento	7.7	30	3,885	291.4	OMNI, 2003; 5.2	2
SV	SHA	Shasta	7.7	30	315	23.6	OMNI, 2003; 5.2	2
SV	TEH	Tehama	7.7	30	104	7.8	OMNI, 2003; 5.2	2
SV	YS	Solano (SV)	7.7	30	384	28.8	OMNI, 2003; 5.2	2
SV	YS	Yolo	7.7	30	512	38.4	OMNI, 2003; 5.2	2

Notes:

P_{cwl}: Percent of people who used their fireplace inserts who used compressed wood logs.

N_{cwl}: Number of compressed wood logs burned in fireplace inserts (logs/home/yr).

$H_{fi,cwl}$: Number of homes with fireplace inserts that burn compressed wood logs. $[H_{fi,cwl}] = [H_{fi,u}]*[P_{cwl}]$, where $H_{fi,u}$ is number of homes with fireplace inserts actually being used.

W_{cwl} = Weight of an average compressed wood log (tons/log) (assuming 5 lbs/log) = 0.0025 ton/log (OMNI, 2003)

$F_{fi,cwl}$: Amount of compressed wood logs burned in fireplace inserts, tons/year. $[F_{fi,cwl}] = [H_{fi,cwl}]*[N_{cwl}]*[W_{cwl}]$

Reference:

1 BAAQMD, 2006. Bay Area Air Quality Management District; "Spare the Air Tonight Study, 2005-2006 Winter Wood Smoke Season", Figures 2 and 15; April 2006; http://sparetheair.org/~/media/STA/Files/3/STA/2005WinterReport.ashx
Assume cord wood usage for "Wood Stoves" includes all fuel usage for Fireplace Inserts.

2 OMNI, 2003. D. Broderick and J. Houck; OMNI Consulting Services, Inc.; "Results of Wood Burning Survey - Sacramento, San Joaquin, and San Francisco Areas, University of California Berkeley/California Air Resources Board - GIS Study", Section 5.2; Jan. 15, 2003; http://www.omni-test.com/publications/final.pdf

3 OMNI, 2006. J.E. Houck and B.N. Eagle; OMNI Environmental Services, Inc.; "Residential Wood Combustion Emission Inventory South Coast Air Basin and Coachella Valley Portion of Salton Sea Air Basin, 2002 Base Year", Table 4.1; October 24, 2006; http://www.omni-test.com/publications/SCAQMD-RWC4.pdf.
Note: Estimates for San Diego and South Coast counties are based on U.S. Census American Housing Survey and alternative method.
Assume cord wood usage for "Wood Stoves" includes all fuel usage for Fireplace Inserts.

4 Sierra, 1989. Sierra Research, Inc.; "Draft Report, Residential Wood Use in California", prepared for the U.S. Environmental Protection Agency; October 20, 1989. Note: Compressed wood logs were not broken out separately in this report.

5 SJVUAPCD, 2010. San Joaquin Valley Air Pollution Control District; "District's Comprehensive Public Outreach and Education Program"; summary of survey conducted by CC&G (Feb.-May 2010); presented at the September 29-30, 2010 board hearing. Assume cord wood usage for "Wood Stoves" includes all fuel usage for Fireplace Inserts.

Table A-9: Pellet Stoves – Number of Devices

AB	Dis	County (AB)	H_{total} # of homes in 2005	P_{ps} % of homes with wood burning pellet stoves	$P_{ps,u}$ % of homes that use their wood burning pellet stove	$H_{ps,u}$ # of homes with pellet stoves in use	Reference	Ref.
GBV	GBU	Alpine	528	0.0	-	0	NCRA, 1988; Tables II, VIII	2
GBV	GBU	Inyo	7,808	0.0	-	0	NCRA, 1988; Tables II, VIII	2
GBV	GBU	Mono	5,774	0.0	-	0	NCRA, 1988; Tables II, VIII	2
LC	LAK	Lake	24,790	0	-	0	Census, 2007; Table B25040	10
LT	ED	El Dorado (LT)	14,220	0.4	100	57	OMNI, 2003; 2.3d, 6.1, 6.2	3
LT	PLA	Placer (LT)	6,000	0.4	100	24	OMNI, 2003; 2.3d, 6.1, 6.2	3
MC	AMA	Amador	13,961	0	-	0	Census, 2007; Table B25040	10
MC	CAL	Calaveras	18,573	0	-	0	Census, 2007; Table B25040	10
MC	ED	El Dorado (MC)	51,742	0.4	100	207	OMNI, 2003; 2.3d, 6.1, 6.2	3
MC	MPA	Mariposa	7,276	1.3	100	95	OMNI, 2003; 2.3d, 6.1, 6.2	3
MC	NSI	Nevada	40,157	0	-	0	Census, 2007; Table B25040	10
MC	NSI	Plumas	9,775	0	-	0	Census, 2007; Table B25040	10
MC	NSI	Sierra	1,568	0.0	-	0	NCRA, 1988; Tables II, VIII	2
MC	PLA	Placer (MC)	10,799	0.4	100	43	OMNI, 2003; 2.3d, 6.1, 6.2	3
MC	TUO	Tuolumne	22,056	0	-	0	Census, 2007; Table B25040	10
MD	AV	Los Angeles (MD)	96,033	0	-	0	Census, 2004a; Table 1-4; Census, 2009	7,9
MD	KER	Kern (MD)	37,223	0	-	0	SJVUAPCD, 2010; QH, QI	11
MD	MOJ	Riverside (MD)	6,583	0	-	0	Census, 2003b, Table 1-4; Census, 2009	6,9
MD	MOJ	San Bernardino (MD)	125,319	0	-	0	Census, 2003b, Table 1-4; Census, 2009	6,9
MD	SC	Riverside (MD)	3,591	0	-	0	Census, 2003b, Table 1-4; Census, 2009	6,9
NC	MEN	Mendocino	34,798	0	-	0	Census, 2007; Table B25040	10
NC	NCU	Del Norte	9,513	0	-	0	Census, 2007; Table B25040	10
NC	NCU	Humboldt	53,152	0	-	0	Census, 2007; Table B25040	10
NC	NCU	Trinity	5,739	0.0	-	0	NCRA, 1988; Tables II, VIII	2
NC	NS	Sonoma (NC)	23,511	3.8	40.9	365	BAAQMD, 2006; Fig. 2	1
NCC	MBU	Monterey	126,559	0	-	0	Census, 2007; Table B25040	10
NCC	MBU	San Benito	16,980	0	-	0	Census, 2007; Table B25040	10
NCC	MBU	Santa Cruz	94,693	0	-	0	Census, 2007; Table B25040	10
NEP	LAS	Lassen	10,214	0	-	0	Census, 2007; Table B25040	10
NEP	MOD	Modoc	3,978	0.0	-	0	NCRA, 1988; Tables II, VIII	2
NEP	SIS	Siskiyou	19,472	0	-	0	Census, 2007; Table B25040	10
SC	SC	Los Angeles (SC)	3,105,059	0	-	0	Census, 2004a; Table 1-4; Census, 2009	7,9
SC	SC	Orange	977,547	0	-	0	Census, 2003a, Table 1-4; Census, 2009	5,9
SC	SC	Riverside (SC)	463,188	0	-	0	Census, 2003b, Table 1-4; Census, 2009	6,9
SC	SC	San Bernardino (SC)	444,312	0	-	0	Census, 2003b, Table 1-4; Census, 2009	6,9
SCC	SB	Santa Barbara	143,106	0	-	0	Sierra, 1989	12
SCC	SLO	San Luis Obispo	100,494	0	-	0	Census, 2007; Table B25040	10
SCC	VEN	Ventura	258,483	0	-	0	Census, 2007; Table B25040	10
SD	SD	San Diego	1,056,548	0	-	0	Census, 2004b, Table 1-4; Census, 2009	8,9
SF	BA	Alameda	542,540	8.9	32.2	15,548	BAAQMD, 2006; Fig. 2	1
SF	BA	Contra Costa	368,770	5.8	35.7	7,636	BAAQMD, 2006; Fig. 2	1
SF	BA	Marin	103,250	4.2	46.6	2,021	BAAQMD, 2006; Fig. 2	1
SF	BA	Napa	49,290	4.2	39.1	809	BAAQMD, 2006; Fig. 2	1
SF	BA	San Francisco	338,700	6.4	27.8	6,026	BAAQMD, 2006; Fig. 2	1
SF	BA	San Mateo	261,280	8.9	40.2	9,348	BAAQMD, 2006; Fig. 2	1
SF	BA	Santa Clara	595,550	5.8	27.9	9,637	BAAQMD, 2006; Fig. 2	1
SF	BA	Solano (SF)	101,410	2.9	33.9	997	BAAQMD, 2006; Fig. 2	1
SF	BA	Sonoma (SF)	158,970	3.8	40.9	2,471	BAAQMD, 2006; Fig. 2	1
SJV	SJU	Fresno	261,554	0	-	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Kern (SJV)	181,734	0	-	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Kings	35,812	0	-	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Madera	38,051	0	-	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Merced	67,116	0	-	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	San Joaquin	193,423	0	-	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Stanislaus	153,742	0	-	0	SJVUAPCD, 2010; QH, QI	11
SJV	SJU	Tulare	114,640	0	-	0	SJVUAPCD, 2010; QH, QI	11
SS	IMP	Imperial	43,771	0	-	0	Census, 2007; Table B25040	10
SS	SC	Riverside (SS)	125,073	0	-	0	Census, 2003b, Table 1-4; Census, 2009	6,9
SV	BUT	Butte	85,478	0.4	100	342	OMNI, 2003; 2.3d, 6.1, 6.2	3
SV	COL	Colusa	6,617	0.4	100	26	OMNI, 2003; 2.3d, 6.1, 6.2	3
SV	FR	Sutter	29,776	0.4	100	119	OMNI, 2003; 2.3d, 6.1, 6.2	3
SV	FR	Yuba	22,021	0.4	100	88	OMNI, 2003; 2.3d, 6.1, 6.2	3
SV	GLE	Glenn	9,506	0.4	100	38	OMNI, 2003; 2.3d, 6.1, 6.2	3
SV	PLA	Placer (SV)	103,191	3	63	1,950	SMAQMD, 2007; Fig. 3, Fig. 11	4
SV	SAC	Sacramento	500,604	3	63	9,461	SMAQMD, 2007; Fig. 3, Fig. 11	4
SV	SHA	Shasta	68,220	0.4	100	273	OMNI, 2003; 2.3d, 6.1, 6.2	3
SV	TEH	Tehama	22,410	0.4	100	90	OMNI, 2003; 2.3d, 6.1, 6.2	3
SV	YS	Solano (SV)	49,415	3	63	934	SMAQMD, 2007; Fig. 3, Fig. 11	4
SV	YS	Yolo	66,027	3	63	1,248	SMAQMD, 2007; Fig. 3, Fig. 11	4
			12,149,062			**69,854**		

Notes:

P_{ps}: Percent of homes with wood burning pellet stoves.

$P_{ps,u}$: Percent of homes with a pellet stove, where the pellet stove was actually used during the burn season

$H_{ps,u}$: Number of homes with pellet stoves actually being used. $H_{ps,u} = [H_{total}]*[P_{ps}]*[P_{ps,u}]$

Estimates for San Diego and South Coast counties are based on U.S. Census American Housing Survey and alternative method.

References:

1 BAAQMD, 2006. Bay Area Air Quality Management District; "Spare the Air Tonight Study, 2005-2006 Winter Wood Smoke Season", Figures 2 and 15; April 2006; http://sparetheair.org/~/media/STA/Files/3/STA/2005WinterReport.ashx

2 NCRA, 1988. Northern California Research Associates; "Draft Report, The California Residential Wood Consumption Survey", Tables II and VIII; May 1988. For the NCRA report, "Pellet Stoves" were not listed as a Type of Woodburning Device. Therefore, it is assumed that any pellet stoves reported for this survey were included with "Wood Stoves"

3 OMNI, 2003. D. Broderick and J. Houck; OMNI Consulting Services, Inc.; "Results of Wood Burning Survey - Sacramento, San Joaquin, and San Francisco Areas, University of California Berkeley/California Air Resources Board - GIS Study", Sections 2.3d, 6.1, 6.2; Jan. 15, 2003; http://www.omni-test.com/publications/final.pdf

4 SMAQMD, 2007. Sacramento Metropolitan Air Quality Management District; "Staff Report, Rule 421, Mandatory Episodic Curtailment of Wood and Other Solid Fuel Burning ", Figures 3 and 11; September 7, 2007; http://www.airquality.org/notices/Rules2007/Rule421StaffReport27Sep2007-Final.pdf

5 Census, 2003a. U.S. Census Bureau; "American Housing Survey for the Anaheim-Santa Ana Metropolitan Area: 2002"; Table 1-4; Issued July 2003; http://www.census.gov/hhes/www/housing/ahs/metropolitandata.html Assume "Wood Stoves" include Pellet Stoves.

6 Census, 2003b. U.S. Census Bureau; "American Housing Survey for the Riverside-San Bernardino-Ontario Metropolitan Area: 2002"; Table 1-4; Issued July 2003; http://www.census.gov/hhes/www/housing/ahs/metropolitandata.html Assume "Wood Stoves" include Pellet Stoves.

7 Census, 2004a. U.S. Census Bureau; "American Housing Survey for the Los Angeles-Long Beach Metropolitan Area: 2003"; Table 1-4; Issued December 2004; http://www.census.gov/hhes/www/housing/ahs/metropolitandata.html Assume "Wood Stoves" include Pellet Stoves.

8 Census, 2004b. U.S. Census Bureau; "American Housing Survey for the San Diego Metropolitan Area: 2002"; Tables 1-4, 1-6; Originally Issued July 2003, Update with Errata Issued May 2004; http://www.census.gov/hhes/www/housing/ahs/metropolitandata.html

9 Census, 2009. U.S. Census Bureau; Characteristics of New Housing; "Characteristics of New One-Family Houses Completed, Number of Fireplaces" (1973 - 2008) and "Characteristics of New One-Family Houses Sold, Presence of Fireplace" (1999 - 2008); released July 2009; http://www.census.gov/const/www/charindex_excel.html#singlecomplete

10 U.S. Census, 2007. United States Census; "American Community Survey 3-Year Estimates, 2005-2007"; Table B25040 (House Heating Fuel); obtained 6/24/09 from website http://factfinder.census.gov Note: It is assumed that the % of homes that use wood for heating fuel is the same as the % of homes with wood stoves. It is also assumed that the percentage assigned to wood stoves includes pellet stoves; therefore, pellet stoves on this sheet are zero.

11 SJVUAPCD, 2010. San Joaquin Valley Air Pollution Control District; "District's Comprehensive Public Outreach and Education Program"; summary of survey conducted by CC&G (Feb.-May 2010); presented at the September 29-30, 2010 board hearing. Assume "Wood Stoves" include Pellet Stoves.

12 Sierra, 1989. Sierra Research, Inc.; "Draft Report, Residential Wood Use in California", prepared for the U.S. Environmental Protection Agency; October 20, 1989. Note: Pellet stoves were not broken out separately in this report.

Table A-10: Pellet Stoves – Amount of Pellets Burned

AB	Dis	County (AB)	N_{sacks} # of sacks of pellets burned in pellet stoves (sacks/home/yr)	F_{ps} Pellets burned in pellet stoves, tons/year	Reference	Ref.
GBV	GBU	Alpine	100.0	0	OMNI, 2003; 6.7	1
GBV	GBU	Inyo	100.0	0	OMNI, 2003; 6.7	1
GBV	GBU	Mono	100.0	0	OMNI, 2003; 6.7	1
LC	LAK	Lake	100.0	0	OMNI, 2003; 6.7	1
LT	ED	El Dorado (LT)	100.0	114	OMNI, 2003; 6.7	1
LT	PLA	Placer (LT)	100.0	48	OMNI, 2003; 6.7	1
MC	AMA	Amador	100.0	0	OMNI, 2003; 6.7	1
MC	CAL	Calaveras	100.0	0	OMNI, 2003; 6.7	1
MC	ED	El Dorado (MC)	100.0	414	OMNI, 2003; 6.7	1
MC	MPA	Mariposa	100.0	189	OMNI, 2003; 6.7	1
MC	NSI	Nevada	100.0	0	OMNI, 2003; 6.7	1
MC	NSI	Plumas	100.0	0	OMNI, 2003; 6.7	1
MC	NSI	Sierra	100.0	0	OMNI, 2003; 6.7	1
MC	PLA	Placer (MC)	100.0	86	OMNI, 2003; 6.7	1
MC	TUO	Tuolumne	100.0	0	OMNI, 2003; 6.7	1
MD	AV	Los Angeles (MD)		0	OMNI, 2006; 3.17, 4.1	2
MD	KER	Kern (MD)		0	SJVUAPCD, 2010; QH, QI	3
MD	MOJ	Riverside (MD)		0	OMNI, 2006; 3.17, 4.1	2
MD	MOJ	San Bernardino (MD)		0	OMNI, 2006; 3.17, 4.1	2
MD	SC	Riverside (MD)		0	OMNI, 2006; 3.17, 4.1	2
NC	MEN	Mendocino	100.0	0	OMNI, 2003; 6.7	1
NC	NCU	Del Norte	100.0	0	OMNI, 2003; 6.7	1
NC	NCU	Humboldt	100.0	0	OMNI, 2003; 6.7	1
NC	NCU	Trinity	100.0	0	OMNI, 2003; 6.7	1
NC	NS	Sonoma (NC)	100.0	731	OMNI, 2003; 6.7	1
NCC	MBU	Monterey	100.0	0	OMNI, 2003; 6.7	1
NCC	MBU	San Benito	100.0	0	OMNI, 2003; 6.7	1
NCC	MBU	Santa Cruz	100.0	0	OMNI, 2003; 6.7	1
NEP	LAS	Lassen	100.0	0	OMNI, 2003; 6.7	1
NEP	MOD	Modoc	100.0	0	OMNI, 2003; 6.7	1
NEP	SIS	Siskiyou	100.0	0	OMNI, 2003; 6.7	1
SC	SC	Los Angeles (SC)		0	OMNI, 2006; 3.17, 4.1	2
SC	SC	Orange		0	OMNI, 2006; 3.17, 4.1	2
SC	SC	Riverside (SC)		0	OMNI, 2006; 3.17, 4.1	2
SC	SC	San Bernardino (SC)		0	OMNI, 2006; 3.17, 4.1	2
SCC	SB	Santa Barbara	100.0	0	OMNI, 2003; 6.7	1
SCC	SLO	San Luis Obispo	100.0	0	OMNI, 2003; 6.7	1
SCC	VEN	Ventura	100.0	0	OMNI, 2003; 6.7	1
SD	SD	San Diego		0	OMNI, 2006; 3.17, 4.1	2
SF	BA	Alameda	100.0	31,096	OMNI, 2003; 6.7	1
SF	BA	Contra Costa	100.0	15,272	OMNI, 2003; 6.7	1
SF	BA	Marin	100.0	4,042	OMNI, 2003; 6.7	1
SF	BA	Napa	100.0	1,619	OMNI, 2003; 6.7	1
SF	BA	San Francisco	100.0	12,052	OMNI, 2003; 6.7	1
SF	BA	San Mateo	100.0	18,696	OMNI, 2003; 6.7	1
SF	BA	Santa Clara	100.0	19,274	OMNI, 2003; 6.7	1
SF	BA	Solano (SF)	100.0	1,994	OMNI, 2003; 6.7	1
SF	BA	Sonoma (SF)	100.0	4,941	OMNI, 2003; 6.7	1
SJV	SJU	Fresno		0	SJVUAPCD, 2010; QH, QI	3
SJV	SJU	Kern (SJV)		0	SJVUAPCD, 2010; QH, QI	3
SJV	SJU	Kings		0	SJVUAPCD, 2010; QH, QI	3
SJV	SJU	Madera		0	SJVUAPCD, 2010; QH, QI	3
SJV	SJU	Merced		0	SJVUAPCD, 2010; QH, QI	3
SJV	SJU	San Joaquin		0	SJVUAPCD, 2010; QH, QI	3
SJV	SJU	Stanislaus		0	SJVUAPCD, 2010; QH, QI	3
SJV	SJU	Tulare		0	SJVUAPCD, 2010; QH, QI	3
SS	IMP	Imperial	100.0	0	OMNI, 2003; 6.7	1
SS	SC	Riverside (SS)		0	OMNI, 2006; 3.17, 4.1	2
SV	BUT	Butte	100.0	684	OMNI, 2003; 6.7	1
SV	COL	Colusa	100.0	53	OMNI, 2003; 6.7	1
SV	FR	Sutter	100.0	238	OMNI, 2003; 6.7	1
SV	FR	Yuba	100.0	176	OMNI, 2003; 6.7	1
SV	GLE	Glenn	100.0	76	OMNI, 2003; 6.7	1
SV	PLA	Placer (SV)	100.0	3,901	OMNI, 2003; 6.7	1
SV	SAC	Sacramento	100.0	18,923	OMNI, 2003; 6.7	1
SV	SHA	Shasta	100.0	546	OMNI, 2003; 6.7	1
SV	TEH	Tehama	100.0	179	OMNI, 2003; 6.7	1
SV	YS	Solano (SV)	100.0	1,868	OMNI, 2003; 6.7	1
SV	YS	Yolo	100.0	2,496	OMNI, 2003; 6.7	1
				139,708		

Notes:

N_{sacks}: Number of sacks of pellets burned in pellet stoves (sacks/home/yr).

W_{sack} = Weight of an Average Sack of Pellets (tons/sack) (assuming 40 lbs/sack) = 0.02 tons/sack (HPBA, 2009)

F_{ps}: Amount of pellet sacks burned in pellet stoves, tons/year. $[F_{ps}] = [H_{ps,u}]*[N_{sacks}]*[W_{sack}]$, where $H_{ps,u}$ is number of homes with pellet stoves actually being used.

Based on survey data, it is assumed that 100% of people who used their pellet stoves burned pellets.

References:

1 OMNI, 2003. D. Broderick and J. Houck; OMNI Consulting Services, Inc.; "Results of Wood Burning Survey - Sacramento, San Joaquin, and San Francisco Areas, University of California Berkeley/California Air Resources Board - GIS Study", Section 6.7; Jan. 15, 2003; http://www.omni-test.com/publications/final.pdf

2 OMNI, 2006. J.E. Houck and B.N. Eagle; OMNI Environmental Services, Inc.; "Residential Wood Combustion Emission Inventory South Coast Air Basin and Coachella Valley Portion of Salton Sea Air Basin, 2002 Base Year", Tables 3.23, 3.24 and 4.8; October 24, 2006; http://www.omni-test.com/publications/SCAQMD-RWC4.pdf
Note: Estimates for San Diego and South Coast counties are based on U.S. Census American Housing Survey and alternative method. Assume cord wood usage for "Wood Stoves" includes all fuel usage for Pellet Stoves.

3 SJVUAPCD, 2010. San Joaquin Valley Air Pollution Control District; "District's Comprehensive Public Outreach and Education Program"; summary of survey conducted by CC&G (Feb.-May 2010); presented at the September 29-30, 2010 board hearing. Assume cord wood usage for "Wood Stoves" includes all fuel usage for Pellet Stoves.

4 HPBA, 2009. Hearth, Patio & Barbecue Association (HPBA), Fuel Options (1/22/09). Pellets come in 40-pound bags. http://www.hpba.org/index.php?id=69

Table A-11: Fireplaces – 2005 Fuel Use and Emissions Estimates

AB	Dis	County (Air Basin)	FUEL USE (Tons/Yr)			2005 EMISSIONS (Tons/Year)						
			Cord Wood	*Mfrd. Logs*	*Total All Fuels*	*CO*	*NO_X*	*$PM_{2.5}$*	*PM_{10}*	*SO_2*	*ROG*	*NH_3*
GBV	GBU	Alpine	161	7	168	12	0	2	2	0	2	0
GBV	GBU	Inyo	1,719	73	1,792	133	2	21	22	0	17	2
GBV	GBU	Mono	1,858	79	1,937	144	3	23	24	1	19	2
LC	LAK	Lake	4,053	172	4,226	314	6	50	52	1	41	4
LT	ED	El Dorado (LT)	1,921	77	1,998	148	3	24	25	1	19	2
LT	PLA	Placer (LT)	811	33	843	63	1	10	10	0	8	1
MC	AMA	Amador	3,259	138	3,398	252	5	40	42	1	33	3
MC	CAL	Calaveras	3,037	129	3,166	235	4	37	39	1	31	3
MC	ED	El Dorado (MC)	6,990	281	7,271	540	10	86	89	2	71	6
MC	MPA	Mariposa	1,190	51	1,240	92	2	15	15	0	12	1
MC	NSI	Nevada	6,566	279	6,845	508	9	81	84	2	67	6
MC	NSI	Plumas	2,896	123	3,019	224	4	36	37	1	29	3
MC	NSI	Sierra	422	18	440	33	1	5	5	0	4	0
MC	PLA	Placer (MC)	1,459	59	1,518	113	2	18	19	0	15	1
MC	TUO	Tuolumne	3,606	153	3,760	279	5	45	46	1	37	3
MD	AV	Los Angeles (MD)	367	374	741	53	2	13	13	1	10	0
MD	KER	Kern (MD)	2,351	86	2,437	181	3	29	30	1	24	2
MD	MOJ	Riverside (MD)	39	34	72	5	0	1	1	0	1	0
MD	MOJ	San Bernardino (MD)	819	708	1,527	110	3	26	27	2	20	1
MD	SC	Riverside (MD)	23	20	43	3	0	1	1	0	1	0
NC	MEN	Mendocino	8,223	349	8,573	637	12	102	105	2	84	7
NC	NCU	Del Norte	2,549	108	2,657	197	4	31	33	1	26	2
NC	NCU	Humboldt	10,404	442	10,846	805	15	128	133	3	106	9
NC	NCU	Trinity	1,886	80	1,966	146	3	23	24	1	19	2
NC	NS	Sonoma (NC)	4,720	141	4,861	361	7	57	59	1	47	4
NCC	MBU	Monterey	17,909	760	18,669	1,386	26	221	230	5	182	16
NCC	MBU	San Benito	2,513	107	2,619	194	4	31	32	1	26	2
NCC	MBU	Santa Cruz	18,841	800	19,641	1,458	27	233	242	5	192	17
NEP	LAS	Lassen	2,876	122	2,998	223	4	36	37	1	29	3
NEP	MOD	Modoc	980	42	1,022	76	1	12	13	0	10	1
NEP	SIS	Siskiyou	5,504	234	5,737	426	8	68	71	2	56	5
SC	SC	Los Angeles (SC)	12,031	12,045	24,076	1,721	55	416	432	28	317	11
SC	SC	Orange	5,907	6,024	11,931	853	27	207	215	14	158	5
SC	SC	Riverside (SC)	2,965	2,564	5,530	397	12	93	97	6	71	3
SC	SC	San Bernardino (SC)	2,855	2,469	5,325	382	12	90	93	6	69	3
SCC	SB	Santa Barbara	10,276	1,066	11,342	839	17	141	147	4	115	9
SCC	SLO	San Luis Obispo	17,360	737	18,098	1,344	25	214	223	5	177	16
SCC	VEN	Ventura	32,306	1,372	33,678	2,501	46	399	414	9	328	29
SD	SD	San Diego	5,683	5,189	10,872	779	24	185	192	12	141	5
SF	BA	Alameda	49,507	2,477	51,983	3,858	72	620	644	15	510	45
SF	BA	Contra Costa	94,221	2,316	96,536	7,178	130	1,124	1,168	24	930	85
SF	BA	Marin	8,479	806	9,285	687	14	115	119	3	94	8
SF	BA	Napa	8,995	310	9,305	691	13	109	114	2	90	8
SF	BA	San Francisco	6,181	1,112	7,294	537	12	96	100	4	77	6
SF	BA	San Mateo	16,689	1,897	18,586	1,373	28	234	243	7	190	15
SF	BA	Santa Clara	70,647	2,643	73,290	5,444	100	864	897	20	712	64
SF	BA	Solano (SF)	19,433	564	19,997	1,486	27	234	243	5	193	17
SF	BA	Sonoma (SF)	31,913	952	32,866	2,443	45	385	400	8	318	29
SJV	SJU	Fresno	49,461	715	50,176	3,734	67	578	601	11	479	45
SJV	SJU	Kern (SJV)	29,189	422	29,611	2,204	39	341	355	7	283	26
SJV	SJU	Kings	5,752	83	5,835	434	8	67	70	1	56	5
SJV	SJU	Madera	7,325	106	7,430	553	10	86	89	2	71	7
SJV	SJU	Merced	12,920	187	13,106	975	17	151	157	3	125	12
SJV	SJU	San Joaquin	69,428	1,003	70,431	5,241	94	812	843	16	673	62
SJV	SJU	Stanislaus	41,253	596	41,849	3,114	56	482	501	10	400	37
SJV	SJU	Tulare	29,252	423	29,675	2,208	39	342	355	7	284	26
SS	IMP	Imperial	876	59	935	69	1	11	12	0	9	1
SS	SC	Riverside (SS)	807	698	1,506	108	3	25	26	2	19	1
SV	BUT	Butte	11,548	464	12,012	892	17	142	147	3	117	10
SV	COL	Colusa	894	36	930	69	1	11	11	0	9	1
SV	FR	Sutter	4,023	162	4,184	311	6	49	51	1	41	4
SV	FR	Yuba	2,975	120	3,094	230	4	37	38	1	30	3
SV	GLE	Glenn	1,284	52	1,336	99	2	16	16	0	13	1
SV	PLA	Placer (SV)	6,854	658	7,513	556	11	93	97	3	76	6
SV	SAC	Sacramento	33,252	3,194	36,446	2,696	54	452	469	13	368	30
SV	SHA	Shasta	9,216	370	9,586	712	13	113	118	3	93	8
SV	TEH	Tehama	3,027	122	3,149	234	4	37	39	1	31	3
SV	YS	Solano (SV)	3,282	315	3,598	266	5	45	46	1	36	3
SV	YS	Yolo	4,386	421	4,807	356	7	60	62	2	49	4
		Totals (tons/year) =	**842,407**	**60,825**	**903,233**	**66,926**	**1,293**	**10,981**	**11,406**	**296**	**8,989**	**758**
		Totals (Annual Avg. tons/day) =	**2,308**	**167**	**2,475**	**183**	**4**	**30**	**31**	**1**	**25**	**2**

Fireplace Emission Factors (lb/ton fuel burned)

	CO	NOX	PM2.5	PM10	SO2	ROG	NH3
Cord Wood / Bundles	149	2.6	22.7	23.6	0.4	18.9	1.8
Mfrd. Log	137	6.5	46.4	48.2	4.2	33.8	0.004

[Emissions, tons/yr] = [Emission Factor, lb/ton]*[Fuel Use, tons/yr]/[2000 lbs/ton]
[Total PM] = [PM10]/[0.935], per ARB particulate matter profile code #424
[PM2.5] = [Total PM]*[0.9001] = [PM10]*[0.9001/0.935] = [PM10]*[0.963], per ARB particulate matter profile code #424
[Total Organic Gases, TOG] = [ROG]/0.4385, per ARB organic profile code #549

Table A-12: All Wood Stoves – 2005 Fuel Use and Emissions Estimates
(includes Wood Stoves, Fireplace Inserts, Pellet Stoves)

AB	Dis	County (Air Basin)	FUEL USE (Tons/Yr)						2005 EMISSIONS (Tons/Year)						
			Cord Wood: Conventional	*Cord Wood: Phase II, Non-Catalytic*	*Cord Wood: Phase II, Catalytic*	*Compressed Wood Logs*	*Pellets*	*Total for All Fuels*	*CO*	*NO_X*	*$PM_{2.5}$*	*PM_{10}*	*SO_2*	*ROG*	*NH_3*
GBV	GBU	Alpine	115	72	26	0	0	212	20	0	2	3	0	4	0
GBV	GBU	Inyo	1,225	767	276	1	0	2,268	210	3	26	27	0	39	2
GBV	GBU	Mono	1,324	830	298	1	0	2,452	227	3	28	29	0	42	2
LC	LAK	Lake	5,148	3,251	1,134	3	0	9,535	882	12	110	114	2	164	6
LT	ED	El Dorado (LT)	3,732	2,148	722	5	114	6,721	621	9	77	80	1	117	4
LT	PLA	Placer (LT)	1,575	906	305	2	48	2,836	262	4	33	34	1	49	2
MC	AMA	Amador	4,270	2,717	921	2	0	7,910	732	10	91	95	2	136	5
MC	CAL	Calaveras	6,660	4,250	1,423	2	0	12,335	1,142	16	142	147	2	213	8
MC	ED	El Dorado (MC)	13,579	7,818	2,628	18	414	24,456	2,260	31	282	292	5	427	16
MC	MPA	Mariposa	1,534	969	338	1	189	3,030	264	4	33	34	1	49	2
MC	NSI	Nevada	9,992	6,336	2,176	4	0	18,507	1,713	23	213	221	4	319	12
MC	NSI	Plumas	4,129	2,631	887	1	0	7,648	708	10	88	91	2	132	5
MC	NSI	Sierra	301	189	68	0	0	557	52	1	6	7	0	10	0
MC	PLA	Placer (MC)	2,834	1,632	548	4	86	5,104	472	7	59	61	1	89	3
MC	TUO	Tuolumne	8,322	5,315	1,774	2	0	15,413	1,427	19	177	184	3	266	10
MD	AV	Los Angeles (MD)	998	178	88	0	0	1,264	132	2	17	17	0	28	1
MD	KER	Kern (MD)	863	428	41	0	0	1,332	132	2	16	17	0	26	1
MD	MOJ	Riverside (MD)	199	35	17	0	0	251	26	0	3	3	0	6	0
MD	MOJ	San Bernardino (MD)	4,488	799	394	0	0	5,682	595	8	76	79	1	127	4
MD	SC	Riverside (MD)	119	21	10	0	0	151	16	0	2	2	0	3	0
NC	MEN	Mendocino	11,927	7,601	2,560	4	0	22,092	2,046	28	254	264	4	381	15
NC	NCU	Del Norte	2,587	1,638	567	1	0	4,793	444	6	55	57	1	83	3
NC	NCU	Humboldt	14,467	8,960	2,204	5	0	25,635	2,416	33	298	309	5	454	17
NC	NCU	Trinity	1,343	842	302	1	0	2,489	230	3	29	30	0	43	2
NC	NS	Sonoma (NC)	2,600	3,089	1,262	0	731	7,682	589	10	73	76	2	97	4
NCC	MBU	Monterey	9,158	5,666	2,136	9	0	16,969	1,568	21	196	203	3	293	11
NCC	MBU	San Benito	1,722	1,078	389	1	0	3,190	295	4	37	38	1	55	2
NCC	MBU	Santa Cruz	12,567	7,858	2,847	9	0	23,281	2,153	29	268	279	5	402	16
NEP	LAS	Lassen	4,087	2,603	878	1	0	7,569	701	10	87	91	2	131	5
NEP	MOD	Modoc	698	438	157	0	0	1,293	120	2	15	15	0	22	1
NEP	SIS	Siskiyou	7,504	4,777	1,615	3	0	13,900	1,287	18	160	166	3	240	9
SC	SC	Los Angeles (SC)	32,280	5,749	2,832	0	0	40,860	4,278	55	544	565	8	911	31
SC	SC	Orange	6,015	1,071	528	0	0	7,614	797	10	101	105	2	170	6
SC	SC	Riverside (SC)	15,173	2,702	1,331	0	0	19,207	2,011	26	256	265	4	428	15
SC	SC	San Bernardino (SC)	15,650	2,787	1,373	0	0	19,810	2,074	26	264	274	4	442	15
SCC	SB	Santa Barbara	8,830	5,637	1,885	0	0	16,352	1,514	21	188	195	3	282	11
SCC	SLO	San Luis Obispo	9,552	5,928	2,208	9	0	17,697	1,636	22	204	212	4	305	12
SCC	VEN	Ventura	9,590	5,733	2,436	16	0	17,775	1,639	22	206	214	4	307	12
SD	SD	San Diego	31,486	5,608	2,762	0	0	39,856	4,173	53	530	551	8	889	31
SF	BA	Alameda	370	440	180	0	31,096	32,086	330	60	56	58	5	14	5
SF	BA	Contra Costa	10,823	12,862	5,254	0	15,272	44,211	2,550	64	324	336	8	404	20
SF	BA	Marin	13,531	16,080	6,568	0	4,042	40,220	3,068	52	383	398	8	504	22
SF	BA	Napa	4,643	5,517	2,254	0	1,619	14,033	1,055	18	132	137	3	173	8
SF	BA	San Francisco	347	412	168	0	12,052	12,979	174	24	27	28	2	13	2
SF	BA	San Mateo	4,458	5,298	2,164	0	18,696	30,617	1,149	50	152	158	5	167	10
SF	BA	Santa Clara	7,927	9,420	3,848	0	19,274	40,469	1,932	62	249	259	7	296	16

Table A-12: All Wood Stoves – 2005 Fuel Use and Emissions Estimates
(includes Wood Stoves, Fireplace Inserts, Pellet Stoves)

AB	Dis	County (Air Basin)	FUEL USE (Tons/Yr)						2005 EMISSIONS (Tons/Year)						
			Cord Wood: Conventional	*Cord Wood: Phase II, Non-Catalytic*	*Cord Wood: Phase II, Catalytic*	*Compressed Wood Logs*	*Pellets*	*Total for All Fuels*	*CO*	*NO_X*	*$PM_{2.5}$*	*PM_{10}*	*SO_2*	*ROG*	*NH_3*
SF	BA	Solano (SF)	692	823	336	0	1,994	3,845	171	6	22	23	1	26	1
SF	BA	Sonoma (SF)	17,578	20,889	8,532	0	4,941	51,941	3,984	66	497	516	10	655	29
SJV	SJU	Fresno	9,274	4,599	438	0	0	14,311	1,417	19	173	180	3	277	10
SJV	SJU	Kern (SJV)	4,214	2,090	199	0	0	6,503	644	8	79	82	1	126	5
SJV	SJU	Kings	614	304	29	0	0	947	94	1	11	12	0	18	1
SJV	SJU	Madera	3,835	1,902	181	0	0	5,919	586	8	72	74	1	114	4
SJV	SJU	Merced	6,921	3,432	327	0	0	10,680	1,057	14	129	134	2	206	8
SJV	SJU	San Joaquin	4,351	2,158	206	0	0	6,714	665	9	81	84	1	130	5
SJV	SJU	Stanislaus	8,180	4,057	387	0	0	12,624	1,250	16	153	159	3	244	9
SJV	SJU	Tulare	17,215	8,538	814	0	0	26,567	2,630	35	322	334	5	514	19
SS	IMP	Imperial	91	16	8	0	0	115	12	0	2	2	0	3	0
SS	SC	Riverside (SS)	4,091	729	359	0	0	5,179	542	7	69	72	1	115	4
SV	BUT	Butte	22,433	12,915	4,341	30	684	40,402	3,733	52	465	483	8	705	27
SV	COL	Colusa	1,737	1,000	336	2	53	3,128	289	4	36	37	1	55	2
SV	FR	Sutter	7,814	4,499	1,512	10	238	14,074	1,300	18	162	168	3	245	9
SV	FR	Yuba	5,779	3,327	1,118	8	176	10,408	962	13	120	124	2	182	7
SV	GLE	Glenn	2,495	1,436	483	3	76	4,493	415	6	52	54	1	78	3
SV	PLA	Placer (SV)	14,852	7,005	4,874	60	3,901	30,692	2,499	41	322	335	6	473	19
SV	SAC	Sacramento	72,052	33,982	23,644	291	18,923	148,892	12,121	200	1,564	1,624	29	2,293	90
SV	SHA	Shasta	17,904	10,307	3,464	24	546	32,245	2,979	41	371	386	6	562	22
SV	TEH	Tehama	5,881	3,386	1,138	8	179	10,592	979	14	122	127	2	185	7
SV	YS	Solano (SV)	7,112	3,354	2,334	29	1,868	14,697	1,196	20	154	160	3	226	9
SV	YS	Yolo	9,503	4,482	3,119	38	2,496	19,638	1,599	26	206	214	4	302	12
		Totals (tons/year) =	**555,358**	**306,317**	**122,958**	**609**	**139,708**	**1,124,949**	**93,243**	**1,516**	**11,753**	**12,209**	**219**	**17,484**	**687**
		Totals (Ann. Avg. tons/day) =							**255**	**4**	**32**	**33**	**1**	**48**	**2**

		Wood Stove Emission Factors (lb/ton fuel burned)						
Wood Stoves & Fireplace Inserts:	**Fuel Type**	**CO**	**NOX**	**PM2.5**	**PM10**	**SO2**	**ROG**	**NH3**
Conventional (non-EPA certified)	Cord Wood	230.8	2.8	29.5	30.6	0.4	53	1.7
Phase II EPA certified, Non-Catalytic	Cord Wood	140.8	2.28	14.1	14.6	0.4	12	0.9
Phase II EPA certified, Catalytic	Cord Wood	104.4	2	19.6	20.4	0.4	15	0.9
All	Compressed Wood Logs	201.2	2.8	25.0	26	0.4	15.1	1.7
Pellet Stoves	Pellets	15.9	3.8	2.9	3.06	0.32	0.04	0.3

[Emissions, tons/yr] = [Emission Factor, lb/ton]*[Fuel Use, tons/yr]/[2000 lbs/ton]
[Total PM] = [PM10]/[0.935], per ARB particulate matter profile code #424
[PM2.5] = [Total PM]*[0.9001] = [PM10]*[0.9001/0.935] = [PM10]*[0.963], per ARB particulate matter profile code #424
[Total Organic Gases, TOG] = [ROG]/0.4385, per ARB organic profile code #549