

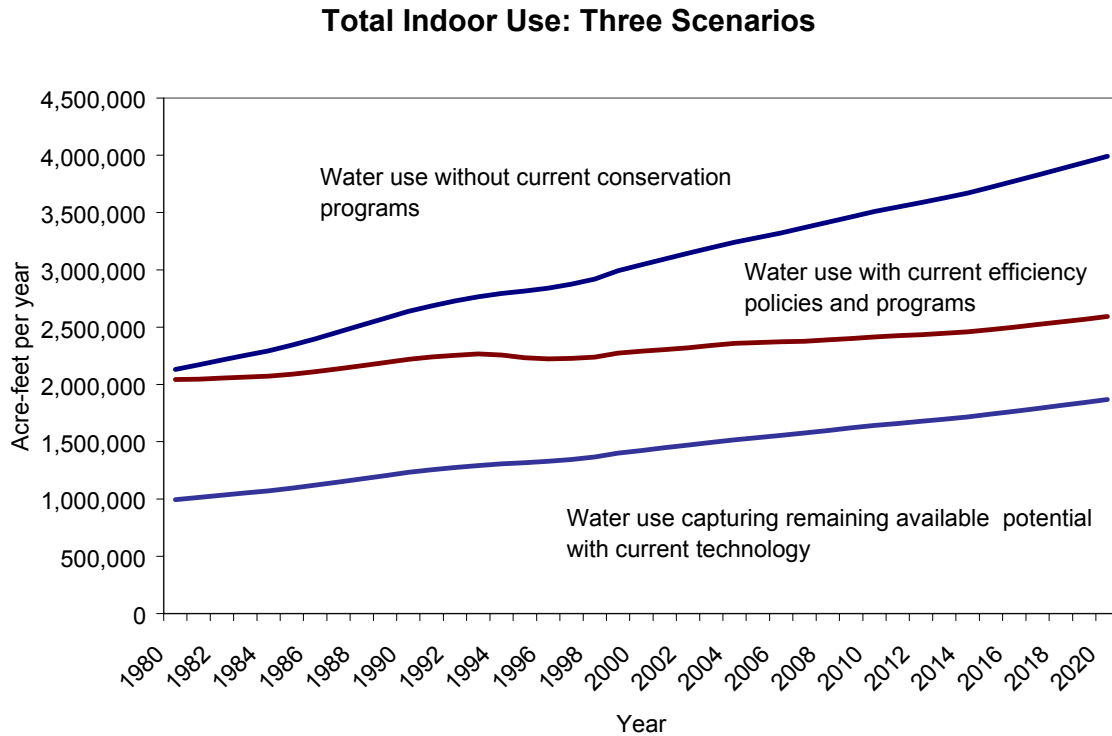
Appendix A

Indoor Residential Water Use and the Potential for Conservation

The following Appendix shows a breakdown of water use inside California homes from 1980 projected to 2020. For the 1998 values, we present a scenario in which no conservation policies or programs had ever been implemented as well as an estimate of actual use. The difference between these two scenarios indicates the amount of water that has already been saved through various conservation programs and legislative requirements. For the 2020 projections, we again present scenario that look at water use with no conservation efforts, with current efforts, and with full implementation of existing cost-effective technology as described in Section 2 of the full report.

Figure A-1 shows total indoor water use in California from 1980 to 2020 by end-use and year for the different three different scenarios. Tables A-1 through A-3 show total indoor water use for the three scenarios. Tables A-4 through A-8 show the water used statewide by specific residential end-uses (Toilets, Showerheads, Washing Machines, Dishwashers, and Leaks). See text and other Appendices of “Waste Not, Want Not,” Section 2 for full details of assumptions.

Figure A-1: Indoor water use by end use by year



Scenario I: No conservation policies or programs implemented

Assumptions: Water-use technologies and policies in place in 1980 only, assuming officially projected population growth in California.

Toilets: 6.0 gallons/flush

Washing Machines: 44 gallons/load

Showers: 5.0 gallons/minute

Dishwashers: 10.3 gallons/load

Leaks: 21.9 gallons/household/day

Table A-1**Scenario 1: Water use without conservation policies and programs****Water Use in Acre-Feet per****Year**

Year	Population	Toilets	Washing Machines	Showers	Dishwashers	Leaks	Faucets	Total
1980	23,783,980	786,456	298,081	521,928	21,507	211,705	290,392	2,130,069
1981	24,279,581	802,844	302,206	532,804	21,805	214,635	296,443	2,170,736
1982	24,806,882	820,280	306,489	544,375	22,114	217,677	302,881	2,213,817
1983	25,338,283	837,852	309,164	556,036	22,307	219,577	309,369	2,254,306
1984	25,817,984	853,714	312,737	566,563	22,564	222,114	315,226	2,292,919
1985	26,404,385	873,104	318,148	579,431	22,955	225,958	322,386	2,341,983
1986	27,054,386	894,598	325,137	593,695	23,459	230,921	330,322	2,398,132
1987	27,718,887	916,571	332,863	608,278	24,017	236,409	338,436	2,456,573
1988	28,395,088	938,930	341,361	623,116	24,630	242,444	346,692	2,517,172
1989	29,085,589	961,763	349,026	638,269	25,183	247,887	355,122	2,577,250
1990	29,760,203	984,070	356,927	653,073	25,753	253,499	363,359	2,636,682
1991	30,297,993	1,001,853	363,453	664,875	26,224	258,134	369,925	2,684,464
1992	30,846,720	1,019,998	367,586	676,916	26,522	261,070	376,625	2,728,717
1993	31,305,445	1,035,166	370,895	686,983	26,761	263,420	382,226	2,765,450
1994	31,663,018	1,046,990	373,571	694,830	26,954	265,320	386,592	2,794,255
1995	31,912,056	1,055,225	376,343	700,295	27,154	267,289	389,632	2,815,938
1996	32,224,869	1,065,568	378,835	707,159	27,333	269,059	393,452	2,841,406
1997	32,672,016	1,080,354	381,483	716,972	27,524	270,940	398,911	2,876,184
1998	33,251,809	1,099,526	384,346	729,695	27,731	272,973	405,990	2,920,262
1999	34,072,478	1,126,663	393,832	747,704	28,416	279,710	416,010	2,992,335
2000	34,653,395	1,145,872	400,547	760,452	28,900	284,479	423,103	3,043,353
2001	35,233,335	1,165,048	407,250	773,178	29,384	289,240	430,184	3,094,285
2002	35,802,238	1,183,860	413,826	785,663	29,858	293,911	437,130	3,144,247
2003	36,363,502	1,202,419	420,313	797,979	30,326	298,518	443,983	3,193,539
2004	36,899,907	1,220,156	426,514	809,751	30,774	302,922	450,532	3,240,647
2005	37,372,444	1,235,781	431,976	820,120	31,168	306,801	456,301	3,282,147
2006	37,838,342	1,251,187	437,361	830,344	31,556	310,625	461,990	3,323,063
2007	38,364,421	1,268,583	443,441	841,889	31,995	314,944	468,413	3,369,265
2008	38,893,801	1,286,088	449,560	853,506	32,436	319,290	474,877	3,415,756
2009	39,425,878	1,303,682	455,710	865,182	32,880	323,658	481,373	3,462,485
2010	39,957,616	1,321,264	461,857	876,850	33,324	328,023	487,865	3,509,183
2011	40,402,397	1,335,972	466,998	886,611	33,694	331,675	493,296	3,548,245
2012	40,852,345	1,350,850	472,199	896,485	34,070	335,368	498,789	3,587,761
2013	41,314,152	1,366,120	477,536	906,619	34,455	339,159	504,428	3,628,318

2014	41,784,860	1,381,685	482,977	916,948	34,847	343,024	510,175	3,669,657
2015	42,370,899	1,401,064	489,751	929,809	35,336	347,834	517,330	3,721,124
2016	42,972,103	1,420,943	496,700	943,002	35,838	352,770	524,671	3,773,924
2017	43,582,505	1,441,127	503,756	956,397	36,347	357,781	532,124	3,827,531
2018	44,201,005	1,461,579	510,905	969,970	36,862	362,858	539,675	3,881,849
2019	44,824,321	1,482,190	518,109	983,648	37,382	367,975	547,286	3,936,590
2020	45,450,647	1,502,901	525,349	997,392	37,905	373,117	554,933	3,991,596

Scenario 2: With current policies and programs

Assumptions: Continuation of "Current" distribution of water-using technologies and polices, with officially projected population growth in California.

Toilets: mixture of 6.0, 3.5, and 1.6 gallons/flush

Washing Machines: 36.4 gallons/load

Showers: 2.5 gallons/minute

Dishwashers: 8 gallons/load

Leaks: 21.9 gallons/household/day

Table A-2**Scenario 2: Water Use, the "No Action" Scenario****Water Use in Acre-Feet per Year**

Year	Population	Toilets	Washing Machines	Showers	Dishwashers	Leaks	Faucets	Total
1980	23,783,980	773,349	246,594	502,993	16,704	211,705	290,392	2,041,737
1981	24,279,581	772,647	250,007	496,054	16,936	214,635	296,443	2,046,721
1982	24,806,882	773,192	253,550	490,816	17,176	217,677	302,881	2,055,292
1983	25,338,283	775,883	255,763	486,589	17,326	219,577	309,369	2,064,507
1984	25,817,984	776,223	258,719	482,117	17,526	222,114	315,226	2,071,926
1985	26,404,385	778,427	263,195	480,720	17,829	225,958	322,386	2,088,516
1986	27,054,386	781,382	268,977	481,342	18,221	230,921	330,322	2,111,165
1987	27,718,887	784,406	275,369	482,845	18,654	236,409	338,436	2,136,117
1988	28,395,088	787,393	282,398	485,112	19,130	242,444	346,692	2,163,169
1989	29,085,589	792,110	288,739	488,150	19,559	247,887	355,122	2,191,568
1990	29,760,203	796,366	295,276	491,270	20,002	253,499	363,359	2,219,773
1991	30,297,993	799,909	300,675	491,895	20,368	258,134	369,925	2,240,906
1992	30,846,720	799,577	304,094	493,217	20,599	261,070	376,625	2,255,182
1993	31,305,445	800,246	306,831	493,056	20,785	263,420	382,226	2,266,564
1994	31,663,018	784,870	309,045	490,091	20,935	265,320	386,592	2,256,853
1995	31,912,056	768,417	311,339	474,824	21,090	267,289	389,632	2,232,591
1996	32,224,869	752,240	313,400	473,804	21,230	269,059	393,452	2,223,184
1997	32,672,016	744,729	315,590	475,932	21,378	270,940	398,911	2,227,481
1998	33,251,809	741,468	316,095	480,984	21,539	272,973	405,990	2,239,050
1999	34,072,478	741,394	323,534	491,132	22,070	279,710	416,010	2,273,850
2000	34,653,395	733,743	329,212	495,977	22,447	284,479	423,103	2,288,961
2001	35,233,335	726,399	334,729	501,200	22,822	289,240	430,184	2,304,574
2002	35,802,238	719,029	340,146	506,331	23,191	293,911	437,130	2,319,737
2003	36,363,502	717,048	345,489	511,447	23,554	298,518	443,983	2,340,039
2004	36,899,907	714,386	350,607	516,176	23,902	302,922	450,532	2,358,524
2005	37,372,444	703,412	355,142	519,720	24,208	306,801	456,301	2,365,584

2006	37,838,342	692,987	359,578	523,356	24,510	310,625	461,990	2,373,045
2007	38,364,421	683,691	355,325	528,421	24,850	314,944	468,413	2,375,644
2008	38,893,801	674,986	360,240	533,598	25,193	319,290	474,877	2,388,184
2009	39,425,878	666,846	365,183	538,922	25,538	323,658	481,373	2,401,520
2010	39,957,616	659,220	370,132	544,321	25,882	328,023	487,865	2,415,444
2011	40,402,397	651,306	374,550	547,967	26,170	331,675	493,296	2,424,965
2012	40,852,345	643,916	378,721	551,941	26,462	335,368	498,789	2,435,198
2013	41,314,152	637,092	382,980	556,273	26,761	339,159	504,428	2,446,693
2014	41,784,860	630,787	387,332	560,878	27,066	343,024	510,175	2,459,262
2015	42,370,899	625,947	392,416	567,986	27,446	347,834	517,330	2,478,959
2016	42,972,103	621,649	397,962	575,296	27,835	352,770	524,671	2,500,182
2017	43,582,505	617,823	403,613	582,777	28,230	357,781	532,124	2,522,348
2018	44,201,005	614,444	409,342	590,408	28,631	362,858	539,675	2,545,358
2019	44,824,321	611,467	415,127	598,114	29,035	367,975	547,286	2,569,004
2020	45,450,647	608,861	420,946	605,861	29,440	373,117	554,933	2,593,159

Scenario 3: Maximizing current efficiency potential

Assumptions: Full implementation of current generation of efficiency technologies and regulations into the future, with officially projected population growth.

Toilets: 1.6 gallons/flush

Washing Machines: 26 gallons/load

Showers: 1.8 gallons/minute

Dishwashers: 5.3 gallons/load

Leaks: 4.2 gallons/household/day

Table A-3

Scenario 3: Potential Water Use, Maximizing efficiency Water Use in Acre-Feet per Year

Year	Population	Toilets	Washing Machines	Showers	Dishwashers	Leaks	Faucets	Total
1980	23,783,980	214,837	163,944	257,929	11,067	40,601	290,392	978,771
1981	24,279,581	219,314	166,213	263,304	11,220	41,163	296,443	997,657
1982	24,806,882	224,077	168,569	269,023	11,379	41,746	302,881	1,017,675
1983	25,338,283	228,877	170,040	274,785	11,478	42,111	309,369	1,036,661
1984	25,817,984	233,210	172,005	279,988	11,611	42,597	315,226	1,054,637
1985	26,404,385	238,507	174,982	286,347	11,812	43,334	322,386	1,077,367
1986	27,054,386	244,378	178,825	293,396	12,071	44,286	330,322	1,103,279
1987	27,718,887	250,380	183,075	300,602	12,358	45,339	338,436	1,130,190
1988	28,395,088	256,488	187,748	307,935	12,673	46,496	346,692	1,158,033
1989	29,085,589	262,725	191,964	315,424	12,958	47,540	355,122	1,185,734
1990	29,760,203	268,819	196,310	322,740	13,251	48,616	363,359	1,213,096
1991	30,297,993	273,677	199,899	328,572	13,494	49,505	369,925	1,235,072
1992	30,846,720	278,633	202,172	334,523	13,647	50,068	376,625	1,255,669
1993	31,305,445	282,777	203,992	339,497	13,770	50,519	382,226	1,272,782
1994	31,663,018	286,007	205,464	343,375	13,869	50,883	386,592	1,286,190
1995	31,912,056	288,257	206,989	346,076	13,972	51,261	389,632	1,296,187
1996	32,224,869	291,082	208,359	349,468	14,065	51,600	393,452	1,308,026
1997	32,672,016	295,121	209,816	354,317	14,163	51,961	398,911	1,324,289

1998	33,251,809	300,358	211,391	360,605	14,269	52,351	405,990	1,344,965
1999	34,072,478	307,771	216,608	369,505	14,622	53,643	416,010	1,378,159
2000	34,653,395	313,019	220,301	375,805	14,871	54,558	423,103	1,401,656
2001	35,233,335	318,257	223,988	382,094	15,120	55,471	430,184	1,425,113
2002	35,802,238	323,396	227,604	388,264	15,364	56,366	437,130	1,448,124
2003	36,363,502	328,466	231,172	394,350	15,605	57,250	443,983	1,470,826
2004	36,899,907	333,311	234,582	400,167	15,835	58,095	450,532	1,492,522
2005	37,372,444	337,579	237,587	405,292	16,038	58,839	456,301	1,511,635
2006	37,838,342	341,788	240,548	410,344	16,238	59,572	461,990	1,530,480
2007	38,364,421	346,540	243,893	416,050	16,463	60,400	468,413	1,551,759
2008	38,893,801	351,321	247,258	421,791	16,691	61,234	474,877	1,573,171
2009	39,425,878	356,128	250,641	427,561	16,919	62,071	481,373	1,594,692
2010	39,957,616	360,931	254,021	433,327	17,147	62,909	487,865	1,616,200
2011	40,402,397	364,948	256,849	438,151	17,338	63,609	493,296	1,634,190
2012	40,852,345	369,013	259,709	443,030	17,531	64,317	498,789	1,652,390
2013	41,314,152	373,184	262,645	448,038	17,729	65,044	504,428	1,671,069
2014	41,784,860	377,436	265,637	453,143	17,931	65,785	510,175	1,690,108
2015	42,370,899	382,730	269,363	459,499	18,183	66,708	517,330	1,713,812
2016	42,972,103	388,160	273,185	466,018	18,441	67,655	524,671	1,738,130
2017	43,582,505	393,674	277,066	472,638	18,703	68,616	532,124	1,762,819
2018	44,201,005	399,261	280,998	479,345	18,968	69,589	539,675	1,787,836
2019	44,824,321	404,891	284,960	486,105	19,236	70,571	547,286	1,813,048
2020	45,450,647	410,548	288,942	492,897	19,504	71,557	554,933	1,838,381

Table A-4: Water use by toilets (natural replacement plus existing utility programs)

Year	State Population	Number of persons using			Total Water Use by toilets In AFY
		6.0 gal/flush	3.5 gal/flush	1.6 gal/flush	
1980	23,783,980	22,832,621	951,359	0	773,349
1981	24,279,581	22,087,834	2,191,747	0	772,647
1982	24,806,882	21,389,191	3,417,691	0	773,192
1983	25,338,283	20,840,503	4,497,780	0	775,883
1984	25,817,984	20,193,625	5,624,359	0	776,223
1985	26,404,385	19,532,659	6,871,726	0	778,427
1986	27,054,386	18,837,126	8,217,260	0	781,382
1987	27,718,887	18,126,253	9,592,634	0	784,406
1988	28,395,088	17,396,411	10,998,677	0	787,393
1989	29,085,589	16,772,035	12,313,554	0	792,110
1990	29,760,203	16,136,493	13,623,710	0	796,366
1991	30,297,993	15,640,742	14,657,251	0	799,909
1992	30,846,720	14,848,425	15,998,295	0	799,577
1993	31,305,445	14,254,764	17,050,681	0	800,246
1994	31,663,018	13,480,631	17,050,681	1,131,706	784,870
1995	31,912,056	12,702,427	17,050,681	2,158,949	768,417
1996	32,224,869	11,911,797	17,050,681	3,262,391	752,240
1997	32,672,016	11,431,219	17,050,681	4,190,116	744,729
1998	33,251,809	11,077,621	17,050,681	5,123,507	741,468
1999	34,072,478	10,766,087	17,050,681	6,255,710	741,394
2000	34,653,395	10,229,428	17,050,681	7,373,286	733,743
2001	35,233,335	9,705,885	17,050,681	8,476,769	726,399
2002	35,802,238	9,185,417	17,050,681	9,566,140	719,029
2003	36,363,502	8,892,051	17,050,681	10,420,770	717,048
2004	36,899,907	8,579,699	17,050,681	11,269,527	714,386
2005	37,372,444	8,236,511	16,368,653	12,767,280	703,412
2006	37,838,342	7,907,051	15,713,907	14,217,384	692,987
2007	38,364,421	7,590,769	15,085,351	15,688,301	683,691
2008	38,893,801	7,287,138	14,481,937	17,124,726	674,986
2009	39,425,878	6,995,652	13,902,659	18,527,566	666,846
2010	39,957,616	6,715,826	13,346,553	19,895,237	659,220
2011	40,402,397	6,447,193	12,812,691	21,142,513	651,306
2012	40,852,345	6,189,306	12,300,183	22,362,856	643,916
2013	41,314,152	5,941,733	11,808,176	23,564,243	637,092
2014	41,784,860	5,704,064	11,335,849	24,744,947	630,787
2015	42,370,899	5,475,901	10,882,415	26,012,583	625,947
2016	42,972,103	5,256,865	10,447,118	27,268,119	621,649
2017	43,582,505	5,046,591	10,029,234	28,506,681	617,823
2018	44,201,005	4,844,727	9,628,064	29,728,214	614,444
2019	44,824,321	4,650,938	9,242,942	30,930,441	611,467
2020	45,450,647	4,464,900	8,873,224	32,112,522	608,861

Table A-5: Water and energy use by showers

Year	Population	Water Use in Acre-feet per Year				Energy Use in Therms/yr		
		Fixture flow rate				Fixture flow rate		
		5.0 gpm	2.5 gpm	1.8 gpm	Actual*	5.0 gpm	2.5 gpm	1.8 gpm
1980	23,783,980	606,893	379,308	273,102	502,993	8.00E+07	5.47E+07	3.95E+07
1981	24,279,581	619,539	387,212	278,793	496,054	9.50E+21	5.94E+21	4.27E+21
1982	24,806,882	632,994	395,621	284,847	490,816	9.70E+21	6.07E+21	4.37E+21
1983	25,338,283	646,554	404,096	290,949	486,589	9.91E+21	6.20E+21	4.46E+21
1984	25,817,984	658,794	411,746	296,457	482,117	1.01E+22	6.31E+21	4.54E+21
1985	26,404,385	673,757	421,098	303,191	480,720	1.03E+22	6.46E+21	4.65E+21
1986	27,054,386	690,343	431,465	310,655	481,342	1.06E+22	6.61E+21	4.76E+21
1987	27,718,887	707,299	442,062	318,285	482,845	1.08E+22	6.78E+21	4.88E+21
1988	28,395,088	724,554	452,846	326,049	485,112	1.11E+22	6.94E+21	5.00E+21
1989	29,085,589	742,173	463,858	333,978	488,150	1.14E+22	7.11E+21	5.12E+21
1990	29,760,203	759,387	474,617	341,724	491,270	1.16E+22	7.28E+21	5.24E+21
1991	30,297,993	773,110	483,194	347,900	491,895	1.19E+22	7.41E+21	5.33E+21
1992	30,846,720	787,112	491,945	354,200	493,217	1.21E+22	7.54E+21	5.43E+21
1993	31,305,445	798,817	499,261	359,468	493,056	1.22E+22	7.65E+21	5.51E+21
1994	31,663,018	807,941	504,963	363,574	490,091	1.24E+22	7.74E+21	5.57E+21
1995	31,912,056	814,296	508,935	366,433	474,824	1.25E+22	7.80E+21	5.62E+21
1996	32,224,869	822,278	513,924	370,025	473,804	1.26E+22	7.88E+21	5.67E+21
1997	32,672,016	833,688	521,055	375,160	475,932	1.28E+22	7.99E+21	5.75E+21
1998	33,251,809	848,482	530,301	381,817	480,984	1.30E+22	8.13E+21	5.85E+21
1999	34,072,478	869,423	543,390	391,240	491,132	1.33E+22	8.33E+21	6.00E+21
2000	34,653,395	884,246	552,654	397,911	495,977	1.36E+22	8.47E+21	6.10E+21
2001	35,233,335	899,045	561,903	404,570	501,200	1.38E+22	8.61E+21	6.20E+21
2002	35,802,238	913,561	570,976	411,103	506,331	1.40E+22	8.75E+21	6.30E+21
2003	36,363,502	927,883	579,927	417,547	511,447	1.42E+22	8.89E+21	6.40E+21
2004	36,899,907	941,570	588,482	423,707	516,176	1.44E+22	9.02E+21	6.50E+21
2005	37,372,444	953,628	596,018	429,133	519,720	1.46E+22	9.14E+21	6.58E+21
2006	37,838,342	965,516	603,448	434,482	523,356	1.48E+22	9.25E+21	6.66E+21
2007	38,364,421	978,940	611,838	440,523	528,421	1.50E+22	9.38E+21	6.75E+21
2008	38,893,801	992,448	620,280	446,602	533,598	1.52E+22	9.51E+21	6.85E+21
2009	39,425,878	1,006,025	628,766	452,711	538,922	1.54E+22	9.64E+21	6.94E+21
2010	39,957,616	1,019,594	637,246	458,817	544,321	1.56E+22	9.77E+21	7.03E+21
2011	40,402,397	1,030,943	644,339	463,924	547,967	1.58E+22	9.88E+21	7.11E+21
2012	40,852,345	1,042,424	651,515	469,091	551,941	1.60E+22	9.99E+21	7.19E+21
2013	41,314,152	1,054,208	658,880	474,394	556,273	1.62E+22	1.01E+22	7.27E+21
2014	41,784,860	1,066,219	666,387	479,799	560,878	1.63E+22	1.02E+22	7.36E+21
2015	42,370,899	1,081,173	675,733	486,528	567,986	1.66E+22	1.04E+22	7.46E+21
2016	42,972,103	1,096,514	685,321	493,431	575,296	1.68E+22	1.05E+22	7.56E+21
2017	43,582,505	1,112,089	695,056	500,440	582,777	1.70E+22	1.07E+22	7.67E+21
2018	44,201,005	1,127,872	704,920	507,542	590,408	1.73E+22	1.08E+22	7.78E+21
2019	44,824,321	1,143,777	714,860	514,700	598,114	1.75E+22	1.10E+22	7.89E+21
2020	45,450,647	1,159,759	724,849	521,891	605,861	1.78E+22	1.11E+22	8.00E+21

* Based on REUWS flow distribution. See text for assumptions.

Table A-6: Water and energy use by washing machines

Year	Number of households with washers	Water use in AFY			Energy savings (therms/yr)
		Actual	Potential	Savings	
1980	6,299,937	246,594	163,944	82,650	105,496,658
1981	6,387,117	250,007	166,213	83,793	106,956,562
1982	6,477,651	253,550	168,569	84,981	108,472,612
1983	6,534,186	255,763	170,040	85,723	109,419,326
1984	6,609,696	258,719	172,005	86,713	110,683,787
1985	6,724,065	263,195	174,982	88,214	112,598,974
1986	6,871,765	268,977	178,825	90,152	115,072,313
1987	7,035,071	275,369	183,075	92,294	117,806,971
1988	7,214,656	282,398	187,748	94,650	120,814,244
1989	7,376,655	288,739	191,964	96,775	123,527,032
1990	7,543,655	295,276	196,310	98,966	126,323,558
1991	7,681,583	300,675	199,899	100,776	128,633,249
1992	7,768,934	304,094	202,172	101,922	130,096,013
1993	7,838,868	306,831	203,992	102,839	131,267,093
1994	7,895,415	309,045	205,464	103,581	132,214,014
1995	7,954,017	311,339	206,989	104,350	133,195,348
1996	8,006,671	313,400	208,359	105,041	134,077,065
1997	8,062,643	315,590	209,816	105,775	135,014,354
1998	8,123,163	316,095	211,391	104,705	136,027,812
1999	8,323,647	323,534	216,608	106,926	139,385,038
2000	8,465,560	329,212	220,301	108,911	141,761,476
2001	8,607,235	334,729	223,988	110,741	144,133,917
2002	8,746,214	340,146	227,604	112,542	146,461,208
2003	8,883,326	345,489	231,172	114,317	148,757,249
2004	9,014,366	350,607	234,582	116,025	150,951,596
2005	9,129,803	355,142	237,587	117,556	152,884,669
2006	9,243,618	359,578	240,548	119,029	154,790,583
2007	9,372,135	355,325	243,893	111,432	156,942,687
2008	9,501,459	360,240	247,258	112,982	159,108,296
2009	9,631,441	365,183	250,641	114,542	161,284,938
2010	9,761,341	370,132	254,021	116,111	163,460,192
2011	9,869,997	374,550	256,849	117,701	165,279,720
2012	9,979,916	378,721	259,709	119,012	167,120,385
2013	10,092,732	382,980	262,645	120,335	169,009,563
2014	10,207,723	387,332	265,637	121,695	170,935,154
2015	10,350,887	392,416	269,363	123,053	173,332,546
2016	10,497,757	397,962	273,185	124,777	175,791,975
2017	10,646,874	403,613	277,066	126,547	178,289,031
2018	10,797,968	409,342	280,998	128,345	180,819,216
2019	10,950,240	415,127	284,960	130,167	183,369,101
2020	11,103,246	420,946	288,942	132,004	185,931,300

Table A-7: Water and energy use by dishwashers

Year	Number of households with dishwashers	Water Use in AFY				Energy Savings therms/yr
		Conventional machine 8 gpl	REUWS distribution	Max practical savings 5.3 gpl	Max available savings 4.5 gpl	
1980	4,660,227	16,704	20,695	11,067	9,396	12,747,900
1981	4,724,717	16,936	20,981	11,220	9,526	12,924,310
1982	4,791,687	17,176	21,279	11,379	9,661	13,107,505
1983	4,833,508	17,326	21,464	11,478	9,746	13,221,903
1984	4,889,364	17,526	21,712	11,611	9,858	13,374,697
1985	4,973,966	17,829	22,088	11,812	10,029	13,606,122
1986	5,083,224	18,221	22,573	12,071	10,249	13,904,993
1987	5,204,025	18,654	23,110	12,358	10,493	14,235,441
1988	5,336,869	19,130	23,700	12,673	10,761	14,598,831
1989	5,456,704	19,559	24,232	12,958	11,002	14,926,636
1990	5,580,238	20,002	24,780	13,251	11,251	15,264,560
1991	5,682,267	20,368	25,233	13,494	11,457	15,543,656
1992	5,746,883	20,599	25,520	13,647	11,587	15,720,412
1993	5,798,615	20,785	25,750	13,770	11,692	15,861,922
1994	5,840,444	20,935	25,936	13,869	11,776	15,976,345
1995	5,883,794	21,090	26,128	13,972	11,863	16,094,926
1996	5,922,743	21,230	26,301	14,065	11,942	16,201,470
1997	5,964,147	21,378	26,485	14,163	12,025	16,314,729
1998	6,008,915	21,539	26,684	14,269	12,116	16,437,193
1999	6,157,218	22,070	27,343	14,622	12,415	16,842,870
2000	6,262,195	22,447	27,809	14,871	12,626	17,130,031
2001	6,366,996	22,822	28,274	15,120	12,838	17,416,710
2002	6,469,802	23,191	28,731	15,364	13,045	17,697,933
2003	6,571,228	23,554	29,181	15,605	13,249	17,975,380
2004	6,668,161	23,902	29,612	15,835	13,445	18,240,538
2005	6,753,553	24,208	29,991	16,038	13,617	18,474,125
2006	6,837,745	24,510	30,365	16,238	13,787	18,704,429
2007	6,932,813	24,850	30,787	16,463	13,978	18,964,483
2008	7,028,476	25,193	31,212	16,691	14,171	19,226,169
2009	7,124,628	25,538	31,639	16,919	14,365	19,489,188
2010	7,220,718	25,882	32,065	17,147	14,559	19,752,039
2011	7,301,094	26,170	32,422	17,338	14,721	19,971,905
2012	7,382,404	26,462	32,783	17,531	14,885	20,194,326
2013	7,465,857	26,761	33,154	17,729	15,053	20,422,608
2014	7,550,918	27,066	33,532	17,931	15,225	20,655,291
2015	7,656,821	27,446	34,002	18,183	15,438	20,944,985
2016	7,765,464	27,835	34,484	18,441	15,657	21,242,175
2017	7,875,769	28,230	34,974	18,703	15,880	21,543,911
2018	7,987,538	28,631	35,471	18,968	16,105	21,849,651
2019	8,100,177	29,035	35,971	19,236	16,332	22,157,772
2020	8,213,360	29,440	36,473	19,504	16,560	22,467,380

Table A-8: Water lost to leaks and potential savings

Year	Number of Households	Average volume of water lost to leaks (AF/yr)	Water lost by top 5.5% of users (AF/yr)	Water lost by reducing leaks to an average of 4.2 gpd (AF/yr)	Potential Savings (AF/year)
1980	8,630,050	211,705	53,168	40,601	171,104
1981	8,749,476	214,635	53,904	41,163	173,472
1982	8,873,495	217,677	54,668	41,746	175,931
1983	8,950,940	219,577	55,145	42,111	177,466
1984	9,054,378	222,114	55,782	42,597	179,517
1985	9,211,048	225,958	56,747	43,334	182,623
1986	9,413,377	230,921	57,994	44,286	186,635
1987	9,637,083	236,409	59,372	45,339	191,070
1988	9,883,090	242,444	60,888	46,496	195,948
1989	10,105,007	247,887	62,255	47,540	200,347
1990	10,333,774	253,499	63,664	48,616	204,883
1991	10,522,716	258,134	64,828	49,505	208,629
1992	10,642,376	261,070	65,565	50,068	211,002
1993	10,738,175	263,420	66,156	50,519	212,901
1994	10,815,637	265,320	66,633	50,883	214,437
1995	10,895,914	267,289	67,127	51,261	216,028
1996	10,968,042	269,059	67,572	51,600	217,458
1997	11,044,716	270,940	68,044	51,961	218,979
1998	11,127,621	272,973	68,555	52,351	220,622
1999	11,044,716	270,940	68,044	51,961	218,979
2000	11,127,621	272,973	68,555	52,351	220,622
2001	11,837,014	290,376	72,925	55,688	234,687
2002	12,038,829	295,326	74,169	56,638	238,688
2003	12,240,304	300,269	75,410	57,586	242,683
2004	12,437,945	305,117	76,628	58,516	246,601
2005	12,632,932	309,900	77,829	59,433	250,467
2006	12,819,283	314,472	78,977	60,310	254,162
2007	12,983,445	318,499	79,988	61,082	257,417
2008	13,145,302	322,469	80,985	61,843	260,626
2009	13,328,065	326,953	82,111	62,703	264,250
2010	13,511,975	331,464	83,244	63,568	267,896
2011	13,696,823	335,999	84,383	64,438	271,561
2012	13,881,552	340,530	85,521	65,307	275,223
2013	14,036,072	344,321	86,473	66,034	278,287
2014	14,192,387	348,156	87,436	66,770	281,386
2015	14,352,822	352,091	88,425	67,524	284,567
2016	14,516,349	356,103	89,432	68,294	287,809
2017	14,719,943	361,097	90,686	69,252	291,846
2018	14,928,806	366,221	91,973	70,234	295,987
2019	15,140,864	371,423	93,280	71,232	300,191
2020	15,355,735	376,694	94,603	72,243	304,451