



U.S. Census Data on Small Community Housing and Wastewater Disposal and Plumbing Practices

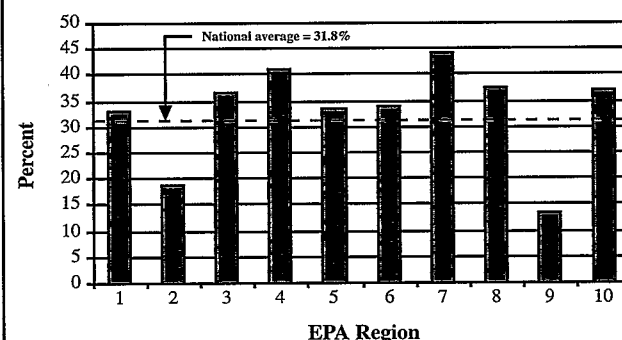
Many people in small communities, those with fewer than 10,000 people, don't have access to public sewers. For these residents alternative wastewater systems are often used to solve their communities' public health problems and to help them comply with the Clean Water Act.

The 1990 Decennial Census of Population and Housing says 30 percent of all Americans live in small communities; 31.8 percent of the Nation's housing units are located in these communities (Figure 1). The Census contains information on the structural characteristics of these houses, plus wastewater disposal methods and types of plumbing facilities.

Did you know . . . ?

- 77 million people live in small communities.
- 11.7 million housing units in small communities are served by public sewers; 19.8 million use septic tanks or cesspools, and 917,373 use outhouses or privies.
- Pennsylvania has the most people living in small communities (4.4 million), and Texas has the greatest number of housing units in small communities (1,877,889).
- California has the highest number of housing units using outhouses or privies (67,865).

Figure 1. Housing Units in Small Communities

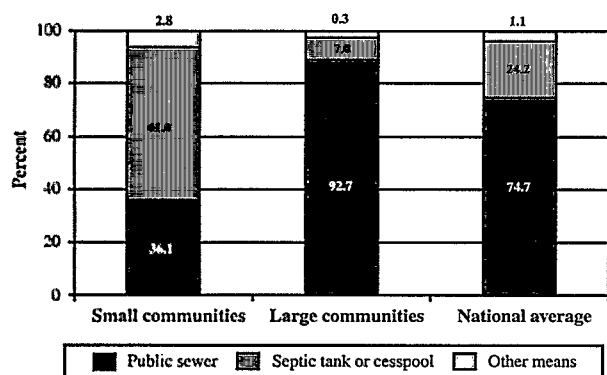


The sections that follow contain information on small community housing, wastewater disposal practices, and existing plumbing facilities. All data presented here are derived from the 1990 Census of Population and Housing. **Table 1** provides a state-by-state summary of small community population, housing, sewage disposal and plumbing data.

Wastewater Disposal Methods

The Census Bureau categorizes U.S. wastewater disposal into three types: public sewer, septic tank or cesspool, and "other" means, such as privies and outhouses. In large communities (those with more than 10,000 people) almost 93 percent of the housing units are connected to a public sewer, 7 percent use septic tanks or cesspools, and 0.3 percent use other means (Figure 2). In contrast, about 61 percent of housing units in small communities use a septic tank or cesspool for wastewater

Figure 2. Wastewater Disposal Method



disposal. Approximately 36 percent are hooked up to public sewers and nearly 3 percent use an alternative means of disposal. Other states with large numbers of small community housing units using outhouses/privies are: Kentucky (55,764), Pennsylvania (47,902), Missouri (46,223), and North Carolina (45,461).

Figure 3 shows that in eight out of ten Environmental Protection Agency (EPA) regions, septic tanks and cesspools are used by more than

50 percent of the small community housing units. When comparing the EPA regions, the proportion of housing units using septic tanks and cesspools varies. For example, in Region 1 about 71 percent of the homes use septic tanks or cesspools for sewage disposal as compared to 45 percent in Regions 7 and 8.

Plumbing Facilities

According to the Census, complete plumbing facilities means that a housing unit has hot and cold piped water, a flush toilet, and a bathtub or shower. All three facilities must be located inside the home but not necessarily in the same room.

Nationwide, 2.3 percent of housing units in small communities have incomplete plumbing facilities. This amounts to nearly three quarters of a million homes that have inadequate plumbing. Alaska has the highest percentage of incomplete plumbing facilities (24.6 percent), followed by Arizona (7.8 percent), New Mexico (7.4 percent), and Kentucky (5.0 percent). When evaluated by numbers rather than percentages, Texas has the

Figure 3. Wastewater Disposal Methods in Small Communities

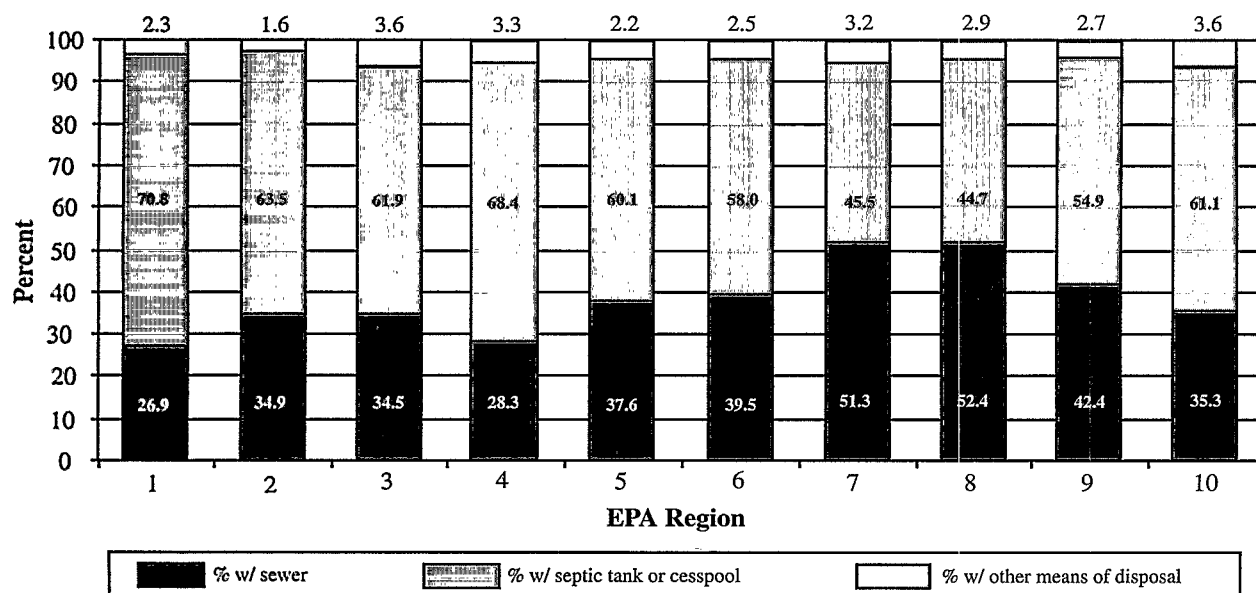
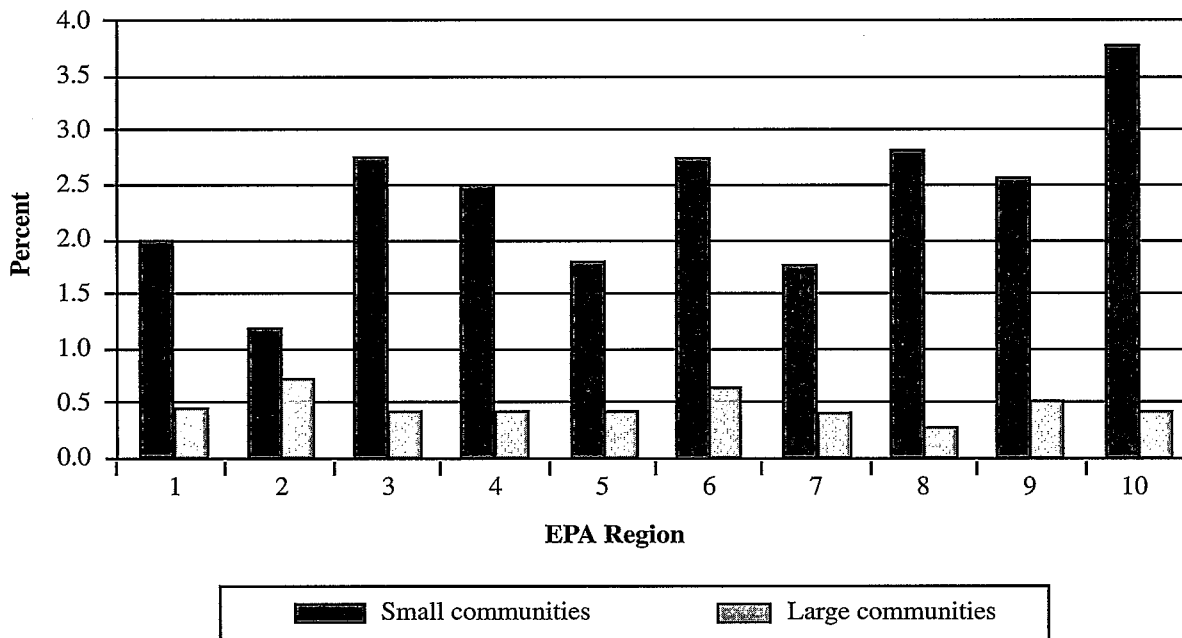


Figure 4. Lack of Complete Plumbing Facilities in Small and Large Communities



highest number of incomplete plumbing facilities (50,214) in housing units, followed by Kentucky (41,707) and Virginia (40,162).

Small communities have a bigger problem with incomplete plumbing than large ones. **Figure 4** illustrates the disparity between the percentages of small community housing units with incomplete plumbing facilities and large community housing units with incomplete plumbing facilities by EPA region. The percent of housing units in large communities with incomplete plumbing does not exceed 0.7 percent for any EPA region, whereas in small communities the percent is as high as 3.8 percent. As highlighted in **Table 1**, more than 70 percent of the Nation's housing units that lack complete plumbing facilities are in small communities.

EPA recognizes that small communities lag behind others in addressing their wastewater treatment and disposal needs. The Agency has, therefore, established several financial and technical assistance programs and centers to help these communities obtain appropriate sewage treatment and disposal systems. To learn more about these programs, visit the Office of Wastewater Management's website: <http://www.epa.gov/OWM>.

Additional copies of this fact sheet may be obtained by contacting the Office of Water Resources Center in EPA at (202) 260-7786 and referring to the document number EPA 832-F-99-060. You may also visit our Website (<http://www.epa.gov/OWM/smallc.htm>) to obtain other summaries of this information.

Table 1. State-by-State Summary of 1990 U.S. Census Bureau Data for Population, Housing, Sewerage, and Plumbing Data for Small Communities (Population < 10,000)

State	State Population			Housing Units ¹			Sewage Disposal (Housing Units) ²					
	Total State	Small Communities	Percent in Small Communities	Total State	Small Communities	Percent in Small Communities	Total State					
							Public Sewer	Septic Tank or Cesspool	No Treatment (Outhouses and Privies)	Total w/o Public Sewers	Percent w/o Public Sewers	Percent w/o Treatment (Outhouses and Privies)
Alabama	4,040,587	1,955,069	48.4	1,670,379	804,943	48.2	910,782	728,690	30,907	759,597	45.5	1.9
Alaska	550,043	203,620	37.0	232,608	114,566	49.3	144,905	59,886	27,817	87,703	37.7	12.0
Arizona	3,865,228	743,254	20.3	1,659,430	346,203	20.9	1,348,836	282,897	27,697	310,594	18.7	1.7
Arkansas	2,350,725	1,439,862	61.3	1,000,667	611,902	61.1	601,188	382,467	17,012	399,479	39.9	1.7
California	29,760,021	3,134,136	10.5	11,182,882	1,293,543	11.6	10,022,843	1,092,174	67,865	1,160,039	10.4	0.6
Colorado	3,294,394	802,425	24.4	1,477,349	398,110	26.9	1,283,186	183,817	10,346	194,163	13.1	0.7
Connecticut	3,287,116	770,840	23.5	1,320,850	304,708	23.1	935,541	378,382	6,927	385,309	29.2	0.5
Delaware	666,168	206,674	31.0	289,919	109,302	37.7	212,793	74,541	2,585	77,126	26.6	0.9
Florida	12,937,926	2,477,852	19.2	6,100,262	1,180,366	19.3	4,499,793	1,559,113	41,356	1,600,469	26.2	0.7
Georgia	6,478,216	2,814,664	43.4	2,638,418	1,113,443	42.2	1,638,979	970,686	28,753	999,439	37.9	1.1
Hawaii	1,108,229	285,086	25.7	389,810	105,127	27.0	312,812	72,940	4,058	76,998	19.8	1.0
Idaho	1,006,749	568,485	56.5	413,327	241,779	58.5	264,618	142,879	5,830	148,709	36.0	1.4
Illinois	11,430,602	2,411,256	21.1	4,506,275	965,537	21.4	3,885,689	598,125	22,461	620,586	13.8	0.5
Indiana	5,544,159	2,365,796	42.7	2,246,046	927,036	41.3	1,525,810	703,032	17,204	720,236	32.1	0.8
Iowa	2,776,755	1,500,990	54.1	1,143,669	619,418	54.2	869,056	264,889	9,724	274,613	24.0	0.9
Kansas	2,477,574	1,003,165	40.5	1,044,112	426,348	40.8	847,767	187,398	8,947	196,345	18.8	0.9
Kentucky	3,685,296	2,085,937	56.6	1,506,845	841,428	55.8	849,491	600,182	57,172	657,354	43.6	3.8
Louisiana	4,219,973	1,736,249	41.1	1,716,241	683,618	39.8	1,246,678	442,758	26,805	469,563	27.4	1.6
Maine	1,227,928	853,406	69.5	587,045	426,184	72.6	266,344	301,373	19,328	320,701	54.6	3.3
Maryland	4,781,468	1,086,674	22.7	1,891,917	433,671	22.9	1,533,799	342,523	15,595	358,118	18.9	0.8
Massachusetts	6,016,425	1,152,633	19.2	2,472,711	503,488	20.4	1,803,176	659,120	10,415	669,535	27.1	0.4
Michigan	9,295,297	3,229,265	34.7	3,847,926	1,442,214	37.5	2,724,408	1,090,481	33,037	1,123,518	29.2	0.9
Minnesota	4,375,099	1,642,933	37.6	1,848,445	739,891	40.0	1,356,520	467,936	23,989	491,925	26.6	1.3
Mississippi	2,573,216	1,593,929	61.9	1,010,423	614,507	60.8	585,185	387,406	37,832	425,238	42.1	3.7
Missouri	5,117,073	2,017,759	39.4	2,199,129	881,243	40.1	1,617,996	532,844	48,289	581,133	26.4	2.2
Montana	799,065	482,145	60.3	361,155	223,483	61.9	218,372	135,371	7,412	142,783	39.5	2.1
Nebraska	1,578,385	690,562	43.8	660,621	299,059	45.3	534,692	117,480	8,489	125,929	19.1	1.3
Nevada	1,201,833	224,733	18.7	518,858	100,384	19.3	456,107	60,508	2,243	62,751	12.1	0.4
New Hampshire	1,109,252	629,261	56.7	503,904	301,667	59.9	250,060	246,692	7,152	253,844	50.4	1.4
New Jersey	7,730,188	1,009,741	13.1	3,075,310	438,517	14.3	2,703,489	357,890	13,931	371,821	12.1	0.5
New Mexico	1,515,069	586,186	38.7	632,058	249,149	39.4	452,934	161,068	18,056	179,124	28.3	2.9
New York	17,990,455	3,405,728	18.9	7,226,891	1,470,717	20.4	5,716,917	1,460,873	49,101	1,509,974	20.9	0.7
North Carolina	6,628,637	3,716,384	56.1	2,818,193	1,607,575	57.0	1,403,033	1,365,632	49,528	1,415,160	50.2	1.8
North Dakota	638,800	356,972	55.9	276,340	159,122	57.6	204,328	66,479	5,533	72,012	26.1	2.0
Ohio	10,847,115	3,386,065	31.2	4,371,945	1,276,835	29.2	3,392,785	940,943	38,217	979,160	22.4	0.9
Oklahoma	3,145,585	1,321,874	42.0	1,406,499	586,779	41.7	1,028,594	367,197	10,708	377,905	26.9	0.8
Oregon	2,842,321	1,678,644	59.1	1,193,567	469,876	39.4	835,545	349,122	8,900	358,022	30.0	0.7
Pennsylvania	11,881,643	4,400,283	37.0	4,938,140	1,832,009	37.1	3,670,338	1,210,054	57,748	1,267,802	25.7	1.2
Rhode Island	1,003,464	162,328	16.2	414,572	68,654	16.6	293,901	118,410	2,261	120,671	29.1	0.5
South Carolina	3,486,703	1,953,177	56.0	1,424,155	783,883	55.0	825,754	578,129	20,272	598,401	42.0	1.4
South Dakota	696,004	411,361	59.1	292,436	175,166	59.9	207,996	78,435	6,005	84,440	28.9	2.1
Tennessee	4,877,185	2,260,513	46.3	2,026,067	922,990	45.6	1,213,934	781,616	30,517	812,133	40.1	1.5
Texas	16,986,510	4,351,950	25.6	7,008,999	1,877,889	26.8	5,690,550	1,266,713	51,736	1,318,449	18.8	0.7
Utah	1,722,850	320,461	18.6	598,388	129,025	21.6	528,864	65,403	4,121	69,524	11.6	0.7
Vermont	562,758	457,655	81.3	271,214	228,288	84.2	115,201	149,125	6,888	156,013	57.5	2.5
Virginia	6,187,358	2,152,387	34.8	2,496,334	877,250	35.1	1,740,787	707,409	48,138	755,547	30.3	1.9
Washington	4,866,692	1,428,491	29.4	2,032,378	603,067	29.7	1,387,396	630,646	14,336	644,982	31.7	0.7
West Virginia	1,793,477	1,295,502	72.2	781,295	551,521	70.6	427,930	318,697	34,668	353,365	45.2	4.4
Wisconsin	4,891,769	2,130,499	43.6	2,055,774	954,561	46.4	1,440,024	580,836	34,914	615,750	30.0	1.7
Wyoming	453,588	238,752	52.6	203,411	111,372	54.8	151,004	49,055	3,352	52,407	25.8	1.6
Total	248,102,973	77,133,613	31.1	101,985,189	32,427,413	31.8	76,178,730	24,670,302	1,136,157	25,806,459	25.3	1.1

(continued)

Table 1. State-by-State Summary of 1990 U.S. Census Bureau Data for Population, Housing, Sewerage, and Plumbing Data for Small Communities (Population < 10,000)

State	Sewage Disposal (Housing Units) ¹						
	Small Communities						
	Public Sewer	Septic Tank or Cesspool	No Treatment (Outhouses and Privies)	Total w/o Public Sewers	Percent w/o Public Sewers	Percent w/o Treatment (Outhouses and Privies)	Percent of Total w/o Treatment That Are in Small Communities
Alabama	190,040	586,404	28,499	614,903	76.4	3.5	92.2
Alaska	40,379	47,229	26,958	74,187	64.8	23.5	96.9
Arizona	135,533	185,198	25,472	210,670	60.9	7.4	92.0
Arkansas	234,249	361,501	16,152	377,653	61.7	2.6	94.9
California	548,372	725,210	19,961	745,171	57.6	1.5	29.4
Colorado	220,473	168,470	9,167	177,637	44.6	2.3	88.6
Connecticut	66,968	234,201	3,539	237,740	78.0	1.2	51.1
Delaware	39,515	67,717	2,070	69,787	63.8	1.9	80.1
Florida	425,834	735,367	19,165	754,532	63.9	1.6	46.3
Georgia	306,578	782,166	24,699	806,865	72.5	2.2	85.9
Hawaii	45,199	57,106	2,822	59,928	57.0	2.7	69.5
Idaho	107,165	129,008	5,606	134,614	55.7	2.3	96.2
Illinois	480,715	470,635	14,187	484,822	50.2	1.5	63.2
Indiana	324,904	587,456	14,676	602,132	65.0	1.6	85.3
Iowa	363,477	246,857	9,084	255,941	41.3	1.5	93.4
Kansas	250,206	168,086	8,056	176,142	41.3	1.9	90.0
Kentucky	240,761	544,903	55,764	600,667	71.4	6.6	97.5
Louisiana	258,506	404,089	21,023	425,112	62.2	3.1	78.4
Maine	124,159	283,107	18,918	302,025	70.9	4.4	97.9
Maryland	144,443	279,254	9,974	289,228	66.7	2.3	64.0
Massachusetts	128,907	370,365	4,216	374,581	74.4	0.8	40.5
Michigan	448,179	967,535	26,500	994,035	68.9	1.8	80.2
Minnesota	289,275	427,733	22,883	450,616	60.9	3.1	95.4
Mississippi	207,715	370,522	36,270	406,792	66.2	5.9	95.9
Missouri	350,252	484,768	46,223	530,991	60.3	5.2	95.7
Montana	94,265	122,015	7,203	129,218	57.8	3.2	97.2
Nebraska	177,924	112,829	8,306	121,135	40.5	2.8	98.1
Nevada	53,722	45,143	1,519	46,662	46.5	1.5	67.7
New Hampshire	81,540	213,384	6,743	220,127	73.0	2.2	94.3
New Jersey	220,552	213,938	4,027	217,965	49.7	0.9	28.9
New Mexico	97,013	134,867	17,269	152,136	61.1	6.9	95.6
New York	446,664	998,022	26,031	1,024,053	69.6	1.8	53.0
North Carolina	360,630	1,201,484	45,461	1,246,945	77.6	2.8	91.8
North Dakota	87,711	65,921	5,490	71,411	44.9	3.5	99.2
Ohio	460,113	785,901	30,821	816,722	64.0	2.4	80.6
Oklahoma	259,393	318,107	9,279	327,386	55.8	1.6	86.7
Oregon	185,116	276,932	7,828	284,760	60.6	1.7	88.0
Pennsylvania	699,323	1,084,784	47,902	1,132,686	61.8	2.6	83.0
Rhode Island	14,542	53,097	1,015	54,112	78.8	1.5	44.9
South Carolina	267,035	498,317	18,531	516,848	65.9	2.4	91.4
South Dakota	93,167	76,063	5,936	81,999	46.8	3.4	98.9
Tennessee	230,658	664,024	28,308	692,332	75.0	3.1	92.8
Texas	734,620	1,106,450	36,819	1,143,269	60.9	2.0	71.2
Utah	70,816	54,312	3,897	58,209	45.1	3.0	94.6
Vermont	77,090	144,340	6,858	151,198	66.2	3.0	99.6
Virginia	220,531	612,272	44,447	656,719	74.9	5.1	92.3
Washington	171,856	419,458	11,753	431,211	71.5	1.9	82.0
West Virginia	208,265	309,180	34,076	343,256	62.2	6.2	98.3
Wisconsin	369,712	552,139	32,710	584,849	61.3	3.4	93.7
Wyoming	60,554	47,558	3,260	50,818	45.6	2.9	97.3
Total	11,714,616	19,795,424	917,373	20,712,797	63.9	2.8	80.7

(continued)

Table 1. State-by-State Summary of 1990 U.S. Census Bureau Data for Population, Housing, Sewerage, and Plumbing Data for Small Communities (Population < 10,000)

State	Plumbing Facilities (Housing Units) ³						
	Total State			Small Communities			
	Complete	Lacking Complete	Percent Lacking Complete	Complete	Lacking Complete	Percent Lacking Complete	Percent of Total Lacking Complete Plumbing That Are in Small Communities
Alabama	1,642,879	27,500	1.6	782,169	22,774	2.8	82.8
Alaska	203,584	29,024	12.5	86,342	28,224	24.6	97.2
Arizona	1,627,959	31,471	1.9	319,120	27,083	7.8	86.1
Arkansas	982,261	18,406	1.8	595,673	16,229	2.7	88.2
California	11,113,501	69,381	0.6	1,277,516	16,027	1.2	23.1
Colorado	1,465,571	11,778	0.8	389,018	9,092	2.3	77.2
Connecticut	1,315,105	5,745	0.4	302,993	1,715	0.6	29.9
Delaware	288,197	1,722	0.6	108,130	1,172	1.1	68.1
Florida	6,072,305	27,957	0.5	1,171,331	9,035	0.8	32.3
Georgia	2,609,956	28,462	1.1	1,091,629	21,814	2.0	76.6
Hawaii	385,498	4,312	1.1	102,403	2,724	2.6	63.2
Idaho	407,309	6,018	1.5	236,179	5,600	2.3	93.1
Illinois	4,476,959	29,316	0.7	954,388	11,149	1.2	38.0
Indiana	2,229,811	16,235	0.7	915,524	11,512	1.2	70.9
Iowa	1,133,898	9,771	0.9	611,370	8,048	1.3	82.4
Kansas	1,036,261	7,851	0.8	420,209	6,139	1.4	78.2
Kentucky	1,462,623	44,222	2.9	799,721	41,707	5.0	94.3
Louisiana	1,694,335	21,906	1.3	688,259	15,359	2.2	70.1
Maine	566,269	20,776	3.5	406,248	19,936	4.7	96.0
Maryland	1,879,232	12,685	0.7	426,431	7,240	1.7	57.1
Massachusetts	2,460,345	12,366	0.5	500,367	3,121	0.6	25.2
Michigan	3,815,434	32,492	0.8	1,419,151	23,063	1.6	71.0
Minnesota	1,824,081	24,364	1.3	719,053	20,838	2.8	85.5
Mississippi	988,572	21,851	2.2	595,047	19,460	3.2	89.1
Missouri	2,172,297	26,832	1.2	860,414	20,829	2.4	77.6
Montana	354,144	7,011	1.9	217,237	6,246	2.8	89.1
Nebraska	655,379	5,242	0.8	294,940	4,119	1.4	78.6
Nevada	516,156	2,702	0.5	99,210	1,174	1.2	43.4
New Hampshire	497,996	5,908	1.2	296,468	5,199	1.7	88.0
New Jersey	3,059,718	15,592	0.5	436,734	1,783	0.4	11.4
New Mexico	612,087	19,971	3.2	230,630	18,519	7.4	92.7
New York	7,159,544	67,347	0.9	1,449,787	20,930	1.4	31.1
North Carolina	2,775,231	42,962	1.5	1,569,894	37,681	2.3	87.7
North Dakota	270,763	5,577	2.0	153,874	5,248	3.3	94.1
Ohio	4,339,037	32,908	0.8	1,255,290	21,545	1.7	65.5
Oklahoma	1,392,742	13,757	1.0	576,956	9,823	1.7	71.4
Oregon	1,183,174	10,393	0.9	462,474	7,402	1.6	71.2
Pennsylvania	4,891,083	47,057	1.0	1,800,122	31,887	1.7	67.8
Rhode Island	412,319	2,253	0.5	68,092	562	0.8	24.9
South Carolina	1,403,978	20,177	1.4	766,711	17,172	2.2	85.1
South Dakota	286,513	5,923	2.0	169,539	5,627	3.2	95.0
Tennessee	1,993,707	32,360	1.6	895,115	27,875	3.0	86.1
Texas	6,923,924	85,075	1.2	1,827,675	50,214	2.7	59.0
Utah	592,522	5,866	1.0	124,376	4,649	3.6	79.3
Vermont	265,092	6,122	2.3	222,316	5,972	2.6	97.5
Virginia	2,450,215	46,119	1.8	837,088	40,162	4.6	87.1
Washington	2,013,760	18,618	0.9	590,149	12,918	2.1	69.4
West Virginia	756,226	25,069	3.2	527,584	23,937	4.3	95.5
Wisconsin	2,025,997	29,777	1.4	929,618	24,943	2.6	83.8
Wyoming	200,194	3,217	1.6	108,551	2,821	2.5	87.7
Total	100,885,743	1,099,446	1.1	31,669,115	758,298	2.3	69.0

1. Housing units are defined as separate living quarters (e.g., apartment, mobile home, a group of rooms, or single room) in which the occupants live and eat separately from other persons in the building.

2. Housing units are either connected to a public sewer, to a septic tank or cesspool, or have no treatment. A public sewer may be operated by a government or private organization. A septic tank or cesspool is an underground pit or tank for sewage treatment and no treatment indicates an outhouse or privie.

3. Complete plumbing facilities include hot and cold piped water, a flush toilet, and a bathtub or shower. All three facilities must be inside the house (housing unit), but not necessarily in the same room. Housing units are lacking complete plumbing when any of the three facilities are not present.