



RESEARCH

Fire Loss in the United States During 2016

September 2017

Hylton J.G. Haynes

© September 2017 National Fire Protection Association

Abstract

United States fire departments responded to an estimated 1,342,000 fires in 2016. These fires resulted in 3,390 civilian fire fatalities, 14,650 civilian fire injuries and an estimated \$13.6 billion in direct property loss. There was a civilian fire death every 2 hours and 35 minutes and a civilian fire injury every 35 minutes 54 seconds in 2016. Home fires caused 2,735, or 81 percent, of the civilian fire deaths. Fires accounted for four percent of the 35,320,000 total calls. Seven percent of the calls were false alarms; 64 percent of the calls were for aid such as EMS.

Keywords: fire statistics, fire incidents, non-fire incidents, fire fatalities, fire injuries, fire losses, intentional fires, region fire department calls.

Acknowledgements

NFPA is grateful to the many fire departments that responded to the *2016 National Fire Experience Survey* for their continuing efforts to provide the data necessary to make national projections. The author would also like to thank the members of NFPA staff who worked on this year's survey, including Steve Belski, Frank Deely, and Jay Petrillo for editing the survey forms and making follow-up calls to fire departments, and Helen Columbo for processing the survey forms.

To learn more about Research go to www.nfpa.research.

Copies of this report are available from:

National Fire Protection Association
NFPA Research, Data and Analytics Division
1 Batterymarch Park
Quincy, MA 02169-7471
www.nfpa.org
E-mail: research@nfpa.org
Phone: 617-984-7451

NFPA# FLX10_REV_July 2019
Copyright © 2017, National Fire Protection Association, Quincy, MA

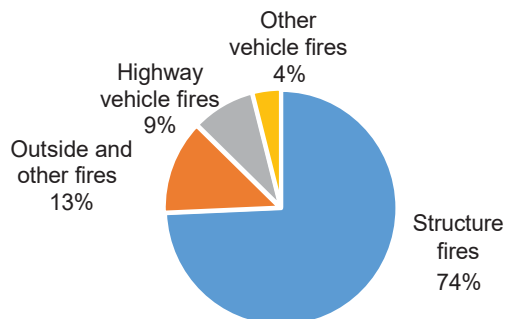


FACT SHEET » RESEARCH

Fires in the United States During 2016

1,342,000 fires were reported in the U.S. during 2016.

- ▶ **3,390** civilian fire deaths
- ▶ One civilian death occurred every 2 hours and 35 minutes
- ▶ **14,650** civilian fire injuries
- ▶ One civilian injury occurred every 34 minutes
- ▶ **\$13.6 billion** in property damage
- ▶ A fire department responded to a fire every 24 seconds



*based on 2016 property loss estimates

Structure Fires

475,500 structure fires occurred in the U.S. during 2016.

- ▶ **2,950** civilian fire deaths
- ▶ **12,775** civilian fire injuries
- ▶ **\$10.4 billion** in property damage
- ▶ One structure fire was reported every 66 seconds

Highway Vehicle Fires

173,000 highway vehicle fires occurred in the U.S. during 2016.

- ▶ **280** civilian fire deaths
- ▶ **1,075** civilian fire injuries
- ▶ **\$1.3 billion** in property damage
- ▶ One highway vehicle fire was reported every 3 minutes and 2 seconds

Outside and Other Fires

662,500 outside and other fires occurred in the U.S. during 2016.

- ▶ **85** civilian fire deaths
- ▶ **650** civilian fire injuries
- ▶ **\$1.4 billion** in property damage¹
- ▶ One outside fire was reported every 48 seconds

Other Vehicle Fires²

31,000 other vehicle fires occurred in the U.S. during 2016.

- ▶ **75** civilian deaths
- ▶ **150** civilian injuries
- ▶ **\$481 million** in property damage
- ▶ One other vehicle fire was reported every 16 minutes and 57 seconds

¹\$911 million in property damage occurred in one major Tennessee wildfire.

²Includes airplanes, trains, ships, construction, or farm vehicles.

Source: NFPA Research: www.nfpa.org/research
Contact information: 617-984-7451 or research@nfpa.org



NATIONAL FIRE PROTECTION ASSOCIATION

The leading information and knowledge resource on fire, electrical and related hazards

This information is provided to help advance fire safety. It does not represent the official position of the NFPA or its Technical Committees. The NFPA disclaims liability for any personal injury, property, or other damages of any nature whatsoever resulting from the use of this information.

Table of Contents

Table of Contents	i
List of Tables and Figures	ii
Overview of 2016 United States Fire Experience	iii
Background and Objective	1
Methods	2
Results	7
Number of Fires	7
Civilian Fire Deaths	13
Civilian Fire Injuries	18
Property Loss	19
Intentionally Set Fires	21
Regional Analysis	23
Conclusion	35
Definition of Terms	36
Appendix A. Fire Loss in the United States Trend Tables, 1977-2016	
United States Fire Rates by Unit of Time	37

List of Tables and Figures

		Page
Table 1	Fire Department Stratum by Size of Community Protected	2
Table 2	Number of Fire Departments Responding to 2016 NFPA Survey by Region and Community Size	4
Table 3	Estimates of 2016 Fires, Civilian Deaths, Civilian Injuries and Property Loss in the United States	8
Table 4	Estimates of 2016 Fires and Property Loss by Property Use	9
Table 5	Estimates of 2016 Structure Fires and Property Loss By Property Use	10
Figure 1	Estimates of Fires by Type in the United States (1977-2016)	11
Figure 2	Fires per Thousand Population by Size of Community (2011-2016)	12
Figure 3	Civilian Home Fire Deaths and Rates per 1,000 Fires (1977-2016)	15
Table 6	Estimates of 2016 Civilian Fire Deaths and Injuries by Property Use	16
Figure 4	Civilian Fire Deaths per Million Population by Community Size (2011-2016)	17
Figure 5	Average Loss per Structure Fire in the United States (1977-2016)	20
Table 7	Estimate of 2015 Losses in Intentionally Set Structure Fires	22
Table 8	Fire Loss Rates Nationwide and by Region, 2016	24
Table 9	2016 Fires per Thousand Population by Region and Size of Community	25
Table 10	2016 Civilian Fire Deaths per Million Population by Region and Size of Community	26
Table 11	Civilian Fire Injuries per Million Population by Region and Size of Community	27
Table 12	2016 Property Loss per Person by Region and Size of Community	28
Table 13	Average 2016 Fire Experience by Size of Community	29
Table 14	Average 2016 Residential Fire Experience by Size of Community	29
Table 15	Fire Department Responses by Type of Call, 2016	30
Table 16	Number of Fires and Non-fire Incidents by Community Size	31
Table 17	Estimates of False alarms by Type, 2016	32
Table 18	A Comparison of Respondents and Nonrespondents	33

Overview of 2016 United States Fire Experience

Number of Fires

- Public fire departments responded to 1,342,000 fires in 2016, a slight decrease of 0.3 percent over the previous year.
- Of these, 475,500 fires occurred in structures, a decrease of 5.2 percent.
- Of the structure fires that occurred in 2016, 352,000, or 74 percent, occurred in home structures, which include one- and two-family homes, manufactured homes, and apartments. This was a decrease of 3.7 percent.
- There were also 173,000 fires in highway-type vehicles, a slight decrease of 0.6 percent from the previous year.
- The 662,500 fires that occurred in outside and other properties represented an increase of 3.6 percent.
- Every 24 seconds, a United States fire department responds to a fire somewhere in the nation. A fire occurs in a structure at the rate of one every 66 seconds, and a home fire occurs every 90 seconds. Fires occur in highway vehicles at the rate of one every 3 minutes 2 seconds, and there is a fire in an outside and other property every 48 seconds.

Civilian Fire Deaths

- In 2016, 3,390 civilians died in fires, an increase of 3.4 percent from the previous year.
- Of these, 2,735, or 80.7 percent of all fire deaths, occurred in the home, an increase of 6.8 percent compared to 2015.
- Another 280 civilians died in highway vehicle fires, which represents 8.3 percent of all fire deaths.
- Nationwide, a civilian died in a fire every 2 hours and 35 minutes, and a civilian died in a home fire every 3 hours and 12 minutes.

Civilian Fire Injuries

- Last year, 14,650 civilian fire injuries occurred, a decrease of 6.7 percent from the previous year. Many civilian injuries are not reported to the fire service, and the estimate for civilian injuries may be low.
- Of these, 12,775, or 87 percent of all civilian injuries, occurred in structure fires.
- Home fires were responsible for 10,750 civilian injuries, or 73 percent of all civilian injuries, in 2016.
- Another 1,075 civilian injuries, or 7 percent of all civilian injuries, occurred in highway vehicle fires.
- Nationwide, there was a civilian fire injury every 33 minutes 51 seconds, and a civilian fire injury in home fires every 48 minutes 53 seconds.

Property Damage

- An estimated \$13.6 billion in property damage occurred as a result of fire in 2016, a decrease of 4.9 percent from the previous year.
- Of this, \$10.4 billion in property damage occurred in structure fires, including \$7.2 billion in property loss in home fires.
- A further \$911 million in property damage occurred in one major Tennessee wildfire. The losses in these wildfires includes homes, outbuildings, commercial properties, and other structures.
- Highway vehicle fires resulted in \$1.3 billion in property loss last year.

Intentionally Set Fires

- An estimated 20,000 fires were intentionally set in 2016, excluding fires whose causes were unknown, a decrease of 13.0 percent over the year before.
- Intentionally set fires in structures also resulted in 310 civilian deaths, an increase of 51.2 percent from the previous year.
- At the same time, intentionally set structure fires resulted in \$572 million in property loss, an increase of 24.3 percent from 2015.
- There were 9,500 intentionally set vehicle fires, a decrease of 5 percent from the previous year. These fires resulted in \$68 million in property damage, a decrease of 8.1 percent from year before.

Background and Objective

Since 1977, the NFPA has surveyed public fire departments to quantify the annual fire experience for the United States (U.S.). This sample survey of U.S. fire departments enables NFPA to make national fire problem estimates as measured by the number of fires that local fire departments attend, and the resulting deaths, injuries and property losses that occur at these incidents.

This report summarizes key findings based on the NFPA survey of fire departments for the U.S. fire experience during 2016 and provide fire loss trends from 1977 to 2016.

Methods

Sample Selection

The NFPA currently has 29,727 public fire departments listed in the US in its Fire Service Inventory (FSI) file. Based on desired levels of statistical precision for the survey results and the staff available to process, edit, and follow up on the individual questionnaires, the NFPA set a target of 2,800 fire department survey responses for the 2016 sample.

Because of the variation in fire loss results by community size, fire departments were placed in one of the following 10 strata by size of community protected (Table 1).

Table 1
Fire Department Stratum, by Size of Community Protected

Stratum	Population Size of Community Protected
1	1,000,000 and up
2	500,000 to 999,999
3	250,000 to 499,999
4	100,000 to 249,999
5	50,000 to 99,999
6	25,000 to 49,999
7	10,000 to 24,999
8	5,000 to 9,999
9	2,500 to 4,999
10	2,500 and under

Sample sizes for the individual strata were chosen to ensure the best estimate of civilian deaths in one-and two-family dwellings, the statistic that most aptly reflects the overall severity of the fire problem. All departments that protect more than 5,000 people or more were included. These 8,635 departments in the eight highest strata protect a population of 245,712,701 or 76 percent of the U.S. population as of July, 2016.

The rest of the sample included 11,855 randomly selected departments from stratum 9 and 10 (less than 5,000 population protected), for a total sample size of 20,490 or 69 percent of all known departments to the NFPA in the United States.

Data Collection

The surveys were sent in early January 2016. A second mailing was sent in mid-March to fire departments that had not responded to the first mailing. A total of 2,768 departments responded to the questionnaire – 2,017 to the first mailing and 751 to the second. One thousand one hundred and forty two or 59 percent responded by using the ‘new’ SNAP Surveys online platform.

Table 2 shows the number of departments that responded by region and size of community. The overall response rate was 14 percent, although response rates were considerably higher for departments protecting larger communities than they were for departments protecting smaller communities. The overall response rate was 52 percent for departments protecting communities of 50,000 population or more (same previous survey), 23 percent for departments protecting communities of 10,000 to 49,999 (down from previous survey), and 9 percent for departments protecting communities less than 10,000 population, which are comprised of mostly volunteers (down from previous survey). The 2,768 departments that did respond protect 131,665,347 people or 41 percent of the total U.S. population.

After the NFPA received the surveys, technical staff members of the Research, Data and Analytics Division reviewed them for completeness and consistency. When appropriate, they followed up on questions with a telephone call.

After the edit, procedures were completed, the survey data were keyed to a computer file, where additional checks were made. The file was then ready for data analysis and estimation procedures.

Table 2
Number of Fire Departments Responding to 2016 NFPA Survey,
by Region and Community Size

Population of Community	All Regions	Northeast	Midwest	South	West
1,000,000 or more	13	1	2	4	6
500,000 to 999,999	31	1	4	15	11
250,000 to 499,999	40	1	6	20	13
100,000 to 249,999	152	11	24	64	53
50,000 to 99,999	206	20	74	73	39
25,000 to 49,999	337	48	155	86	48
10,000 to 24,999	591	117	261	156	57
5,000 to 9,999	441	111	180	96	54
2,500 to 4,999	333	62	154	90	27
Under 2,500	624	94	328	123	79
Total	2,768	466	1,188	727	387

Source: NFPA's Survey of Fire Departments for the 2016 Fire Experience.

Estimation Methodology

The estimation method used for the survey was ratio estimation¹ with stratification by community size. For each fire statistic a sample loss rate was computed for each stratum. This rate consisted of the total for that particular statistic from all fire departments reporting it, divided by the total population protected by the departments reporting the statistic. Note that this means that the departments used in calculating each statistic could be different, reflecting differences in unreported statistics. The sample fire loss rates by stratum were then multiplied by population weighing factors to determine the estimates and then are combined to provide the overall national estimate.

If this method of estimation is to be effective, estimates of the total number of fire departments and the total population protected in each stratum must be accurate. The NFPA makes every effort to ensure that this is the case. The population weights used for the national estimates were developed using the NFPA FSI (Fire Service Inventory) File and U.S. Census population figures.

For each estimate, a corresponding standard error was also calculated. The standard error is a measure of the error caused by the fact that estimates are based on a sampling of fire losses rather than on a complete census of the fire problem. Due to the fact that the survey is based on a random sample of the smaller departments, we can be very confident that the actual value falls within the percentage noted in parentheses for the overall national fire loss statistics: number of fires (2.0 percent), number of civilian deaths (10.3 percent), number of civilian injuries (9.6 percent), and property loss (3 percent).

The standard error helps in determining whether year-to-year differences are statistically significant. Differences that were found to be statistically significant were so noted in tables. Property loss estimates are particularly prone to large standard errors because they are sensitive to unusually high losses, and, as a result, large percentage differences from year to year may not always be statistically significant. In 2016, for instance, property damage in stores and offices was estimated to be \$689,000,000. This represented a decrease of 8.5 percent from the year before, but was found not to be statistically significant.

In addition to sampling errors, there are non-sampling errors. These include biases of the survey methodology, incomplete or inaccurate reporting of data to the NFPA and differences in data collection methods by the fire departments responding. As an example of a non-sampling error, most of the fires included in the survey took place in highly populated residential areas, because the fire departments selected for the surveys are primarily public fire departments that protect sizable residential populations. Fires that occur in sparsely populated areas protected

¹ William G. Cochran, *Sampling Techniques*, John Wiley, New York, NY, 1977, pp. 150-161.

primarily by State and Federal Departments of Forestry are not likely to be included in the survey results.

The NFPA Fire Incident Data Organization (FIDO) data base was also used in conjunction with the annual survey to help identify any large-loss fires or deaths that the survey might have missed.

The editors of survey data attempted to verify all reported civilian deaths in vehicle fires. They contacted most of the fire departments that reported fire-related deaths in vehicles and found that many of the deaths were indeed the results of fire. In some instances, however, impact was found to have been the cause of death. This effort can have a considerable impact on the estimates.

The results presented in this report are based on fire incidents attended by public fire departments. No adjustments were made for unreported fires and losses (e.g., fires extinguished by the occupant). Also, no adjustments were made for fires attended solely by private fire brigades (e.g., industry and military installations), or for fires extinguished by fixed suppression systems with no fire department response.

Results

Number of Fires

Based upon the data from our 2016 National Fire Experience Survey, we estimate that public fire departments in the U.S. responded to 1,342,000 fires last year, a decrease of 0.3 percent from 2015.

Of these fires, an estimated 475,500 were structure fires, 5.2 percent fewer than the year before and the lowest since NFPA began collecting this data in 1977. The number of structure fires has trended downward since 1977. Structure fires have fallen from a peak of 1,098,000 in 1977. From 1998 to 2008, the number of structure fires fluctuated between 505,000 and 530,500 annually before decreasing to 480,500 in 2009. Since then, estimates have ranged between 475,500 and 501,500 structure fires a year.

We categorize structure fires as residential and non-residential. Residential properties include one- and two-family homes, including manufactured homes, apartments or other multi-family housing, hotels and motels, dormitories, and boarding houses. “Home” encompasses one- or two-family homes, including manufactured housing, and apartments or other multi-family homes. Homes are much less regulated than other residential properties. Non-residential structure properties include public assembly, schools and colleges, health care and correctional institutions, stores and offices, industrial facilities, storage facilities, and other structures such as outbuildings and bridges.

In 2016, there were 371,500 residential structure fires, accounting for 78.1 percent of all structure fires, a decrease of 16,500 fires over 2015. Of these fires, 257,000 occurred in one- and two-family homes, accounting for 54.0 percent of all structure fires. Another 95,000 fires occurred in apartments (20.0 percent of the structure fire total). The total number of home fires for 2016 is 352,000. There were also 104,000 non-residential structure fires in 2016, a decrease of 8.4 percent over 2015.

The 662,500 outside fires or other non-structure, non-vehicle fires accounted for almost half (49.4 percent) of all reported fires. These included 298,500 brush, grass, and forest fires (22.2 percent of total fires); 172,000 outside rubbish fires (12.8 percent of total fires); 88,000 outside fires involving property of value (6.6 percent); and 104,000 (7.7 percent of total fires) other non-structure, non-vehicle fires.

From 2015 to 2016, outside or other fires increased 3.6 percent. Outside and other fires peaked in 1977 at 1,658,500. The number of such fires then decreased steadily to 1,011,000 in 1983 and remained relatively flat through the 1980s. By 1993, the number of outside fires dropped to 910,500, and stayed near the 1 million level for the next three years. In 2013, outside and other fires dropped to a record low of 564,500 fires, the only year these fires have dropped below 600,000.

From 2015 to 2016, brush, grass, or forest fires increased 0.5 percent; outside rubbish fires increased 5.5 percent; fires involving property of value increased significantly by 15.8 percent; and other non-structure, non-vehicle fires increased .5 percent.

In addition to residential, non-residential, and outside fires, there were an estimated 173,000 highway vehicle fires in 2016, a decrease of 0.6 percent from the year before, and 31,000 other vehicle fires, an increase of 1.6 percent.

Table 3
Estimates of 2016 Fires, Civilian Deaths, Civilian Injuries and
Property Loss in the United States

	Estimate	Range ¹	Percent Change From 2015
Number of Fires	1,342,000	1,328,500 to 1,355,500	-0.3
Number of Civilian Deaths	3,390	3,215 to 3,565	+3.4
Number of Civilian Injuries	14,650	13,950 to 15,350	-6.7
Property Loss ²	\$13,601,000,000 ³	\$13,403,000,000 to 13,799,000,000	-4.9**

The estimates are based on data reported to the NFPA by fire departments that responded to the 2016 National Fire Experience Survey.

¹ These are 95 percent confidence intervals.

² This includes overall direct property loss to contents, structures, vehicles, machinery, vegetation, and anything else involved in a fire. It does not include indirect losses. No adjustment was made for inflation in the year-to-year comparison.

³ This figure includes the Gatlinburg, Tennessee Wildfires 2016 with an estimated property loss of \$911,000,000. Loss by specific property was not available.

**Change was statistically significant at the .01 level.

Table 4
Estimates of 2016 Fires and Property Loss, by Property Use

Type of Fire	Number of Fires		Property Loss ¹	
	Estimate	Percent Change from 2015	Estimate	Percent Change from 2015
Fires in Structures	475,500	-5.2**	\$10,400,000,000	+1.2
Fires in Highway Vehicles	173,000	-0.6	\$1,298,000,000	+4.9
Fires in Other Vehicles ³	31,000	+1.6	\$481,000,000	-16.9*
Fire Outside but no vehicle (outside-storage, crops, timber, etc.)	88,000	+15.8**	\$1,264,000,000	-39.8**
Fires in Brush, Grass, Wildland (excluding crops and timber) with no value or loss involved	298,500	+0.5		
Fires in Rubbish, Including dumpsters (outside of structures), with no value or loss involved	172,000	+5.5		
All Other Fires	104,000	+0.5	\$158,000,000	+56.4**
Total	1,342,000	-0.3	\$13,601,000,000	-4.9**

The estimates are based on data reported to the NFPA by fire departments that responded to the 2016 National Fire Experience Survey.

¹ This includes overall direct property loss to contents, structure, a vehicle, machinery, vegetation or anything else involved in the fire. It does to include indirect losses, e.g., business interruption or temporary shelter costs. No adjustment was made for inflation in the year-to-year comparison.

² Loss by specific property was not available.

³ This includes trains, boats, ships, aircraft, farm vehicles and construction vehicles.

*Change was statistically significant at the .05 level.

**Change was statistically significant at the .01 level.

Table 5
Estimates of 2016 Structure Fires and Property Loss, by Property Use

Property Use	Structure Fires		Property Loss ¹	
	Estimate	Percent Change from 2015	Estimate	Percent Change from 2015
Public Assembly	14,000	-17.7**	\$360,000,000	+11.5
Educational	4,000	-20.0**	\$41,000,000	+2.5
Institutional	5,500	-15.4**	\$68,000,000	+33.3
Residential (Total)	371,500	-4.3	\$7,421,000,000	+2.9**
One- and Two-Family Homes ²	257,000	-5.0*	\$6,142,000,000	+5.9**
Apartments	95,000	0.0	\$1,089,000,000	-6.2**
Other Residential ³	19,500	-13.3	\$190,000,000	-24.0**
Stores and Offices	16,000	-3.0	\$689,000,000	+8.5
Industry, Utility, Defense ⁴	8,500	-5.6	\$542,000,000	-41.3**
Storage in Structures	27,000	-11.5*	\$962,000,000	-6.8
Special Structures	29,000	0.0	\$317,000,000	+387.7**
Total	475,500	-5.2**	\$10,400,000,000	+1.2

The estimates are based on data reported to the NFPA by fire departments that responded to the 2016 National Fire Experience Survey.

¹ This includes overall direct property loss to contents, structure, a vehicle, machinery, vegetation or anything else involved in a fire. It does not include indirect losses, e.g., business interruption or temporary shelter costs. No adjustment was made for inflation in the year-to-year comparison.

² This includes manufactured homes.

³ Includes hotels and motels, college dormitories, boarding houses, etc.

⁴ Incidents handled only by private fire brigades or fixed suppression systems are not included in the figures shown here.

*Change was statistically significant to the 0.05 level

**Change was statistically significant at the .01 level.

..

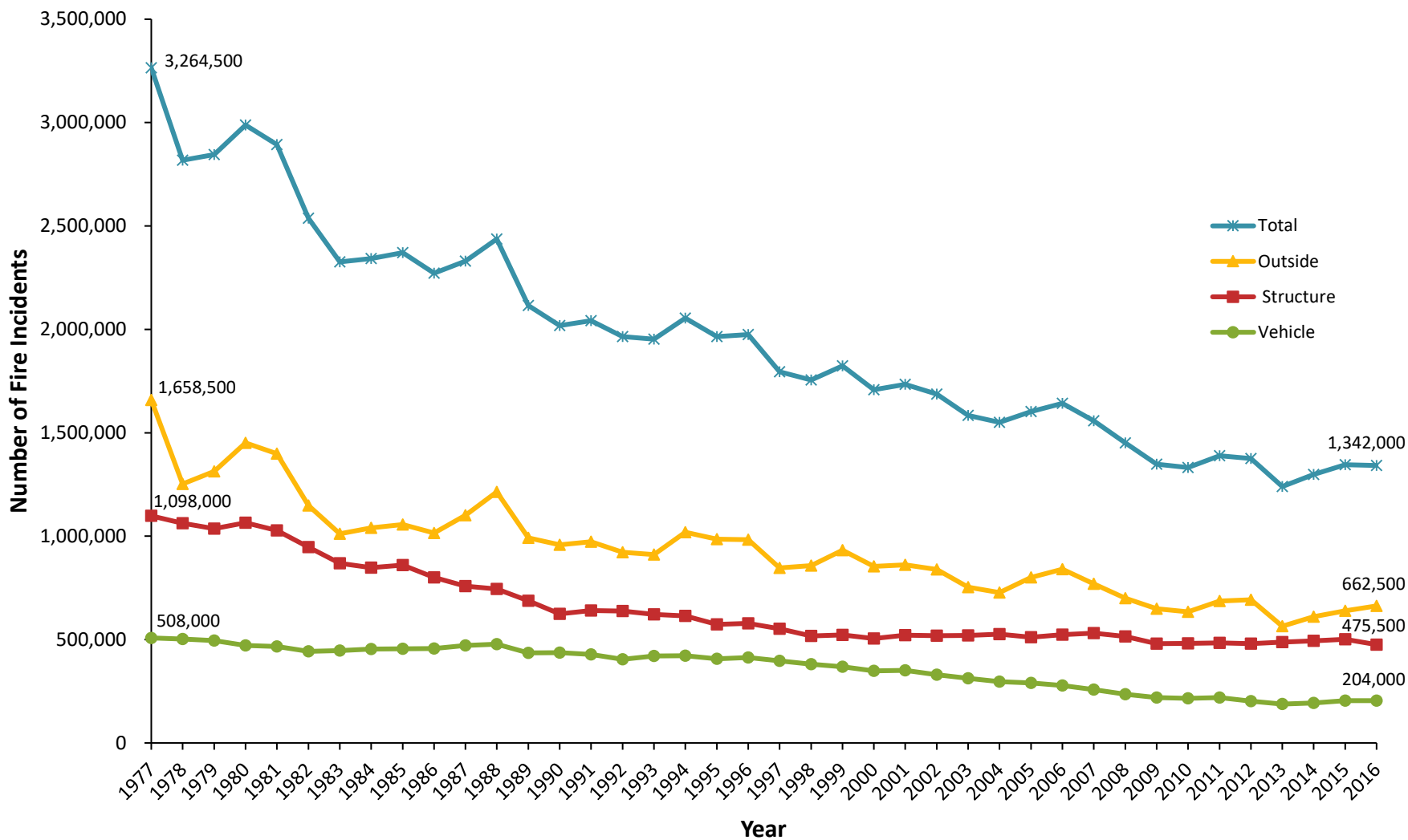


Figure 1. Fire Incidents by Type in the United States, by Year (1977-2016)

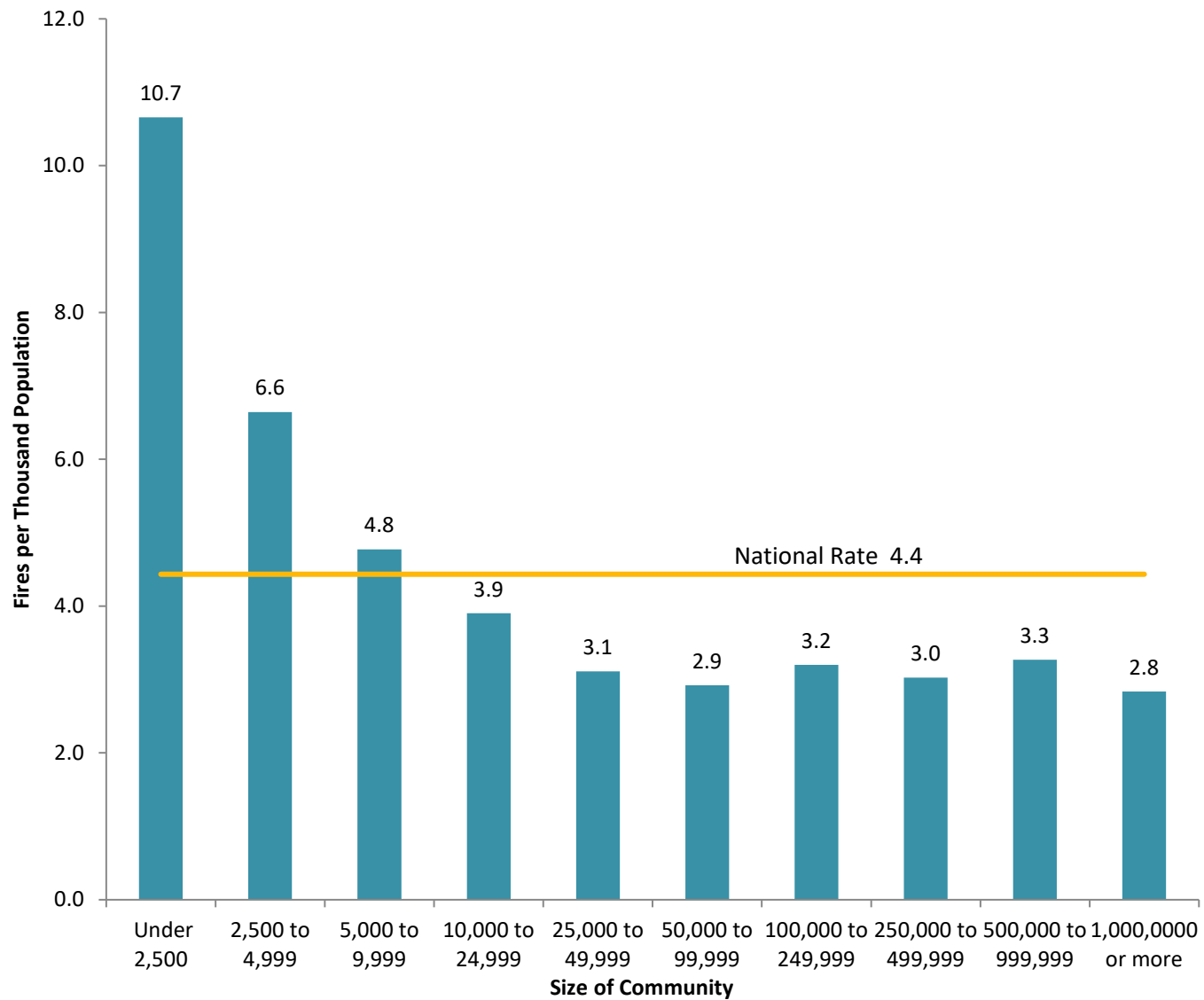


Figure 2. Fires per Thousand Population, by Size of Community (2011-2016)

Civilian Fire Deaths

The 1,342,000 fires reported by fire departments in 2016 resulted in an estimated 3,390 civilian deaths, an increase (3.4 percent) over the 2015 civilian death toll and the highest number of deaths since 2008, when 3,320 civilians died in fires. We can better understand the nature of this increase by examining by types of properties in which the deaths occurred.

The 352,000 home structure fires (which includes one- and two-family homes and apartments) caused 2,735 civilian deaths, an increase of 6.8 percent from 2015. This includes 2,410 deaths (71 percent of the total number of civilian deaths) in one- and two-family homes and 325 in apartments or other multi-family housing including condominiums. Deaths in one- or two-family homes increased by 11.8 percent, while apartment deaths actually decreased by a 19.8 percent from 2015. Eighty-one percent of civilian fire deaths resulted from home fires.

Home fire deaths were at their peak in 1978, when 6,015 people died in such fires. The number has trended downwards until recent years, with fewer than 5,000 annual deaths since 1982, and less than 4,000 deaths since 1991, with the exception of 1996. Since 2006, home fire deaths have stayed below 3,000 per year.

Overall, home fire deaths over the period 1977 to 2016 declined from 5,865 to 2,735, a drop of 53.4 percent. The number of home fires also dropped steadily over the same period for an overall decrease of 51.3 percent. However, the death rate per 1,000 home fires fluctuated considerably during that period, from 8.1 in 1977 to a high of 9.7 in 1996 and a low of 6.5 in 2006 to 7.8 in 2016, for an overall decrease during that period of 3.7 percent. This suggests that even since the number reported of home fires and home fire deaths declined similarly during the period, the fire death rate risk has not changed much. That is, given a fire serious enough to report to the fire department, the risk of dying in that fire has not decreased much.

In 2016, there were also 65 civilian fire deaths in other residential occupancies, such as hotels, motels, dormitories, and boarding houses, with an increase of 44.4 percent. In addition, 150 civilians died in non-residential structure fires, a significant increase of 87.5 percent from the year before. Part of this increase is due in large part by the Oakland warehouse fire, known as the Ghost Ship where 36 civilians died. Although classified as a warehouse this property was being used as a dwelling that defies easy occupancy classification

Of the 2,950 civilian deaths in structure fires, 310 (10.5 percent) died in fires that were intentionally set.

With 2,735 home fire deaths accounting for 81 percent of all civilian fire deaths, fire-safety initiatives targeted at the home remain the key to any reductions in the overall fire death toll. There are five major strategies for reducing the death toll in home fires. First, more widespread public fire safety education is needed on how to prevent fires and how to avoid serious injury or death if a fire occurs. Information on the common causes of fatal home fires should be used in the design of fire safety education messages. Second, people need to install and maintain smoke alarms and to develop and practice escape plans. Third, wider use of residential sprinklers must be aggressively pursued. Fourth, additional ways must be sought to make home products safer from fire. The regulations requiring more child-resistant lighters are a good example, as are fire-safe cigarettes. Finally, the special fire safety needs of high-risk groups such as African American children, older adults, the poor, and people with disabilities need to be addressed.^{1,2}As indicated above, there has been significant success in reducing the number of reported home fires, but once a serious fire starts, deaths are almost as likely to occur in a home fire as they were 40 years ago.

In one category, highway vehicle fires, the number of deaths decreased from an estimated 445 in 2015 to an estimated 280 civilians in 2016. These numbers exclude deaths due to trauma if the fire was not a factor in the death. Between 1980 and 2009, the number of highway vehicle deaths has decreased by 60 percent. Since a low of an estimated 260 deaths in 2009, the number of deaths from highway vehicle fires has increased to an estimated 445 deaths in 2015, an increase of 71.2 percent over that period. In 2016, the number of highway vehicle deaths decreased to an estimated 280 deaths. The median number of vehicle deaths over the last decade is 300 deaths. The number of deaths in 2016 represents a 6.7 percent decrease over this median estimate.

¹ Marty Ahrens, *Characteristics of Home Fire Victims*, October 2014, Quincy: National Fire Protection Association, Fire Analysis and Research Division.

² Rita F. Fahy and Alison L. Miller, "How Being Poor Affects Fire Risk", *Fire Journal*, Vol. 83, No. 1 (January 1989), p. 28.

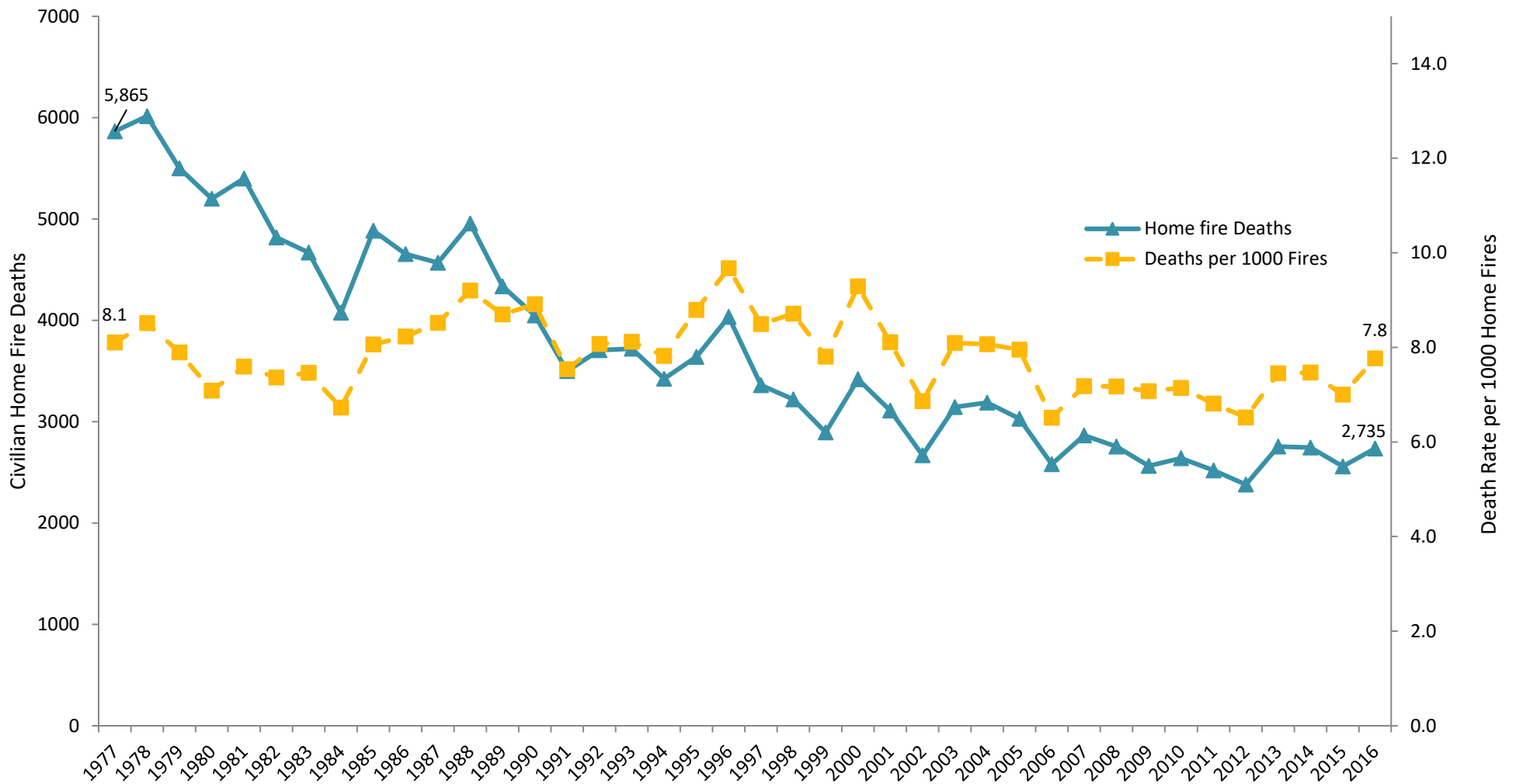


Figure 3. Civilian Home Fire Deaths and Rates per 1000 Fires, 1977-2016

Source: NFPA Survey of Fire Departments (1977-2016)

Table 6
Estimates of 2016 Civilian Fire Deaths and Injuries, by Property Use

Property Use	Estimate	Civilian Deaths		Civilian Injuries		
		Percent Change From 2015	Percent of all Civilian Deaths	Estimate	Percent Change From 2015	Percent of all Civilian Injuries
Residential (total)	2,800	+7.5**	82.6	11,125	-3.9	75.9
One- and Two-Family Homes ¹	2,410	+11.8	71.1	7,375	-8.4	50.3
Apartments	325	-19.8	9.6	3,375	-11.6	23.0
Other Residential ²	65	+44.4	1.9	375	-25.0	2.6
Non-Residential Structures ³	150	+87.5**	4.4	1,650	+15.8	11.3
Highway Vehicles	280	-37.1	8.3	1,075	-30.6*	7.3
Other Vehicles ⁴	75	+36.4	2.2	150	-53.8**	1.0
All Other ⁵	85	-10.5	2.5	650	-21.2	4.4
Total	3,390	+3.4		14,650	-6.7	

The estimates are based on data reported to the NFPA by fire departments that responded to the 2016 National Fire Experience Survey.

Note all of the changes were not statistically significant; considerable year-to-year fluctuation is to be expected for many of these totals because of their small size.

¹ This includes manufactured homes.

² Includes hotels and motels, college dormitories, boarding houses, etc.

³ This includes public assembly, educational, institutional, store and office, industry, utility, storage, and special structure properties.

⁴ This includes trains, boats, ships, farm vehicles and construction vehicles.

⁵ This includes outside properties with value, as well as brush, rubbish, and other outside locations.

*Change was statistically significant to the 0.05 level

**Change was statistically significant to the 0.01 level

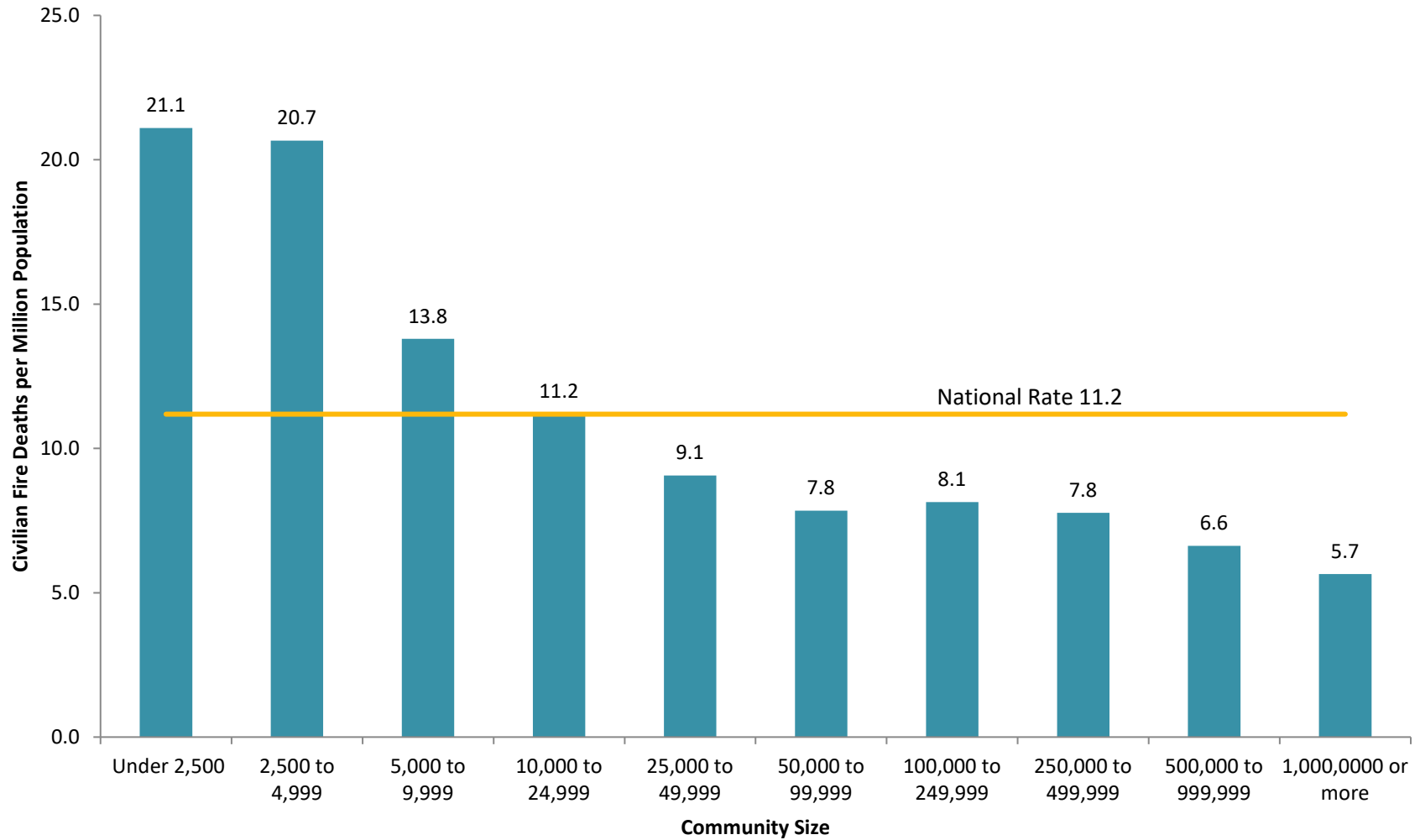


Figure 4. Civilian Fire Deaths per Million Population by Community Size (2012-2016)

Civilian Fire Injuries

In addition to the 3,390 civilians who died in fires in 2016, there were an estimated 14,650 civilian fire injuries. This is a decrease of 6.7 percent from 2015 and is the lowest since 1977. Since civilian fire injuries are not always reported to the fire service, estimates of civilian fire injuries may be lower than actual levels. For example, many injuries occur at small fires to which fire departments do not respond, and even when fire departments do respond, they may be unaware of injured persons they did not transport to medical facilities themselves.

Of the 14,650 civilians injured in 2016, we estimate that 12,775 civilians were injured in structure fires, and of those, that 10,750 were injured in home structure fires, a decrease of 3.0 percent from the previous year. Of these injuries, 7,375 occurred in one- and two-family homes and manufactured homes and 3,375 occurred in apartments. An additional 1,650 civilians were injured in non-residential structure fires in 2016, an increase of 15.8 percent from the year before. Additionally, 1,075 civilians were injured in highway vehicle fires, a 30.6 percent decrease from 2015. Other vehicle fires (including planes, trains, ships, construction, and farm vehicles) represent a decrease of 53.8 percent from 2015.

Between 1977 and 2016, the number of civilian injuries ranged from a peak of 31,325 in 1979 to a low of 14,650 in 2016, a decrease of 53.2 percent. Since 1997, civilian injuries have remained below 35,000 per year, below 19,000 since 2002, and below 16,000 since 2013.

Property Loss

NFPA estimates that the 1,342,000 fires to which the fire service responded in 2016 caused \$13.6 billion in property damage, 4.9 percent less than 2015. It is worth noting that a major wildfire in Gatlinburg Tennessee caused \$911 million in direct property damage. The direct property loss from this wildfire was unprecedented for the eastern United States, and something local authorities need to be paying attention to into the future.

Fires in structures not related to wildfires resulted in \$10.4 billion in property damage, an increase of 1.2 percent from 2015. Each structure fire resulted in an average property loss of \$21,872.

From 1977 to 2016, excluding the events of September 11, 2001, the average loss per structure fire was \$3,757 in 1977 and \$21,872 in 2016, for an overall increase of 482 percent. When property loss is adjusted for inflation in 2016 dollars, however, the increase in the average structure fire loss between 1977 and 2016 is 48 percent.

Of the 2016 property loss in structures, \$7.2 billion occurred in home structures, a increase of 3.9 percent from 2015. An estimated \$6.1 billion of this loss occurred in one- and two-family homes, a increase of 5.9 percent. An estimated loss of \$1.1 billion occurred in apartments or other multi-family housing like condominiums.

Other property damage results for 2016 include \$689 million in store and office properties, an increase of 8.5 percent; \$542 million in industrial and manufacturing properties, a 41.3 percent decrease; \$1.3 billion in highway vehicles, a 4.9 percent increase; and \$481 million in other vehicles, a 16.9 percent decrease. There was a 388 percent increase in other structure properties, to \$317 million, partly due to three major fires in Gilbert (two) and Phoenix, Arizona. The Phoenix and one of the Gilbert properties were construction sites that were structures other than buildings under construction and the other Gilbert fire was a building structure under construction.

It should be kept in mind that property loss totals can change significantly from year to year due to the impact of occasional large-loss fires. NFPA provides an annual analysis of such fires in the November/December issue of the *NFPA Journal*.

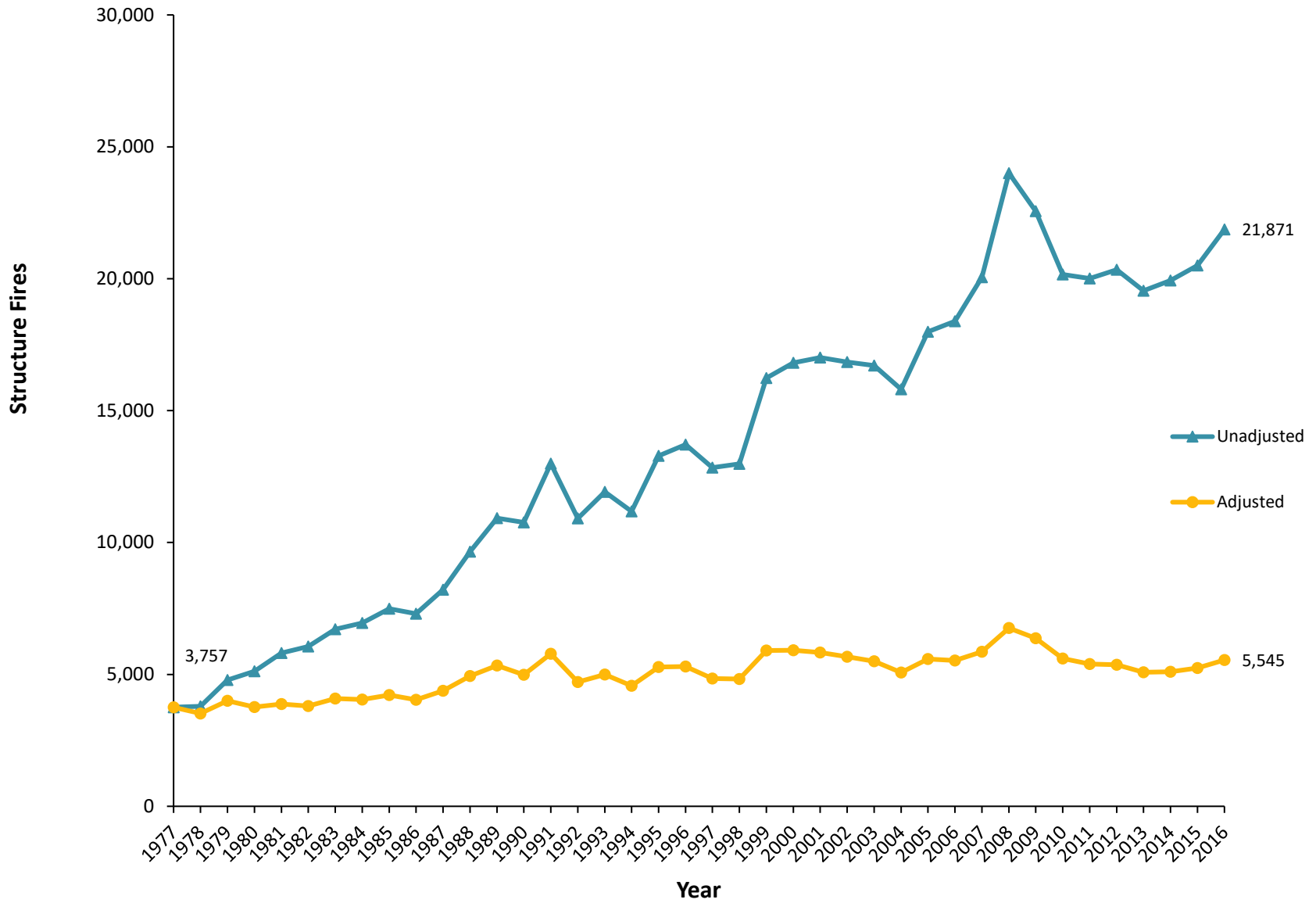


Figure 5. Average Loss per Structure Fire in the United States (1977-2016)

Intentionally Set Fires

NFPA estimates 20,000 structure fires were intentionally set in 2016, a decrease of 13.0 percent from the year before. These fires resulted in an estimated 310 civilian deaths, an increase of 51.2 percent from the previous year. At the same time, though, these fires resulted in \$572 million in property loss, an increase of 24.3 percent compared to 2015.

In 2016, there were also an estimated 9,500 intentionally set vehicle fires, 5 percent fewer than the year before. These fires set resulted in \$68 million in property loss, a decrease of 8.1 percent from 2015.

Estimates of intentionally set fires do not include allocation of fires whose causes were unknown or unreported.

Table 7
Estimate of 2016 Losses in Intentionally Set Structure Fires

Intentionally¹ Set Structure Fires	Estimate	Percent change from 2015
Number of Structure Fires	20,000	-13.0
Civilian Deaths	310	+51.2
Property Loss ¹	\$572,000,000	+24.3

The estimates are based on data reported to the NFPA by fire departments that responded to the 2016 National Fire Experience Survey.

¹ This includes overall direct property loss to contents, structure, a vehicle, machinery, vegetation, or anything else involved in a fire. It does not include indirect losses, e.g., business interruption or temporary shelter costs. No adjustment was made for inflation in the year-to-year comparison.

*Change was statistically significant to the 0.05 level

**Change was statistically significant to the 0.01 level

Regional Analysis

Fire loss rates nationwide for 2016 and by region¹ can be seen in [Table 8](#). The Northeast (4.4), and the South (4.7) had the highest fire incident rate per thousand people. The South with (13.1) had the highest civilian death rate per million population.

The Northeast with (59.3) had the highest civilian injury rate per million population, while the Midwest with (\$36.9) had the highest property loss per capita rate.

Fire incident rates by region and community size can be seen in [Table 9](#). The Northeast had the highest rates for communities of 25,000 to 249,999 and greater than 500,000 population. The Midwest had the highest rates for communities between 250,000 to 499,999 and the South had the highest rates for communities less than 49,999 population.

Civilian fire deaths per million population by region and community size are shown in [Table 10](#). The Northeast had the highest rates for communities of 250,000 to 499,999 population. Midwest had the highest rate for communities of 100,000 to 249,999, the Northeast and the West had the highest rates for communities of 5,000 to 9,999. The South had the highest rates for communities greater than 500,000; 10,000 to 99,999 and less than 5,000 population.

Civilian fire injuries per million population by region and community size are shown in [Table 11](#). The Northeast had the highest rates in communities 25,000 to 99,999 and communities less than 2,500. The Midwest had the highest rates for communities of more than 100,000 population; the South the highest rates for communities with population 5,000 to 9,999 and the West had the highest rate for communities 10,000 to 24,999 population.

Property loss per capita by region and community size are shown in [Table 12](#). The Midwest had the highest rates for the larger communities of 500,000 or more and communities between 10,000 and 24,999 population. The South has the highest property loss per capita in communities 250,000 to 499,999, 50,000 to 99,999 and less than 4,999 population. The West has the highest property loss in communities 100,000 to 249,999; 25,000 to 49,999 and 5,000 to 9,999 population.

¹ As defined by the U.S. Bureau of the Census, the four regions are: Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming.

Table 8
Fire Loss Rates Nationwide and by U.S. Census Region, 2016

Region	Number of Fires per Thousand Population	Civilian Deaths per Million Population	Civilian Injuries per Million Population	Property Loss per Capita
Nationwide	4.2	10.5	45.3	\$32.9
Northeast	4.4	10.4	59.3	\$36.2
Midwest	3.9	11.1	42.9	\$36.9
South	4.7	13.1	50.9	\$32.6*
West	3.5	6.2	29.3	\$26.9

Source: NFPA's Survey of Fire Departments for 2016 U.S. Fire Experience.

*Includes Tennessee Wildfire 2016

Table 9
2016 Fires per Thousand Population, by Region and Size of Community

Population of Community	All Regions	Northeast	Midwest	South	West
500,000 or more	2.9	4.7	2.8	2.4	2.5
250,000 to 499,999	3.0	3.5	3.7	2.8	3.0
100,000 to 249,999	3.2	5.3	2.6	3.6	2.6
50,000 to 99,999	2.9	3.8	2.3	3.3	2.6
25,000 to 49,999	3.0	3.7	2.4	4.2	2.6
10,000 to 24,999	4.1	3.8	3.3	5.4	4.9
5,000 to 9,999	4.9	4.7	3.9	6.6	5.1
2,500 to 4,999	6.4	5.6	4.7	9.1	8.7
under 2,500	10.7	8.0	8.8	15.9	14.9

Source: NFPA's Survey of Fire Departments for 2016 U.S. Fire Experience.

Table 10
2016 Civilian Fire Deaths per Million Population, by Region and Size of Community

Population of Community	All Regions	Northeast	Midwest	South	West
500,000 or more	5.4	7.1	6.0	7.2	3.3
250,000 to 499,999	6.6	16.7	9.2	7.3	3.6
100,000 to 249,999	10.5	11.6	14.3	9.1	10.5
50,000 to 99,999	6.9	6.9	7.7	8.1	3.4
25,000 to 49,999	9.0	10.9	8.8	11.3	4.2
10,000 to 24,999	13.8	13.6	13.6	15.7	9.9
5,000 to 9,999	14.7	9.3	13.6	13.1	31.3
2,500 to 4,999	20.3	19.0	19.5	29.0	0.0
under 2,500	19.3	10.3	11.8	39.2	35.7

Source: NFPA's Survey of Fire Departments for 2016 U.S. Fire Experience.

Table 11
2016 Civilian Fire Injuries per Million Population, by Region and Size of Community

Population of Community	All Regions	Northeast	Midwest	South	West
500,000 or more	41.6	*	41.2	31.9	21.0
250,000 to 499,999	52.6	*	63.6	58.0	38.0
100,000 to 249,999	49.2	67.5	67.6	60.2	24.8
50,000 to 99,999	46.2	61.6	47.4	51.7	26.6
25,000 to 49,999	49.7	68.3	47.5	62.7	18.5
10,000 to 24,999	58.7	64.1	59.3	50.0	65.5
5,000 to 9,999	34.6	32.6	32.9	57.2	12.2
2,500 to 4,999	54.0	26.6	67.8	56.4	36.2
under 2,500	25.0	69.7	6.5	26.4	59.1

Source: NFPA's Survey of Fire Departments for 2016 U.S. Fire Experience.

*insufficient data

Table 12
2016 Property Loss per Person, by Region and Size of Community

Population of Community	All Regions	Northeast	Midwest	South	West
500,000 or more	\$27.9	*	\$33.4	\$23.3	\$28.2
250,000 to 499,999	\$29.1	*	*	\$31.0	\$25.3
100,000 to 249,999	\$36.0	\$38.8	\$30.3	\$34.3	\$41.2
50,000 to 99,999	\$26.4	\$27.7	\$22.6	\$29.3	\$28.0
25,000 to 49,999	\$29.2	\$25.9	\$24.4	\$35.7	\$34.9
10,000 to 24,999	\$42.4	\$26.0	\$49.6	\$42.5	\$36.5
5,000 to 9,999	\$55.4	\$36.9	\$50.8	\$62.0	\$86.6
2,500 to 4,999	\$63.4	\$44.1	\$53.9	\$93.9	\$67.7
under 2,500	\$111.3	\$72.4	\$115.7	\$134.5	\$119.5

Source: NFPA's Survey of Fire Departments for 2016 U.S. Fire Experience.

*Insufficient data

Average Fire Experience

Average fire experience by community size for all fires and residential properties can be seen in Table 13 and Table 14. Note that communities with larger populations are expected to have more fires and losses.

Table 13
Average 2016 Fire Experience, by Size of Community

Population of Community	Total Fires	Structure Fires	Civilian Deaths	Civilian Injuries	Property Loss
1,000,000 or more	6,649	3,323	12.15	129.50	\$50,649,750
500,000 to 999,999	2,306	829	4.48	20.75	21,123,604
250,000 to 499,999	1,020	382	2.24	17.80	10,108,052
100,000 to 249,999	494	181	1.61	7.54	5,547,766
50,000 to 99,999	196	76	0.47	3.14	1,795,632
25,000 to 49,999	103	40	0.31	1.70	1,019,332
10,000 to 24,999	64	23	0.22	0.92	870,655
5,000 to 9,999	35	13	0.11	0.29	404,617
2,500 to 4,999	22	13	0.40	1.01	596,149
under 2,500	11	3	0.02	0.03	141,715

Table 14
Average 2016 Residential Fire Experience, by Size of Community

Population of Community	Number of Fires	Civilian Deaths	Civilian Injuries	Property Loss
1,000,000 or more	2,508	7.31	84.25	\$31,893,660
500,000 to 999,999	643	3.74	16.03	12,198,115
250,000 to 499,999	291	1.79	14.28	5,433,623
100,000 to 249,999	144	1.02	75.91	2,513,444
50,000 to 99,999	61	0.43	2.55	1,721,946
25,000 to 49,999	32	0.27	1.37	590,443
10,000 to 24,999	19	0.217	0.68	663,712
5,000 to 9,999	10	0.10	0.21	234,458
2,500 to 4,999	5	0.05	0.09	125,251
under 2,500	2	0.02	0.02	63,479

Source: NFPA's Survey of Fire Departments for 2016 U.S. Fire Experience.

Table 15
Fire Department Responses, by Type of Call, 2016

	Number	Percent of Calls	Percent Change From 2015
Fire Incidents	1,342,000	3.8%	-0.3
Medical Aid Responses (Ambulance, EMS, Rescue)	22,750,500	64.4%	+5.8
False Alarms	2,622,000	7.4%	+1.4
Mutual Aid or Assistance Calls	1,515,000	4.3%	+1.5
Hazardous Material Responses (Spills, Leaks, etc.)	425,000	1.2%	-3.8
Other Hazardous Responses (arcing wires, bomb removal etc.)	684,500	1.9%	+6.5
All Other Responses (smoke scares, lock-outs, etc.)	5,981,000	16.9%	+5.9
Total Incidents	35,320,000	100.0%	+4.9

The percent of fires and non-fire incidents by community size is shown in Table 16.

A further breakdown on false responses was collected on the 2016 surveys and the results can be seen in Table 17.

Table 16
Average Number of Fires and Non-Fire Incidents, by Community Size, 2014-2016

Community Size										
	1,000,000 or more	500,000 to 999,999	250,000 to 499,999	100,000 to 249,999	50,000 to 99,999	25,000 to 49,999	10,000 to 24,999	5,000 to 9,999	2,500 to 4,999	under 2,500
Fires	5,764	2,213	1,004	463	184	95	56	32	30	15
Rescue, EMS etc.,	144,802	66,233	26,695	12,017	4,546	1,961	928	346	225	60
False alarm responses	15,879	5,885	2,352	1,000	565	279	129	52	27	7
Mutual aid responses	1,527	1,528	463	348	185	130	85	52	42	16
Hazardous materials	2,724	809	349	169	82	47	24	10	5	1
Other hazardous	2,446	1,083	618	273	135	66	33	15	12	3
All other responses	74,557	14,090	7,557	2,797	1,186	474	195	80	48	10
Total for all incidents	247,699	91,841	39,038	17,068	6,883	3,053	1,450	589	389	113
	1,000,000 or more	500,000 to 999,999	250,000 to 499,999	100,000 to 249,999	50,000 to 99,999	25,000 to 49,999	10,000 to 24,999	5,000 to 9,999	2,500 to 4,999	under 2,500
Fires	2.3%	2.4%	2.6%	2.7%	2.7%	3.1%	3.8%	5.5%	7.7%	13.1%
Rescue, EMS etc.,	58.5%	72.1%	68.4%	70.4%	66.0%	64.2%	64.0%	58.8%	57.9%	53.5%
False alarm responses	6.4%	6.4%	6.0%	5.9%	8.2%	9.2%	8.9%	8.9%	6.9%	6.6%
Mutual aid responses	0.6%	1.7%	1.2%	2.0%	2.7%	4.3%	5.8%	8.9%	10.9%	14.0%
Hazardous materials	1.1%	0.9%	0.9%	1.0%	1.2%	1.6%	1.7%	1.7%	1.3%	1.0%
Other hazardous	1.0%	1.2%	1.6%	1.6%	2.0%	2.2%	2.3%	2.6%	3.0%	2.7%
All other responses	30.1%	15.3%	19.4%	16.4%	17.2%	15.5%	13.4%	13.6%	12.3%	8.9%
Total for all incidents	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: NFPA's Survey of Fire Departments for U.S. Fire Experience (2014-2016)

Table 17
Fire Department False Alarm Responses, by Type of Call, 2016

	Estimate	Percent Change From 2015	Percent of All False Alarms
Malicious, Mischievous False Call	172,500	3.9%	6.6%
System Malfunction	837,000	1.1%	31.9%
Unintentional Call	1,225,500	2.2%	46.7%
Other False Alarms (Bomb Scares, etc.)	387,000	3.6%	14.8%
Total	2,622,000	2.2%	100.0%

Source: NFPA's Survey of Fire Departments for 2016 U.S. Fire Experience

Table 18
A Comparison of Respondents and *Nonrespondents to the 2016 NFPA Survey, by Community Size

Population Size of Community Protected	Number of Fires (Per Thousand Population)				Civilian Deaths (Per Million Population)				Property Loss (Per Capita)			
	Respondents		Nonrespondents		Respondents		Nonrespondents		Respondents		Nonrespondents	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
100,000 to 249,999	148	3.24	26	3.36	151	10.49	25	6.99	92	36.00	21	25.72
50,000 to 99,999	202	2.87	29	4.91	200	6.89	26	11.02	113	26.44	22	75.43
25,000 to 49,999	331	3.01	33	3.70	330	9.04	30	7.76	173	29.23	24	51.66
10,000 to 24,999	582	4.10	25	5.37	581	13.79	23	29.08	262	42.36	17	55.45
5,000 to 9,999	428	4.85	25	6.44	424	14.68	24	10.92	182	55.40	13	103.22

*Some departments did not return the questionnaire. A sample of these non respondents was contacted by telephone and questioned about their 2016 fire experience

Note: "n" refers to the number of department reporting the statistic

Fire Experience of Nonrespondents

A telephone follow-up was made to a sample of Nonrespondents to determine whether fire departments that did not respond to the survey experienced fire loss rates similar to those that did respond. This would help the NFPA determine whether we received questionnaires only from departments that had experienced unusually high or low fire losses.

The sample of the nonrespondents selected was proportional by state and population of the community to the original sample selected for the survey. As a result of these efforts 139 fire departments were successfully contacted and answered some of the questions about their fire experience.

[Table 18](#) compares fire loss rates for both respondents and nonrespondents. For communities of 100,000 to 249,999, the nonrespondent rate was 50 percent higher for civilian deaths, and 4 percent higher for fires. Respondents were 40 percent higher for property loss.

For communities of 50,000 to 99,999, the nonrespondent rate was 38 percent higher for civilian deaths, 65 percent higher for property loss and 41.5 percent higher for fires. (No results were statistically significant).

For communities of 25,000 to 49,999, the nonrespondent rate was 19 percent higher for fires and 43 percent higher for property loss. Respondents were 17 percent higher for civilian deaths.

For communities of 10,000 to 24,999, the nonrespondent rate was 53 percent higher for civilian deaths, 24 percent higher for property loss and fires.

For communities of 5,000 to 9,999, the nonrespondent rate was 25 percent higher for fires, 46 percent higher for higher for property loss. Respondents were 34 percent higher for civilian death. No statistically significant differences between respondent and nonrespondent rates were observed in this analysis.

Conclusions

The total number of fires continues to be on a downward trend, as does the number of outside fires, structure fires and vehicle fires. In [Figure 2](#), the number of fires per thousand population, the frequency of fire incident is much higher in communities with less than 5,000 population.

Since 1977, the number of home fires deaths has declined considerably, however the number of deaths per 1,000 fires has remained fairly flat between a high of 9.7 deaths per 1,000 fires in 1996 to a low of 6.5 deaths per 1,000 fires in 2013 (See [Figure 3](#)). One can conclude that even though the number fires is decreasing the risk of death in the event of a fire has remained relatively constant for the period 1977 to 2016. In [Figure 4](#), the rate of civilian fire deaths per million population in communities with less than 5,000 people is significantly worse than in larger communities. Considering the fact that the majority of these smaller communities are served predominately by volunteer fire departments, it may be helpful to invest (training, staffing and equipment) in these departments to better help lower the death rates in these small communities.

In conclusion, although the frequency of fire incidents is going down, the risk of death and property loss remains relatively constant when the fire incident occurs.

Definition of Terms

Civilian: The term “civilian” includes anyone other than a firefighter, and covers public service personnel such as police officers, civil defense staff, non-fire service medical personnel, and utility company employees.

Death: An injury that occurred as a direct result of a fire that is fatal or becomes fatal within one year.

Fire: Any instance of uncontrolled burning. Includes combustion explosions and fires out on arrival. Excludes controlled burning (whether authorized or not), over pressure rupture without combustion, mutual aid responses, smoke scares, and hazardous responses (e.g., oil spill without fire).

Injury: Physical damage that is suffered by a person as a direct result of fire and that requires (or should require) treatment by a practitioner of medicine (physician, nurse, paramedic, EMT) within one year of the incident (regardless of whether treatment was actually received), or results in at least one day of restricted activity immediately following the incident. Examples of injuries resulting from fire are smoke inhalation, burns, wounds and punctures, fractures, heart attacks (resulting from stress under fire condition), strains and sprains.

Property Damage: Includes all forms of direct loss to contents, structure, machinery, a vehicle, vegetation or anything else involved in the fire but not indirect losses, such as business interruption or temporary shelter provisions.

Structure: An assembly of materials forming a construction for occupancy or use in such a manner as to serve a specific purpose. A building is a form of structure. Open platforms, bridges, roof assemblies over open storage or process areas, tents, air-supported, and grandstands are other forms of structures.

Vehicles, Highway and Other: Fires in these instances may have been associated with an accident; however, reported casualties and property loss should be the direct result of the fire only. Highway vehicles include any vehicle designed to operate normally on highways, e.g., automobiles, motorcycles, buses, trucks, trailers (not mobile homes on foundations), etc. Other vehicles include trains, boats and ships, aircraft, and farm and construction vehicles.

Appendix A.

Fire Loss in the United States Trend Tables, 1977-2016 and
U.S. Fire Rates by Unit of Time

The U.S. Fire Problem

Year	Fires	Civilian Deaths	Civilian Injuries	Firefighter Deaths	Firefighter Injuries	Direct Property Damage (in Billions)	
						As Reported	In 2016 Dollars
1977	3,264,500	7,395	31,190	157	112,540	\$4.7	\$18.5
1978	2,817,500	7,710	29,825	174	101,100	\$4.5	\$16.5
1979	2,845,500	7,575	31,325	126	95,780	\$5.8	\$19.1
1980	2,988,000	6,505	30,200	138	98,070	\$6.3	\$18.3
1981	2,893,500	6,700	30,450	136	103,340	\$6.7	\$17.6
1982	2,538,000	6,020	30,525	128	98,150	\$6.4	\$15.8
1983	2,326,500	5,920	31,275	113	103,150	\$6.6	\$15.9
1984	2,343,000	5,240	28,125	119	102,300	\$6.7	\$15.5
1985	2,371,000	6,185	28,425	128	100,900	\$7.3	\$16.3
1986	2,271,500	5,850	26,825	119	96,450	\$6.7	\$14.7
1987	2,330,000	5,810	28,215	132	102,600	\$7.2	\$15.2
1988	2,436,500	6,215	30,800	136	102,900	\$8.4	\$17.1
1989	2,115,000	5,410	28,250	118	100,700	\$8.7	\$16.8
1990	2,019,000	5,195	28,600	108	100,300	\$7.8	\$14.4
1991	2,041,500	4,465	29,375	108	103,300	\$9.5 ¹	\$16.8 ¹
1992	1,964,500	4,730	28,700	75	97,700	\$8.3	\$14.2
1993	1,952,500	4,635	30,475	79	101,500	\$8.5 ²	\$14.2 ²
1994	2,054,500	4,275	27,250	106	95,400	\$8.2	\$13.3
1995	1,965,500	4,585	25,775	98	94,500	\$8.9	\$14.0
1996	1,975,000	4,990	25,550	96	87,150	\$9.4	\$14.4
1997	1,795,000	4,050	23,750	99	85,400	\$8.5	\$12.7
1998	1,755,500	4,035	23,100	91	87,500	\$8.6	\$12.7
1999	1,823,000	3,570	21,875	112	88,500	\$10.0	\$14.4
2000	1,708,000	4,045	22,350	103	84,550	\$11.2	\$15.6
2001	1,734,500	6,196 ³	21,100 ⁴	443 ⁵	82,250	\$44.0 ⁶	\$59.7 ⁶
2002	1,687,500	3,380	18,425	98	80,800	\$10.3	\$13.7
2003	1,584,500	3,925	18,125	106	78,750	\$12.3 ⁷	\$16.1 ⁷
2004	1,550,500	3,900	17,875	104	75,840	\$9.8	\$12.5
2005	1,602,000	3,675	17,925	87	80,100	\$10.7	\$13.2
2006	1,642,500	3,245	16,400	89	83,400	\$11.3	\$13.4
2007	1,557,500	3,430	17,675	106	80,100	\$14.6 ⁸	\$16.9 ⁸
2008	1,451,500	3,320	16,705	105	79,700	\$15.5 ⁹	\$17.0 ⁹

The U.S. Fire Problem (Continued)

Year	Fires	Civilian Deaths	Civilian Injuries	Firefighter Deaths	Firefighter Injuries	Direct Property Damage (in Billions)	
						As Reported	In 2016 Dollars
2009	1,348,500	3,010	17,050	82	78,150	\$12.5	\$14.0
2010	1,331,500	3,120	17,720	73	71,875	\$11.6	\$12.8
2011	1,389,500	3,005	17,500	61	70,090	\$11.7	\$12.9
2012	1,375,000	2,855	16,500	64	69,400	\$12.4	\$13.0
2013	1,240,000	3,240	15,925	97	65,880	\$11.5	\$11.9
2014	1,298,000	3,275	15,775	64	63,350	\$11.6	\$11.7
2015	1,345,500	3,280	15,700	68	68,085	\$14.3 ¹⁰	\$14.4
2016	1,342,000	3,390	14,650	69	62,085	\$13.6 ¹¹	\$13.6

¹This includes \$1.5 billion in damage caused by the Oakland Fire Storm, most of which was lost to homes but for which no detailed breakdown by property type was available.

²This includes \$809 million in damage caused by Southern California wildfires.

³This includes 2,451 civilian deaths that occurred from the events of 9/11/01.

⁴This includes 800 civilian injuries that occurred from the events of 9/11/01.

⁵This includes 340 firefighters at the World Trade Center, 09/11/01.

⁶This includes \$33.44 billion in property loss that occurred from the events of 9/11/01.

⁷This includes the Southern California Wildfires (Cedar and Old Wildfires) with an estimated total property loss of \$2,040,000,000. Loss by specific property type for this fire was not available.

⁸This includes the California Fire Storm 2007 with an estimated property damage of \$1.8 billion.

⁹This includes the California wildfires 2008 with an estimated property damage of \$1.4 billion.

¹⁰This includes the California wildfires 2015 with an estimated property damage of \$2.0 billion.

¹¹This includes the Gatlinburg, Tennessee wildfires 2016 with an estimated property damage of \$911 million.

Direct property damage figures do not include indirect losses, like business interruption.

Inflation adjustment to 2016 dollars is done using the consumer price index.

Source: *Fire Loss in the United States 2016*, Hylton J.G. Haynes, NFPA, September 2017 and previous reports in the series; *Firefighter Fatalities in the United States*, Rita F. Fahy, Paul R. LeBlanc, Joseph L. Molis, NFPA, June 2017 and previous reports in the series; *U.S. Firefighter Injuries*, Hylton J.G. Haynes, Joseph L. Molis, NFPA, October 2016 and previous reports in the series.

The U.S. Structure Fire Problem

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions) ¹	
				As Reported	In 2016 Dollars
1977	1,098,000	6,505	26,310	\$4.1	\$16.2
1978	1,062,000	6,350	24,985	\$4.0	\$14.7
1979	1,036,500	5,970	24,850	\$5.0	\$16.5
1980	1,065,000	5,675	24,725	\$5.5	\$16.0
1981	1,027,500	5,760	25,700	\$6.0	\$15.8
1982	946,500	5,200	25,575	\$5.7	\$14.1
1983	868,500	5,090	26,150	\$5.8	\$14.0
1984	848,000	4,525	23,025	\$5.9	\$13.6
1985	859,500	5,265	23,350	\$6.4	\$14.3
1986	800,000	4,985	22,750	\$5.8	\$12.8
1987	758,000	4,880	23,815	\$6.2	\$13.1
1988	745,000	5,280	26,275	\$7.2 ²	\$14.6 ²
1989	688,000	4,655	24,025	\$7.5 ³	\$14.5 ³
1990	624,000	4,400	24,075	\$6.7	\$12.4
1991	640,500	3,765	24,975	\$8.3 ⁴	\$14.7 ⁴
1992	637,500	3,940	24,325	\$7.0 ⁵	\$12.0 ⁵
1993	621,500	3,980	26,550	\$7.4 ⁶	\$12.3 ⁶
1994	614,000	3,590	23,125	\$6.9	\$11.2
1995	573,500	3,985 ⁷	21,725	\$7.6	\$12.0
1996	578,500	4,220	21,875	\$7.9	\$12.1
1997	552,000	3,510	20,375	\$7.1	\$10.6
1998	517,500	3,420	19,425	\$6.7	\$9.9
1999	523,000	3,040	18,525	\$8.5	\$12.3
2000	505,500	3,535	19,600	\$8.5	\$11.8
2001 ⁸	521,500	3,220	17,225	\$8.9	\$12.1
2002	519,000	2,775	15,600	\$8.7	\$11.6
2003	519,500	3,385 ⁹	15,600	\$8.7 ¹⁰	\$11.4 ¹⁰
2004	526,000	3,305	15,525	\$8.3	\$10.5
2005	511,000	3,105	15,325	\$9.2	\$11.3
2006	524,000	2,705	14,350	\$9.6	\$11.4
2007	530,500	3,000	15,350	\$10.6 ¹¹	\$12.3 ¹¹

The U.S. Structure Fire Problem (Continued)

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions) ¹	
				As Reported	In 2016 Dollars
2008	515,000	2,900	14,960	\$12.4 ¹²	\$13.6 ¹²
2009	480,500	2,695	14,740	\$10.8	\$12.1
2010	482,000	2,755	15,420	\$9.7	\$10.7
2011	484,500	2,640	15,635	\$9.7	\$10.3
2012	480,500	2,470	14,700	\$9.8	\$10.3
2013	487,500	2,855	14,075	\$9.5	\$9.8
2014	494,000	2,860	13,425	\$9.8	\$9.9
2015	501,500	2,685	13,000	\$10.3	\$10.4
2016	475,500	2,950	12,775	\$10.4 ¹³	10.4 ¹³

¹ Individual incidents with large loss can affect the total for a given year.

² The 1988 figure includes a Norco, Louisiana petroleum refinery with a loss of \$330 million.

³ The 1989 figure includes a Pasadena, Texas polyolefin plant with a loss of \$750 million.

⁴ The 1991 figure includes the Oakland fire storm with a loss of \$1.5 billion and the Meriden Plaza high-rise fire in Philadelphia with a loss of \$325 million.

⁵ The 1992 figure includes the Los Angeles Civil Disturbance with a loss of \$567 million

⁶ The 1993 figure includes Southern California wildfires with a loss of \$809 million.

⁷ Includes 168 deaths that occurred at the federal office building fire in Oklahoma City, OK.

⁸ Does not include the events of 9/11/01, where there were 2,451 civilian deaths, 800 civilian injuries and \$33.44 billion in property loss.

⁹ Includes 100 fire deaths in the Station Night Club Fire in Rhode Island and 31 deaths in two nursing home fires in CT and TN.

¹⁰ Does not include the Southern California wildfires with an estimated property damage of \$2 billion.

¹¹ This does not include the California Fire Storm 2007 with an estimated property damage of \$1.8 billion.

¹² Does not include the California wildfires 2008 with an estimated property damage of \$1.4 billion.

¹³ Does not include the Gatlinburg, Tennessee wildfires 2016 with an estimated property damage of \$911 million.

Direct property damage figures do not include indirect losses, like business interruption.

Inflation adjustment to 2016 dollars is done using the consumer price index.

Source: *Fire Loss in the United States 2016*, Hylton J.G. Haynes, NFPA, September 2017 and previous reports in the series.

The U.S. Home Structure Fire Problem

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions)	
				As Reported	In 2016 Dollars
1977	723,500	5,865	21,640	\$2.7	\$10.7
1978	706,500	6,015	20,400	\$2.1	\$7.7
1979	696,500	5,500	18,825	\$2.4	\$7.9
1980	734,000	5,200	19,700	\$2.8	\$8.2
1981	711,000	5,400	19,125	\$3.1	\$8.2
1982	654,500	4,820	20,450	\$3.1	\$7.7
1983	625,500	4,670	20,750	\$3.2	\$7.7
1984	605,500	4,075	18,750	\$3.4	\$7.9
1985	606,000	4,885	19,175	\$3.7	\$8.3
1986	565,500	4,655	18,575	\$3.5	\$7.7
1987	536,500	4,570	19,965	\$3.6	\$7.6
1988	538,500	4,955	22,075	\$3.9	\$7.9
1989	498,500	4,335	20,275	\$3.9	\$7.5
1990	454,500	4,050	20,225	\$4.2	\$7.8
1991	464,500	3,500	21,275	\$5.5 ¹	\$9.7 ¹
1992	459,000	3,705	21,100	\$3.8	\$6.5
1993	458,000	3,720	22,000	\$4.8 ²	\$8.0 ²
1994	438,000	3,425	19,475	\$4.2	\$6.8
1995	414,000	3,640	18,650	\$4.3	\$6.8
1996	417,000	4,035	18,875	\$4.9	\$7.5
1997	395,500	3,360	17,300	\$4.5	\$6.8
1998	369,500	3,220	16,800	\$4.3	\$6.3
1999	371,000	2,895	16,050	\$5.0	\$7.2
2000	368,000	3,420	16,975	\$5.5	\$7.7
2001	383,500	3,110	15,200	\$5.5	\$7.5
2002	389,000	2,670	13,650	\$5.9	\$7.9
2003	388,500	3,145	13,650	\$5.9 ³	\$7.7 ³
2004	395,500	3,190	13,700	\$5.8	\$7.4
2005	381,000	3,030	13,300	\$6.7	\$8.3
2006	396,000	2,580	12,500	\$6.8	\$8.0

The U.S. Home Structure Fire Problem (Continued)

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions)	
				As Reported	In 2016 Dollars
2007	399,000	2,865	13,600	\$7.4 ⁴	\$8.6 ⁴
2008	386,500	2,755	13,160	\$8.2 ⁵	\$9.0 ⁵
2009	362,500	2,565	12,650	\$7.6	\$8.5
2010	369,500	2,640	13,350	\$6.9	\$7.6
2011	370,000	2,520	13,910	\$6.9	\$7.4
2012	365,000	2,380	12,875	\$7.0	\$7.4
2013	369,500	2,755	12,200	\$6.8	\$7.0
2014	367,000	2,745	11,825	\$6.8	\$6.9
2015	365,500	2,560	11,075	\$7.0	\$7.1
2016	352,000	2,735	10,750	\$7.2 ⁶	\$7.2 ⁶

¹Includes \$1.5 billion in damage caused by the Oakland Fire Storm, most of which was lost to homes but for which no detailed breakdown by property type was available.

²Includes \$809 million in damage caused by Southern California wildfires

³This does not include the Southern California wildfires with an estimated property damage of \$2 billion.

⁴Does not include the California Fire Storm 2007 with an estimated property damage of \$1.8 billion

⁵Does not include the California wildfires 2008 with an estimated property damage of \$1.4 billion.

⁶ Does not include the Gatlinburg, Tennessee wildfires 2016 with an estimated property damage of \$911 million.

"Homes" are dwellings, duplexes, manufactured homes (also called mobile homes), apartments, rowhouses, and townhouses. Other residential properties, such as hotels and motels, dormitories, barracks, rooming and boarding homes, and the like, are not included.

Direct property damage figures do not include indirect losses, like business interruption.

Inflation adjustment to 2016 dollars is done using the consumer price index.

Source: *Fire Loss in the United States 2016*, Hylton J.G. Haynes, NFPA, September 2017 and previous reports in the series.

One- and Two-Family Home Structure Fires¹

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions)	
				As Reported	In 2016 Dollars
1977	678,000	4,835	17,465	\$2.3	\$9.1
1978	623,233	4,945	15,400	\$1.8	\$6.6
1979	550,500	4,320	14,650	\$2.0	\$6.6
1980	590,500	4,175	16,100	\$2.4	\$7.0
1981	574,000	4,430	14,875	\$2.7	\$7.1
1982	538,000	3,960	15,750	\$2.8	\$6.9
1983	523,500	3,825	16,450	\$2.8	\$6.7
1984	506,000	3,290	15,100	\$2.9	\$6.7
1985	501,500	4,020	15,250	\$3.2	\$7.1
1986	468,000	4,005	14,650	\$3.0	\$6.6
1987	433,000	3,780	15,200	\$3.1	\$6.6
1988	432,500	4,125	17,125	\$3.3	\$6.7
1989	402,500	3,545	15,225	\$3.3	\$6.4
1990	359,000	3,370	15,250	\$3.5	\$6.5
1991	363,000	2,905	15,600	\$3.4 ²	\$6.0 ²
1992	358,000	3,160	15,275	\$3.2	\$5.5
1993	358,000	3,035	15,700	\$4.1 ³	\$6.8 ³
1994	341,000	2,785	14,000	\$3.5	\$5.7
1995	320,000	3,035	13,450	\$3.6	\$5.7
1996	324,000	3,470	13,700	\$4.1	\$6.3
1997	302,500	2,700	12,300	\$3.7	\$5.6
1998	283,000	2,775	11,800	\$3.6	\$5.3
1999	282,500	2,375	11,550	\$4.1	\$5.9
2000	283,500	2,920	12,575	\$4.6	\$6.4
2001	295,500	2,650	11,400	\$4.7	\$6.4
2002	300,500	2,280	9,950	\$5.0	\$6.7
2003	297,000	2,735	10,000	\$5.1 ⁴	\$6.7 ⁴
2004	301,500	2,680	10,500	\$4.9	\$6.2
2005	287,000	2,570	10,300	\$5.8	\$7.2
2006	304,500	2,155	8,800	\$5.9	\$7.0
2007	300,500	2,350	9,650	\$6.2 ⁵	\$7.2 ⁵

One- and Two-Family Home Structure Fires¹ (Continued)

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions)	
				As Reported	In 2016 Dollars
2008	291,000	2,365	9,185	\$6.9 ⁶	\$7.6 ⁶
2009	272,500	2,100	9,300	\$6.4	\$7.2
2010	279,000	2,200	9,400	\$5.9	\$6.5
2011	274,500	2,105	9,485	\$5.7	\$6.1
2012	268,000	2,000	8,825	\$5.7	\$6.0
2013	271,500	2,430	8,300	\$5.6	\$5.8
2014	273,500	2,345	8,025	\$5.8	\$5.9
2015	270,500	2,155	8,050	\$5.8	\$5.9
2016	257,000	2,410	7,375	\$6.1 ⁷	\$6.1 ⁷

¹Includes manufactured homes.

²Does not include \$1.5 billion in damage caused by the Oakland Fire Storm most of which was lost to homes but for which not detailed breakdown by property type was available.

³Includes \$809 million in damage caused by Southern California wildfires.

⁴This does not include the Southern California Wildfires with an estimated property damage of \$2 billion.

⁵This does not include the California Fire Storm 2007 with an estimated property damage of \$1.8 billion.

⁶Does not include the California wildfires 2008 with an estimated property damage of \$1.4 billion.

⁷Does not include the Gatlinburg, Tennessee wildfires 2016 with an estimated property damage of \$911 million.

Direct property damage figures do not include indirect losses, like business interruption.
Inflation adjustment to 2016 dollars is done using the consumer price index.

Source: *Fire Loss in the United States 2016*, Hylton J.G. Haynes., NFPA, September 2017 and previous reports in the series.

U.S. Highway Vehicle Fire Problem, 1980-2016

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions)	
				As Reported	in 2016 Dollars
1980	456,000	650	2,850	\$0.5	\$1.5
1981	453,000	770	2,900	\$0.5	\$1.3
1982	433,000	575	3,250	\$0.5	\$1.2
1983	435,500	670	3,400	\$0.6	\$1.5
1984	437,000	530	3,250	\$0.6	\$1.4
1985	437,000	770	3,250	\$0.7	\$1.6
1986	438,000	665	2,850	\$0.7	\$1.5
1987	451,000	755	2,900	\$0.7	\$1.5
1988	459,000	800	2,750	\$0.8	\$1.6
1989	415,500	560	2,750	\$0.8	\$1.6
1990	415,000	645	3,025	\$0.8	\$1.5
1991	406,500	530	2,675	\$0.8	\$1.4
1992	385,500	665	2,750	\$0.8	\$1.4
1993	402,000	540	2,400	\$0.9	\$1.5
1994	402,000	555	2,325	\$1.0	\$1.6
1995	386,000	490	2,275	\$1.0	\$1.6
1996	395,000	550	2,075	\$1.1	\$1.7
1997	377,000	450	1,950	\$1.1	\$1.6
1998	358,500	545	2,050	\$1.1	\$1.6
1999	345,000	450	1,600	\$1.1	\$1.6
2000	325,000	450	1,325	\$1.2	\$1.7
2001	327,000	470	1,750	\$1.3	\$1.8
2002	307,000	540	1,700	\$1.2	\$1.6
2003	286,000	455	1,400	\$1.1	\$1.4
2004	266,500	520	1,300	\$1.0	\$1.3
2005	259,000	500	1,450	\$1.0	\$1.2
2006	250,000	445	1,075	\$1.0	\$1.2
2007	227,500	365	1,500	\$1.1	\$1.3
2008	207,000	350	850	\$1.2	\$1.3
2009	190,500	260	1,455	\$1.0	\$1.1

U.S. Highway Vehicle Fire Problem, 1980-2015 (Continued)

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions)	
				As Reported	in 2016 Dollars
2010	184,500	285	1,440	\$1.0	\$1.1
2011	187,500	270	1,020	\$1.0	\$1.1
2012	172,500	300	800	\$1.3	\$1.4
2013	164,000	300	925	\$1.1	\$1.1
2014	167,500	310	1,275	\$1.1	\$1.1
2015	174,000	445	1,550	\$1.2	\$1.2
2016	173,000	280	1,075	\$1.3	\$1.3

Highway vehicles include any vehicle designed to operate normally on highways, such as automobiles, motorcycles, buses, trucks, and trailers, but not manufactured homes on foundations.

Direct property damage figures do not include indirect losses, like business interruption. Inflation adjustment to 2016 dollars is done using the consumer price index.

Source: *Fire Loss in the United States 2016*, Hylton J.G. Haynes., NFPA, September 2017 and previous reports in the series.

2016 U.S. Fire Rates, by Unit of Time

Property Class	Fire per Hour	Civilian Deaths per Day	Civilian Injuries per Day	Direct Dollar Damage per Hour
All Residential	42.3	7.7	30.5	\$ 845,000
Homes ¹	40.2	7.5	29.5	\$ 823,000
One- and -two family dwellings	29.3	6.6	20.2	\$ 699,000
Apartments	10.8	0.9	9.2	\$ 124,000
Other residential	2.2	0.2	1.0	\$ 22,000
Public Assembly	1.6			\$ 41,000
Educational	0.5			\$ 5,000
Institutional	0.6			\$ 8,000
Stores and Offices	1.8			\$ 78,000
Industry, Utilities, and Defense	1.0			\$ 62,000
Storage	3.1			\$ 110,000
Special Structures	3.3			\$ 36,000
All Non-Residential	11.9	0.4	4.5	\$ 339,000
All Structures	54.3	8.1	35.0	\$ 1,184,000
Vehicles	23.3	1.0	3.4	\$ 203,000
Outside and other (not Structure or Vehicle)	75.6	0.2	1.8	\$ 162,000
All Fires	153.2	9.3	40.1	\$1,548,000
	(or 2.6 per minute, or one every 23.5 seconds)	(or one every 155 minutes)	(or every 35.9 minutes)	(or \$25,800 per minute, or \$430 per second)

¹Homes are dwellings, duplexes, manufactured homes, apartments, rowhouses, townhouses, and condominiums. Direct property damage is expressed to the nearest thousand dollars.

Source: *Fire Loss in the United States 2016*, Hylton J.G. Haynes., NFPA, September 2017 and previous reports in the series.