

# **FIRE LOSS IN THE UNITED STATES DURING 2012**

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**September 2013**



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## **Abstract**

U.S. fire departments responded to an estimated 1,375,000 fires. These fires resulted in 2,855 civilian fire fatalities, 16,500 civilian fire injuries and an estimated \$12,427,000,000 in direct property loss. There was a civilian fire death every 3 hours and 4 minutes and a civilian fire injury every 32 minutes in 2012. Home fires caused 2,380, or 83%, of the civilian fire deaths. Fires accounted for four percent of the 31,854,000 total calls. Seven percent of the calls were false alarms; sixty-eight percent of the calls were for aid such as EMS.

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

## **Acknowledgements**

The NFPA gratefully thanks the many fire departments that responded to the 2012 National Fire Experience Survey for their continuing efforts for providing us in a timely manner the data so necessary to make national projections.

The survey project manager and author of the report gratefully thanks the many members of NFPA staff who worked on this year's survey including Frank Deely, John Baldi, and John Conlon for editing the survey forms and their follow-up calls to fire departments; and Norma Candeloro for handling the processing of survey forms and typing this report.

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NFPA# FLX10-01

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## Table of Contents

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	Page
Table of Contents	i
List of Tables and Figures	ii
Overview of 2012 U.S. Fire Experience	iii
Fire Loss Fact Sheet	vi
NFPA Resource Page	vii
Fire Department Responses by Type of Call	24
Survey Methodology	27
Fire Experience of Nonrespondents	32
Definition of Terms	34
Footnotes	35
Appendix A. Fire Loss in the United States Trend Tables, 1977-2012 and U.S. Fire rates by Unit of Time	36

## List of Tables and Figures

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	Page	
<a href="#">Table 1.</a>	Estimates of 2012 Fires, Civilian Deaths, civilian Injuries and Property Loss in the United States	2
<a href="#">Table 2.</a>	Estimates of 2012 Fires and Property Loss by Property Use	3
<a href="#">Table 3.</a>	Estimates of 2012 Structure Fires and Property Loss By Property Use	4
<a href="#">Figure 1.</a>	Estimates of Fires by Type in the United States (1978-2012)	5
<a href="#">Figure 2.</a>	Fires per Thousand Population by Size of Community (2008-2012)	6
<a href="#">Figure 3.</a>	Civilian Home Fire Deaths and Rates per 1,000 Fires (1977-2012)	8
<a href="#">Table 4.</a>	Estimates of 2011 Civilian Fire Deaths and Injuries by Property Use	10
<a href="#">Figure 4.</a>	Civilian Fire Deaths per Million People in Home Fires by Community Size (2008-2012)	11
<a href="#">Figure 5.</a>	Average Loss per Structure Fire in the U.S. (1977-2012)	14
<a href="#">Table 5.</a>	Estimates of 2012 Losses in Intentionally set Structure Fires	16
<a href="#">Table 6.</a>	Fire Loss Rates Nationwide and by Region, 2012	18
<a href="#">Table 7.</a>	2012 Fires per Thousand Population by Region and Size of Community	19
<a href="#">Table 8.</a>	Civilian Fire Deaths per Million Population by Region and Size of Community	20
<a href="#">Table 9.</a>	Civilian Fire Injuries per Million Population by Region and Size of Community	21
<a href="#">Table 10.</a>	2012 Property Loss per Person by Region and Size of Community	22
<a href="#">Table 11.</a>	Average 2012 Fire Experience by Size of Community	23
<a href="#">Table 12.</a>	Average 2012 Residential Fire Experience by Size of Community	23
<a href="#">Table 13.</a>	Fire Department Responses by Type of Call, 2012	24
<a href="#">Table 14.</a>	Number of Fires and Nonfire Incidents by Community Size	25
<a href="#">Table 15.</a>	Estimates of False alarms by Type, 2012	26
<a href="#">Table 16.</a>	Number of Fire Departments Responding by Region and Size of Community	30
<a href="#">Table 17.</a>	Respondents and Nonrespondents Fire Experience by Community Size	33

## Number of Fires

- 1,375,500 fires were responded to by public fire departments, a slight decrease of 1.0% from the year before.
- 480,500 fires occurred in structures, a very slight decrease of 0.8%.
- 365,000 fires or 76% of all structure fires occurred in home structures (1- and 2- family homes and apartments), a very slight decrease of 1.3%.
- 172,500 fires occurred in highway vehicles, a decrease of 8.0% from the year before.
- 692,000 fires occurred in outside properties, a slight increase of 0.9%.
- What do these fire frequencies above mean? Every 23 seconds, a 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 in particular a home fire occurs every 85 seconds. Fires occur in vehicles at the rate of 1 every 156 seconds, and there's a fire in an outside property every 46 seconds.

## **Civilian Fire Deaths**

- 2,855 civilian fire deaths occurred in 2012, a decrease of 5.0%.
- 2,380 civilian fire deaths occurred in the home or 83% of all fire deaths, a decrease of 5.6%.
- 300 civilians died in highway vehicle fires.
- Nationwide, there was a civilian fire death every 3 hours and 4 minutes, and a civilian death in home fires occurred every 3 hours and 41 minutes.

## **Civilian Fire Injuries**

- 16,500 civilian fire injuries occurred in 2012, a decrease of 5.7%. This estimate for civilian injuries is on the low side, because many civilian injuries are not reported to the fire service.
- 12,875 of all civilian injuries occurred in home fires.
- 800 civilians were injured in vehicle fires.
- Nationwide, there was a civilian fire injury every 32 minutes, and a civilian fire injury in home fires every 41 minutes.

## **Property Damage**

- An estimated \$12.4 billion in property damage occurred as a result of fire in 2012, an increase of 6.6% from last year.
- \$9.8 billion of property damage occurred in structure fires.
- \$7.0 billion of property loss occurred in home fires.
- \$1.1 billion of property loss occurred in highway vehicle fires.

## **Intentionally Set Fires**

- An estimated 26,000 intentionally set (not including any allocation of fires with unknown cause), a decrease of 1.9%.
- Intentionally set fires in structures resulted in 180 civilian deaths, a decrease of 5.3%.
- Intentionally set structure fires also resulted in \$581,000,000 in property loss, an decrease of 3.3%.
- 12,500 intentionally set vehicle fires occurred, a decrease of 3.9% from a year ago, and caused \$480,000,000 in property damage, a highly significant increase of 445% from a year ago. This increase is mostly due to the intentionally set fire to the USS Miami (submarine) which was in for repairs and resulted in an estimated \$400,000,000 in property damage.

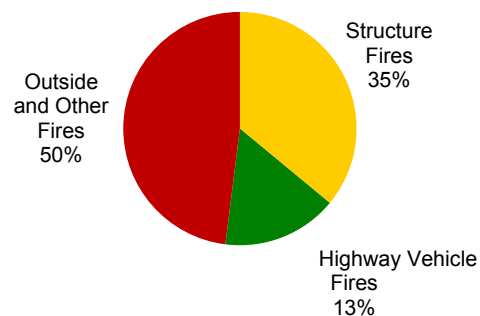


## Fires in the United States During 2012 Fact Sheet

**1,375,000** fires were reported in the U.S. during 2012.

- A slight decrease of 1% from 2011
- **2,855** civilian fire deaths
- One civilian death occurred every three hours and 4 minutes
- **16,500** civilian fire injuries
- One civilian injury occurred every 32 minutes
- **\$12.4 billion** in property damage
- A fire department responded to a fire every 23 seconds

Fires in the United States During 2012



**480,500** structure fires occurred in the U.S. during 2012.

- A very slight decrease of 0.8% from 2011
- **2,470** civilian fire deaths
- **14,700** civilian fire injuries
- **\$9.8 billion** in property damage
- One structure fire was reported every 66 seconds



**172,500** highway vehicle fires occurred in the U.S. during 2012.

- A decrease of 8% from 2011
- **300** civilian fire deaths
- **800** civilian fire injuries
- **\$1.1 billion** in property damage
- One highway vehicle fire was reported every 182 seconds



**692,000** outside and other fires occurred in the U.S. during 2012.

- A slight increase 0.9% from 2011
- **60** civilian fire deaths
- **825** civilian fire injuries
- **\$813 million** in property damage
- One outside fire was reported every 46 seconds



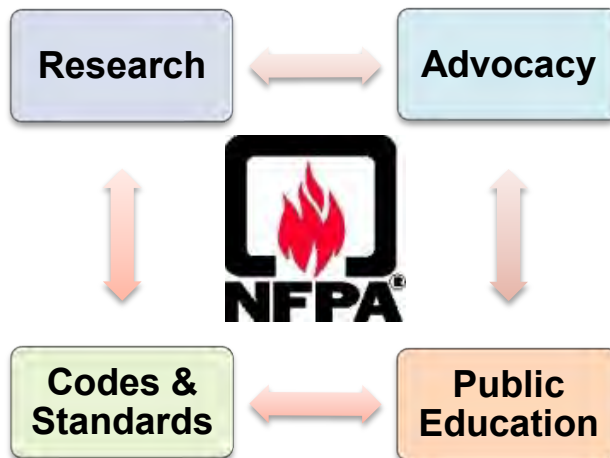


# NFPA's Fire Safety Resources

NFPA's wealth of fire-related research includes investigations of technically significant fire incidents, fire data analysis, and the Charles S. Morgan Technical Library, one of the most comprehensive fire literature collections in the world. In addition, NFPA's Fire Protection Research Foundation is a source of independent fire test data. Find out more at: [www.nfpa.org/research](http://www.nfpa.org/research)

Properly installed and maintained smoke alarms are necessary to provide a warning of any fire to all occupants. You can find out more information about smoke alarms here: [NFPA Smoke Alarm Information](#)

Home fire sprinkler systems provide even greater protection. These systems respond quickly to reduce the heat, flames, and smoke from a fire until help arrives. More information about home fire sprinklers may be found at [www.firesprinklerinitiative.org](http://www.firesprinklerinitiative.org)



NFPA also develops, publishes, and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks. Among these are:

[NFPA1: Fire Code:](#)

[NFPA 101: Life Safety Code®:](#)

[NFPA 13R: Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four](#)

[For consumers:](#) NFPA has consumer safety information regarding causes, escape planning, fire & safety equipment, and many other topics.

[For Kids:](#) Sparky.org has important information for kids delivered via fun games, activities, and cartoons.

[For public educators:](#) Resources on fire safety education programs, educational messaging, grants & awards, and many other topics.

## **Number of Fires**

In 2012, public fire departments responded to 1,375,000 fires in the United States, according to estimates based on data the NFPA received from fire departments responding to its 2012 National Fire Experience Survey (see Tables 1 and 2). (A fire department is a public organization that provides fire prevention, fire suppression and associated emergency and non-emergency services to a jurisdiction such as a county, municipality, or organized fire district.) This represents a very slight decrease of 1.0% from last year.

There were an estimated 480,500 structure fires reported to fire departments in 2012, a very slight decrease of 0.8%, or virtually no change from a year ago. For the 1977-2012 period, the number of structure fires were at their peak in 1977 when 1,098,000 structure fires occurred (see Figure 1). The number of structure fires then decreased quite steadily particularly in the 1980s to 688,000 by the end of 1989 for an overall decrease of 37.3% from 1977. Since 1989, structure fires again decreased steadily for an overall decrease of 24.7% to 517,500 by the end of 1998. They stayed in the 505,000 to 530,500 area from 1999 to 2008, before the decrease to 480,500 in 2009, and the slight increases in 2010 and 2011.

Fire incident rates by community size were examined (see Figure 2). The smallest communities (populations less than 2,500) had the highest rate with 11.1 which was more than twice the average national rate.

Of the structure fires, 381,000 were residential fires, accounting for 79% of all structure fires, and a very slight decrease of 1.3% from a year ago. Of the residential structure fires, 268,000 occurred in one- and two-family homes, accounting for 55.7% of all structure fires. Another 97,000 occurred in apartments accounting for 20.2% of all structure fires.

There were 99,500 nonresidential structure fires in 2012, a very slight increase of 1.0% from last year.

For the 1977-2012 period, the number of outside fires were at their high in 1977 when 1,658,500 outside fires occurred. The number of outside fires decreased steadily the next six years to 1,011,000 in 1983 for a considerable decrease of 39.0% from 1977. Outside fires changed little for the rest of the 1980s except for 1988 when 1,214,000 occurred. Outside fires dropped to 910,500 in 1993, and stayed near the 1,000,000 level

**Table 1**  
**Estimates of 2012 Fires, Civilian Deaths, Civilian Injuries**  
**and Property Loss in the United States**

	Estimate	Range <sup>1</sup>	Percent Change From 2011
Number of Fires	1,375,000	1,351,500 to 1,399,000	-1.0
Number of Civilian Deaths	2,855	2,535 to 3,175	-5.0
Number of Civilian Injuries	16,500	16,540 to 18,460	-5.7
Property Loss <sup>2</sup>	\$12,427,000,000	\$12,067,000,000 to 12,787,000,000	+6.6**

The estimates are based on data reported to the NFPA by fire departments that responded to the 2011 National Fire Experience Survey.

<sup>1</sup> These are 95 percent confidence intervals.

<sup>2</sup> 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.

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

**Table 2**  
**Estimates of 2012 Fires and**  
**Property Loss by Property Use**

Type of Fire	Number of Fires		Property Loss <sup>1</sup>	
	Estimate	Percent Change from 2011	Estimate	Percent Change from 2011
Fires in Structures	480,500	-0.8	\$9,776,000,000	+0.9
Fires in Highway Vehicles	172,500	-8.0**	\$1,094,000,000	+7.7
Fires in Other Vehicles <sup>2</sup>	30,000	-4.8	\$744,000,000	+122.8**
Fires Outside but no vehicle (outside-storage, Crops, Timber, etc.)	83,000	+5.1	\$727,000,000	+34.3**
Fires in Brush, Grass				
Wildland (excluding crops and timber) with no value or loss involved	350,000	+3.6	—	—
Fires in Rubbish				
Including dumpsters (outside of structures), with no value or loss involved	179,000	-0.8	—	—
All Other Fires	80,000	-9.6	\$86,000,000	-14.7
<b>Total</b>	<b>1,375,000</b>	<b>-1.0</b>	<b>\$12,427,000,000</b>	<b>+6.6</b>

The estimates are based on data reported to the NFPA by fire departments that responded to the 2012 National Fire Experience Survey.

<sup>1</sup> 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.

<sup>2</sup> This includes trains, boats, ships, aircraft, farm vehicles and construction vehicles.

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

**Table 3**  
**Estimates of 2012 Structure Fires and**  
**Property Loss by Property Use**

Property Use	Structure Fires		Property Loss <sup>1</sup>	
	Estimate	Percent Change from 2011	Estimate	Percent Change from 2011
Public Assembly	12,000	+4.0	\$281,000,000	-37.0**
Educational	5,000	0	64,000,000	+35.0**
Institutional	6,000	-7.7	35,000,000	-32.3
Residential (Total)	381,000	-1.3	7,199,000,000	+2.1
One- and Two-Family Homes <sup>2</sup>	268,000	-2.4	5,818,000,000	+1.3
Apartments	97,000	+1.6	1,192,000,000	+2.1*
Other Residential <sup>3</sup>	16,000	0	189,000,000	+35.0*
Stores and Offices	17,500	-5.4	643,000,000	+2.9
Industry, Utility, Defense <sup>4</sup>	9,000	+10.0	676,000,000	+9.0
Storage in Structures	28,500	+5.6	751,000,000	+4.2
Special Structures	21,500	+13.2	127,000,000	-3.1
<b>Total</b>	<b>480,500</b>	<b>-0.8</b>	<b>\$9,776,000,000</b>	<b>+0.9</b>

The estimates are based on data reported to the NFPA by fire departments that responded to the 2012 National Fire Experience Survey.

<sup>1</sup> 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.

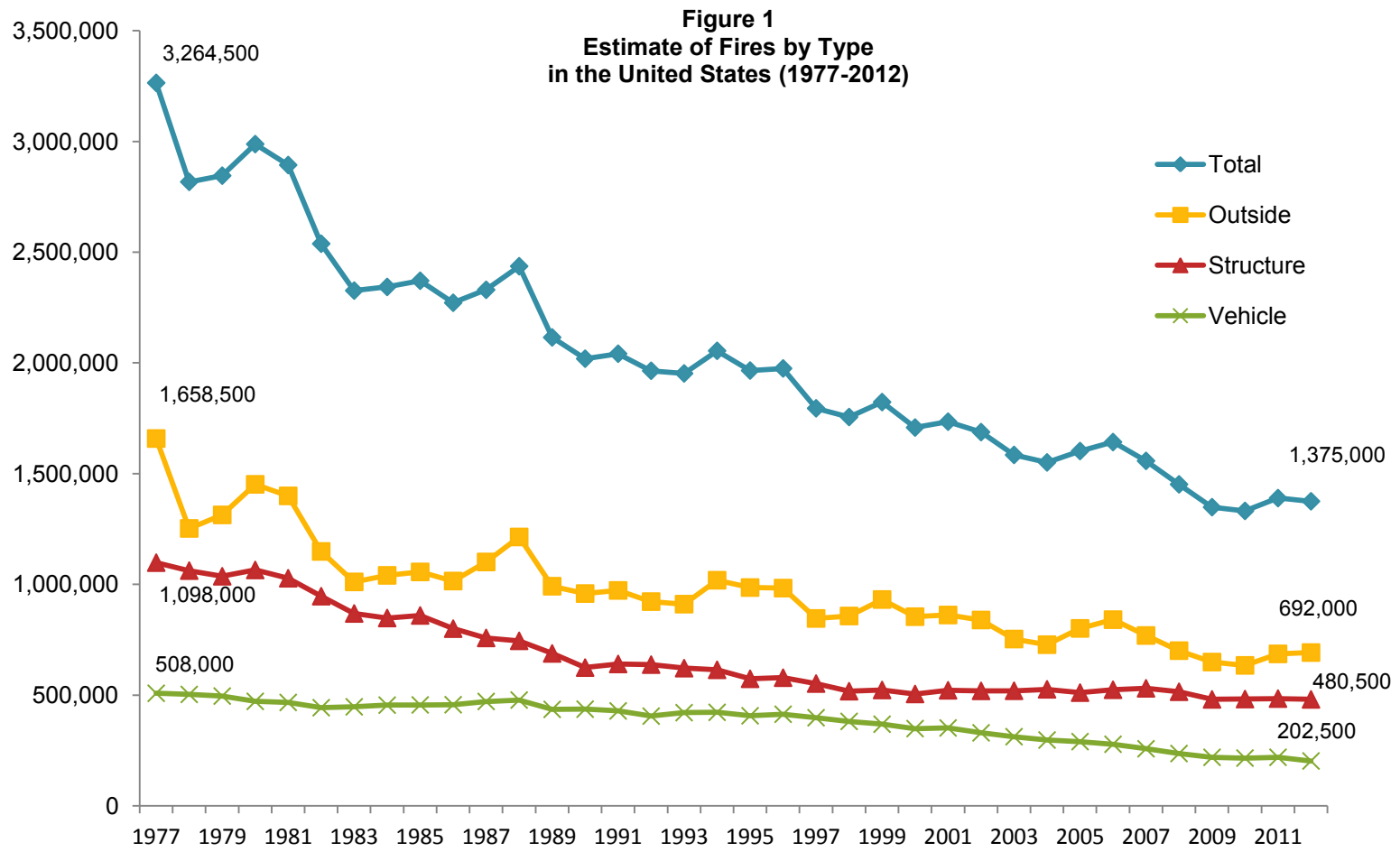
<sup>2</sup> This includes manufactured homes.

<sup>3</sup> Includes hotels and motels, college dormitories, boarding houses, etc.

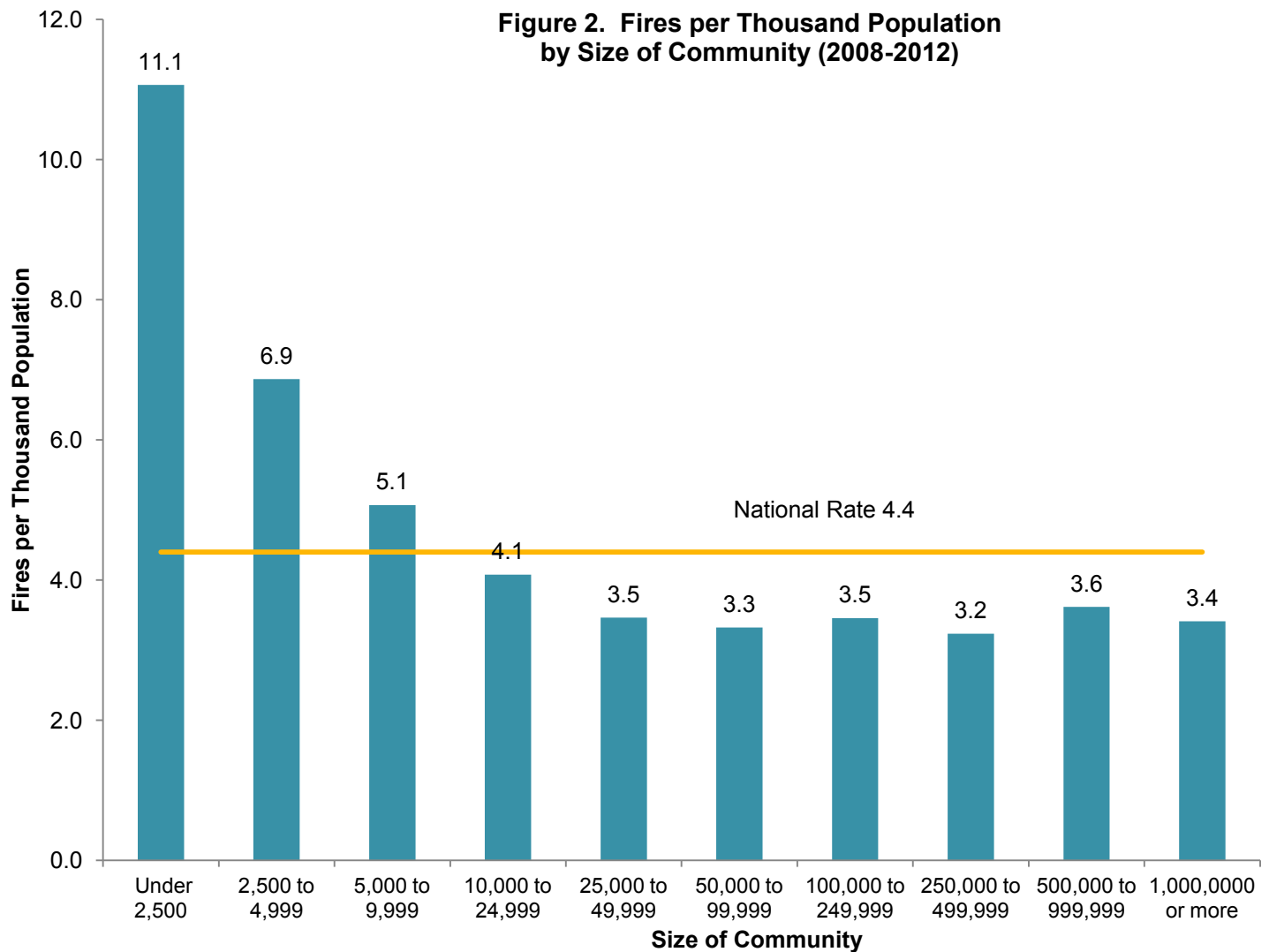
<sup>4</sup> Incidents handled only by private fire brigades or fixed suppression systems are not included in the figures shown here.

\*Change was statistically significant at the .05 level.

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



Source: NFPA survey of fire departments (1977-2012)



the next three years. From 1997 to 2002, the number of outside fires stayed in the 839,000 to 861,500 level except for 1999 when 931,500 occurred, then rose in 2005 and 2006, before declining during 2007-2010 to 634,000 at the end of 2010, and increasing 9.1% over the next two years to 692,000 in 2012.

Of the outside fires in 2012, there were an estimated 350,000 brush, grass, and wildland fires, an increase of 3.6%, while an estimated 83,000 fires outside of structure with valve involved occurred, an increase of 5.1%..

There were also an estimated 172,500 highway vehicle fires in 2012, a decrease of 8.0%, and 30,000 in other vehicles, a decrease of 4.8%.

### **Civilian Fire Deaths**

The 1,375,000 fires reported by fire departments resulted in an estimated 2,855 civilian deaths in 2012 based on data reported to the NFPA. This is a decrease of 5.0% from a year ago. The nature of the decrease is better understood when results are examined by property type.

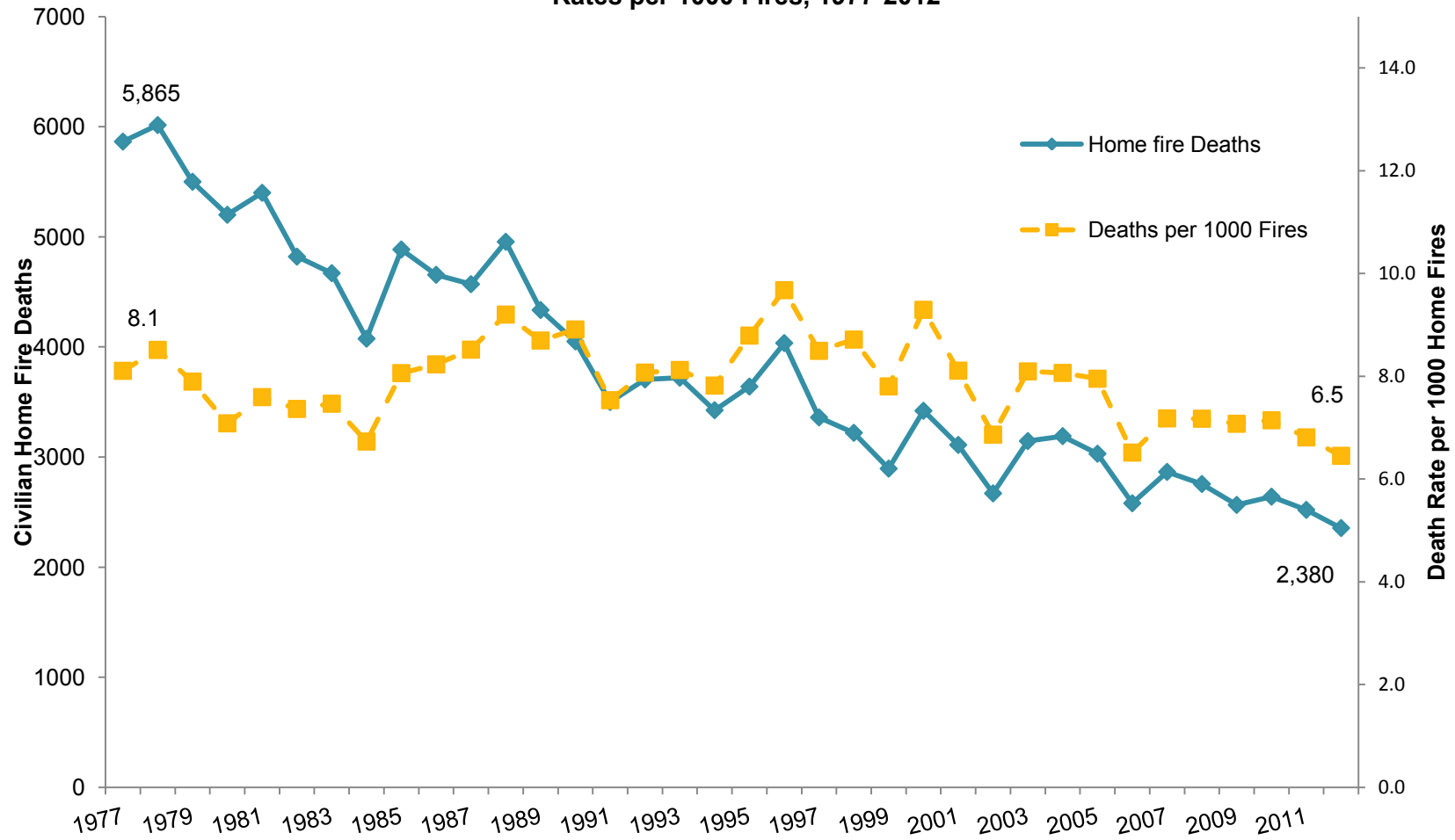
An estimated 2,405 civilians died in residential fires in 2012, a decrease of 5.7%. Of these deaths, 380 occurred in apartment fires. Another 2,000 died in one- and two- family homes, a decrease of 5.0%.

In all, fires in the home (one- and two-family homes, including manufactured homes and apartments) resulted in 2,380 civilian deaths, a decrease of 5.6% from a year ago. Looking at trends in civilian deaths since 1977-78<sup>1</sup>, several observations are worth noting. Home fire deaths were at their peak in 1978 when 6,015 fire deaths occurred. Home fire deaths then decreased 20% during the 1979-82 period to 4,820 by the end of 1982. From 1982 to 1988, the number of home fire deaths stayed quite level in the 4,650 to 4,950 area except for 1984 when 4,075 fire deaths occurred. From 1989 to 1996 home fire deaths continued to decline and stayed in the 3,420 to 4,340 area. From 1997 onward home fire deaths have generally continued to decline with the number of deaths staying in the 2,380 to 3,200 area since 2001.

Overall for the 1977-2012 period, the number of home fire deaths decreased from 5,865 in 1977 to 2,380 in 2012 for a decrease of 59%. The number of home fire incidents also declined steadily for an overall decrease of 50% for the same period. When the death rate per 1,000 home fire incidents is looked at (Figure 3), there is no steady decline, but rather the rate fluctuates considerably up and down<sup>2</sup>. In fact, the death rate per 1,000 home fires was 8.1 in 1977 and 6.5 in 2012 for a decrease of 20%. These results suggest that even though the number of home fires and home fire deaths declined similarly during



**Figure 3. Civilian Home Fire Deaths and Rates per 1000 Fires, 1977-2012**



Source: NFPA Survey of Fire Departments (1977-2012)

the period, the death rate did not, and that given there is a home fire, the fire death rate risk has not changed much for the period.

With home fire deaths still accounting for 2,380 fire deaths, or 83% of all civilian deaths, fire safety initiatives targeted at the home remain the key to any reductions in the overall fire death toll. Five major strategies are: First, more widespread public fire safety education is needed on how to prevent fires and how to avoid serious injury or death if fire occurs. Information on the common causes of fatal home fires should continue to be used in the design of fire safety education messages. Second, more people need to install and maintain smoke detectors and 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 more fire safe. The regulations requiring more child-resistant lighters are a good example, as are requirements for cigarettes, with reduced ignition strength (generally called “fire-safe” cigarettes). The wider use of upholstered furniture and mattresses that are more resistant to cigarette ignitions is an example of change that has already accomplished much and will continue to do more. Fifth, the special fire safety needs of high-risk groups, e.g., the young, older adults, the poor and people with disabilities need to be addressed.<sup>3,4</sup>

Also in 2012, 65 civilians that died in structure fires, 180 or 7.3%, died in fires that were intentionally set.

Civilian fire deaths per million people by community size was examined (Figure 4). The smallest communities (populations less than 2,500) had the highest rate with 19.7, which was almost twice the national average rate.

Also in 2012, an estimated 300 civilians died in highway vehicle fires an increase of 11.1%. Over the 1977-2012 period, the number of highway vehicle deaths (mostly cars) has decreased 60%.

**Table 4**  
**Estimates of 2012 Civilian Fire Deaths and Injuries by Property Use**

Property Use	Estimate	Civilian Deaths		Civilian Injuries		
		Percent Change From 2011	Percent of all Civilian Deaths	Estimate	Percent Change From 2011	Percent of all Civilian Injuries
Residential (total)	2,405	-5.7	84.3	13,175	-8.3*	79.8
One-and-Two-Family Homes <sup>1</sup>	2,000	-5.0	70.1	8,825	-7.0	53.5
Apartments	380	-8.4	13.3	4,050	-8.5	24.5
Other Residential <sup>2</sup>	25	-16.7	0.9	300	-33.3	1.8
Non-residential Structures <sup>3</sup>	65	-27.8	2.3	1,525	+19.6	9.2
Highway Vehicles	300	+11.1	10.5	800	-21.2	4.8
Other Vehicles <sup>4</sup>	25	+16.7	0.9	175	+2.9	1.1
All Other <sup>5</sup>	60	-7.7	2.1	825	+22.2	5.0
<b>Total</b>	<b>2,855</b>	<b>-5.0</b>		<b>16,500</b>	<b>-5.7</b>	

Estimates are based on data reported to the NFPA by fire departments that responded to the 2012 National Fire Experience Survey. Note that most changes were not statistically significant; considerable year-to-year fluctuation is to be expected for many of these totals because of their small size.

<sup>1</sup> This includes manufactured homes.

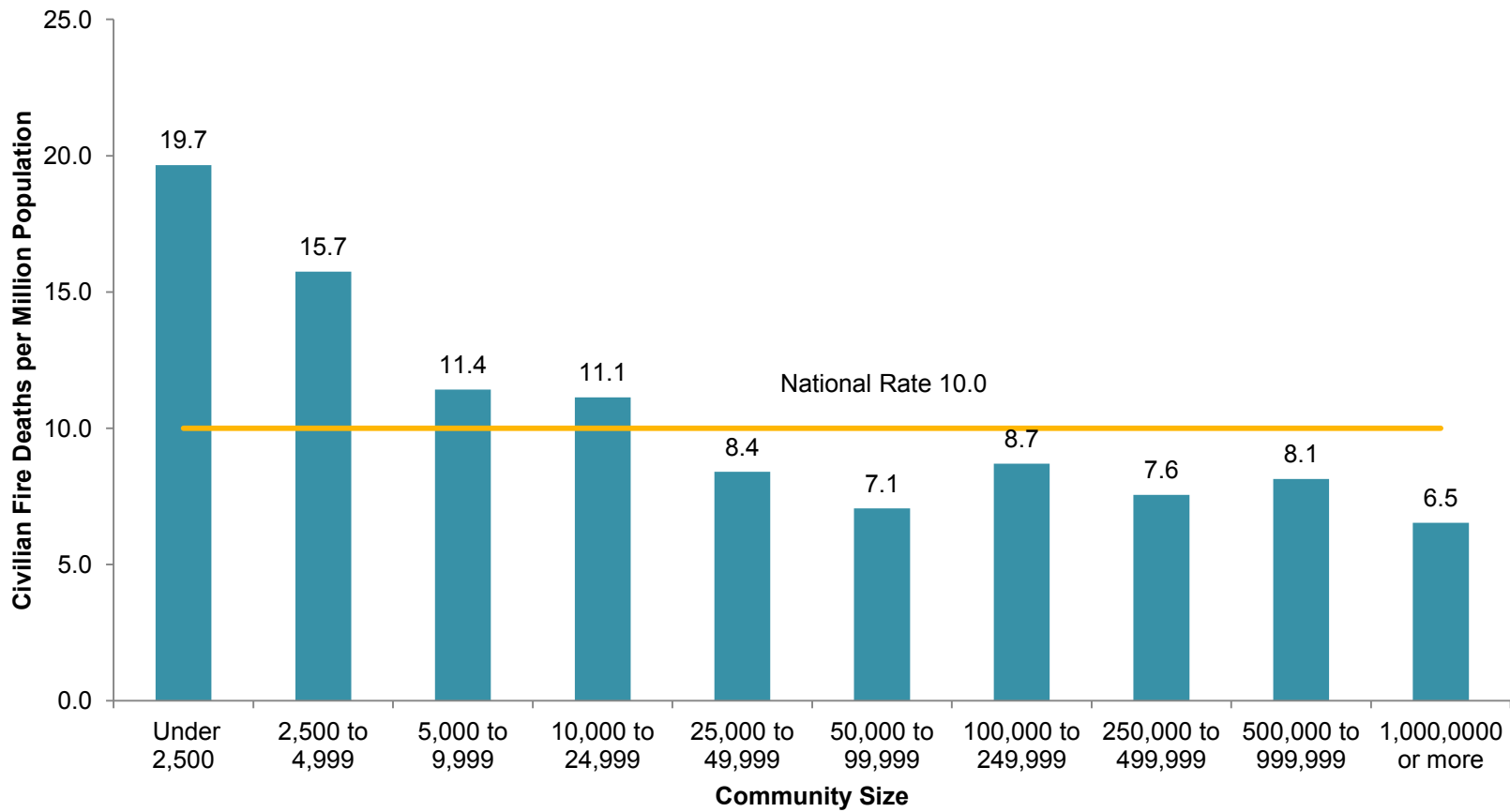
<sup>2</sup> Includes hotels and motels, college dormitories, boarding houses, etc.

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

<sup>4</sup> This includes trains, boats, ships, farm vehicles and construction vehicles.

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

**Figure 4. Civilian Fire Deaths per Million Population by Community Size (2008-2012)**



Source: NFPA survey of fire departments (1977-2012)

## **Civilian Fire Injuries**

Results based on data reported to the NFPA indicate that in addition 2,855 civilian fire deaths, there were an estimated 16,500 civilian fire injuries in 2012. This represents a decrease of 57%, and the lowest it's been since 2006.

Estimates of civilian fire injuries are on the low side, because many civilian injuries are not reported to the fire service. For example, many injuries occur at small fires that fire departments do not respond to, and sometime when departments do respond they may be unaware of injured persons that they did not transport to medical facilities.

The NFPA estimates that there were 13,175 civilians injured in residential properties, a significant decrease of 8.3%. Of these injuries 8,825 occurred in one- and two-family homes, and 4,050 occurred in apartments. There were also 1,525 civilians injured in nonresidential structures in 2012, an increase of 19.6%.

For the 1977-2012 period, the number of civilian injuries has ranged from a high of 31,275 in 1983 to a low of 16,400 in 2006 for an overall decrease of 48%. There was no consistent pattern going up or down until 1995, when injuries fell roughly 5,000 in 1994-95 to 25,775. From 1996 to 2002, injuries declined 28% to 18,425 by the end of 2002. Since 2002, civilian injuries have been in the range of 16,400 to 18,425.

## Property Loss

The NFPA estimates that the 1,375,000 fires responded to by the fire service caused \$12,427,000,000 in property damage in 2012. This is an increase of 6.6%.

Fires in structures resulted in \$9,776,000,000 in property damage an increase of 0.9%. Average loss per structure fire was \$20,345, an increase of 1.7%.

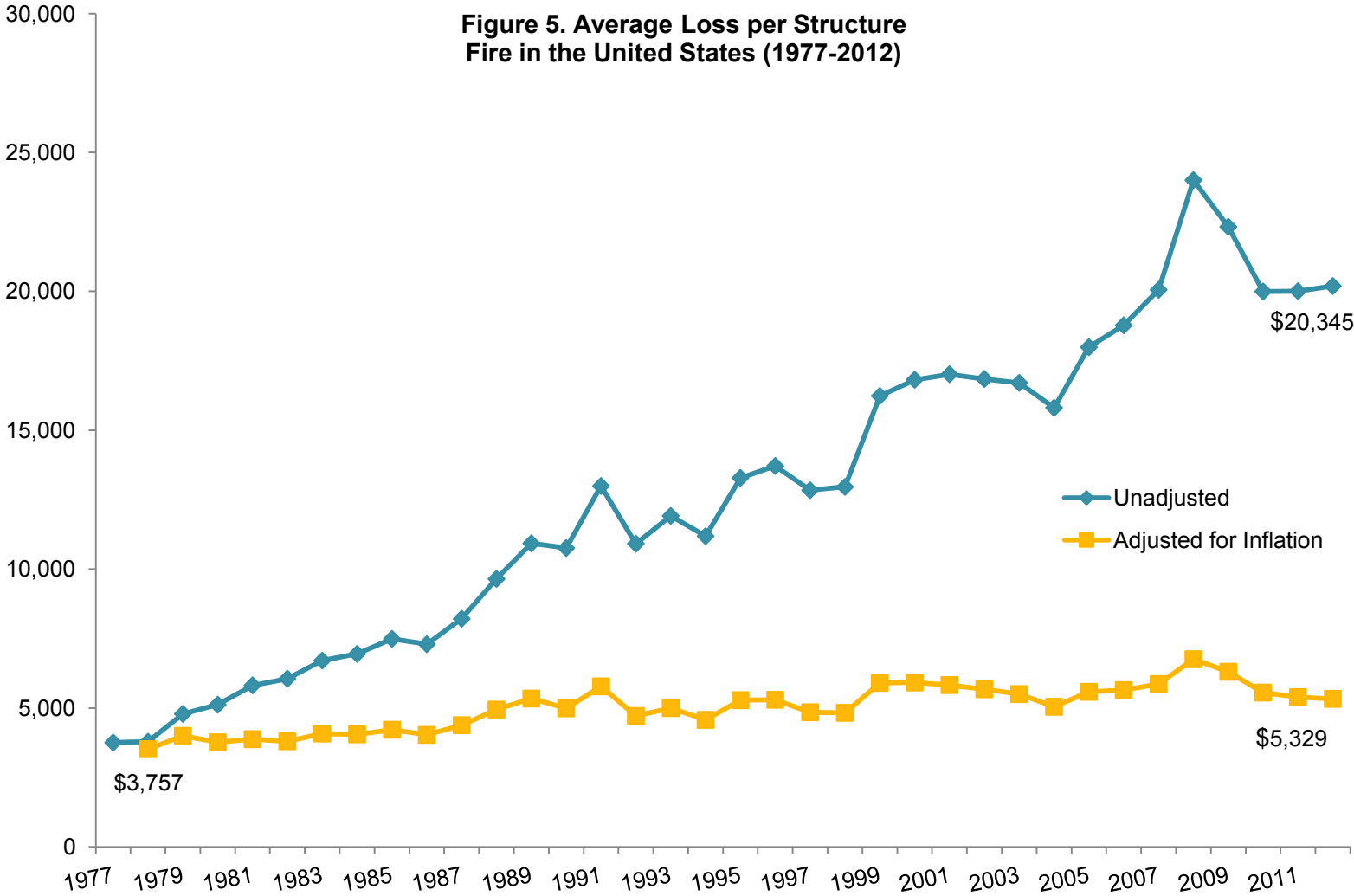
Over the 1977-2012 period, and excluding the events of 9/11/01, the average loss per structure fire was \$3,757 in 1977 and \$20,345 in 2012 for an overall increase of 441%. When property loss is adjusted for inflation, the increase in the average structure fire loss between 1977 and 2012 is 43%.

Of the property loss in structures, \$7,199,000,000 occurred in residential properties, an increase of 2.1%. An estimated \$5,818,000,000 occurred in one- and two-family homes, an increase of 1.3%. An estimated \$1,192,000,000 also occurred in apartments.

Other property damage figures worth noting for 2012 include: \$281,000,000 in public assembly properties, a significant decrease of 37.0%; \$64,000,000 in educational properties, a significant increase of 35.0%; \$744,000,000 in other vehicles, a significant increase of 122.8% (this reflects the \$400,000,000 property damage to the USS Miami (submarine), which was in for repairs; \$714,000,000 in fires outside of structures with value involved, a significant increase of 34.3% (this includes the Waldo Canyon Fire in Colorado with an estimated property loss of \$453,700,000 and the High Park Fire also in Colorado with an estimated property loss of \$113,700,000).

It should be kept in mind that property loss totals can change dramatically from year to year because of the impact of occasional large loss fires. The NFPA provides an analysis of these large loss fires in the November/December issue of *NFPA Journal* every year.

**Figure 5. Average Loss per Structure Fire in the United States (1977-2012)**



Source: NFPA Survey of Fire Departments (1977-20112) Year

## **Intentionally Set Fires**

Based on data reported by fire departments in the survey, the NFPA estimates there were 26,000 intentionally set structure fires in 2012, a decrease of 1.9% from a year ago (see Table 5). Also, these estimates do not include any allocation of fires with cause unknown or unreported.<sup>5</sup>

These intentionally set structure fires resulted in an estimated 180 civilian deaths, a decrease of 5.3%. These set structure fires also resulted in \$581,000,000 in property loss, a decrease of 3.3%.

Also in 2012, there were an estimated 12,500 intentionally set vehicle fires, a decrease of 3.9% from a year ago. These set vehicle fires resulted in \$480,000,000 in property loss, a very significant increase of 445.4% from a year ago. (This increase is mostly due to the intentionally set fire to the USS Miami (submarine) which was in for repairs and resulted in an estimated \$400,000,000 in property damage.)



**Table 5**  
**Estimate of 2012 Losses in**  
**Intentionally Set Structure Fires**

<b>Intentionally<sup>2</sup> Set Structure Fires</b>	<b>Estimate</b>	<b>Percent change from 2011</b>
Number of Structure Fires	26,000	-1.9
Civilian Deaths	180	-5.3
Property Loss <sup>1</sup>	\$581,000,000	-3.3

The estimates are based on data reported to the NFPA by fire departments that responded to the 2012 National Fire Experience Survey.

<sup>1</sup> 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.

## Region

Fire loss rates nationwide and by region<sup>6</sup> can be seen in Table 6. The Midwest with 5.8 had the highest fire incident rate per thousand people.

The Midwest with 10.6 had the highest civilian death rate per million population followed closely by the Northeast (10.2), and the South (10.0).

The Northeast (66.3) and the Midwest (63.2) had the highest civilian injury rates per million population.

The Midwest (\$46.7), and the Northeast (\$43.6) had the highest property loss per capita rates.

Fire incident rates by region and community size can be seen in Table 7. The Northeast had the highest rates for communities of 50,000 to 249,999, the Midwest had the highest rate for communities of 250,000 or more, the South had the highest rates for communities of 10,000 to 49,999 and communities of 2,500 to 9,999, and the West had the highest rate for the smallest communities (population of less than 2,500).

Civilian fire deaths per million properties by region and community size are shown in Table 8. The Midwest had the highest rate for communities of 250,000, or more the Northeast had the highest rates for communities of 100,000 to 249,999, communities of 25,000 to 49,999 and communities of 2,500 to 4,999, and the South had the highest rates for communities of 50,000 to 99,999, communities of 5,000 to 24,999, and the smallest communities (populations of less than 2,500).

Civilian fire injuries per million population by region and community size are shown in Table 9. The Northeast had the highest rates for communities of 500,000 or more, communities of 100,000 to 249,999, and communities of 2,500 to 4,999, the Midwest had the highest rates for communities of 10,000 to 24,999, the South had the highest rates for communities of 25,000 to 99,999, and communities of 5,000 to 9,999, and the South had the highest rate for the smallest communities (populations of less than 2,500).

Property loss per capita by region and community size are shown in Table 10. The Northeast had the highest rate for communities of 100,000 to 249,999, the Midwest had the highest rate for communities of 250,000 to 499,999, the South had the highest rate for communities of 10,000 to 24,999, and the West had the highest rates for communities of 25,000 to 49,999, and the smaller communities (populations of less than 10,000).

**Table 6**  
**Fire Loss Rates Nationwide and by Region, 2012**

<b>Region</b>	<b>Number of Fires per Thousand Population</b>	<b>Civilian Deaths per Million Population</b>	<b>Civilian Injuries per Million Population</b>	<b>Property Loss per Capita</b>
Nationwide	4.4	9.0	52.6	\$39.3
Northeast	4.4	10.2	66.3	\$43.6
Midwest	5.8	10.6	63.2	\$46.7
South	4.4	10.0	48.0	\$34.6
West	3.1	5.1	39.7	\$36.9

Source: NFPA's; Survey of Fire Departments for 2012 U.S. Fire Experience.

**Table 7**  
**2012 Fires per Thousand Population**

Population of Community	All Regions	Northeast	Midwest	South	West
500,000 or more	3.0	*	4.3	2.8	2.3
250,000 to 499,999	3.3	*	5.1	3.1	2.1
100,000 to 249,999	3.3	6.2	4.0	3.6	2.2
50,000 to 99,999	3.3	4.3	3.0	3.7	2.6
25,000 to 49,999	3.3	3.8	2.9	4.1	3.0
10,000 to 24,999	4.1	3.6	3.9	4.9	4.0
5,000 to 9,999	4.8	4.0	4.9	5.7	5.1
2,500 to 4,999	7.0	5.6	6.7	8.3	7.5
under 2,500	11.5	6.7	11.7	13.6	13.8

Source: NFPA's Survey of Fire Departments for 2012 U.S. Fire Experience.

\*Insufficient data

**Table 8**  
**2012 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	6.6	8.2	8.5	7.6	4.0
250,000 to 499,999	7.4	*	8.8	7.9	6.0
100,000 to 249,999	8.5	12.3	10.0	11.3	3.2
50,000 to 99,999	6.6	5.8	6.4	8.0	4.9
25,000 to 49,999	8.7	11.4	7.5	8.8	9.6
10,000 to 24,999	8.5	5.5	8.1	10.0	9.5
5,000 to 9,999	13.2	11.5	14.8	15.5	4.0
2,500 to 4,999	17.0	24.8	12.7	23.6	*
under 2,500	15.6	6.8	14.8	20.8	22.6

Source: NFPA's Survey of Fire Departments for 2012 U.S. Fire Experience

\*Insufficient data

**Table 9**  
**2012 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	54.4	99.5	43.7	46.0	37.7
250,000 to 499,999	62.9	*	82.4	68.0	43.9
100,000 to 249,999	61.0	115.0	103.2	56.9	37.3
50,000 to 99,999	64.7	77.0	67.7	77.4	35.9
25,000 to 49,999	64.0	74.0	59.1	74.8	49.9
10,000 to 24,999	58.7	47.6	67.2	54.8	53.3
5,000 to 9,999	36.5	37.1	31.7	46.0	33.8
2,500 to 4,999	28.4	59.4	25.5	20.2	*
under 2,500	30.4	34.2	24.9	21.3	69.2

Source: NFPA's Survey of Fire Departments for 2012 U.S. Fire Experience.

\*Insufficient data

**Table 10**  
**2012 Property Loss per Person**  
**by Region and Size of Community**

Population of Community	All Regions	Northeast	Midwest	South	West
500,000 or more	\$24.7	*	*	\$23.7	\$23.7
250,000 to 499,999	28.5	*	34.3	28.1	27.5
100,000 to 249,999	36.1	\$45.5	39.9	40.2	27.6
50,000 to 99,999	29.9	22.9	31.4	27.6	33.4
25,000 to 49,999	33.6	30.3	35.0	31.0	36.2
10,000 to 24,999	52.5	47.6	55.3	57.3	37.1
5,000 to 9,999	49.7	45.6	49.9	50.7	56.3
2,500 to 4,999	66.5	60.6	70.6	61.1	75.6
under 2,500	101.9	69.0	108.4	110.1	114.9

Source: NFPA's Survey of Fire Departments for 2012 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 Tables 11 and 12.

**Table 11**  
Average 2012 Fire Experience by Size of Community

Population of Community	Total Fires	Structure Fires	Civilian Deaths	Civilian Injuries	Property Loss
1,000,000 or more	4,223	1,565	12.27	101.78	\$40,901,500
500,000 to 999,999	2,465	958	5.07	31.60	23,365,100
250,000 to 499,999	1,095	454	2.47	21.00	13,706,600
100,000 to 249,999	506	191	1.30	9.73	5,595,400
50,000 to 99,999	220	86	0.45	4.37	2,022,200
25,000 to 49,999	114	44	0.30	2.21	1,165,700
10,000 to 24,999	65	24	0.13	0.94	815,300
5,000 to 9,999	35	12	0.10	0.26	451,100
2,500 to 4,999	24	7	0.08	0.10	300,300
under 2,500	12	3	0.02	0.03	130,200

**Table 12**  
Average 2012 Residential Fire Experience by Size of Community

Population of Community	Number of Fires	Civilian Deaths	Civilian Injuries	Property Loss
1,000,000 or more	1,465	8.91	65.61	\$22,067,200
500,000 to 999,999	760	4.14	27.52	13,322,600
250,000 to 499,999	376	1.97	17.40	5,726,400
100,000 to 249,999	152	1.16	8.29	3,247,000
50,000 to 99,999	67	0.40	3.42	1,259,000
25,000 to 49,999	36	0.27	1.81	683,300
10,000 to 24,999	19	0.12	0.76	471,300
5,000 to 9,999	10	0.09	0.20	240,800
2,500 to 4,999	6	0.06	0.08	178,000
under 2,500	2	0.01	0.02	57,800

Source: NFPA's Survey of Fire Departments for 2012 U.S. Fire Experience



**Table 13**  
**Fire Department Responses by Type of Call, 2012**

	Number	Percent Change From 2011
Fire Incidents	1,375,000	-1.0
Medical Aid Responses (Ambulance, EMS, Rescue)	21,705,500	+9.6
False Alarms	2,238,000	-6.1
Mutual Aid or Assistance Calls	1,326,500	+6.0
Hazardous Material Responses (Spills, Leaks, etc.)	360,000	-5.0
Other Hazardous Responses (arcing wires, bomb removal etc.)	694,000	-3.6
All Other Responses (smoke scares, lock-outs, etc.)	4,155,000	-0.4
<b>Total Incidents</b>	<b>31,854,000</b>	<b>+5.8</b>

The percent of fires and nonfire incidents by community size is shown in Table 14.

A further breakdown on false responses was collected on the 2012 surveys and the results can be seen in [Table 15](#).

**Table 14**  
**Number of Fires and Nonfire Incidents by Community size, 2010-2012 Average**

<b>Community Size</b>										
	<b>1,000,000 or more</b>	<b>500,000 to 999,999</b>	<b>250,000 to 499,999</b>	<b>100,000 to 249,999</b>	<b>50,000 to 99,999</b>	<b>25,000 to 49,999</b>	<b>10,000 to 24,999</b>	<b>5,000 to 9,999</b>	<b>2500 to 4,999</b>	<b>under 2,500</b>
Fires	4,300	2,525	1,113	509	222	114	65	35	24	12
Rescue, EMS etc.,	137,341	78,484	23,461	11,443	4,643	1,895	879	320	129	42
False alarm responses	15,998	5,563	2,328	1,150	554	276	120	53	16	7
Mutual aid responses	3,517	992	564	333	191	126	87	55	29	13
Hazardous materials	1,268	855	324	169	82	50	25	10	3	1
Other hazardous	2,067	1,271	710	298	154	85	45	20	8	3
All other responses	19,561	12,698	6,704	2,542	1,051	427	182	78	29	7
<b>Total for all incidents</b>	<b>184,051</b>	<b>102,388</b>	<b>35,203</b>	<b>16,444</b>	<b>6,897</b>	<b>2,973</b>	<b>1,403</b>	<b>571</b>	<b>240</b>	<b>84</b>
	<b>1,000,000 or more</b>	<b>500,000 to 999,999</b>	<b>250,000 to 499,999</b>	<b>100,000 to 249,999</b>	<b>50,000 to 99,999</b>	<b>25,000 to 49,999</b>	<b>10,000 to 24,999</b>	<b>5,000 to 9,999</b>	<b>2500 to 4,999</b>	<b>under 2,500</b>
Fires	2.3%	2.5%	3.2%	3.1%	3.2%	3.8%	4.6%	6.2%	10.1%	14.5%
Rescue, EMS etc.,	74.6%	76.7%	66.6%	69.6%	67.3%	63.7%	62.7%	56.1%	53.9%	49.8%
False alarm responses	8.7%	5.4%	6.6%	7.0%	8.0%	9.3%	8.5%	9.3%	6.8%	8.0%
Mutual aid responses	1.9%	1.0%	1.6%	2.0%	2.8%	4.2%	6.2%	9.6%	12.2%	15.4%
Hazardous materials	0.7%	0.8%	0.9%	1.0%	1.2%	1.7%	1.8%	1.8%	1.3%	1.2%
Other hazardous	1.1%	1.2%	2.0%	1.8%	2.2%	2.8%	3.2%	3.4%	3.4%	3.4%
All other responses	10.6%	12.4%	19.0%	15.5%	15.2%	14.3%	13.0%	13.6%	12.2%	7.8%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: NFPA's Survey of Fire Departments for 2012 U.S. Fire Experience

**Table 15**  
**Estimates of False Alarms by Type, 2012**

	Estimate	Percent Change From 2011	Percent of All False Alarms
Malicious, Mischievous False Call	167,500	-8.2	7.5
System Malfunction	713,000	-4.7	31.9
Unintentional Call	1,044,500	-1.6	46.6
Other False Alarms (Bomb Scares, etc.)	313,500	-19.8	14.0
<b>Total</b>	<b>2,238,000</b>	<b>-6.1</b>	

Source: NFPA's Survey of Fire Departments for 2012 U.S. Fire Experience

## SURVEY METHODOLOGY

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Each year, based on a sample survey of fire departments across the country, the NFPA estimates the national fire problem as measured by the number of fires that public fire departments attend, and the resulting deaths, injuries and property losses that occur. This report summarizes key findings based on the NFPA Survey for 2012 Fire Experience. This section explains the major steps in conducting the 2012 survey.

### Sample Selection

The NFPA currently has 30,145 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 determined that 3,000 fire departments were a reasonable number for the 2011 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:

- 1,000,000 and up
- 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

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 50,000 people or more were included. These 831 departments in the five highest strata protect 153,760,000.

For the remaining five population strata, assuming response rates similar to the past two years for the five highest strata, a total sample of 2,592 was indicated. Sample sizes for individual strata were calculated using a methodology that assured optimum sample allocations<sup>7</sup>. Based on the average variation in civilian deaths in one- and two-family dwellings by stratum for the last two years and on the estimated number of fire departments, appropriate relative sample weights were determined. Then the

corresponding sample sizes by stratum were calculated. The sample size by stratum was then adjusted based on the response rates from the last two years' returns. A sample size of 20,385 was found to be necessary to obtain the desired total response of 3,000 fire departments. For all strata, where a sample was necessary, departments were randomly selected.

### **Data Collection**

The fire departments selected for the survey were sent the 2012 NFPA Fire Experience Questionnaire during the 2nd week of January 2013. A second mailing was sent in mid-March to fire departments that had not responded to the first mailing. A total of 2,795 departments responded to the questionnaire 2,097 to the first mailing and 698 to the second. Six hundred and seventy-six or 24% responded by using the online version of the survey form.

Table 14 shows the number of departments that responded by region and size of community. The overall response rate was 14%, although response rates were considerably higher for departments protecting larger communities than they were for departments protecting smaller communities. The response rate was 50% for departments protecting communities of 50,000 population or more, 23% for departments protecting communities of 10,000 to 24,999, and 10% for departments protecting communities less than 10,000 population, which are comprised of mostly volunteers. The 2,795 departments that did respond protect 120,282,500 people or 39% of the total U.S. population.

After the NFPA received the surveys, technical staff members of the Fire Analysis and Research 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.

### **Estimation Methodology**

The estimation method used for the survey was ratio estimation<sup>8</sup> 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 were 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<sup>6</sup>. 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, 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%), number of civilian deaths (11.3%), number of civilian injuries (5.5%), and property loss (3.0%).

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 2012, for instance, property damage in educational properties was estimated to be \$64,000,000. This represented an increase 35.0% from the year before, but was found not to be statistically significant.

**Table 16**  
**Number of Fire Departments Responding to 2012 NFPA Survey, by**  
**Region and Community Size**

Population of Community	All Regions	Northeast	Midwest	South	West
1,000,000 or more	12	2	1	5	4
500,000 to 999,999	29	1	2	17	9
250,000 to 499,999	34	2	6	19	7
100,000 to 249,999	121	7	22	54	38
50,000 to 99,999	212	17	71	74	50
25,000 to 49,999	313	42	142	84	45
10,000 to 24,999	581	93	248	162	78
5,000 to 9,999	389	98	168	87	36
2,500 to 4,999	306	56	139	85	26
Under 2,500	798	117	407	161	113
<b>Total</b>	<b>2,795</b>	<b>435</b>	<b>1,206</b>	<b>748</b>	<b>406</b>

In addition to sampling errors, there are nonsampling errors. These include biases of the survey methodology, incomplete or inaccurate reporting of data to the NFPA, differences in data collection methods by the fire departments responding. As an example of a nonsampling 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 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.



## Fire Experience of Nonrespondents

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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 nonrespondents selected was proportional by state and population of community to the original sample selected for the survey. As a result of these efforts, 155 fire departments were successfully contacted and answered some of the questions about their fire experience.

Table 17 compares fire loss rates for both respondents and nonrespondents. For communities of 100,000 to 249,999, the rates for respondents and nonrespondents were similar for deaths, the respondent rate was 55% higher for civilian deaths, and 102% higher for property loss, while the nonrespondent rate was 12% higher for fires. (The result for property loss was statistically significant).

For communities of 50,000 to 99,999, the respondent rate was 61% higher for civilian deaths and 45% higher for property loss, while the nonrespondent rate was 18% higher for fires. (The results for property loss was statistically significant).

For communities of 25,000 to 49,999, the respondent rate was 112% higher for civilian deaths, and 10% higher for property loss, while the nonrespondent rate was 48% higher for fires. (Results for fires and deaths were statistically significant).

For communities of 10,000 to 24,999, the respondent rate was 20% higher for civilian deaths and 11% higher for property loss, while the nonrespondent rate was 12% higher for fires. (None of these results were statistically significant).

For communities of 5,000 to 9,999, the nonrespondent rate was 50% higher for fires, while the respondent rate was 21% higher for property loss. (Neither of these results was statistically significant).

**Table 17**  
**A Comparison of Respondents and Nonrespondents\***  
**to the 2012 NFPA Survey by Community Size**

Population of Community	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	114	3.3	16	3.7	121	8.5	15	5.5	84	36.1	11	17.8
50,000 to 99,999	206	3.3	39	3.9	208	6.6	39	4.1	129	29.9	32	20.6
25,000 to 49,999	289	3.3	34	4.9	310	8.7	34	4.1	182	33.6	28	30.5
10,000 to 24,999	538	4.1	39	4.6	579	8.5	39	7.1	331	52.5	23	47.2
5,000 to 9,999	361	4.8	27	7.2	387	13.2	*	*	200	61.7	14	50.9

\*Some departments did not return the questionnaire. A sample of these nonrespondents was contacted by telephone and questioned about their 2012 fire experience.

Note: “n” refers to the number of departments reporting the statistic.

ns – Data not sufficient.

## Definition of Terms

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**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.

## Footnotes

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1. Note that the NFPA changed its survey methodology in 1977-78, and meaningful comparisons cannot be made with fire statistics estimated before 1977.
2. The downward trend of home fire deaths for the period was examined by a Spearman's rho correlation coefficient and was found to be statistically significant at the .001 level, while for the death rate per 1,000 home fires, there was no statistically significant trend found.
3. Jennifer D. Flynn., *Characteristics of Home Fire Victims*, July 2010, Quincy: National Fire Protection Association, Fire Analysis and Research Division.
4. Rita F. Fahy and Alison L. Miller, "How Being Poor Affects Fire Risk", *Fire Journal*, Vol. 83, No. 1 (January 1989), p. 28.
5. Ben Evarts, *Intentional Fires*, Quincy: National Fire protection Association, January 2012.
6. 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.
7. Steve K. Thompson, *Sampling*, John Wiley, New York, NY, 1992, pp. 107-111.
8. William G. Cochran, *Sampling Techniques*, John Wiley, New York, NY, 1977, pp. 150-161.

Appendix A.  
Fire Loss in the United States Trend Tables, 1977-2012 and U.S. Fire Rates by Unit of Time

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## The U.S. Fire Problem, 1977-2012

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions)	
				As Reported	In 2012 Dollars
1977	3,264,000	7,395	31,190	\$4.7	\$17.8
1978	2,817,500	7,710	29,825	\$4.5	\$15.8
1979	2,845,500	7,575	31,325	\$5.8	\$18.4
1980	2,988,000	6,505	30,200	\$6.3	\$17.6
1981	2,893,500	6,700	30,450	\$6.7	\$16.9
1982	2,538,000	6,020	30,525	\$6.4	\$15.2
1983	2,326,500	5,920	31,275	\$6.6	\$15.2
1984	2,343,000	5,240	28,125	\$6.7	\$14.8
1985	2,371,000	6,185	28,425	\$7.3	\$15.5
1986	2,271,500	5,850	26,825	\$6.7	\$14.0
1987	2,330,000	5,810	28,215	\$7.2	\$14.5
1988	2,436,500	6,215	30,800	\$8.4	\$16.3
1989	2,115,000	5,410	28,250	\$8.7	\$16.1
1990	2,019,000	5,195	28,600	\$7.8	\$13.7
1991	2,041,500	4,465	29,375	\$9.5 <sup>1</sup>	\$16.0 <sup>1</sup>
1992	1,964,500	4,730	28,700	\$8.3	\$13.6
1993	1,952,500	4,635	30,475	\$8.5 <sup>2</sup>	\$13.5 <sup>2</sup>
1994	2,054,500	4,275	27,250	\$8.2	\$12.7
1995	1,965,500	4,585	25,775	\$8.9	\$13.4
1996	1,975,000	4,990	25,550	\$9.4	\$13.8
1997	1,795,000	4,050	23,750	\$8.5	\$12.1
1998	1,755,500	4,035	23,100	\$8.6	\$12.1
1999	1,823,000	3,570	21,875	\$10.0	\$13.8
2000	1,708,000	4,045	22,350	\$11.2	\$14.9
2001	1,734,500	6,196 <sup>3</sup>	21,100 <sup>4</sup>	\$44.0 <sup>6</sup>	\$57.1 <sup>6</sup>
2002	1,687,500	3,380	18,425	\$10.3	\$13.1
2003	1,584,500	3,925	18,125	\$12.3 <sup>7</sup>	\$15.4 <sup>7</sup>
2004	1,550,500	3,900	17,875	\$9.8	\$11.9
2005	1,602,000	3,675	17,925	\$10.7	\$12.6
2006	1,642,500	3,245	16,400	\$11.3	\$12.9
2007	1,557,500	3,430	17,675	\$14.6 <sup>8</sup>	\$16.2 <sup>8</sup>
2008	1,451,500	3,320	16,705	\$15.5 <sup>9</sup>	\$16.6 <sup>9</sup>
2009	1,348,500	3,010	17,050	\$12.5	\$13.4
2010	1,331,000	3120	17,720	\$11.6	\$12.2
2011	1,389,500	3,005	17,500	\$11.7	\$11.9
2012	1,375,000	2,855	16,500	\$12.4	\$12.4

<sup>1</sup>This 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.

<sup>2</sup>This includes \$809 million in damage caused by Southern California wildfires.

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

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

<sup>5</sup>This includes 340 firefighters at the World Trade Center, September 11, 2001.

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

<sup>7</sup>This 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.

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

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

Direct property damage figures do not include indirect losses, like business interruption. Inflation adjustment to 2011 dollars is done using the consumer price index.

Source: *Fire Loss in the United States 2012*, Michael J. Karter, Jr., NFPA, September 2013 and previous reports in the series.

## The U.S. Structure Fire Problem, 1977-2012

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions) <sup>1</sup>	
				As Reported	In 2012 Dollars
1977	1,098,000	6,505	26,310	\$4.1	\$15.5
1978	1,062,000	6,350	24,985	\$4.0	\$14.1
1979	1,036,500	5,970	24,850	\$5.0	\$15.8
1980	1,065,000	5,675	24,725	\$5.5	\$15.3
1981	1,027,500	5,760	25,700	\$6.0	\$15.1
1982	946,500	5,200	25,575	\$5.7	\$13.5
1983	868,500	5,090	26,150	\$5.8	\$13.3
1984	848,000	4,525	23,025	\$5.9	\$13.0
1985	859,500	5,265	23,350	\$6.4	\$13.6
1986	800,000	4,985	22,750	\$5.8	\$12.1
1987	758,000	4,880	23,815	\$6.2	\$12.5
1988	745,000	5,280	26,275	\$7.2 <sup>2</sup>	\$14.0 <sup>2</sup>
1989	688,000	4,655	24,025	\$7.5 <sup>3</sup>	\$13.9 <sup>3</sup>
1990	624,000	4,400	24,075	\$6.7	\$11.8
1991	640,500	3,765	24,975	\$8.3 <sup>4</sup>	\$14.0 <sup>4</sup>
1992	637,500	3,940	24,325	\$7.0 <sup>5</sup>	\$11.5 <sup>5</sup>
1993	621,500	3,980	26,550	\$7.4 <sup>6</sup>	\$11.8 <sup>6</sup>
1994	614,000	3,590	23,125	\$6.9	\$10.7
1995	573,500	3,985 <sup>7</sup>	21,725	\$7.6	\$11.4
1996	578,500	4,220	21,875	\$7.9	\$11.6
1997	552,000	3,510	20,375	\$7.1	\$10.1
1998	517,500	3,420	19,425	\$6.7	\$9.4
1999	523,000	3,040	18,525	\$8.5	\$11.7
2000	505,500	3,535	19,600	\$8.5	\$11.3
2001 <sup>8</sup>	521,500	3,220	17,225	\$8.9	\$11.5
2002	519,000	2,775	15,600	\$8.7	\$11.1
2003	519,500	3,385 <sup>9</sup>	15,600	\$8.7 <sup>10</sup>	\$10.9 <sup>10</sup>
2004	526,000	3,305	15,525	\$8.3	\$10.1
2005	511,000	3,105	15,325	\$9.2	\$10.8
2006	524,000	2,705	14,350	\$9.6	\$10.9
2007	530,500	3,000	15,350	\$10.6 <sup>11</sup>	\$11.7 <sup>11</sup>
2008	515,000	2,900	14,960	\$12.4 <sup>12</sup>	\$13.2 <sup>12</sup>
2009	480,500	2,695	14,740	\$10.8	\$11.5
2010	482,000	2,755	15,420	\$9.7	\$10.2
2011	484,500	2,640	15,635	\$9.7	\$9.9
2012	480,500	2,470	14,700	\$9.8	\$9.8

<sup>1</sup> Individual incidents with large loss can affect the total for a given year.

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

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

<sup>4</sup> 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.

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

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

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

<sup>8</sup> 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.

<sup>9</sup> 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.

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

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

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

Direct property damage figures do not include indirect losses, like business interruption. Inflation adjustment to 2011 dollars is done using the consumer price index.

Source: *Fire Loss in the United States 2012*, Michael J. Karter, Jr., NFPA, September 2013 and previous reports in the series.

## The U.S. Home Structure Fire Problem, 1977-2012

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions)	
				As Reported	In 2012 Dollars
1977	723,500	5,865	21,640	\$2.7	\$10.2
1978	706,500	6,015	20,400	\$2.1	\$7.4
1979	696,500	5,500	18,825	\$2.4	\$7.6
1980	734,000	5,200	19,700	\$2.8	\$7.8
1981	711,000	5,400	19,125	\$3.1	\$7.8
1982	654,500	4,820	20,450	\$3.1	\$7.4
1983	625,500	4,670	20,750	\$3.2	\$7.4
1984	605,500	4,075	18,750	\$3.4	\$7.5
1985	606,000	4,885	19,175	\$3.7	\$7.9
1986	565,500	4,655	18,575	\$3.5	\$7.3
1987	536,500	4,570	19,965	\$3.6	\$7.3
1988	538,500	4,955	22,075	\$3.9	\$7.6
1989	498,500	4,335	20,275	\$3.9	\$7.2
1990	454,500	4,050	20,225	\$4.2	\$7.4
1991	464,500	3,500	21,275	\$5.5 <sup>1</sup>	\$9.3 <sup>1</sup>
1992	459,000	3,705	21,100	\$3.8	\$6.2
1993	458,000	3,720	22,000	\$4.8 <sup>2</sup>	\$7.7 <sup>2</sup>
1994	438,000	3,425	19,475	\$4.2	\$6.5
1995	414,000	3,640	18,650	\$4.3	\$6.5
1996	417,000	4,035	18,875	\$4.9	\$7.2
1997	395,500	3,360	17,300	\$4.5	\$6.4
1998	369,500	3,220	16,800	\$4.3	\$6.1
1999	371,000	2,895	16,050	\$5.0	\$6.9
2000	368,000	3,420	16,975	\$5.5	\$7.3
2001	383,500	3,110	15,200	\$5.5	\$7.1
2002	389,000	2,670	13,650	\$5.9	\$7.5
2003	388,500	3,145	13,650	\$5.9 <sup>3</sup>	\$7.4 <sup>3</sup>
2004	395,500	3,190	13,700	\$5.8	\$7.1
2005	381,000	3,030	13,300	\$6.7	\$7.9
2006	396,000	2,580	12,500	\$6.8	\$7.7
2007	399,000	2,865	13,600	\$7.4 <sup>4</sup>	\$8.2 <sup>4</sup>
2008	386,500	2,755	13,160	\$8.2 <sup>5</sup>	\$8.8
2009	362,500	2,565	12,650	\$7.6	\$8.1
2010	384,000	2,640	13,350	\$7.1	\$7.5
2011	370,000	2,520	13,910	\$6.9	\$7.0
2012	365,000	2,380	12,875	\$5.7	\$5.7

<sup>1</sup>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.

<sup>2</sup>Includes \$809 million in damage caused by Southern California wildfires

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

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

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

"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 2010 dollars is done using the consumer price index.

Source: *Fire Loss in the United States 2012*, Michael J. Karter, Jr., NFPA, September 2013 and previous reports in the series.



## One- and Two-Family Home Structure Fires <sup>1</sup>, 1977-2012

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions)	
				As Reported	In 2012 Dollars
1977	678,000	4,835	17,465	\$2.3	\$8.7
1978	623,233	4,945	15,400	\$1.8	\$6.3
1979	550,500	4,320	14,650	\$2.0	\$6.3
1980	590,500	4,175	16,100	\$2.4	\$6.7
1981	574,000	4,430	14,875	\$2.7	\$6.8
1982	538,000	3,960	15,750	\$2.8	\$6.6
1983	523,500	3,825	16,450	\$2.8	\$6.4
1984	506,000	3,290	15,100	\$2.9	\$6.4
1985	501,500	4,020	15,250	\$3.2	\$6.8
1986	468,000	4,005	14,650	\$3.0	\$6.3
1987	433,000	3,780	15,200	\$3.1	\$6.3
1988	432,500	4,125	17,125	\$3.3	\$6.4
1989	402,500	3,545	15,225	\$3.3	\$6.1
1990	359,000	3,370	15,250	\$3.5	\$6.1
1991	363,000	2,905	15,600	\$3.4 <sup>2</sup>	\$5.8 <sup>2</sup>
1992	358,000	3,160	15,275	\$3.2	\$5.2
1993	358,000	3,035	15,700	\$4.1 <sup>3</sup>	\$6.6 <sup>3</sup>
1994	341,000	2,785	14,000	\$3.5	\$5.4
1995	320,000	3,035	13,450	\$3.6	\$5.4
1996	324,000	3,470	13,700	\$4.1	\$6.0
1997	302,500	2,700	12,300	\$3.7	\$5.3
1998	283,000	2,775	11,800	\$3.6	\$5.1
1999	282,500	2,375	11,550	\$4.1	\$5.6
2000	283,500	2,920	12,575	\$4.6	\$6.1
2001	295,500	2,650	11,400	\$4.7	\$6.1
2002	300,500	2,280	9,950	\$5.0	\$6.4
2003	297,000	2,735	10,000	\$5.1 <sup>4</sup>	\$6.4 <sup>4</sup>
2004	301,500	2,680	10,500	\$4.9	\$6.0
2005	287,000	2,570	10,300	\$5.8	\$6.8
2006	304,500	2,155	8,800	\$5.9	\$6.7
2007	300,500	2,350	9,650	\$6.2 <sup>5</sup>	\$6.9 <sup>5</sup>
2008	291,000	2,365	9,185	\$6.9 <sup>6</sup>	\$7.4 <sup>6</sup>
2009	272,500	2,100	9,300	\$6.4	\$6.8
2010	279,000	2,200	9,400	\$5.9	\$6.2
2011	274,500	2,105	9,485	\$5.7	\$5.8
2012	268,000	2,000	8,825	\$5.8	\$5.8

<sup>1</sup>Includes manufactured homes.

<sup>2</sup>Does 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.

<sup>3</sup>Includes \$809 million in damage caused by Southern California wildfires.

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

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

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

Direct property damage figures do not include indirect losses, like business interruption. Inflation adjustment to 2011 dollars is done using the consumer price index.

Source: *Fire Loss in the United States 2012*, Michael J. Karter, Jr., NFPA, September 2013 and previous reports in the series.

## U.S. Highway Vehicle Fire Problem, 1980-2012

Year	Fires	Civilian Deaths	Civilian Injuries	Direct Property Damage (in Billions)	
				As Reported	In 2012 Dollars
1980	456,000	650	2,850	\$0.5	\$1.4
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	\$1.4
1984	437,000	530	3,250	\$0.6	\$1.3
1985	437,000	770	3,250	\$0.7	\$1.5
1986	438,000	665	2,850	\$0.7	\$1.5
1987	451,000	755	2,900	\$0.7	\$1.4
1988	459,000	800	2,750	\$0.8	\$1.6
1989	415,500	560	2,750	\$0.8	\$1.5
1990	415,000	645	3,025	\$0.8	\$1.4
1991	406,500	530	2,675	\$0.8	\$1.3
1992	385,500	665	2,750	\$0.8	\$1.3
1993	402,000	540	2,400	\$0.9	\$1.4
1994	402,000	555	2,325	\$1.0	\$1.5
1995	386,000	490	2,275	\$1.0	\$1.5
1996	395,000	550	2,075	\$1.1	\$1.6
1997	377,000	450	1,950	\$1.1	\$1.6
1998	358,500	545	2,050	\$1.1	\$1.5
1999	345,000	450	1,600	\$1.1	\$1.5
2000	325,000	450	1,325	\$1.2	\$1.6
2001	327,000	470	1,750	\$1.3	\$1.7
2002	307,000	540	1,700	\$1.2	\$1.5
2003	286,000	455	1,400	\$1.1	\$1.4
2004	266,500	520	1,300	\$1.0	\$1.2
2005	259,000	500	1,450	\$1.0	\$1.2
2006	250,000	445	1,075	\$1.0	\$1.1
2007	227,500	365	1,500	\$1.1	\$1.2
2008	207,000	350	850	\$1.2	\$1.3
2009	190,500	260	1,455	\$1.0	\$1.1
2010	184,500	285	1,440	\$1.0	\$1.1
2011	187,500	270	1,020	\$1.0	\$1.0
2012	172,500	300	800	\$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 2011 dollars is done using the consumer price index.

Source: *Fire Loss in the United States 2012*, Michael J. Karter, Jr., NFPA, September 2013 and previous reports in the series.

## 2012 U.S. Fire Rates by Unit of Time

Property Class	Fires per Hour	Civilian Deaths per Day	Civilian Injuries per Day	Direct Dollar Damage per Hour
All residential	43.5	6.6	36.1	\$822,000
Homes <sup>1</sup>	41.7	6.5	35.3	\$800,200
One- and -two family dwellings	30.6	5.5	24.2	\$664,000
Apartments	11.1	1.0	11.1	\$136,000
Other residential	1.8	0.1	0.8	\$22,000
Public Assembly	1.4			\$32,000
Educational	0.6			\$7,000
Institutional	0.7			\$4,000
Stores and offices	2.0			\$73,000
Industry, utilities, and defense	1.0			\$77,000
Storage	3.3			\$86,000
Special structure	2.5			\$14,000
All non residential	11.4	0.2	4.2	\$286,000
All structures	54.9	6.8	40.3	\$1,107,000
Vehicles	23.1	0.9	2.7	\$210,000
Out and other (not structure or vehicle)	79.0	0.2	2.3	\$93,000
All fires	157.0 (or 2.6 per minute, or one every 23 seconds)	7.8 (or one every 184 minutes)	45.2 (or every 32 minutes)	\$1,419,000 (or \$24,000 per minute, or 395 per second)

<sup>1</sup>Homes 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 2012*, Michael J. Karter, Jr., NFPA, September 2013.