



RESEARCH

Fireworks Fires

Supporting Tables

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Fireworks Fires: Supporting Tables

The tables in this document are a companion to the [report of the same name](#).

The first table shows estimates of annual averages from 2014–2018. Only fires that occurred in or on the structure are included. Estimates were derived from the [U.S. Fire Administration’s National Fire Incident Reporting System \(NFIRS\)](#) and the NFPA’s annual fire department experience survey and include proportional shares of unknown or missing data. Fires are rounded to the nearest hundred, deaths and injuries are rounded to the nearest one, and property loss is rounded to the nearest million dollars. Percentages were calculated on unrounded estimates. Inflation adjustments were made only for the trend table.

Estimates include proportional shares of fires in which the heat source was unknown. Please refer to [How NFPA’s National Estimates Are Calculated for Home Structure Fires](#) for more details.

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**Table 1. Estimated Fires Started by Fireworks by Incident Type
Annual Average of 2014–2018 Fires Reported to US Fire Departments**

Incident Type	Fires	
Outside or Unclassified Fire	16,200	(89%)
VEGETATION FIRE	10,900	(60%)
Brush, grass or forest fire	10,800	(59%)
Grass fire	5,500	(30%)
Brush or brush and grass mixture fire	3,700	(20%)
Forest, woods or wildland fire	600	(3%)
Unclassified natural vegetation fire	1,100	(6%)
<i>Cultivated vegetation or crop fire</i>	200	(1%)
OUTSIDE RUBBISH FIRE	4,500	(25%)
Dumpster or other outside trash receptacle fire	2,400	(13%)
Outside rubbish, trash, or waste fire	1,400	(8%)
Other or unclassified outside rubbish fire	700	(4%)
OUTSIDE FIRE INVOLVING PROPERTY OF VALUE	400	(2%)
Outside mailbox	100	(0%)
Other or unclassified outside fire involving property of value	400	(2%)
UNCLASSIFIED FIRE	300	(2%)
Structure Fire	1,600	(9%)
Home fire	900	(5%)
Non-home residential fire	100	(0%)
Non-residential fire	700	(4%)
Vehicle Fire	400	(2%)
Total	18,200	(100%)

Note: These are national estimates of fires reported to US municipal fire departments and so exclude fires reported only to federal or state agencies or industrial fire brigades. National estimates are projections. Fires are rounded to the nearest hundred. Figures reflect a proportional share of fires with heat source unknown. Totals may not equal sums because of rounding error.

Sources: NFIRS and the NFPA survey.

Table 2. Fires and Losses Associated with Fireworks, 1980–2018, Fires Reported to US Fire Departments

A. Fires

Year	Home Structures	Other Residential Structures	Nonresidential Structures	Total Structures	Vehicles	Outdoor and Other	Total
1980	2,900	100	1,100	4,000	500	21,800	26,400
1981	2,800	100	1,300	4,200	500	27,100	31,800
1982	1,700	100	1,000	2,700	500	24,600	27,800
1983	1,400	100	800	2,300	500	25,300	28,000
1984	2,400	100	1,200	3,700	1,000	34,700	39,400
1985	2,600	100	1,500	4,100	900	46,600	51,600
1986	2,300	100	1,200	3,600	1,000	30,500	35,100
1987	1,900	100	1,100	3,100	800	33,200	37,100
1988	2,300	100	1,400	3,700	900	47,400	52,100
1989	1,700	100	900	2,700	800	29,900	33,400
1990	1,600	100	800	2,500	800	30,000	33,300
1991	1,600	100	900	2,600	900	24,900	28,400
1992	1,400	0	900	2,300	700	22,500	25,500
1993	1,300	0	800	2,100	800	27,300	30,200
1994	1,300	0	900	2,200	700	35,100	38,000
1995	1,100	0	700	1,900	700	24,900	27,500
1996	1,100	0	600	1,700	600	22,500	24,800
1997	1,000	0	700	1,700	500	17,900	20,100
1998	800	0	500	1,400	500	19,800	21,700
1999	1,700 (1,600)	0 (0)	1,200 (600)	2,800 (2,200)	900	29,000	32,700
2000	1,500 (1,400)	100 (100)	1,200 (700)	2,800 (2,200)	900	35,000	38,700
2001	1,200 (1,100)	100 (100)	1,000 (700)	2,200 (1,900)	900	32,600	35,600

Table 2. Fires and Losses Associated with Fireworks, 1980–2018, Fires Reported to US Fire Departments (Continued)

A. Fires (Continued)

Year	Home Structures		Other Residential Structures		Nonresidential Structures		Total Structures		Vehicles	Outdoor and Other	Total
2002	1,100	(1,000)	100	(100)	700	(600)	1,900	(1,600)	900	29,900	32,700
2003	1,000	(900)	100	(100)	700	(600)	1,800	(1,600)	800	31,300	33,900
2004	900	(800)	100	(100)	600	(400)	1,500	(1,300)	600	25,800	27,900
2005	1,000	(900)	100	(0)	700	(500)	1,800	(1,400)	700	31,000	33,500
2006	900	(800)	100	(0)	700	(500)	1,700	(1,300)	600	30,300	32,600
2007	1,000	(800)	100	(100)	700	(400)	1,700	(1,300)	600	22,700	25,100
2008	900	(700)	0	(0)	500	(400)	1,400	(1,100)	500	20,600	22,500
2009	700	(600)	0	(0)	600	(300)	1,300	(900)	400	16,300	18,000
2010	600	(600)	0	(0)	400	(300)	1,100	(900)	300	14,100	15,500
2011	700	(600)	0	(0)	400	(200)	1,200	(900)	400	16,300	17,800
2012	800	(700)	100	(0)	600	(400)	1,400	(1,100)	300	23,300	25,000
2013	700	(600)	0	(0)	600	(300)	1,400	(900)	200	14,000	15,600
2014	800	(600)	0	(0)	400	(200)	1,300	(900)	200	12,500	14,000
2015	700	(600)	0	(0)	700	(300)	1,400	(900)	300	13,700	15,300
2016	800	(700)	100	(0)	600	(300)	1,600	(1,000)	300	16,900	18,800
2017	900	(700)	100	(0)	700	(300)	1,700	(1,100)	400	16,100	18,200
2018	1,000	(800)	100	(0)	800	(300)	1,900	(1,100)	500	17,100	19,500

Note: Numbers in parentheses exclude fires reported as confined to a cooking vessel, chimney, flue, fuel burner, boiler, compactor, incinerator, or trash. Detailed reporting is not required and is much less often provided for fires coded as confined fires. These are national estimates of fires reported to US municipal fire departments and so exclude fires reported only to federal or state agencies or industrial fire brigades. National estimates are projections. Casualty and loss projections can be heavily influenced by the inclusion or exclusion of one unusually serious fire. Fires are rounded to the nearest hundred. Figures reflect a proportional share of fires with heat source unknown. Because of low participation in NFIRS Version 5.0 during 1999-2001, estimates for those years are highly uncertain and must be used with caution. Totals may not equal sums because of rounding error.

Sources: Data from NFIRS Version 4.1 (1980-1998) and Version 5.0 (1999-2018) and the NFPA survey.

Table 2. Fires and Losses Associated with Fireworks, 1980–2018, Fires Reported to US Fire Departments (Continued)

B. Civilian Deaths

Year	Home Structures		Other Residential Structures		Nonresidential Structures		Total Structures		Vehicles	Outdoor and Other	Total
1980	0		0		0		0		0	0	0
1981	0		0		0		0		0	0	0
1982	0		0		0		0		0	0	0
1983	0		0		0		0		0	0	0
1984	3		0		0		3		0	0	3
1985	8		0		0		8	3	4	15	15
1986	4		0		0		4	0	0	4	4
1987	4		0		3		7	0	0	7	7
1988	20		0		0		20	0	0	20	20
1989	4		0		0		4	0	0	4	4
1990	3		0		0		3	0	0	3	3
1991	0		0		0		0	2	0	2	2
1992	0		0		0		0	0	1	1	1
1993	0		0		0		0	0	3	3	3
1994	12		0		0		12	0	0	12	12
1995	0		0		0		0	0	2	2	2
1996	9		0		18*		27	0	0	27	27
1997	0		0		0		0	0	3	3	3
1998	0		0		0		0	0	0	0	0
1999	43	(43)	0	(0)	0	(0)	43	(43)	0	0	43
2000	29	(29)	0	(0)	0	(0)	29	(29)	0	0	29
2001	0	(0)	0	(0)	0	(0)	0	(0)	0	0	0

Table 2. Fires and Losses Associated with Fireworks, 1980–2018, Fires Reported to US Fire Departments (Continued)

B. Civilian Deaths (Continued)

Year	Home Structures		Other Residential Structures		Nonresidential Structures		Total Structures		Vehicles	Outdoor and Other		Total
2002	0	(0)	0	(0)	0	(0)	0	(0)	0	0	0	0
2003	7	(7)	0	(0)	0**	(0)	7**	(7)	0	0	0	7
2004	0	(0)	0	(0)	0	(0)	0	(0)	0	0	0	0
2005	0	(0)	0	(0)	0	(0)	0	(0)	0	0	0	0
2006	4	(4)	0	(0)	0	(0)	4	(4)	0	2	0	6
2007	9	(9)	0	(0)	0	(0)	9	(9)	0	0	0	9
2008	0	(0)	0	(0)	0	(0)	0	(0)	0	1	0	1
2009	0	(0)	0	(0)	0	(0)	0	(0)	0	0	0	0
2010	8	(8)	0	(0)	0	(0)	8	(8)	0	0	0	8
2011	0	(0)	0	(0)	0	(0)	0	(0)	0	0	0	0
2012	0	(0)	0	(0)	0	(0)	8	(8)	0	0	0	8
2013	0	(0)	0	(0)	0	(0)	0	(0)	0	0	0	0
2014	16	(16)	0	(0)	0	(0)	16	(16)	0	0	0	16
2015	0	(0)	0	(0)	0	(0)	0	(0)	0	2	0	2
2016	0	(0)	0	(0)	0	(0)	0	(0)	0	0	0	0
2017	5	(5)	0	(0)	0	(0)	5	(5)	0	0	0	5
2018	5	(5)	0	(0)	0	(0)	5	(5)	0	0	0	5

*The 1996 total is inflated by statistical projection of one Ohio fire with nine deaths.

**This does not include 100 deaths in the Station nightclub fire that occurred in Rhode Island in 2003.

Note: Numbers in parentheses exclude fires reported as confined to a cooking vessel, chimney, flue, fuel burner, boiler, compactor, incinerator, or trash. Detailed reporting is not required and is much less often provided for fires coded as confined fires. These are national estimates of fires reported to US municipal fire departments and so exclude fires reported only to federal or state agencies or industrial fire brigades. National estimates are projections. Casualty and loss projections can be heavily influenced by the inclusion or exclusion of one unusually serious fire.

Civilian deaths are expressed to the nearest one. Figures reflect a proportional share of fires with heat source unknown. Because of low participation in NFIRS Version 5.0 during from 1999-2001, estimates for those years are highly uncertain and must be used with caution.

Totals may not equal sums because of rounding error.

Sources: Data from NFIRS Version 4.1 (1980-1998) and Version 5.0 (1999-2018) and the NFPA survey.

Table 2. Fires and Losses Associated with Fireworks, 1980–2018, Fires Reported to US Fire Departments (Continued)

C. Civilian Injuries

Year	Home Structures		Other Residential Structures		Nonresidential Structures		Total Structures		Vehicles	Outside and Other	Total
1980	30		10		0		30		0	20	50
1981	30		0		20		50		0	20	70
1982	10		0		20		30		0	60	100
1983	50		0		0		50		0	30	80
1984	40		0		10		50	10		30	90
1985	70		10		10		80	30		30	140
1986	50		10		50		100	0		20	130
1987	50		10		10		70	0		30	90
1988	40		0		20		50	20		30	100
1989	50		0		0		50	20		30	110
1990	30		10		10		50	0		60	110
1991	50		10		10		70	10		30	110
1992	40		0		10		50	10		40	100
1993	20		0		20		40	0		20	70
1994	90		0		10		100	10		50	150
1995	50		0		0		50	0		40	90
1996	20		0		20		40	0		20	70
1997	20		0		10		30	20		20	70
1998	10		0		0		10	10		30	40
1999	0	(0)	0	(0)	0	(0)	0	(0)	0	80	80
2000	30	(30)	0	(0)	0	(0)	30	(30)	0	40	70
2001	40	(40)	0	(0)	10	(10)	50	(50)	10	20	80

Table 2. Fires and Losses Associated with Fireworks, 1980–2018, Fires Reported to US Fire Departments (Continued)

C. Civilian Injuries (Continued)

Year	Home Structures		Other Residential Structures		Nonresidential Structures		Total Structures		Vehicles	Outside and Other	Total
2002	20	(20)	10	(10)	0	(0)	30	(30)	20	10	60
2003	40	(40)	0	(0)	10*	(10)	50*	(50)	0	30	80
2004	10	(10)	0	(0)	0	(0)	10	(10)	0	30	50
2005	50	(50)	0	(0)	0	(0)	50	(50)	10	40	90
2006	20	(20)	10	(0)	0	(0)	30	(20)	10	30	70
2007	20	(20)	0	(0)	0	(0)	30	(30)	10	20	50
2008	10	(10)	10	(10)	10	(10)	20	(20)	10	10	40
2009	20	(20)	0	(0)	10	(10)	30	(30)	0	10	30
2010	30	(30)	0	(0)	0	(0)	30	(30)	0	20	60
2011	30	(30)	0	(0)	0	(0)	30	(30)	10	10	40
2012	20	(20)	0	(0)	10	(0)	30	(30)	0	10	50
2013	10	(10)	0	(0)	0	(0)	20	(20)	0	10	30
2014	60	(60)	0	(0)	11	(11)	71	(71)	0	10	81
2015	50	(50)	3	(3)	3	(3)	56	(56)	0	17	73
2016	19	(19)	41	(41)	0	(0)	60	(60)	11	17	87
2017	15	(15)	0	(0)	0	(0)	15	(15)	5	8	27
2018	31	(26)	0	(0)	2	(2)	33	(29)	4	9	46

* This does not include injuries in the Station nightclub fire that occurred in Rhode Island in 2003.

Note: Numbers in parentheses exclude fires reported as confined to a cooking vessel, chimney, flue, fuel burner, boiler, compactor, incinerator, or trash. Detailed reporting is not required and is much less often provided for fires coded as confined fires. These are national estimates of fires reported to US municipal fire departments and so exclude fires reported only to federal or state agencies or industrial fire brigades. National estimates are projections. Casualty and loss projections can be heavily influenced by the inclusion or exclusion of one unusually serious fire. Civilian injuries are expressed to the nearest ten. Figures reflect a proportional share of fires with heat source unknown. Because of low participation in NFIRS Version 5.0 during 1999–2001, estimates for those years are highly uncertain and must be used with caution. Totals may not equal sums because of rounding error.

Sources: Data from NFIRS Version 4.1 (1980-1998) and Version 5.0 (1999-2018) and the NFPA survey.

Table 2. Fires and Losses Associated with Fireworks, 1980–2018, Fires Reported to US Fire Departments (Continued)

D. Direct Property Damage (in Millions)

Year	Home Structures		Other Residential Structures		Nonresidential Structures		Total Structures		Vehicles	Outdoor and Other	Total	Total in 2018 Dollars
1980	\$12		\$0		\$3		\$15		\$0	\$0	\$16	\$49
1981	\$12		\$0		\$6		\$18		\$0	\$1	\$19	\$52
1982	\$9		\$0		\$2		\$11		\$0	\$0	\$11	\$29
1983	\$7		\$0		\$5		\$12		\$0	\$0	\$13	\$33
1984	\$19		\$0		\$6		\$25		\$2	\$1	\$27	\$65
1985	\$22		\$1		\$7		\$30		\$1	\$5	\$36	\$84
1986	\$24		\$0		\$29		\$53		\$2	\$1	\$56	\$128
1987	\$17		\$0		\$7		\$24		\$1	\$0	\$25	\$55
1988	\$22		\$0		\$14		\$37		\$1	\$1	\$39	\$83
1989	\$56		\$0		\$3		\$59		\$1	\$2	\$62	\$126
1990	\$22		\$1		\$4		\$26		\$2	\$1	\$28	\$54
1991	\$17		\$0		\$5		\$21		\$2	\$0	\$23	\$42
1992	\$13		\$0		\$16		\$29		\$1	\$3	\$33	\$59
1993	\$12		\$0		\$6		\$19		\$1	\$1	\$21	\$37
1994	\$10		\$0		\$8		\$18		\$2	\$2	\$22	\$37
1995	\$21		\$1		\$9		\$30		\$2	\$1	\$32	\$53
1996	\$12		\$0		\$7		\$19		\$1	\$6	\$27	\$43
1997	\$13		\$0		\$8		\$21		\$1	\$0	\$23	\$41
1998	\$9		\$0		\$3		\$12		\$1	\$2	\$16	\$25
1999	\$17	(\$17)	\$0	(\$0)	\$1	(\$1)	\$19	(\$19)	\$3	\$1	\$23	\$35
2000	\$36	(\$36)	\$0	(\$0)	\$6	(\$6)	\$42	(\$42)	\$3	\$3	\$48	\$70
2001	\$32	(\$32)	\$1	(\$1)	\$17	(\$17)	\$50	(\$50)	\$5	\$4	\$59	\$84

Table 2. Fires and Losses Associated with Fireworks, 1980–2018, Fires Reported to US Fire Departments (Continued)

D. Direct Property Damage (in Millions) (Continued)

Year	Home Structures		Other Residential Structures		Nonresidential Structures		Total Structures		Vehicles	Outdoor and Other	Total	Total in 2018 Dollars
2002	\$25	(\$25)	\$1	(\$1)	\$5	(\$5)	\$31	(\$31)	\$4	\$1	\$35	\$49
2003	\$47	(\$47)	\$1	(\$1)	\$13*	(\$13)	\$60*	(\$60)	\$4	\$1	\$65	\$89
2004	\$15	(\$15)	\$0	(\$0)	\$5	(\$5)	\$20	(\$20)	\$2	\$1	\$22	\$29
2005	\$26	(\$26)	\$0	(\$0)	\$10	(\$10)	\$37	(\$37)	\$2	\$1	\$41	\$53
2006	\$28	(\$28)	\$0	(\$0)	\$3	(\$3)	\$31	(\$31)	\$1	\$1	\$34	\$42
2007	\$39	(\$39)	\$1	(\$1)	\$4	(\$4)	\$43	(\$43)	\$76**	\$1	\$119**	\$144**
2008	\$23	(\$23)	\$1	(\$1)	\$8	(\$8)	\$32	(\$32)	\$1	\$9	\$42	\$49
2009	\$28	(\$28)	\$1	(\$1)	\$7	(\$7)	\$35	(\$35)	\$1	\$1	\$38	\$44
2010	\$19	(\$19)	\$0	(\$0)	\$13	(\$13)	\$32	(\$32)	\$1	\$3	\$36	\$42
2011	\$19	(\$19)	\$5	(\$5)	\$6	(\$6)	\$29	(\$29)	\$2	\$1	\$32	\$36
2012	\$36	(\$36)	1	(\$1)	\$24	(\$24)	\$60	(\$60)	\$1	\$16	\$78	\$85
2013	\$16	(\$16)	\$1	(\$1)	\$3	(\$3)	\$19	(\$19)	\$1	\$1	\$21	\$23
2014	\$27	(\$27)	\$0	(\$0)	\$7	(\$7)	\$34	(\$34)	\$1	\$0	\$35	\$37
2015	\$24	(\$24)	\$0	(\$0)	\$8	(\$8)	\$32	(\$32)	\$1	\$11	\$45	\$48
2016	\$19	(\$19)	\$0	(\$0)	\$12	(\$12)	\$32	(\$32)	\$2	\$7	\$40	\$42
2017	\$31	(\$31)	\$3	(\$3)	\$4	(\$4)	\$38	(\$38)	\$3	\$67	\$108	\$110
2018	\$38	(\$38)	\$0	(\$0)	\$6	(\$6)	\$44	44	\$2	\$58	\$105	\$105

*Does not include damages in the Station night club fire that occurred in Rhode Island in 2003.

**Vehicle estimate inflated by one apparently miscoded incident showing a \$20 million loss, which would project to a \$75 million estimate from that one incident.

Note: Numbers in parentheses exclude fires reported as confined to a cooking vessel, chimney, flue, fuel burner, boiler, compactor, incinerator, or trash.

Detailed reporting is not required and is much less often provided for fires coded as confined fires. These are national estimates of fires reported to US municipal fire departments and so exclude fires reported only to federal or state agencies or industrial fire brigades. National estimates are projections.

Casualty and loss projections can be heavily influenced by the inclusion or exclusion of one unusually serious fire. Direct property damage is rounded to the nearest million dollars. Figures reflect a proportional share of fires with heat source unknown. Inflation adjustment to 2006 dollars is done using the consumer price index. Because of low participation in NFIRS Version 5.0 during 1999–2001, estimates for those years are highly uncertain and must be used with caution. Totals may not equal sums because of rounding error.

Sources: Data from NFIRS Version 4.1 (1980-1998) and Version 5.0 (1999-2018) and the NFPA survey

Acknowledgements

The National Fire Protection Association thanks all the fire departments and state fire authorities who participate in the National Fire Incident Reporting System (NFIRS) and the annual NFPA fire experience survey. These firefighters are the original sources of the detailed data that make this analysis possible. Their contributions allow us to estimate the size of the fire problem.

We are also grateful to the U.S. Fire Administration for its work in developing, coordinating, and maintaining NFIRS.

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