

County Profiles

2008 Fire Data Analysis



Statistics compiled by the
Massachusetts Fire Incident Reporting System (MFIRS)



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Suffolk County

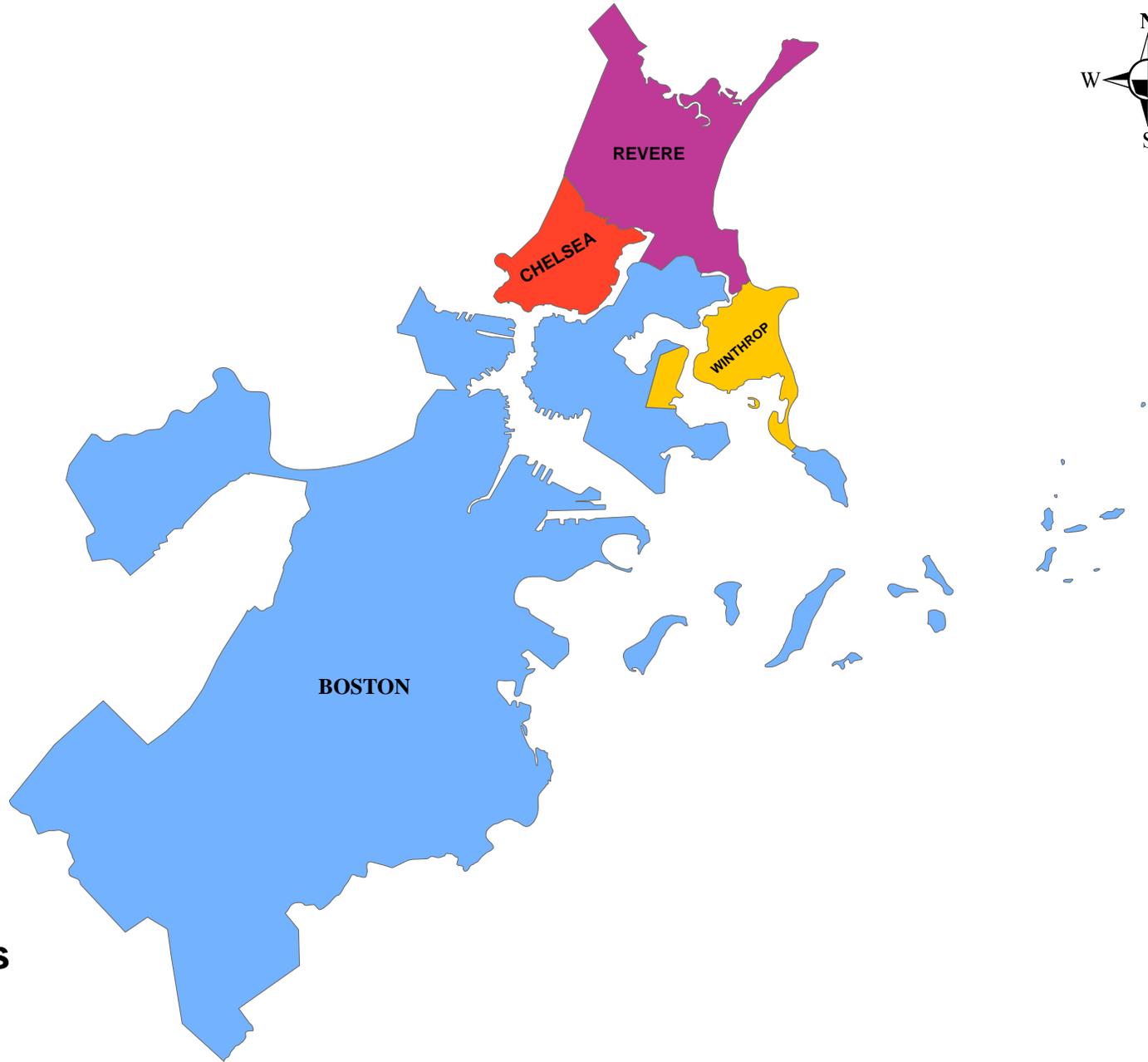
2008 Fire Data Analysis



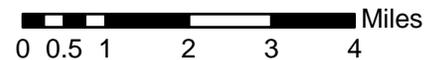
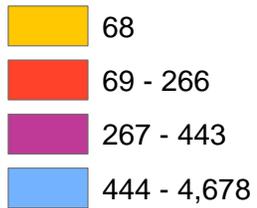
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Suffolk County Fires 2008



2008 Fires



Suffolk County Fires in 2008

Boston, Chelsea, Revere & Winthrop Comprise Suffolk County

Suffolk County is composed of four communities: the City of Boston, the largest city in the Commonwealth; the City of Chelsea; the City of Revere; and the Town of Winthrop. Because 85% of Suffolk County's residents live in Boston, statistics about the whole county are very heavily influenced by Boston's experience and may not reveal important problems in the other communities.

5,535 Total Fires — 3,833 Structures, 428 Vehicles & 1,274 Other Fires

The four communities in Suffolk County reported a total of 5,535 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2008. The 3,833 structure fires, 428 motor vehicle fires, 766 outside rubbish fires, 379 brush, tree or lawn fires, 93 special outside fires, eight cultivated vegetation or crop fires, and 28 other fires caused four civilian deaths, one fire service death, 37 civilian injuries, 70 fire service injuries and an estimated dollar loss of \$52.2 million. Although 11% of Massachusetts residents live in Suffolk County, these four Suffolk County fire departments reported 18% of the state's 30,136 fires.

Comparing Communities: Rate of Fire/1,000 Population

The easiest way to compare fire problems from community to community while taking into consideration the size of the community is to compare rates of fire per 1,000 population. Suffolk County had 8.0 fires per 1,000 people in 2008, over one and a half times the statewide rate of 4.8 fires per 1,000 population. Revere had the highest rate at 9.4 fires per 1,000 people in 2008. Winthrop had the lowest rate, 3.8 fires per 1,000 people this year, less than the county average. Chelsea had the second highest rate of fires per population with 7.6. Boston's fire rate per 1,000 population was 7.9.

Structure Fires Per 1,000 Population

Suffolk County had a rate of 5.6 structure fires per 1,000 people in 2008. The community with the highest rate of structure fires per 1,000 population was Revere, having 8.4 structure fires per 1,000 people. Chelsea had 5.4 fires per 1,000 population. Boston also had 5.4 structure fires per 1,000 people. Winthrop had the lowest rate of structure fires with 2.0 per 1,000 population. The rate of structure fires per 1,000 people in Massachusetts in 2008 was 2.7. Boston, Chelsea and Revere all experienced a higher than statewide average number of structure fires per 1,000 population.

Vehicle Fires Per 1,000 Population

Suffolk County had 0.62 motor vehicle fires per 1,000 population in 2008. Boston had the highest rate in the county at a rate of 0.66 motor vehicle fires per 1,000 people. Chelsea had the next highest rate at .37 motor vehicle fires per 1,000 people. Winthrop experienced 0.22 motor vehicle fires per 1,000 population. Revere had the lowest rate of motor vehicle fires per 1,000 population at 0.21. The state's rate was 0.48 motor vehicle fires per 1,000 people in 2008.

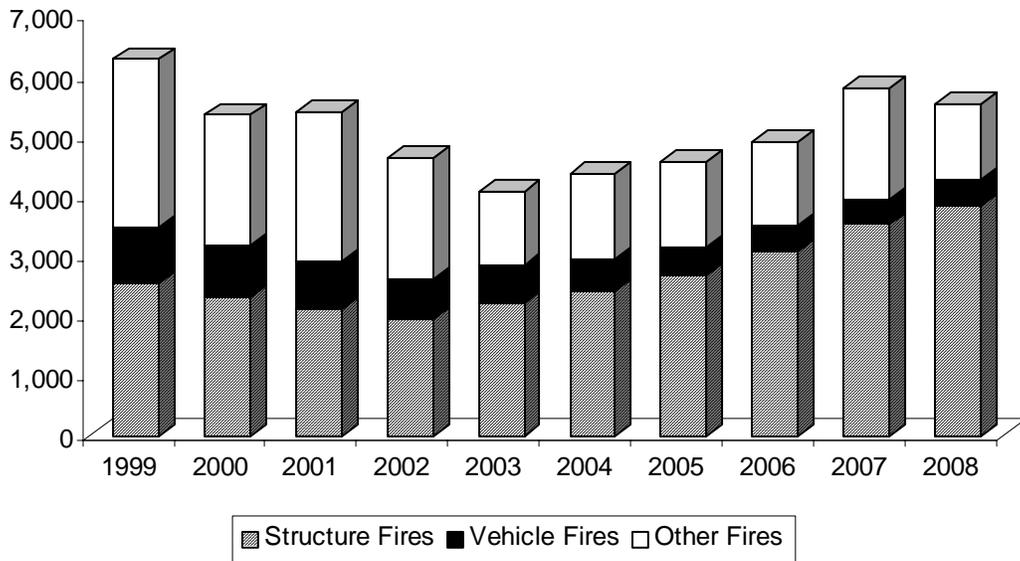
Town	Total Fires Per 1,000 Pop.	Structure Fires Per 1,000 Pop.	MV Fires Per 1,000 Pop.	Other Fires Per 1,000 Pop.
Boston	7.94	5.42	0.66	1.86
Chelsea	7.58	5.42	0.37	1.80
Revere	9.37	8.44	0.21	0.72
Winthrop	3.72	1.97	0.22	1.53
Suffolk County	8.02	5.56	0.62	1.85
Massachusetts	4.75	2.71	0.48	1.83

STRUCTURE FIRES

Structure & Motor Vehicle Fires Up in 2008

The total number of reported fires in Suffolk County decreased by 393, or 7%, from the 5,928 reported in 2007. Reported structure fires increased 267, or 7%, from 3,572 the previous year. Motor vehicle fires increased by 10, or 2%, from 418 the year before. The total number of reported outside and other fires decreased by 664, or 34%, from 1,938 in 2007.

Suffolk County Fires by Incident Type



SUFFOLK COUNTY FIRES FROM 1999 TO 2008

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons
1999	6,268	2,535	940	2,793	495	211	244	40
2000	5,341	2,297	866	2,178	384	174	177	33
2001	5,380	2,115	775	2,490	365	161	172	32
2002	4,613	1,933	683	1,997	292	154	122	16
2003	4,060	2,195	636	1,229	192	78	61	53
2004	4,376	2,401	524	1,451	165	80	54	31
2005	4,565	2,655	475	1,435	139	70	28	41
2006	4,911	3,068	445	1,398	154	60	27	67
2007	5,782	3,517	418	1,857	140	71	16	53
2008	5,535	3,833	428	1,274	124	49	50	55

BUILDING FIRES

There were 3,797 building fires of different types in Suffolk County in 2008. These 3,797 building fires accounted for 99.1% of all structure fires in Suffolk County.

84% of Building Fires in Homes

The 3,797 building fires that occurred in Suffolk County in 2008 can be broken down by fixed property use as follows: 3,172, or 84% of all reported building fires in 2008, were in residential properties; 161 fires happened in institutional properties; 160 fires took place in mercantile and office properties; 125 fires occurred in public assembly properties; 92 fires occurred in educational properties; 50 fires took place in special properties; 20 fires were in storage properties; eight were reported in manufacturing properties; six occurred in industrial, utility, defense, agricultural or mining facilities; and three fires occurred in unclassified buildings.

For a complete breakdown of building fires by individual property use type, see the chart on pages 21 through 23.

RESIDENTIAL FIRES**Unattended Cooking Caused Over 3/4 of Residential Building Fires**

In 2008, 3,172, or 84%, of the 3,797 building fires in Suffolk County occurred in residential properties. Since this is such a large percentage of the building fires, we focus in on these incidents. The leading cause of residential building fires in Suffolk County was cooking, accounting for 76% of these fires.

Heating fires were the second leading cause of residential building fires in Suffolk County, causing 8% of these fires. Electrical problems caused 3% of these fires.

Smoking, and indoor rubbish fires were each responsible for 2% of these fires. Arson and candles each accounted for 1% of these fires. Juvenile-set fires and clothes dryers were each responsible for less than 1% of the fires in people's homes in Suffolk County in 2008.

86% of Residential Building Fires Are Confined to Non-Combustible Containers¹

Two thousand seven hundred and nineteen (2,719), or 84% of all residential building fires, were reported as confined to non-combustible containers in 2008. Two thousand three hundred and eighty-four (2,384) of the reported fires were cooking fires contained to a non-combustible container accounting for 75% of residential building fires. Two hundred and twenty-eight (228), or 7%, were fires confined to a fuel burner or boiler malfunction. There were 82 confined indoor rubbish fires, accounting for 3% of the residential building fires in 2008. Twenty-two (22), or 1% of all residential fires, were confined to chimneys or flues. Two (2), or 0.1%, of the residential building fires in Suffolk County, were confined commercial compactor fires. One (1), or 0.03%, of the residential building fires in Suffolk County, was a confined incinerator overload or malfunction. The number of contained fires increased by 316, or 13%, from the 2,403 reported in 2007.

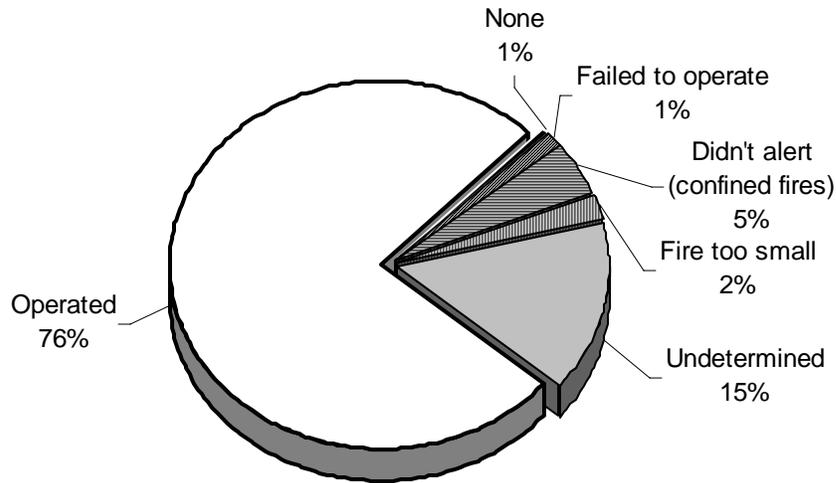
Detectors Alerted Occupants in Over 3/4 of Fires

Smoke or heat detectors operated and alerted the occupants in 2,410, or 76%, of the residential building fires. In 5% of these fires², the detectors did not alert the occupants. Detectors were present but did not operate in 1% of these incidents. In another 1% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 2% of the residential fires. Smoke detector performance was undetermined in 480 incidents, or 15% of Suffolk County's residential building fires.

¹ In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing To Ignition, Cause Of Ignition, and Equipment Involved in Ignition. These incidents are not included in the analysis of these fields.

² These represent confined fires where it was reported that the detector did not alert the occupants.

Detector Status in Suffolk County's Residential Structure Fires 2008



Over 1/5 of Failed Detectors Had Missing or Disconnected Batteries

Of the 38 fires where smoke detectors were present but failed to operate, seven, or 18%, failed because of missing or disconnected batteries. Another seven, or 21%, did not operate because the batteries were dead. Five (5) detectors, or 13%, failed because of a lack of maintenance; and one detector, or 3%, failed because of improper installation or placement. For 18 cases, or 47%, the reason the detector failed was not determined or classified.

JUVENILE-SET FIRES

18 Juvenile-set Fires

There were 18 reported juvenile-set fires in Suffolk County in 2008. The 17 structure fires, one brush fire and one unclassified fire caused \$141,325 in estimated damages.

ARSONS

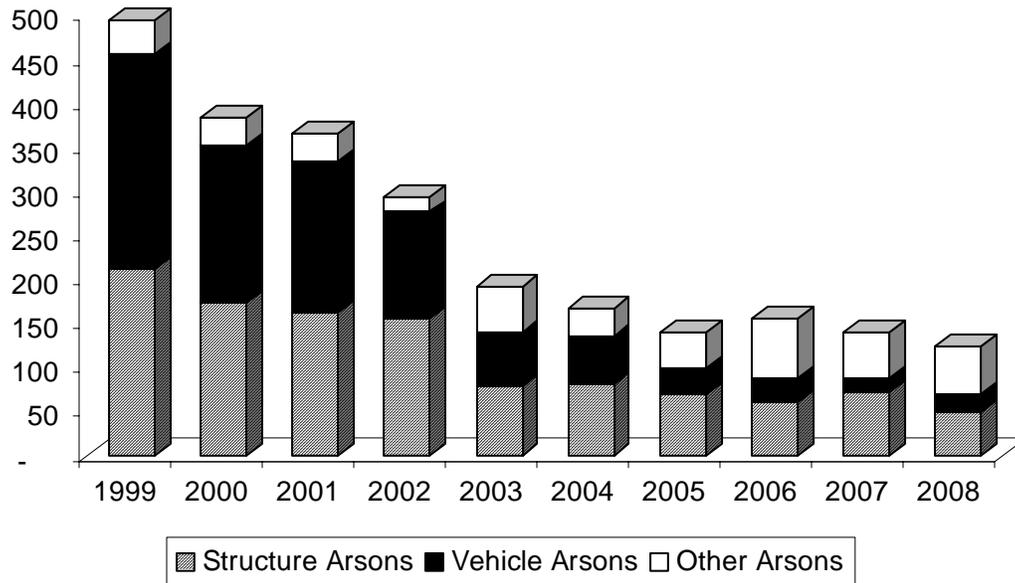
124 Arsons³ —49 Structure Arsons, 20 Vehicle Arsons & 55 Other Arsons

One hundred and twenty-four (124), or 2%, of Suffolk County's 5,535 fires were considered intentionally set, or for purposes of analysis, arson. The 49 structure arsons,

³ In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

20 motor vehicle arsons and 55 outside and other arsons caused two civilian deaths, three civilian injuries, seven fire service injuries and an estimated dollar loss of \$1.9 million.

Suffolk County Arsons by Incident Type



Structure Arson Decreases

The total number of reported arson fires decreased by 18, or 13%, from the 142 reported in 2007. Structure arson decreased by 23 from the 72 reported a year earlier. Motor vehicle arsons increased by four from 16 the previous year. Identified outside and other arson increased by one from 54 the year before. Structure arsons represented 40% of the total arson problem while motor vehicle arson accounted for 16% of all the 2008 arsons in Suffolk County.

Arson Rates Per Population

The community in Suffolk County with the highest rate of arson per population in 2008 was Winthrop with 0.38 arsons per 1,000 people. All of the communities, Suffolk County and the state in general had less than one arson per 1,000 population. For all of Suffolk County, the arson rate was 0.18 per 1,000 population; for the entire Commonwealth it was slightly higher at 0.19 per 1,000 population. Boston had the highest rate for structure arsons per 1,000 population with 0.08. Boston, the only community in Suffolk County to report a motor vehicle arson, had a rate of motor vehicle arsons per thousand population of 0.03.

ALL INCIDENTS

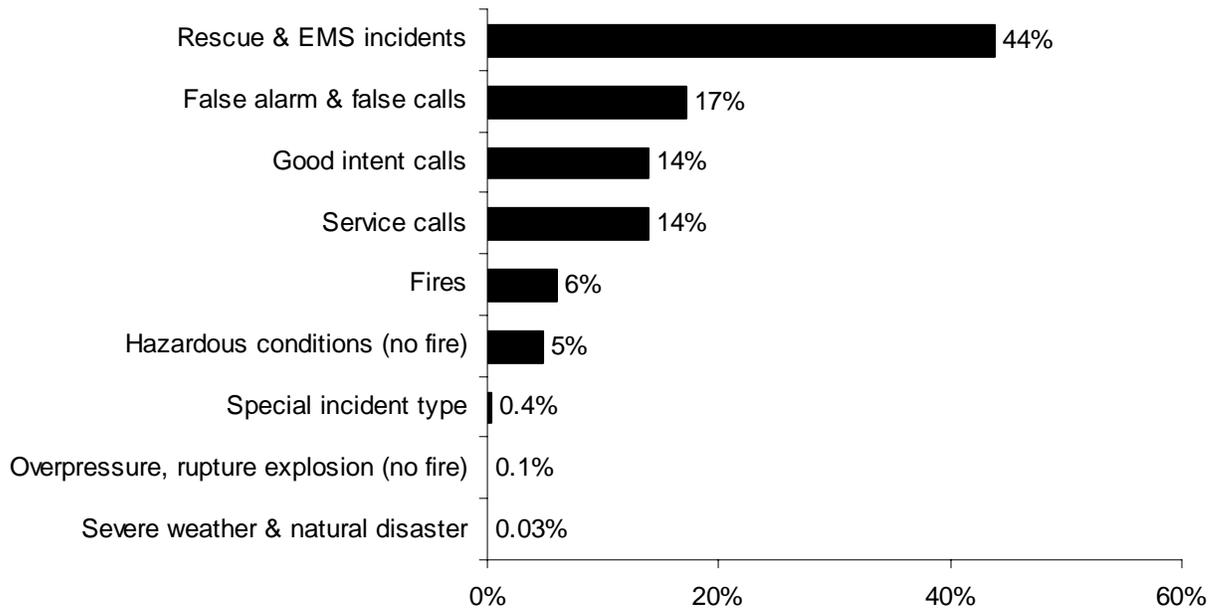
Rescue & EMS Calls Are 44% of All Reported Responses

In 2008, fire departments in Suffolk County reported 92,073 total responses to MFIRS. Of these 92,073 incidents, 86,517 non-fire calls were voluntarily reported.

Of these 86,517 non-fire calls, 40,352, or 44% of all the responses reported in 2008, were reported rescue and emergency medical services (EMS) calls⁴; 15,767, or 17%, were reported false alarm or false calls; 13,036, or 14%, were reported good intent calls; 12,465, or 14%, were reported service calls such as lock-outs, water or smoke problem, unauthorized burning or public service assistance; 4,436, or 5%, reported hazardous condition calls with no fire; 355, or 0.4%, were special incident type calls such as citizen complaints; 81, or 0.1%, were reported overpressure, rupture, explosion or overheat calls with no fire; and 25, or 0.03%, were severe weather calls.

Five thousand five hundred and fifty-six (5,556), or 6%, of the total responses submitted by Suffolk County fire departments were fires⁵.

2008 Responses by Incident Type



Suffolk County Fire Departments Reported Giving Mutual Aid 228 Times

⁴ The Boston Fire Department does not run any ambulances. Instead they dispatch their companies as first responders to all EMS calls.

⁵ This figure includes responses in which Suffolk County fire departments gave mutual aid to another fire department at a fire.

In 2008, Suffolk County fire departments reported coming to the aid of other fire departments 228 times. Of these 228 responses, 169, or 74%, were for service calls such as cover assignments; 20, or 9%, were for fires; 14, or 6%, were for good intent calls; 10, or 4%, were for rescue or EMS incidents; seven, or 3%, were for false alarms or false calls; another seven, or 3%, were for hazardous condition calls with no fire; and one, or 0.4%, of the mutual aid given calls was for a special incident.

Suffolk County Fire Departments Reported Receiving Mutual Aid in 220 Incidents

In 2008, Suffolk County fire departments reported receiving aid from surrounding departments in 220 incidents. Of these 220 incidents, 101, or 46%, were rescue and emergency medical services calls; 78, or 35%, were hazardous conditions calls with no fire; 21, or 10%, were for fires; 10, or 5%, were false alarms or false calls; five, or 2% were good intent calls; four, or 2%, were service calls; and one, or 0.5%, was a special incident.

The City of Boston

4,678 Fires — 3,194 Structure Fires, 387 Vehicle Fires & 1,097 Other Fires

The Boston Fire Department reported 3,194 structure fires, 387 motor vehicle fires, 663 outside rubbish fires, 343 grass, tree or brush fires, 82 special outside fires, two cultivated vegetation or crop fires, and seven unclassified fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2008. These 4,678 incidents caused four civilian deaths, one fire service death, 29 civilian injuries, 14 fire service injuries and an estimated dollar loss of \$48.2 million. There were 7.9 fires for every 1,000 citizens in 2008.

Structure & Motor Vehicle Fires Up

The total number of Boston fires reported to the Massachusetts Fire Incident Reporting System decreased by 90 from the 4,768 reported in 2007 to 4,678 in 2008. Structure fires increased by 284, motor vehicle fires increased by 20, and outside and other fires decreased by 414. For the sixth year in a row the number of structure fires increased significantly. Motor vehicle fires have been on a downward trend since 1986; however 2008 is the first increase since 1994. Outside and other fires restarted the trend of decreasing since 1996 that was only briefly interrupted in 2001, 2004 and now in 2008. Although fewer than 10% of the state's residents live in the City of Boston, the Boston Fire Department reported 16% of the 30,136 fire incidents reported statewide in 2008.

109 Arsons — 45 Structure Arsons, 20 Vehicle Arsons & 44 Other Arsons

One hundred and nine (109), or 2%, of the 4,678 Boston fires were considered intentionally set⁶, or, for purposes of this analysis, arson. The 45 structure arsons, 20 motor vehicle arsons and 44 outside and other arsons caused two civilian deaths, two civilian injuries and an estimated dollar loss of \$1.5 million

Unattended Cooking Caused over 3/4 of Boston's Residential Fires

Cooking was the leading cause of the 2,668 fires in Boston residential buildings, accounting for 76% of these fires. Heating equipment was the cause of 7% of these fires. Electrical problems and indoor rubbish fires each caused 3% of these fires. Smoking caused 2% of residential building fires in Boston. Arson and candles each accounted for 1% of these fires. Juvenile-set fires accounted for less than 1% of the fires in Boston residences in 2008.

Detectors Alerted Occupants in 83% of Fires

Smoke or heat detectors operated and alerted the occupants in 2,200, or 83%, of the residential building fires. In 5% of these fires⁷, the detectors did not alert the occupants. Detectors were present but did not operate in 1% of these incidents. In 1% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 2% of the

⁶ In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

⁷ These represent confined fires where it was reported that the detector did not alert the occupants.

residential fires. Smoke detector performance was undetermined in 211 incidents, or 8% of Boston's residential building fires.

Largest Loss Fires

The Boston Fire Department reported nine fires with over \$1 million in estimated damages. These nine fire totaled \$22.1 million in damages. There were two fires tied for the largest loss fire of 2008.

- On May 30, 2008, at 3:24 a.m., the Boston Fire Department was called to an undetermined fire at Hook's Lobster Company. It was undetermined if detectors or sprinklers were present. There were no other injuries associated with this fire and damages were estimated to be \$5 million. The fire spread to an adjacent structure to the rear of the building causing \$20,000 in damages to that building.
- On June 27, 2008, at 2:47 p.m., the Boston Fire Department was called to a fire in a seven-unit apartment building. The fire was caused by a lightning strike. No one was injured in this fire. Detectors were present and alerted the occupants. The building was not sprinklered and damages were estimated to be \$5 million.

The City of Chelsea

266 Fires — 190 Structure Fires, 13 Vehicle Fires and 63 Other Fires

The City of Chelsea reported 266 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2008. The 190 structure fires, 13 motor vehicle fires, 26 outside rubbish fires, 13 grass, tree or brush fires, five special outside fires, and 19 unclassified fires caused five civilian injuries, 53 fire service injuries and an estimated dollar loss of \$2.7 million. There were 7.9 fires for every 1,000 citizens in 2008.

All Fires Are Down

All fires decreased by 60, or 18%, from the 326 fires reported in 2007. Structure fires decreased by 22 from the 212 reported in 2007. Motor vehicle fires decreased by 10, from 23 the previous year. Outside and other fires decreased by 28 from the 91 reported in 2007.

7 Arsons — 2 Structure Arsons & 5 Other Arsons

Seven (7), or 3%, of the 266 Chelsea fires were considered intentionally set, or, for purposes of this analysis, arson⁸. The two structure arsons and five outside and other arsons caused seven fire service injuries and an estimated dollar loss of \$406,000.

Unsafe Cooking Practices Caused Over 2/3of Residential Fires

⁸ In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

Cooking was the leading cause of fires in Chelsea's residential properties in 2008 accounting for 69% of these fires. Heating fires were the second leading cause, accounting for 12% of the fires in people's homes in Chelsea in 2008. Smoking caused 3% of residential building fires in Chelsea. Indoor rubbish fires accounted for 2% of these fires. Candles, clothes dryers, arson, electrical problems and juvenile-set fires each caused 1% of the fires in Chelsea residences in 2008.

Detectors Alerted Occupants in 43% of Fires

Smoke or heat detectors operated and alerted the occupants in 67, or 43%, of the residential building fires. In 2% of these fires⁹, the detectors did not alert the occupants. Detectors were present but did not operate in 1% of residential fires. There were no reported fires where detectors were not present. The fire was too small to trigger the detector in 1% of these fires. Smoke detector performance was undetermined in 81 incidents, or 53% of Chelsea's residential building fires.

Largest Loss Fire in Chelsea

On March 17, 2008, at 8:12 p.m., the Chelsea Fire Department was dispatched to a fire in a two-family home of undetermined cause. The fire started in the basement. There were four firefighters injuries at this fire. Detectors were present and alerted the occupants. The building was not sprinklered and damages were estimated to be \$510,000.

The City of Revere

443 Fires — 399 Structure Fires, 10 Vehicle Fires and 34 Other Fires

The City of Revere reported 443 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2008. The 399 structure fires, 10 motor vehicle fires, 33 outside rubbish fires, and one brush fire, caused one civilian injury, one firefighter injury and an estimated dollar loss of \$389,050. There were 9.4 fires for every 1,000 citizens in 2008.

Structure Fires Up

The total number of reported fires decreased by 43 from the 486 reported in 2007. Structure fires increased by 72 from the 327 reported during the previous year. Motor vehicle fires decreased 16 from 26 in 2007. Reported outside and other fires increased by 99 from 133 the year before.

1 Arson — 1 Structure Arson

One (1), or 1%, of Revere's 443 reported fires were considered intentionally set, or for purposes of this analysis, arson¹⁰. There was one reported structure arson in 2008.

⁹ These represent confined fires where it was reported that the detector did not alert the occupants.

¹⁰ In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

Unsafe Cooking Causes Almost 86% of Residential Fires

Cooking was the leading cause of fires in Revere's residential properties in 2008, accounting for 86% of these fires. Heating equipment caused 9% of residential building fires in 2008. Indoor rubbish fires were responsible for 2% of these fires. Smoking caused 1% of these fires. Arson, electrical problems and juvenile-set fires each accounted for less than 1% of the residential building fires in Revere in 2008.

Detectors Alerted Occupants in 44% of Fires

Smoke or heat detectors operated and alerted the occupants in 140, or 44%, of the residential building fires. In 3% of these fires¹¹, the detectors did not alert the occupants. Detectors were present but did not operate in 0.3% of these incidents. In another 0.3% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 1% of the residential fires. Smoke detector performance was undetermined in 166 incidents, or 52% of Revere's residential building fires.

Largest Loss Fire In Revere

At 1:44 p.m., on November 27, 2008, the Revere Fire Department was called to a heating equipment fire in a single-family home. A cardboard box was placed too close to the stove used for heating. Damages from this blaze were estimated to be \$175,000. There were no injuries at this fire. The home did not have any smoke detectors and the building was not sprinklered.

The Town of Winthrop

68 Fires — 36 Structure Fires, 4 Vehicle Fires and 28 Other Fires

The Town of Winthrop reported 68 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2008. The 36 structure fires, four motor vehicle fires, 12 outside rubbish fires, nine brush and grass fires, and five special outside fires caused one civilian injury, two fire service injuries and an estimated dollar loss of \$898,440 million. There were 3.7 fires for every 1,000 citizens in 2008.

All Fires Down

The total number of fires reported in Winthrop decreased by 34 from 102 in 2007. Structure fires decreased 18 from the 54 reported in 2007. Motor vehicle fires decreased by one from five in 2007. Outside and other fires dropped 15 from 43 in 2007.

¹¹ These represent confined fires where it was reported that the detector did not alert the occupants.

7 Arsons – 1 Structure & 6 Outside & Other Arsons

Seven (7), or 10%, of the 68 Winthrop fires were considered intentionally set, or, for purposes of this analysis, arson¹². The one structure arson and six outside and other arsons caused one civilian injury.

Unsafe Cooking Practices Caused 45% of Winthrop's Residential Fires

Cooking was the leading cause of fires in Winthrop residential properties in 2008 accounting for 45%. Heating equipment fires were the second leading cause, accounting for 17% of the fires. Arson, clothes dryers, juvenile-set fires, and smoking each caused 3% of the fires in Winthrop's homes 2008.

Detectors Alerted Occupants in Only 10% of Fires

Smoke or heat detectors operated and alerted the occupants in three, or 10%, of the residential building fires. There were no reported fires¹³, where the detectors did not alert the occupants. Detectors were present but did not operate in 3% of these fires. In another 3% of these fires, no detectors were present at all. In 7% of reported fires the fire was too small to trigger the detector. Smoke detector performance was undetermined in 22 incidents, or 77% of Winthrop's residential building fires.

Largest Loss Fire in Winthrop

On January 29, 2008, at 10:21 p.m., the Winthrop Fire Department was called to a fire at a single-family home. The fire began in the ceiling and floor assembly between the second and third floors. There were no injuries associated with this fire. Detectors were present but failed to operate. The building was not sprinklered. Damages from this fire were estimated to be \$252,000.

¹² In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

¹³ These represent confined fires where it was reported that the detector did not alert the occupants.

Suffolk County**Population: 689,807****8.0 Fires/1,000 Population****Total Fires: 5,535 \$52,226,746**

Situation	Fires	% of Fires	Dollar Loss
Structure Fires	3,833	61%	\$33,443,224
Vehicle Fires	428	7%	3,497,821
Other Fires	1,274	32%	1,043,485

3 Fatal Fires 0.72 Civilian Deaths/1,000 Fires

4 Civilian Deaths 0.06 Civilian Deaths/10,000 Population

1 Fire Service Death

37 Civilian Injuries 70 Fire Service Injuries

Building Fires: 3,797**Residential Building Fires: 3,172****Residential Building Fires Confined to Non-Combustible Containers: 2,719****Unconfined Residential Building Fires: 453**

3 Civilian Deaths 26 Civilian Injuries 65 Fire Service Injuries

Occupancy	Fires	%	Detector Status	Fires	%
Apartments	2,243	71%	Operated	2,410	76%
1- & 2-Family homes	526	17%	Didn't operate	38	1%
Dormitories	119	4%	None	25	1%
Rooming houses	90	3%	Fire too small	69	2%
Residential board & care	41	1%	Didn't Alert (confined)	150	5%
Hotel/motel	23	1%	Undetermined	480	15%

Area of Origin¹⁴	%	Heat Source	%	%Unconfined¹⁵
Kitchen	78%	Radiated heat from oper. eq.	3%	19%
Heating room or area	7%	Arcing	2%	14%
Bedroom	2%	Heat from operating equip.	1%	10%
Exterior balcony, unencl. porch	1%	Hot or smoldering object	1%	7%
Chimney or flue	1%	Hot ember or ash	1%	5%
Bathroom	1%	Cigarette	1%	4%

¹⁴ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

¹⁵ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

Item First Ignited¹⁶	%	Factor Contrib. to Ignit.	%	%Unconfined¹⁷
Food, cooking materials	76%	Abandoned materials	2%	14%
Flammable, combustible liquid	7%	Too close to combustibles	2%	12%
Rubbish, trash, waste	3%	Unspecified short-circuit arc	2%	11%
Structural member, framing	1%	Misuse of materials	1%	8%
Electrical wire, cable insulation	1%	Equipment unattended	1%	8%

Equipment¹⁸	%	Cause of Ignition	%	%Unconfined¹⁹
Cooking equipment	75%	Unintentional	9%	63%
None	14%	Failure of eq. or heat source	2%	12%
Boiler, furnace, cent. heat unit	7%	Intentional	1%	8%
Chimney or flue	1%	Act of nature	0.2%	1%
Clothes dryer	0.1%	Undetermined	1%	7%
		Cause under investigation	1%	8%

Detector Alerted Occupants (Confined Fires in Non-Combustible Containers)

Alerted Occupants	80%
Didn't Alert Occupants	6%
Undetermined	14%

¹⁶ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

¹⁷ Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed. These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Factors Contributing to Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

¹⁸ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

¹⁹ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Cause of Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

Month	Total Fires	Structure Fires	Vehicle Fires	Other Fires
January	397	308	40	49
February	371	288	41	42
March	395	289	23	83
April	577	338	40	199
May	569	336	34	199
June	480	291	46	143
July	398	242	38	118
August	368	260	26	82
September	437	305	32	100
October	522	365	38	119
November	496	388	35	73
December	525	423	35	67

Day	Total Fires	Structure Fires	Vehicle Fires	Other Fires
Sunday	774	545	49	180
Monday	776	513	76	187
Tuesday	746	517	60	169
Wednesday	877	604	64	209
Thursday	759	521	50	188
Friday	788	547	67	174
Saturday	815	586	62	167

Time	Total Fires	Structure Fires	Vehicle Fires	Other Fires
00:01 - 04:00	528	289	78	161
04:01 - 08:00	357	254	42	61
08:01 - 12:00	826	639	64	123
12:01 - 16:00	1,247	851	68	328
16:01 - 20:00	1,532	1,125	91	316
20:01 - 00:00	1,045	675	85	285

Motor Vehicle Fires

Total: 428

Automobiles: 367 (86%)

19 (5%) of the automobile fires considered intentionally set.

Arson Fires**Total Arsons: 124****Dollar loss: \$1,873,454****0.18 Arson Fires/1,000 Population**

Situation	Arsons	% Situation	% Arson	Dollar Loss
Structure Arsons	49	12%	40%	\$1,756,753
Vehicle Arsons	20	5%	16%	113,000
Other Arsons	55	4%	44%	3,701

0.07 Structure arsons/1,000 population

0.03 Vehicle arsons /1,000 population

0.08 Other arsons/1,000 population

2 Civilian Deaths

3 Civilian Injuries

7 Fire Service Injuries

Peak Times of Day for:

Structure Arsons	#	%	Vehicle Arsons	#	%
08:01 - 12:00	13	27%	00:01 - 04:00	9	45%
16:01 - 20:00	11	22%	20:01 - 00:00	5	25%
00:01 - 04:00	7	14%	08:01 - 12:00	2	10%
20:01 - 00:00	7	14%	12:01 - 16:00	2	10%

Other Arsons	#	%
16:01 - 20:00	21	38%
20:01 - 00:00	18	38%
12:01 - 16:00	8	15%
00:01 - 04:00	4	7%
08:01 - 12:00	4	7%

Peak Fixed Property Uses for Structure Arsons	#	%
Apartments	29	59%
1- & 2-Family homes	13	10%
High/junior high/middle schools	4	10%
Church, mosque, synagogue	2	4%

BOSTON FIRES FROM 2004 TO 2008**POPULATION: 589,141**

	Total	Structure	Vehicle	Other	Total	Structure	Vehicle	Other
2004	3,833	2,060	452	1,321	141	75	43	23
2005	3,874	2,238	397	1,239	118	62	24	32
2006	3,971	2,432	379	1,160	94	46	22	26
2007	4,768	2,910	347	1,097	107	53	14	40
2008	4,678	3,194	387	1,097	109	45	20	44

CHELSEA FIRES FROM 2004 TO 2008**POPULATION: 35,080**

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons
2004	253	190	30	33	2	1	0	1
2005	181	141	14	26	1	0	0	1
2006	268	187	25	56	16	6	1	9
2007	326	212	23	91	16	11	0	5
2008	266	190	13	63	7	2	0	5

REVERE FIRES FROM 2004 TO 2008**POPULATION: 47,283**

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons
2004	188	96	34	58	6	1	1	4
2005	339	195	40	104	13	7	4	2
2006	536	385	29	122	31	6	4	21
2007	486	327	26	133	6	4	2	0
2008	443	399	10	34	1	1	0	0

WINTHROP FIRES FROM 2004 TO 2008**POPULATION: 18,303**

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons
2004	73	48	1	24	11	4	1	6
2005	108	69	8	31	7	1	0	6
2006	96	54	2	40	13	2	0	11
2007	102	54	5	43	11	3	0	8
2008	68	36	4	28	7	1	0	6

Suffolk County Fire Experience By Community For 2008

	Boston	Chelsea	Revere	Winthrop	Suffolk County*	State
Total Fires	4,678	266	443	68	5,535	30,136
Population	589,141	35,080	47,283	18,303	689,807	6,349,097
Rate/1K Pop.	7.9	7.6	9.4	3.7	8.0	4.8
Civilian Deaths	4	0	0	0	4	49
Civ. Deaths/10K Pop.	0.07	0	0	0	0.06	0.07
Fire Service Deaths	1	0	0	0	1	1
Civilian Injuries	29	5	1	1	37	337
Civ. Inj./1K Pop.	0.05	0.14	0.02	0.05	0.05	0.05
Fire Service Injuries	14	53	1	2	70	622
Est. \$ Loss	\$48,198,966	2,739,290	389,050	898,440	52,226,746	254,193,733
Structure Fires	3,194	190	399	36	3,833	17,198
Structure Fires/ 1,000 Population	5.4	5.4	8.4	2.0	5.6	2.7
Structure Fires Dollar Loss	\$44,970,815	2,570,985	355,550	843,050	48,741,400	234,770,019
Residential Building Fires	2,668	155	320	29	3,172	13,939
Confined Fires	2,267	129	304	19	2,719	10,556
Vehicle Fires	387	13	10	4	428	3,076
Vehicle Fires 1,000 Population	0.7	0.4	0.2	0.2	0.6	0.5
Vehicle Fire Dollar Loss	\$3,207,350	86,250	33,500	41,450	3,368,550	14,831,503
Other Fires	1,097	63	34	28	1,274	9,862
Other Fires Dollar Loss	\$20,801	82,055	0	13,940	116,796	4,592,211

*This figure includes 80 incidents reported by Massport Fire-Rescue. There were 14 structure fires, 14 vehicle fires and 52 outside and other fires.

Suffolk County Arson Experience By Community For 2008

	Boston	Chelsea	Revere	Winthrop	Suffolk County*	State
Total Arsons	107	7	1	7	140	1,181
Population	574,283	28,710	42,786	18,127	663,906	6,349,097
Rate/1,000 Population	0.19	0.20	0.02	0.38	0.20	0.20
Civilian Deaths	2	0	0	0	2	5
Fire Service Deaths	0	0	0	0	0	0
Civilian Injuries	2	0	0	1	3	10
Fire Service Injuries	0	7	0	0	7	37
Est. \$ Loss	\$1,467,454	406,000	0	0	1,873,454	11,964,664
Structure Arsons	45	2	1	1	49	279
Structure Arsons/ 1,000 Population	0.08	0.061	0.02	0.05	0.10	0.04
Structure Arson Dollar Loss	\$1,350,753	157,275	0	0	1,756,753	10,916,623
% of Structure Fires Caused by Arson	1%	1%	0.3%	3%	1%	2%
% of Structure Fire Dollar Loss Caused by Arson	3%	16%	0%	0%	4%	5%
Residential Building Arsons	32	1	1	1	35	166
Vehicle Arsons	20	0	0	0	20	150
Vehicle Arsons/ 1,000 Population	0.03	0.00	0	0	0.03	0.02
Vehicle Arson Dollar Loss	\$113,000	0	0	0	113,000	870,397
% of Vehicle Fires Caused by Arson	5%	0%	0%	0%	5%	5%
% of Vehicle Fire Dollar Loss Caused by Arson	4%	0%	0%	0%	3%	6%
Other Arsons	44	5	0	6	55	752
Other Arson Dollar Loss	\$3,701	0	0	0	3,701	177,644

*There were no intentionally set fires reported by Massport Fire-Rescue.

2008 Suffolk County Structure Fires By Property Use

Property Use	Boston	Chelsea	Revere	Winthrop	Suffolk County
Assembly	102	5	15	1	135
Property Use, other	4	0	0	0	4
Assembly, other	5	0	0	0	5
Fixed use recreation places, other	1	1	0	0	2
Variable use amusement, rec. places	2	0	0	0	2
Ballroom, gymnasium	3	0	0	0	3
Convention center, exhibition hall	4	0	0	0	4
Stadium, arena	2	0	0	0	2
Playground	0	0	1	1	2
Places of worship, funeral parlors	1	0	0	0	1
Church, mosque, synagogue, temple	20	1	3	0	24
Athletic/health club	3	0	0	0	3
Yacht Club	1	0	0	0	1
Public or government, other	2	0	0	0	2
Library	3	0	0	0	3
Museum	1	0	0	0	1
Courthouse	1	0	0	0	1
Eating, drinking places	4	0	0	0	4
Restaurant or cafeteria	31	2	7	0	40
Bar or nightclub	4	1	2	0	7
Passenger terminal, other	1	0	0	0	1
Airport passenger terminal	0	0	0	0	12
Bus station	1	0	0	0	1
Rapid transit station	6	0	1	0	7
Studio/theater, other	1	0	0	0	1
Movie theater	1	0	1	0	2
Educational	83	4	4	1	92
Educational, other	17	0	0	0	17
Schools, non-adult	5	0	3	0	8
Preschool	3	0	0	0	3
Elementary school	9	3	0	1	13
High/junior high/middle school	19	0	0	0	19
Adult education, college classroom	16	1	0	0	17
Day care, in commercial property	12	0	1	0	13
Day care, in residence, licensed	2	0	0	0	2
Institutional	138	3	20	1	162
Health care, detention, & cor. other	23	0	0	0	23
Nursing homes, 4+ persons	13	3	16	0	32
Mental retard./dev. disability facility	19	0	0	0	19
Alcohol/substance abuse recov. ctr.	19	0	0	0	19

2008 Suffolk County Structure Fires By Property Use

Property Use	Boston	Chelsea	Revere	Winthrop	Suffolk County
Institutional (cont'd)					
Hospital - medical or psychiatric	50	0	0	0	50
Hospices	1	0	0	0	1
Clinics, Dr. offices, hemodialysis ctrs.	4	0	1	0	5
Clinic, clinic-type infirmary	2	0	0	0	2
Doctor, dentist or oral surgeon's office	3	0	2	1	6
Jail, prison (not juvenile)	3	0	0	0	3
Police station	1	0	1	0	2
Residential	2,676	155	320	29	3,180
Residential, other	124	7	0	0	131
1- or 2- family dwelling	395	22	95	15	527
Multifamily dwellings	1,901	114	221	13	2,249
Boarding/rooming house	82	8	0	0	90
Hotel/motel, commercial	20	0	3	0	23
Residential board and care	35	4	1	1	41
Dormitory type residence, other	113	0	0	0	113
Sorority house, fraternity house	6	0	0	0	6
Mercantile, business	134	5	18	2	160
Mercantile, business, other	45	0	1	0	46
Convenience store	3	0	3	0	6
Food & beverage sales, grocery store	18	0	2	1	21
Textile, wearing apparel sales	2	0	0	0	2
Household goods, sales, repairs	1	1	0	0	2
Specialty shop	6	1	0	1	8
Pers. serv., incl. barber & beauty shops	4	0	2	0	6
Rec, hobby, home repair, pet store	0	0	1	0	1
Laundry, dry cleaning	9	0	1	0	10
Professional supplies, services	1	0	0	0	1
Service station, gas station	3	0	1	0	4
MV or boat sales, services, repair	3	0	0	0	3
General retail, other	4	0	1	0	5
Department or discount store	1	0	0	0	1
Bank	3	0	0	0	3
Office: veterinary or research	2	0	0	0	2
Business office	29	3	6	0	39
Utility, defense, agriculture, mining	4	0	3	0	7
Steam or heat generating plant	1	0	0	0	1
Electric generating plant	1	0	0	0	1
Laboratory or science laboratory	2	0	0	0	2

2008 Suffolk County Structure Fires By Property Use²⁰

Property Use	Boston	Chelsea	Revere	Winthrop	Suffolk County
Utility, defense, agriculture, mining (cont'd)					
Gas distrib., pipeline, gas distribution	0	0	2	0	2
Sanitation utility	0	0	1	0	1
Manufacturing, processing	5	2	1	0	8
Storage	18	0	1	1	21
Storage, other	2	0	0	1	3
Outbuilding or shed	4	0	0	0	4
Refrigerated storage	1	0	0	0	1
Parking garage, (det. Res. garage)	2	0	0	0	2
Parking garage, general vehicle	4	0	0	0	4
Fire station	2	0	1	0	3
Warehouse	2	0	0	0	3
Dock, marina, pier, wharf	1	0	0	0	1
Outside or special property	25	14	16	1	56
Property use, other	9	2	1	0	12
Total Structure Fires	3,194	190	399	36	3,833

2008 Suffolk County Reponses²¹ by Incident Type

Incident Type	Boston	Chelsea	Revere	Winthrop	Massport Fire Rescue	Suffolk County
Fires	4,678	267	443	68	100	5,556
Overpressure, rupture, explosion (no fire)	49	11	5	3	13	81
Rescue & EMS calls	26,378	4,962	5,428	1,614	1,970	40,352
Hazardous conditions (no fire)	3,449	289	225	144	329	4,436
Service calls	10,763	634	671	337	60	12,465
Good intent calls	12,064	316	377	180	99	13,036
False alarm & false calls	13,363	959	910	298	237	15,767
Severe weather & natural disaster	15	4	0	6	0	25
Special incident type	308	24	12	8	3	355

²⁰ The Suffolk County figures include 11 Massport fires: 9 Assembly properties, 1 Mercantile or Business property & 1 Storage facility.

²¹ These figures include mutual or automatic aid given calls.

Boston Fires in 2008

4,678 Fires — 3,194 Structure Fires, 387 Vehicle Fires & 1,097 Other Fires

The Boston Fire Department reported 3,194 structure fires, 387 motor vehicle fires, 663 outside rubbish fires, 343 grass, tree or brush fires, 82 special outside fires, two cultivated vegetation or crop fires, and seven unclassified fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2008. These 4,678 incidents caused four civilian deaths, one fire service death, 29 civilian injuries, 14 fire service injuries and an estimated dollar loss of \$48.2 million. There were 8.0 fires for every 1,000 citizens in 2008. The statewide rate was 4.8 fires for every 1,000 people.

Structure & Motor Vehicle Fires Up

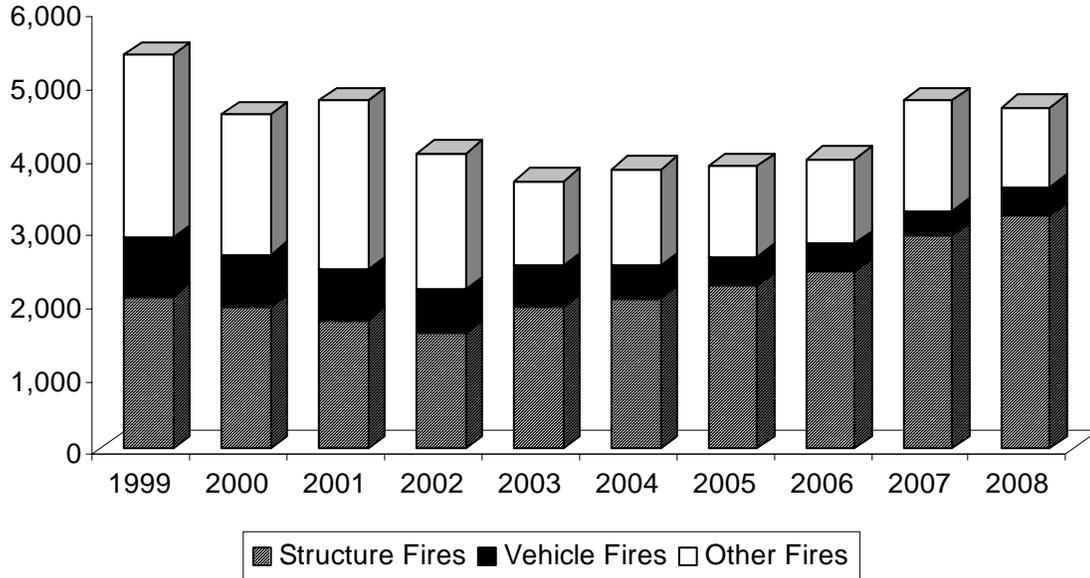
The total number of Boston fires reported to the Massachusetts Fire Incident Reporting System decreased by 90 from the 4,768 reported in 2007 to 4,678 in 2008. Structure fires increased by 284, motor vehicle fires increased by 40, and outside and other fires decreased by 414.

For the sixth year in a row the number of structure fires increased significantly. Motor vehicle fires have been on a downward trend since 1986. Outside and other fires restarted the trend of decreasing since 1996 that was only briefly interrupted in 2001, 2004 and now in 2007. Although fewer than 10% of the state's residents live in the City of Boston, the Boston Fire Department reported 16% of the 30,136 fire incidents reported statewide in 2008.

BOSTON FIRES FROM 1999 TO 2008

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons
1999	5,394	2,084	812	2,498	439	200	218	21
2000	4,588	1,944	717	1,927	318	150	154	14
2001	4,769	1,757	692	2,320	327	153	159	15
2002	4,051	1,593	595	1,863	275	151	113	11
2003	3,676	1,938	570	1,168	163	73	58	32
2004	3,833	2,030	452	1,321	141	75	43	23
2005	3,874	2,238	397	1,239	118	62	24	32
2006	3,971	2,432	379	1,160	94	46	22	26
2007	4,768	2,910	347	1,511	107	53	14	40
2008	4,678	3,194	387	1,097	109	45	20	44

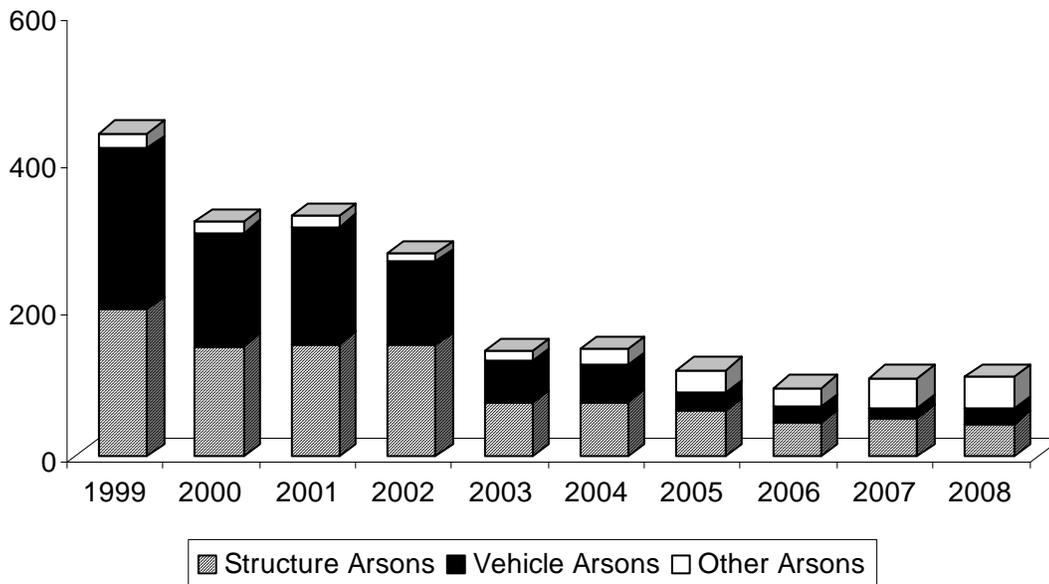
Boston Fires by Incident Type



109 Arsons — 45 Structure Arsons, 20 Vehicle Arsons & 44 Other Arsons

One hundred and nine (109), or 2%, of the 4,678 Boston fires were considered intentionally set²², or, for purposes of this analysis, arson. The 45 structure arsons, 20

Boston Arsons by Incident Type



²² In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

motor vehicle arsons and 44 outside and other arsons caused two civilian deaths, two civilian injuries and an estimated dollar loss of \$1,467,454.

STRUCTURE FIRES

Reported Structure Fires Up

The 3,194 structure fires caused three civilian deaths, one fire service death, 25 civilian injuries, 13 fire service injuries and an estimated dollar loss of \$45 million. These incidents represented 68% of Boston's reported fires in 2008. The average estimated dollar loss per structure fire was \$14,080. The total number of reported structure fires increased by 284, or 10%, from the 2,910 reported in 2007.

Arson Caused of 1% of Structure Fires

The 45 structure arsons caused two civilian deaths, two civilian injuries and an estimated dollar loss of \$1.4 million. Arson was indicated as the cause of 1% of the structure fires and 3% of Boston's structure fire dollar loss. The 45 structure arsons accounted for 41% of the Boston arson fires reported in 2008. The total number of reported structure arsons decreased by eight, or 15%, from 53 in 2007.

71% of Structure Arsons Occurred in Residences

Seventy-one percent (71%) of Boston's 45 structure arsons occurred in residential occupancies; 16% occurred in educational buildings; 7% occurred each in health care, detention or correction facilities; 4% occurred in public assembly properties; and 2% occurred in mercantile or business properties.

BUILDING FIRES

There were 3,167 building fires of different types in Boston in 2008. These 3,167 building fires accounted for 99.2% of all structure fires in Boston.

84% of Building Fires in Homes

The 3,167 building fires that occurred in Boston in 2008 can be broken down by fixed property use as follows: 2,668, or 84%, of all the building fires reported in 2008, were in residential properties; 137 fires happened in institutional facilities; 134 fires took place in mercantile and office properties; 95 fires occurred in public assembly properties; 83 fires occurred in educational properties; 22 took place in special properties; 17 fires were in storage facilities; five were reported in manufacturing properties; and three happened in industrial, utility, defense, agricultural or mining facilities. Three (3) fires occurred in buildings where the property use was unclassified or not reported.

RESIDENTIAL FIRES

Residential Building Fires Caused 3 Civilian Deaths & \$30 Million in Damages

In 2008, 2,668 or 84%, of Boston's 3,167 reported building fires occurred in residences. Fires in or on residential buildings caused three civilian fire deaths, 20 civilian injuries,

12 fire service injuries and an estimated dollar loss of \$30 million. The total number of residential building fires increased by 238, or 10%, from the 2,430 reported in 2007.

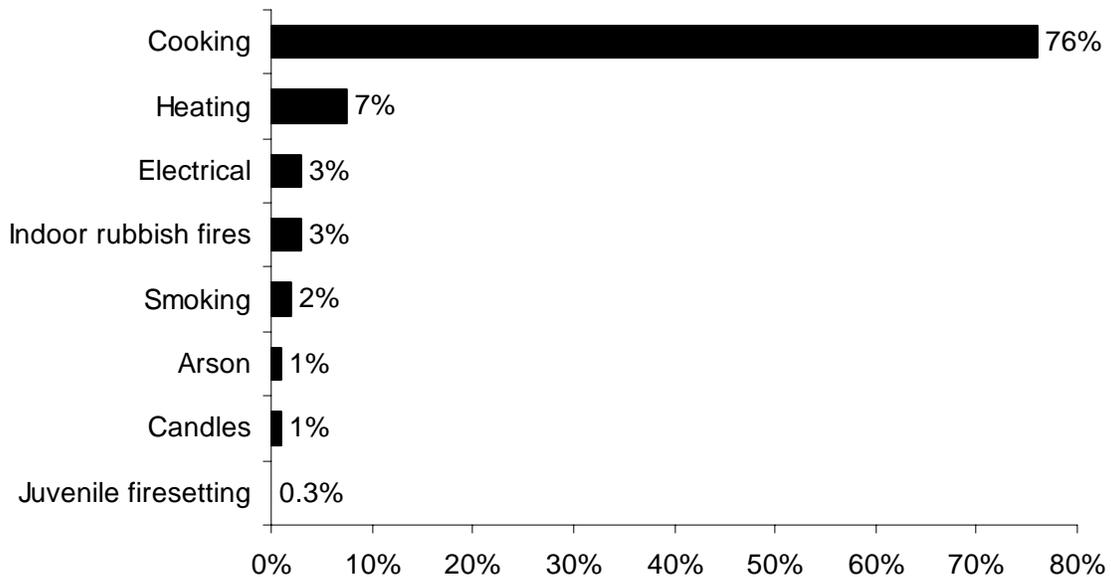
Apartments Accounted for 71% of Residential Building Fires

The peak fixed property uses for residential building fires were apartments, accounting for 71% of the residential building fires in Boston; 15% occurred in 1- or 2-family homes; 4% occurred in dormitories, 3% happened in rooming houses, 1% each occurred in residential board and care facilities and in hotels or motels, and 5% happened in unclassified residential occupancies.

Unattended Cooking Caused 71% of Boston’s Residential Fires

Cooking was the leading cause of the 2,281 fires in Boston residential buildings, accounting for 71% of these fires. Heating equipment was the cause of 7% of these fires. Electrical problems and indoor rubbish fires each caused 3% of residential building fires in Boston. Smoking caused 2% of these fires. Arson and candles each accounted for 1% of these fires. Juvenile-set fires accounted for less than 1% of the fires in Boston residences in 2008.

Causes of Residential Structure Fires



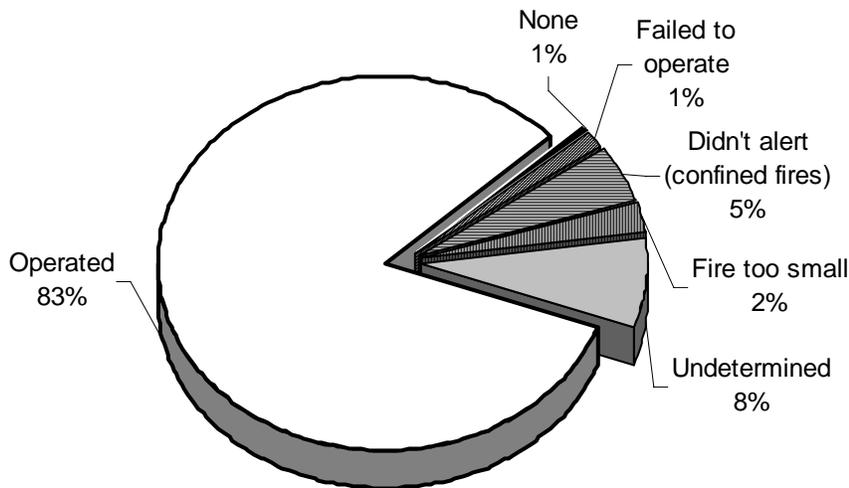
85% of Residential Building Fires Are Confined to Non-Combustible Containers²³

Two thousand two hundred and sixty-seven (2,267), or 85% of all residential building fires, were reported as confined to non-combustible containers in 2008. One thousand nine hundred and sixty-six (1,996) of the reported fires were cooking fires contained to a non-combustible container accounting for 75% of residential building fires. One hundred and eighty (180), or 8%, were fires confined to a fuel burner or boiler malfunction. Sixty-eight (68), or 3%, of these fires were contained rubbish fires. Twenty (20), or 1% of all residential building fires reported in 2008, were fires confined to a chimney. Two (2), or less than 1%, were confined commercial compactor fires. One (1) incinerator overload or malfunction caused less than 1% of residential building fires in Boston in 2008.

Detectors Alerted Occupants in 83% of Fires

Smoke or heat detectors operated and alerted the occupants in 2,200, or 83%, of the residential building fires. In 5% of these fires²⁴, the detectors did not alert the occupants. Detectors were present but did not operate in 1% of these incidents. In another 1% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 2% of the residential fires. Smoke detector performance was undetermined in 211 incidents, or 8% of Boston’s residential building fires.

Detector Status in Boston's Residential Structure Fires 2008



²³ In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

Over 1/5 Failed Detectors Had Missing Batteries

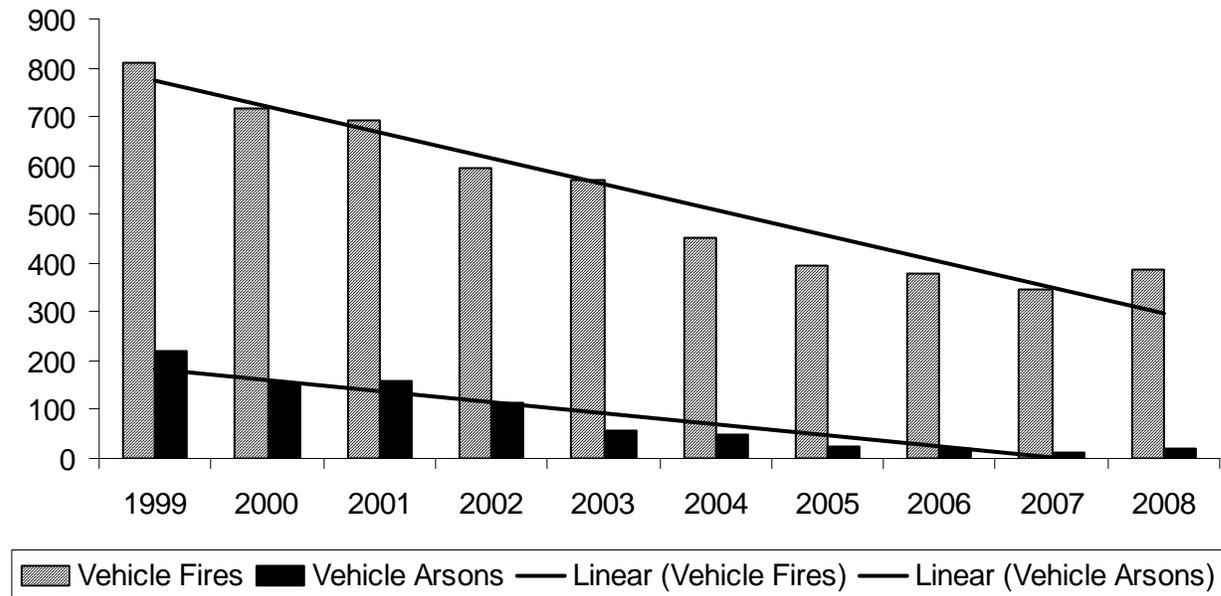
Of the 34 fires where smoke detectors were present but failed to operate, seven, or 21%, did not operate because the batteries were either missing or disconnected. Another seven, or 21%, failed because of dead batteries. Four (4), or 11%, failed because of a lack of maintenance; and one failed because of improper installation or placement. For 15 cases, or 44%, the reason the detector failed was not determined or classified.

MOTOR VEHICLE FIRES

Motor Vehicle Fires Increase for the First Time in 10 Years.

The 387 motor vehicle fires caused one civilian death, one fire service death and an estimated dollar loss of \$3.2 million. Motor vehicle fires comprised 8% of Boston’s reported fires in 2008. The total number of motor vehicle fires increased 40 from the 347 reported in 2007. Motor vehicle fires have only seen year to year increases twice since then — from 1993 to 1994 and 1998 to 1999. Since 1999, motor vehicle fires have decreased 52% and motor vehicle arsons have decreased 91%.

**Motor Vehicle Fires & Arsons
in Boston 1999 - 2008**



5% of Motor Vehicle Fires Considered Arson

²⁴ These represent confined fires where it was reported that the detector did not alert the occupants.

Twenty (20), or 5%, of Boston's 387 motor vehicle fires were considered intentionally set, or for purposes of this report, arson. These 20 motor vehicle arsons caused an estimated dollar loss of \$113,000. The total number of reported motor vehicle arsons increased six, or 43% from the 14 reported in 2007. Vehicle arson went against the current downward trend since 1986. The only time since then that motor vehicle arsons increased were minor increases from 1993 to 1994 and 1998 to 1999.

Boston Fire Department Instrumental in Getting MV Fire Legislation Passed

The Boston Fire Department was instrumental in passing legislation requiring owners of burned motor vehicles to complete and sign a report which must also be signed by a fire official from the department in the community where the fire occurred before an insurance claim could be made. The Burned/Recovered Motor Vehicle Reporting Law was implemented in 1987. The Boston Fire Department has successfully used this legislation as a tool to aggressively investigate suspicious or questionable motor vehicle fires and has dramatically reduced the frequency of owners burning their cars to "sell" them back to the insurance companies.

Boston Fire Department Brought Vehicle Arson Down 99% Since 1986

The total number of motor vehicle fires reported annually has plunged 3,214 from a high of 3,601 in 1983 to 387 in 2008, an 89% decrease. The drop in vehicle arson was even more dramatic. Vehicle arson fell 3,047 from the 1986 high of 3,061 incidents to 20 in 2008 for a 99% decline.

Motor Vehicle Arsons Less Than Structure Arsons –Downward Trend

For the seventh year in a row, there were fewer motor vehicle arsons than structure arsons in Boston. Motor vehicle arson represents 18% of the total arson problem while structure arson accounts for 41% of the all 2008 arsons in Boston.

OUTSIDE AND OTHER FIRES

Dumpster Fires Account for 14% of Boston's Fires

The 663 outside rubbish fires, 343 grass, tree or brush fires, 82 special outside fires, two cultivated vegetation or crop fires, and seven unclassified fires are grouped together as 'outside or other fires.' These 1,097 outside and other fires caused four civilian injuries, one fire service injury and an estimated dollar loss of \$20,801. Outside and other fires comprised 23% of the 4,678 Boston fires reported in 2008. Fourteen percent (14%) of Boston's fires were rubbish or dumpster fires and 7% were brush, tree, or grass fires. The total number of outside and other fires decreased by 414, or 27%, from the 1,511 reported in 2007.

44 Outside and Other Fires Considered Arson

The 44 identified outside and other arsons caused an estimated dollar loss of \$3,701. Twenty-three (23) were grass, tree or brush fires. Fourteen (14) were special outside fires; two were outside rubbish fires, and five were unclassified fires. Outside and other

arsons accounted for 5% of Boston's outside and other fires, and 40% of Boston's total arson fires.

FATAL FIRES

3 Boston Fires Killed 4 Civilians in 2008

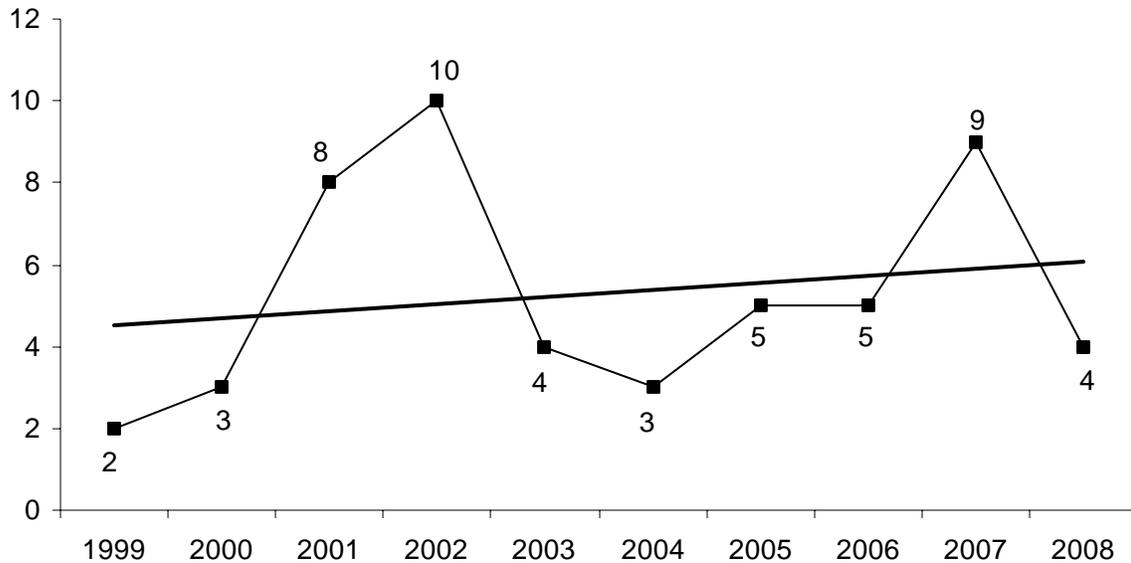
There were three fatal fires in Boston that killed four civilians.

- On April 6, 2008, at 3:20 a.m. the Boston Fire Department was called to a fatal arson fire in a two-family home. The fire was set on the exterior of the building by a friend of the victims' mother. The victims, a two-year old girl and her 14-year old sister, were sleeping at the time of the fire, were unable to escape from the third floor and sought shelter in a closet. They were overcome by the heat and smoke. The victims' mother and brother were also injured at this fire. It was undetermined if detectors were present. There were no sprinklers. The fire caused an estimated \$350,000 worth of damage and five other exposure fires.
- On October 23, 2008, at 12:42 a.m., the Boston Fire Department was called to a fatal boat fire that was docked at a local yacht club. The 64-year old victim sometimes slept on his boat overnight. He fell asleep while smoking and the cigarette ignited the mattress he was sleeping on. He died from burns and smoke inhalation. No one else was injured at this fire, and damages were estimated at \$20,000.
- On December 19, 2008 at 2:34 a.m., the Boston Fire Department was called to a fatal fire of undetermined cause in a single-family home. The victim, a 65-year old man, was overcome by the heat and smoke and was found by firefighters in the kitchen. No one else was injured at this fire. It was undetermined if smoke detectors were present. The building had no sprinklers. Damages from this fire were estimated to be \$150,000.

1 Construction Vehicle Fire in a Building Under Renovation Killed 1 Firefighter

- On January 3, 2008, at 12:14 p.m., the Boston Fire Department was dispatched to a fire at a multiple use building undergoing major renovations. A Bobcat-type mini-loader on one of the floors under renovation, was on fire. Lieutenant Vincent P. Russell, 54-years old, was assisting a crew with a handline while he was still in a stairwell. During suppression efforts he was knocked to the floor where he received multiple injuries. Six days later he died from complications resulting from his injuries. There were no other injuries associated with this fire. Damages were estimated to be \$30,000.

Fire Deaths in Boston 1999 - 2008



JUVENILE-SET FIRES

12 Juvenile-set Fires

There were 12 reported juvenile-set fires in Boston in 2008. The 11 structure fires and one brush fire caused \$126,325 in estimated damages.

ALL CALLS

Rescue & EMS Calls Are 37% of All Reported Responses

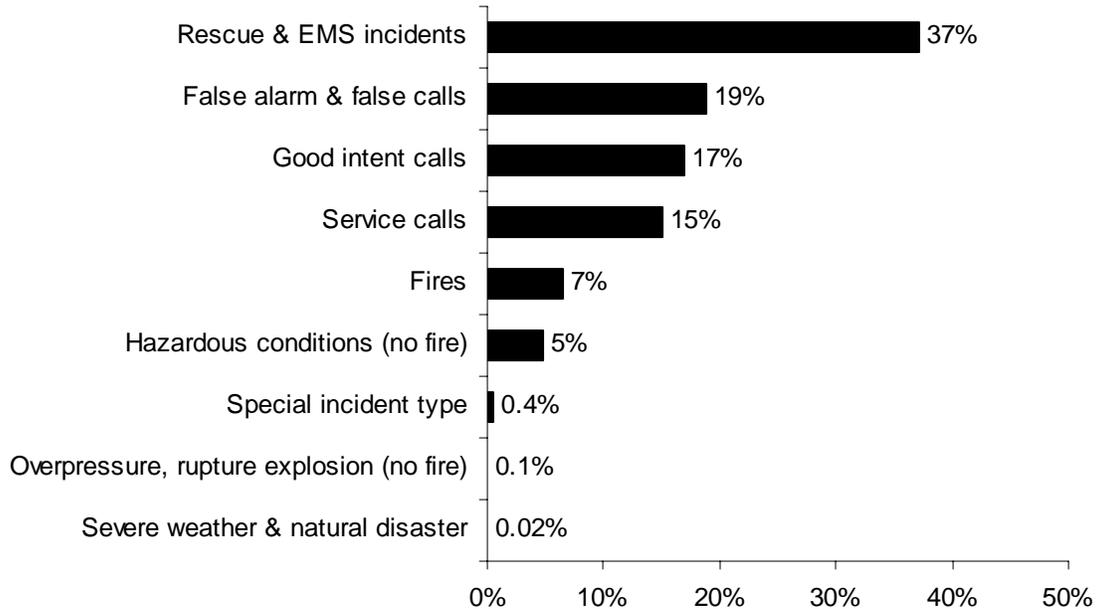
In 2008, the Boston Fire Department reported 71,067 total responses to MFIRS. Of these 71,067 responses, 66,389 non-fire calls were voluntarily reported.

Of these 66,389 non-fire calls, 26,378, or 37% of all the responses reported in 2008, were reported rescue and emergency medical services (EMS) calls²⁵; 13,363, or 19%, were reported good intent calls; 12,064, or 17%, were reported false alarm or false calls; 10,763, or 15%, were reported service calls such as lock-outs, water or smoke problem, unauthorized burning or public service assistance; 3,449, or 5%, were reported hazardous condition calls with no fire; 308, or 0.4%, were special incident type calls such as citizen complaints; 49, or 0.1%, were reported overpressure, rupture, explosion or overheat calls with no fire; and 15, or 0.01%, were severe weather calls.

²⁵ The Boston Fire Department does not run any ambulances. Instead they dispatch their companies as first responders to all EMS calls.

Four thousand seven hundred and sixty-eight (4,678), or 7%, of the total responses submitted by the Boston Fire Department were fires.

2008 Boston Calls by Incident Type



CONCLUSIONS

- **4 Civilians Died in Boston in 2008**

The four fire deaths in 2008 decreased by five from the nine reported in 2007. This is below the 10-year average of 5.3 deaths per year. Two (2) of the victims were children.

- **1 Firefighter Killed in the Line of Duty**

One (1) Boston firefighter was killed in a construction vehicle fire in a building under renovation in 2008.

- **Structure and Motor Vehicle Fires Increase**

Structure fires increase for the sixth straight year. Motor vehicle fires increase for the first time in 10 years.

- **Cooking Caused Over 3/4 of Residential Fires**

Cooking was the leading cause of the 2,668 fires in Boston residential buildings, accounting for 76% of all residential building fires.

- **Smoke Detectors Operated in 82% of Residential Fires**

Smoke or heat detectors operated in 82%, of residential building fires.

- **There Were No Working Detectors in 2% of Residential Building Fires**

There were no working detectors in 2% of Boston's residential building fires. In 1% detectors failed to operate and in 1% of these fires detectors were not present.

- **Apartments Accounted for 71% of Residential Building Fires**

The peak fixed property uses for building fires were apartments, accounting for 71% of the building fires in Boston; 15% occurred in 1- or 2-family homes; 4% occurred in dormitories, 3% happened in rooming houses, 1% occurred in residential board and care facilities; and another 1% occurred in hotels or motels.

- **Fewer Motor Vehicle Fires Than Building Fires – Continuing Trend**

Each year since 1982, there were usually more vehicle fires than structure fires in Boston. For the fifth straight year this has changed. In 1987, structure fires accounted for 16% of the fires in Boston and in 2008 they accounted for 68%. In 1987 motor vehicle fires accounted for 37% of the total number of fires and in 2008 they accounted for 8%.

- **Motor Vehicle Arsons Less Than Structure Arsons –Downward Trend**

For the seventh year in a row, there were fewer motor vehicle arsons than structure arsons in Boston. Motor vehicle arson represents 18% of the total arson problem while structure arson accounts for 41% of the all 2008 arsons in Boston.

Boston **FDID: 25035** **Population: 589,141**

Total Fires **4,678** **\$48,198,966**

7.9 Fires/1,000 Population

Situation Found	Fires	% of Fires	Dollar Loss
Structure Fires	3,194	68%	\$44,970,801
Vehicle Fires	387	8%	3,207,350
Other Fires	1,097	23%	20,801

3 Fatal Fires 0.86 Civilian Deaths/1,000 Fires
 4 Civilian Deaths 0.07 Civilian Deaths/10,000 population
 1 Fire Service Death 29 Civilian Injuries 14 Fire Service Injuries

5.42 Structure fires/1,000 population

0.66 Vehicle fires /1,000 population

1.86 Other fires/1,000 population

Building Fires: 3,167

Residential Building Fires: 2,668

Residential Building Fires Confined to Non-Combustible Containers: 2,267

Unconfined Residential Building Fires: 401

3 Civilian Fire Deaths 20 Civilian Injuries 12 Fire Service Injuries

Occupancy	Fires	%	Detector Status	Fires	%
Apartments	1,895	71%	Operated	2,200	83%
1- & 2-Family homes	394	15%	Didn't operate	34	1%
Dormitories	119	4%	None	23	1%
Rooming houses	82	3%	Fire too small	62	2%
Residential board & care	35	1%	Didn't alert (confined)	138	5%
Hotel/motel	20	1%	Undetermined	211	8%

Area of Origin²⁶	%	Heat Source	%	%Unconfined²⁷
Kitchen	78%	Radiated heat from oper. eq.	3%	20%
Heating room or area	7%	Arcing	2%	15%
Bedroom	2%	Heat from operating eq.	1%	9%
Ext. balcony, unenclosed porch	1%	Cigarettes	2%	9%
Chimney or flue	1%	Hot or smoldering object	1%	8%

²⁶ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

²⁷ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

Item First Ignited²⁸	%	Factor Contrib. to Ignit.	%	%Unconfined²⁹
Food, cooking materials	76%	Abandoned materials	2%	15%
Flammable, combustible liquid	7%	Too close to combustibles	2%	12%
Rubbish, trash, waste products	3%	Unspecified short-circuit arc	2%	12%
Structural member, framing	1%	Misuse of material or prod.	1%	9%
Electrical wire, cable insulation	1%	Equipment unattended	1%	8%
		Elec. failure, malf., other	1%	5%
		Failure to clean	1%	4%

Equipment³⁰	%	Cause of Ignition	%	%Unconfined³¹
Cooking equipment	75%	Unintentional	9%	63%
None	15%	Failure of eq. or heat source	2%	12%
Boiler, furnace, cent. heat. unit	7%	Intentional	1%	8%
Chimney, flue	1%	Undetermined	1%	7%
		Cause under investigation	1%	8%
		Act of nature	0.2%	1%

Detector Alerted Occupants (Confined Fires in Non-Combustible Containers)

Alerted occupants	88%
Didn't alert occupants	6%
Undetermined	6%

²⁸ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

²⁹ Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed. These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Factors Contributing to Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

³⁰ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

³¹ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Cause of Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

Month	Total Fires	Structure Fires	Vehicle Fires	Other Fires
January	335	259	35	41
February	313	239	36	38
March	325	231	22	72
April	478	274	37	167
May	477	277	32	168
June	411	253	43	115
July	338	201	36	101
August	320	226	23	71
September	375	255	30	90
October	439	298	34	107
November	431	339	29	63
December	436	342	30	64

Day	Total Fires	Structure Fires	Vehicle Fires	Other Fires
Sunday	666	465	47	154
Monday	668	433	68	167
Tuesday	639	441	52	146
Wednesday	728	488	58	182
Thursday	638	435	47	156
Friday	652	444	58	158
Saturday	687	488	57	142

Time	Total Fires	Structure Fires	Vehicle Fires	Other Fires
00:01 - 04:00	467	248	74	145
04:01 - 08:00	301	213	36	52
08:01 - 12:00	694	531	60	103
12:01 - 16:00	1,031	699	61	271
16:01 - 20:00	1,280	931	81	268
20:01 - 00:00	905	572	75	258

Motor Vehicle Fires

Total: 387

Automobiles: 343 (89%)

19 (6%) of the automobile fires considered intentionally set.

Arson Fires

Total Arsons: 109 **\$1,467,454**

	Arsons	% of Situation	% of Arson	Dollar Loss
Structure Arsons	45	1%	41%	\$1,350,753
Vehicle Arsons	20	5%	18%	113,000
Other Arsons	44	4%	40%	3,701

2 Civilian Deaths 2 Civilian Injuries

0.19 Arson fires/1,000 population
 0.08 Structure arsons/1,000 population
 0.03 Vehicle arsons /1,000 population
 0.07 Other arsons/1,000 population

Peak Times of Day for Arson Fires

Structure Arsons	#	%	Vehicle Arsons	#	%
08:01 - 12:00	11	24%	00:01 - 04:00	9	45%
16:01 - 20:00	10	22%	20:01 - 00:00	5	25%
00:01 - 20:00	7	16%	08:01 - 12:00	2	10%
20:01 - 00:00	7	16%	12:01 - 16:00	2	10%
Other Arsons	#	%			
20:01 - 00:00	11	25%			
00:01 - 04:00	9	20%			
16:01 - 20:00	8	18%			

Peak Fixed Property Uses for Structure Arsons

Occupancy	#	%
Apartments	26	58%
1- & 2-Family homes	5	11%
High/junior high/middle schools	5	11%
Church, mosque, synagogue	2	4%

Chelsea Fires in 2008

266 Fires — 190 Structure Fires, 13 Vehicle Fires and 63 Other Fires

The City of Chelsea reported 266 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2008. The 190 structure fires, 63 motor vehicle fires, 26 outside rubbish fires, 13 grass, tree or brush fires, five special outside fires, and 19 unclassified fires caused five civilian injuries, 53 fire service injuries and an estimated dollar loss of \$2.7 million. There were 7.6 fires for every 1,000 citizens in 2008. The statewide rate was 4.8 fires for every 1,000 people.

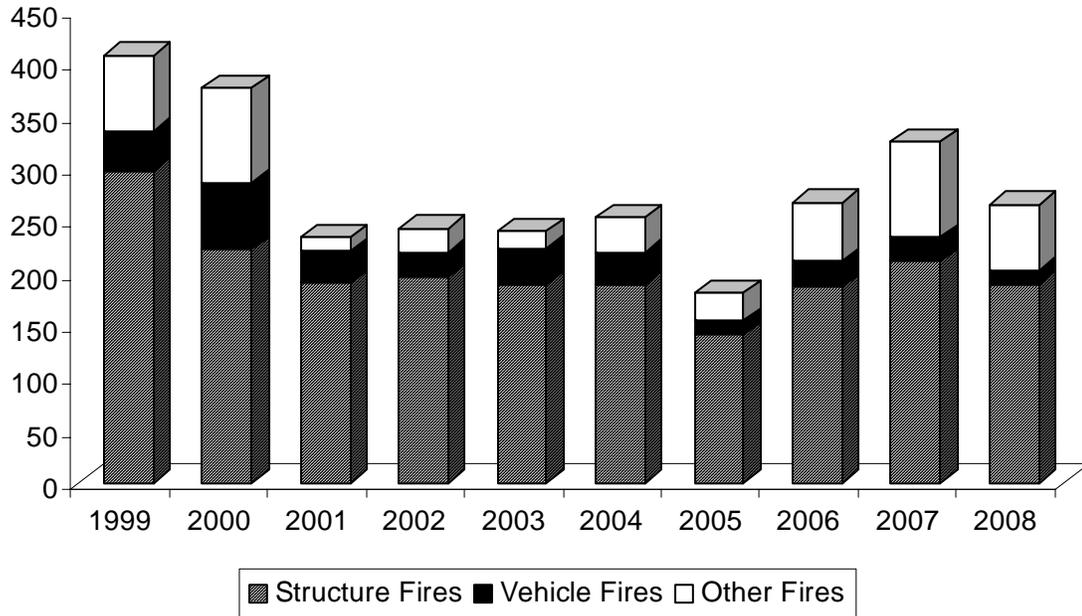
All Fires Are Down

The total number of fires reported to the Massachusetts Fire Incident Reporting System decreased by 60, from the 326 fires reported in 2007. Structure fires decreased by 22 from the 212 reported in 2007. Motor vehicle fires decreased by 10, from 23 the previous year. Outside and other fires decreased by 28 from the 91 reported in 2007.

CHELSEA FIRES FROM 1999 TO 2008

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons
1999	408	298	38	72	12	5	7	0
2000	377	223	64	90	31	15	12	4
2001	234	191	30	13	7	2	4	1
2002	243	197	23	23	4	2	1	1
2003	240	190	34	16	2	2	0	0
2004	253	190	30	33	2	1	0	1
2005	181	141	14	26	1	0	0	1
2006	268	187	25	56	16	6	1	9
2007	326	212	23	91	16	11	0	5
2008	266	190	13	63	7	2	0	5

Chelsea Fires by Incident Type

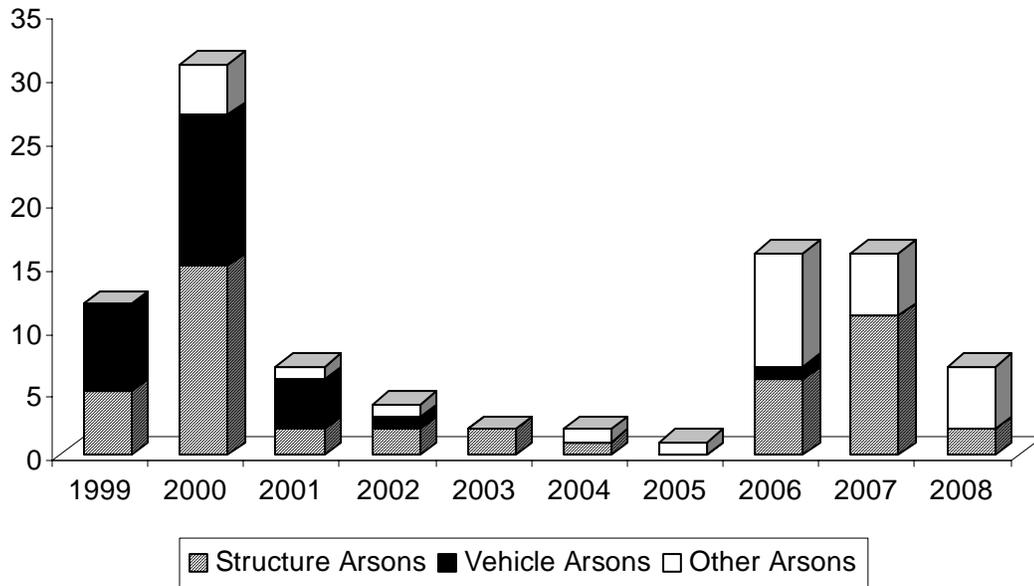


7 Arsons — 2 Structure Arsons & 5 Other Arsons

Seven (7), or 3%, of the 266 Chelsea fires were considered intentionally set, or, for purposes of this analysis, arson³². The two structure arsons and five outside and other arsons caused seven fire service injuries and an estimated dollar loss of \$406,000.

³² In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

Chelsea Arsons by Incident Type



Structure Arsons Drop

The total number of arson fires decreased by nine, or 82%, from the 16 arsons reported in 2007. Structure arsons decreased by nine from the 11 reported in 2007. Motor vehicle arsons remained the same with none reported both in 2007 and 2008. This is the fifth time in the past six years that Chelsea did not report a motor vehicle arson. Outside and other arsons remained the same with five reported in both 2007 and 2008.

STRUCTURE FIRES

Structure Fires Rise

The 190 structure fires caused five civilian injuries, 52 fire service injuries and an estimated dollar loss of \$2.6 million. These fires represented 71% of Chelsea’s reported fires in 2008. The total number of structure fires decreased by 22 from the 212 structure fires reported in 2007.

Arson Caused of 1% of Structure Fires

The two structure arsons caused seven fire service injuries and an estimated dollar loss of \$406,000. Arson was indicated as the cause of 1% of the structure fires and accounted for 16% of Chelsea’s structure fire dollar loss. The two structure arsons represented 29% of the Chelsea’s arson fires reported in 2008. The total number of reported structure arsons decreased by nine from 11 reported in 2007.

BUILDING FIRES

There were 185 building fires of different types in Chelsea in 2008. These 185 building fires accounted for 97.4% of all structure fires in Chelsea.

84% of Building Fires in Homes

The 185 building fires that occurred in Chelsea in 2008 can be broken down by fixed property use as follows: 155 fires were in residential properties accounting for 84% of all building fires; 11 fires occurred at special properties; five fires happened in mercantile or office properties; another five fires occurred in public assembly properties; four fires occurred at educational facilities; three fires occurred at institutional facilities; and two fires happened at manufacturing or processing facilities.

RESIDENTIAL BUILDING FIRES

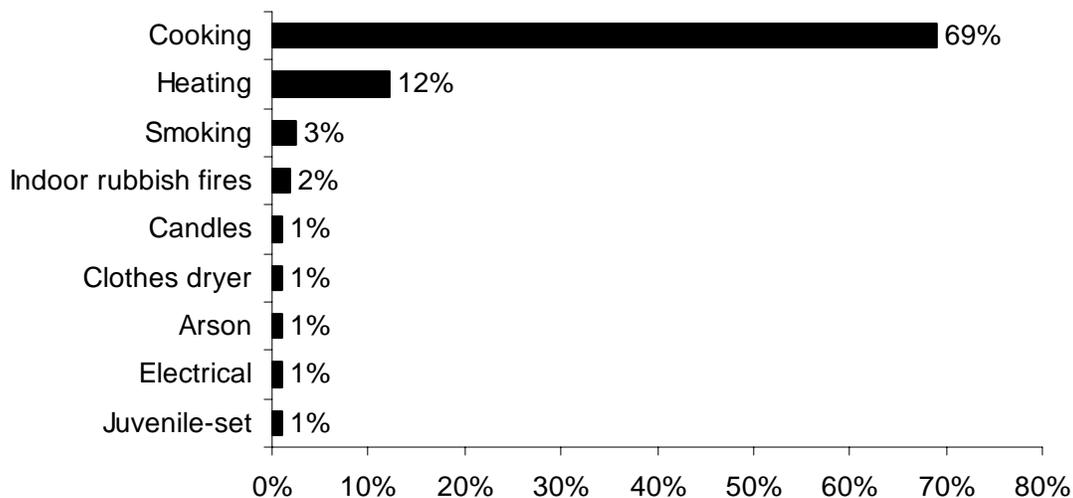
Residential Building Fires Decrease

One hundred and fifty-five (155), or 84%, of Chelsea’s 185 building fires occurred in residential occupancies. This is a decrease of 30 over the 185 reported residential fires in 2007. The peak fixed property uses for residential building fires were apartments, accounting for 74% of the residential building fires in Chelsea; 14% occurred in one- or two-family homes; 5% occurred in rooming houses; 3% happened at residential board and care facilities; and 5% occurred in unclassified residential properties.

Unsafe Cooking Practices Caused Over 2/3 of Residential Fires

Cooking was the leading cause of fires in Chelsea’s residential properties in 2008 accounting for 69% of these fires. Heating fires were the second leading cause, accounting for 12% of the fires in people’s homes in Chelsea in 2008. Smoking caused 3% of residential building fires in Chelsea. Indoor rubbish fires accounted for 2% of these fires. Candles, clothes dryers, arson, electrical problems and juvenile-set fires each caused 1% of the fires in Chelsea residences in 2008.

Causes of Residential Fires



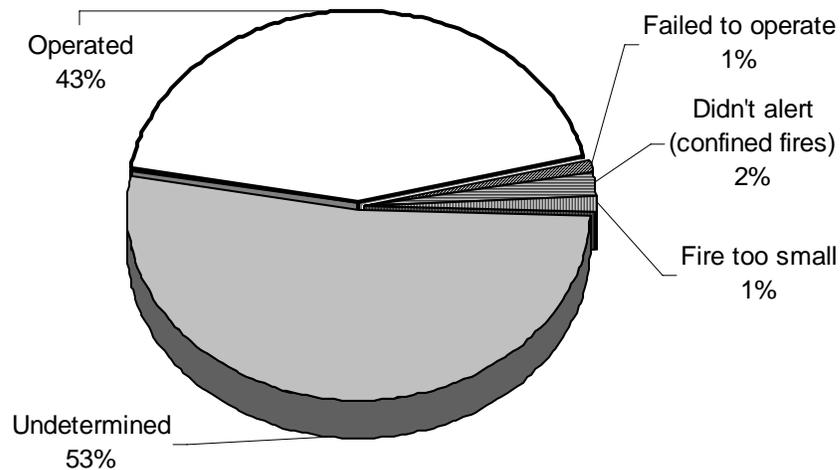
83% of Residential Building Fires Are Confined to Non-Combustible Containers²

One hundred and twenty-nine (129), or 87%, of all residential building fires, were reported as confined to non-combustible containers in 2008. Nearly all of the confined fires were cooking fires contained to a non-combustible container like a pot or a pan, and accounted for 106, or 68%, of all residential building fires. Eighteen (18), or 12%, were fires confined to a fuel burner or boiler malfunction. Five (5), or 3%, of these fires were contained rubbish fires.

Detectors Alerted Occupants in 43% of Fires

Smoke or heat detectors operated and alerted the occupants in 67, or 43%, of the residential building fires. In 2% of these fires³³, the detectors did not alert the occupants. There were no reported fires where detectors were not present. Detectors were present but failed to operate in 1% of these fires. The fire was too small to trigger the detector in 1% of these fires. Smoke detector performance was undetermined in 81 incidents, or 53% of Chelsea’s residential building fires.

Detector Status in Chelsea's Residential Structure Fires 2008



² In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: area of origin, detector status, item first ignited, heat source, factors contributing to ignition, cause of ignition, and equipment involved in ignition. These incidents are not included in the analysis of these fields.

³³ These represent confined fires where it was reported that the detector did not alert the occupants.

MOTOR VEHICLE FIRES

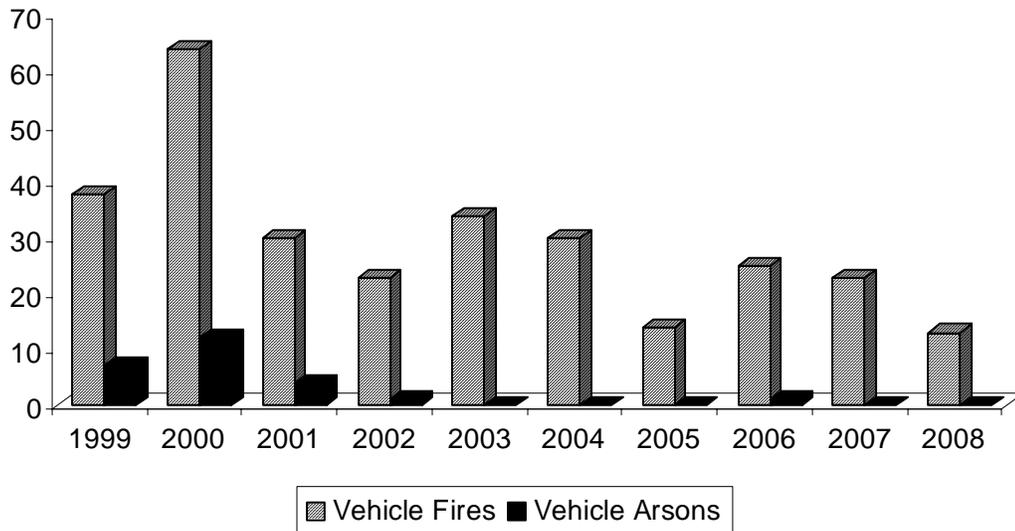
Vehicle Fires Down

The 13 motor vehicle fires caused one fire service injury and an estimated dollar loss of \$86,250. Motor vehicle fires comprised 5% of Chelsea’s 266 reported fires in 2008. The total number of motor vehicle fires decreased by 10 from the 23 reported in 2007.

No Motor Vehicle Fires Considered Arson

For the fifth time since 2003, Chelsea did not have a reported motor vehicle arson.

**Motor Vehicle Fires & Arsons
in Chelsea 1999 - 2008**



OUTSIDE AND OTHER FIRES

Reported Outside and Other Fires Are Down

The 63 outside and other fires caused an estimated dollar loss of \$82,055. Outside and other fires comprised 24% of the 266 fires Chelsea reported in 2008. The 63 outside and other fires included 26 outside rubbish fires, 13 grass, tree or brush fires, five special outside fires, and 19 unclassified fires. The total number of outside and other fires decreased by 28, from the 91 reported in 2007.

5 Outside and Other Fires Considered Arson

There were five identified outside and other arsons. Four (4) were outside rubbish fires and one was a brush fire. Outside and other arsons accounted for 8% of Chelsea’s outside and other fires, and 71% of Chelsea’s total arson fires.

FATAL FIRES

There were no fatal fires in Chelsea in 2008.

JUVENILE-SET FIRES

4 Juvenile-set Fires

There were four reported juvenile-set fires in Chelsea in 2008. This included three structure fires and one unclassified fire.

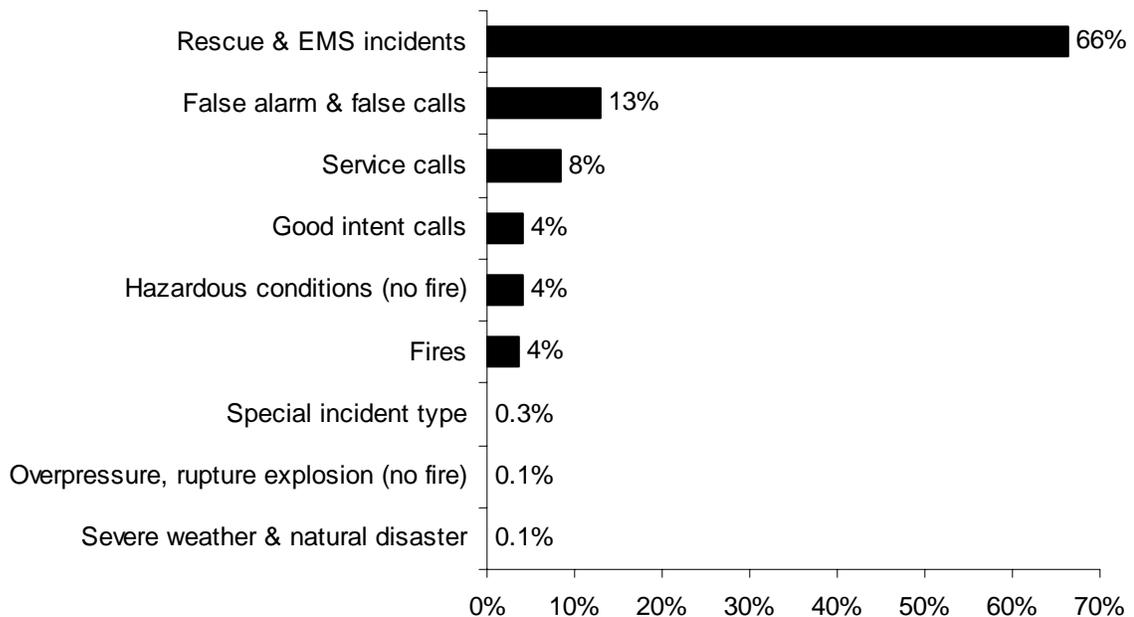
ALL CALLS

Rescue & EMS Calls Are 2/3 of All Reported Responses

In 2008, the Chelsea Fire Department reported 7,466 total responses to MFIRS. Of these 7,466 responses, 7,199 non-fire calls were voluntarily reported.

Of these 7,199 non-fire calls, 4,962, or 66% of all the responses reported in 2008, were reported rescue and emergency medical services (EMS) calls; 959, or 13%, were reported false alarm or false calls; 634, or 8%, were reported service calls such as lock-outs, water or smoke problems, unauthorized burning or public service assistance; 316, or 4%, were reported good intent calls; 289, or 4%, were reported hazardous condition calls with no fire; 24, or 0.3%, were special incident type calls such as citizen complaints; 11, or 0.1%, were reported overpressure, rupture, explosion or overheat calls with no fire; and four, or 0.03%, were severe weather calls.

2008 Chelsea Calls by Incident Type



Two hundred and sixty-seven (267), or 4%, of the total responses submitted by the Chelsea Fire Department were fires.

Chelsea Reported Giving Mutual Aid 19 Times

In 2008, the Chelsea Fire Department reported coming to the aid of other fire departments 19 times. Of these 19 incidents, 12, or 63%, were service calls such as cover assignments; two, or 11% were good intent calls; two, or 11%, were rescue and emergency medical services calls; one, or 5%, was for a fire; and one, or 5%, was a false alarm or false call.

Chelsea Received Mutual Aid in 123 Incidents

In 2008, the Chelsea Fire Department reported receiving aid from surrounding departments in 123 incidents. Of these 123 incidents, 94, or 76%, were rescue and emergency medical services calls; 13, or 11%, were for fires; seven, or 6%, were false alarms or false calls; four, or 3%, were good intent calls; three, or 2%, were service calls; one, or 1%, was a hazardous condition call with no fire; and one, or 1%, was a special incident type.

CONCLUSIONS

- **Cooking Caused Over 2/3 of Residential Fires**

Over two-thirds, or 69%, of Chelsea's residential building fires were caused by unattended cooking or other unsafe cooking practices. Prevention and education of community members may help this issue.

- **Heating Equipment Fires Were the Second Leading Cause of Residential Fires**

Heating equipment fires were the second leading cause of residential building fires.

- **Reported Arsons Decline**

Reported arsons decreased nine, with seven arsons reported in 2008. For the fifth time in the past six years, Chelsea did not report a motor vehicle arson.

- **Confined Fires Account for 83% of All Residential Building Fires in Chelsea**

Residential building fires contained to non-combustible containers accounted for 129, or 83%, of the 155 residential building fires in Chelsea in 2008. Of these 129 fires, 106, or 68%, were confined cooking fires.

- **Undetermined if Smoke Detectors Operated in Over 1/2 of Residential Fires**

It was undetermined in over half, or 53%, of Chelsea homes where fires occurred were protected by smoke detectors. Detectors sounded the alarm in 43% of the residential fires. The majority of these were confined fires. Data collection in this area has improved in the past few years, but there is still room for improvement.

Chelsea **FDID: 25057** **Population: 35,080**

Total Fires **266** **\$2,739,290**

7.6 Fires/1,000 Population

Situation Found	Fires	% of Fires	Dollar Loss
Structure Fires	190	71%	\$2,570,985
Vehicle Fires	13	5%	86,250
Other Fires	63	24%	82,055

5 Civilian Injuries 53 Fire Service Injuries

5.42 Structure fires/1,000 population

0.37 Vehicle fires /1,000 population

1.80 Other fires/1,000 population

Building Fires: 185

Residential Building Fires: 155

Residential Building Fires Confined to Non-Combustible Containers: 129

Unconfined Residential Building Fires: 26

5 Civilian Injuries 51 Fire Service Injuries

Occupancy	Fires	%	Detector Status	Fires	%
Apartments	114	74%	Operated	67	43%
1- & 2-Family homes	22	14%	Didn't operate	2	1%
Rooming houses	8	5%	None	0	0%
Residential board & care	4	3%	Fire too small	2	1%
Residential, other	7	5%	Didn't alert (confined)	3	2%
			Undetermined	81	53%

Area of Origin³⁴	%	Heat Source	%	%Unconfined³⁵
Kitchen	73%	Heat open flame/smok. mat.	3%	19%
Heat equipment room	12%	Heat from operating eq.	3%	15%
Bedroom	2%	Candles	1%	8%
Bathroom	2%	Arcing	1%	8%
Living room	1%			
Laundry room	1%			

³⁴ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

³⁵ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

Item First Ignited³⁶	%	Factor Contrib. to Ignit.	%	%Unconfined³⁷
Food, cooking materials	72%	Misuse of mater. or product	1%	8%
Flammable or combustible. liq.	12%	Mech. failure/malfun., other	1%	8%
Electrical wire, cable insulation	2%	Too close to combustibles	1%	8%
Ext. roof cover., surface, finish	1%	Abandoned materials	1%	4%
Rubbish, trash, waste	1%	Elect. failure/malfunc. Other	1%	4%
Mattress, pillow	1%	Playing with heat source	1%	4%

Equipment³⁸	%	Cause of Ignition	%	%Unconfined³⁹
Kitchen & cooking equipment	68%	Unintentional	9%	54%
None	15%	Fail of equip. or heat source	3%	19%
Boiler, furnace, cent. heat. unit	12%	Intentional	1%	8%
Clothes dryer	1%	Undetermined	2%	12%
Stove, heating	1%	Cause under investigation	1%	8%

Detector Alerted Occupants (Confined Fires in Non-Combustible Containers)

Alerted occupants	36%
Didn't alert occupants	2%
Undetermined	62%

Mutual Aid Given	# of Incidents
Boston	7
Everett	4
Revere	2
Melrose	1
Lynn	1
Winthrop	1
Woburn	1

³⁶ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

³⁷ Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed. These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Factors Contributing to Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

³⁸ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

³⁹ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Cause of Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

Month	Total Fires	Structure Fires	Vehicle Fires	Other Fires
January	24	17	2	5
February	17	16	1	0
March	24	22	0	2
April	35	22	0	13
May	20	10	1	9
June	28	12	2	14
July	9	8	0	1
August	11	5	1	5
September	16	11	1	4
October	22	17	1	4
November	26	21	1	4
December	34	29	3	2

Day	Total Fires	Structure Fires	Vehicle Fires	Other Fires
Sunday	30	22	2	6
Monday	33	26	2	5
Tuesday	37	29	1	7
Wednesday	43	30	1	12
Thursday	45	28	1	16
Friday	35	24	5	6
Saturday	43	31	1	11

Time	Total Fires	Structure Fires	Vehicle Fires	Other Fires
00:01 - 04:00	23	13	3	7
04:01 - 08:00	15	10	2	3
08:01 - 12:00	43	32	1	10
12:01 - 16:00	66	42	2	22
16:01 - 20:00	81	61	3	17
20:01 - 00:00	38	32	2	4

Motor Vehicle Fires

Total: 13

Automobiles: 9 (69%)

None of the automobile fires considered intentionally set.

Arson Fires

Total Arsons: 7 **\$406,000**

Situation	Arsons	% of Situation	% of Arson	Dollar Loss
Structure Arsons	2	1%	29%	\$406,000
Vehicle Arsons	0	0%	0%	0
Other Arsons	5	8%	71%	0

7 Fire Service Injuries

- 0.20 Arson fires/1,000 population
- 0.06 Structure arsons/1,000 population
- 0.00 Vehicle arsons /1,000 population
- 0.14 Other arsons/1,000 population

Peak Times of Day for Arson Fires

Structure Arsons	#	%	Vehicle Arsons	#	%
08:01 - 12:00	1	50%			
16:01 - 20:00	1	50%			

Other Arsons	#	%
16:01 - 20:00	2	40%
00:01 - 04:00	1	00%
08:01 - 12:00	1	20%
20:01 - 00:00	1	20%

Peak Fixed Property Uses for Structure Arsons

Apartments	1	50%
Household goods, sales, repairs	1	50%

Revere Fires in 2008

443 Fires — 399 Structure Fires, 10 Vehicle Fires and 34 Other Fires

The City of Revere reported 443 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2008. The 399 structure fires, 10 motor vehicle fires, 33 outside rubbish fires, one brush fires caused one civilian injury, one firefighter injury and an estimated dollar loss of \$389,050. There were 9.43 fires for every 1,000 citizens in 2008. The statewide rate was 4.8 fires for every 1,000 people.

Structure Fires Up

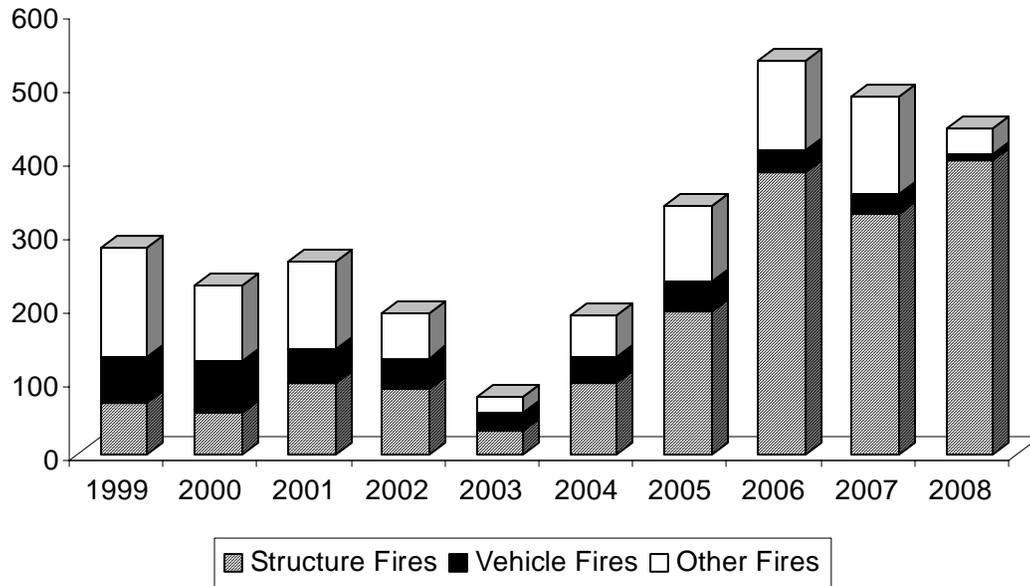
The total number of reported fires decreased by 43 from the 486 reported in 2007. Structure fires increased by 72 from the 327 reported during the previous year. Motor vehicle fires decreased 16 from 26 in 2007. Reported outside and other fires decreased by 99 from 133 the year before.

REVERE FIRES FROM 1999 TO 2008

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons
1999	280	69	63	148	24	4	15	5
2000	229	57	70	102	21	7	10	4
2001	262	98	44	120	18	5	8	5
2002	191	88	43	60	4	0	3	1
2003	80	34	23	23	2	0	2	0
2004	188	96	34	58	6	1	4	1
2005	339	195	40	104	13	7	4	2
2006 ⁴⁰	536	395	29	122	31	6	4	21
2007	486	327	26	133	6	4	2	0
2008	443	399	10	34	1	1	0	0

⁴⁰ The majority of this increase in reported fires was a dramatic increase in the reporting of the number of confined structure fires. In 2005 Revere reported 133 confined structure fires; and in 2006 they reported 319 of these types of fires for an increase of 140%. This increase of 186 confined fires represents 94% of the increase in all reported fires from 2005 to 2006.

Revere Fires by Incident Type



1 Arsons — 1 Structure

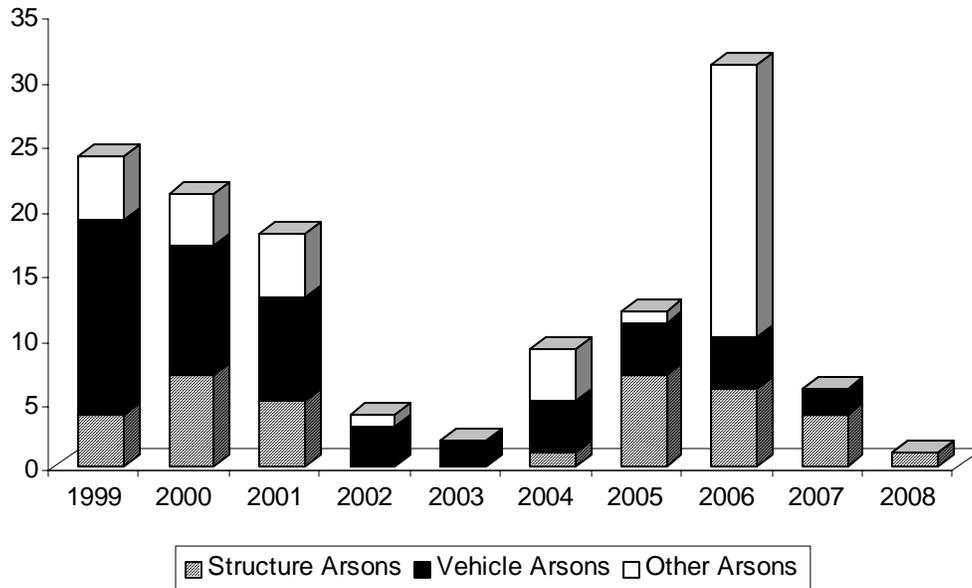
One (1), or 1%, of Revere’s 443 reported fires was considered intentionally set, or for purposes of this analysis, arson⁴¹. There was one reported structure arson in 2008.

All Arson Down

The total number of reported arson fires decreased by five from the six reported in 2007. There was one reported structure arson, a decrease of three from four reported in 2007. Motor vehicle arsons decreased by two from the two reported in 2007. Reported outside remained the same with no reported arsons in 2007 and in 2008.

⁴¹ In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

Revere Arsons by Incident Type



STRUCTURE FIRES

Structure Fires Down

The 399 structure fires caused one fire service injury and an estimated dollar loss of \$355,550. These fires accounted for 90% of the fires Revere reported in 2008. Structure fires increased by 72 from the 327 reported during 2007.

1 Structure Arson in 2008

There was one reported structure arson in Revere. Arson was indicated as the cause of less than 1% of the structure fires and accounted for 0% of Revere’s structure fire dollar loss. The one structure arson accounted for 100% of the Revere arson fires reported in 2008. The total number of reported structure arsons decreased by three from four in 2007.

BUILDING FIRES

There were 398 building fires of different types in Revere in 2008. These 398 building fires accounted for 99.7% of all structure fires in Revere.

80% of Building Fires in Homes

The 398 building fires that occurred in Revere in 2008 can be broken down by fixed property use as follows: 320, or 80%, of all the building fires, were in residential properties; 20 fires happened in institutional facilities; 18 fires took place in mercantile and office properties; 16 fires occurred in special properties; 15 fires occurred in public assembly properties; four fires occurred at educational facilities; three fires happened in

industrial, utility, defense, agricultural or mining facilities one fire was in storage facility; and another fire occurred at a manufacturing or processing facility.

RESIDENTIAL BUILDING FIRES

80% of Building Fires Occurred in Residences

Three hundred and twenty (320), or 80%, of the 398 building fires occurred in residences. The 320 residential building fires reported in 2008 caused an estimated dollar loss of \$331,450.

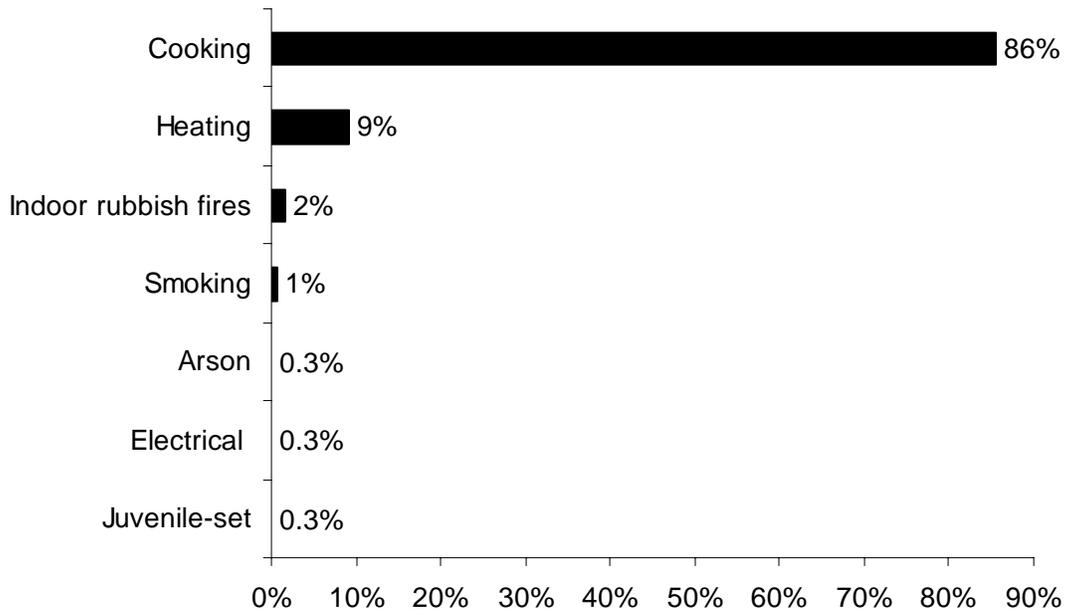
Apartments Accounted for Over 2/3 of Residential Building Fires

The peak fixed property uses for residential building fires were apartments accounting for 69% of the residential building fires in Revere; 30% occurred in 1- or 2-family homes; 1% took place in hotels or motels; and less than 1% occurred in residential board and care facilities.

Unsafe Cooking Causes 86% of Residential Fires

Cooking was the leading cause of fires in Revere’s residential properties in 2008, accounting for 86% of these fires. Heating equipment caused 9% of residential building fires in 2008. Indoor rubbish fires were responsible for 2% of these fires. Smoking caused 1% of these fires. Arson, electrical problems and juvenile-set fires each accounted for less than 1% of the residential building fires in Revere in 2008.

Causes of Residential Fires



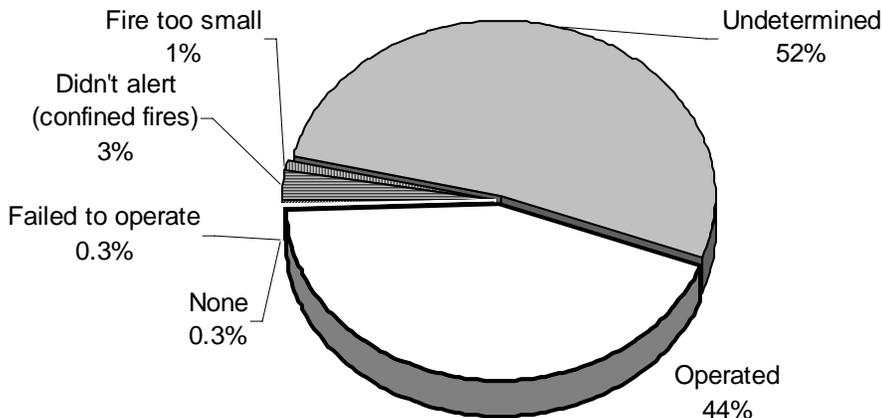
95% of Residential Building Fires Are Confined to Non-Combustible Containers²

Three hundred and four (304), or 95% of all residential building fires, were reported as confined to non-combustible containers in 2008. Two hundred and seventy (270) of the confined fires were cooking fires contained to a non-combustible container and accounted for 84% of residential building fires. Twenty-six (26), or 8%, of the confined fires were fires confined to a fuel burner or boiler malfunction. Seven (7), or 2%, were confined indoor rubbish fires. There was one fire confined to a chimney accounting for less than 1% of Revere’s residential fires.

Detectors Alerted Occupants in 44% of Fires

Smoke or heat detectors operated and alerted the occupants in 140, or 44%, of the residential building fires. In 3% of these fires⁴², the detectors did not alert the occupants. Detectors were present but did not operate in less than 1% of these incidents. In less than 1% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 1% of the residential fires. Smoke detector performance was undetermined in 166 incidents, or 52% of Revere’s residential building fires.

Detector Status in Revere's Residential Structure Fires 2008



² In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

⁴² These represent confined fires where it was reported that the detector did not alert the occupants.

MOTOR VEHICLE FIRES

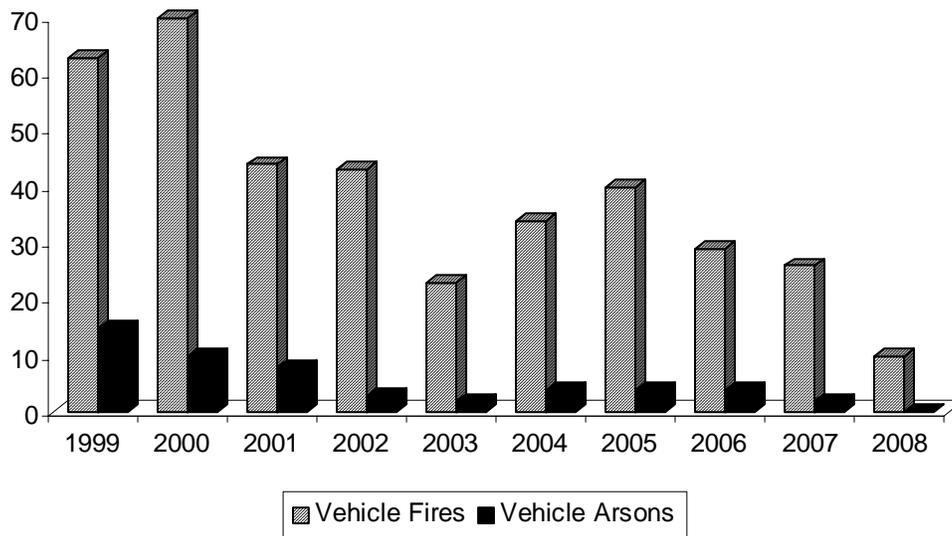
Motor Vehicle Fires Drop

There were 10 motor vehicle fires in Revere in 2008 that caused an estimated \$33,500 in damages. Motor vehicle fires comprised 2% of Revere’s reported fires in 2008. The total number of motor vehicle fires decreased by 16, or 62%, from the 26 reported in 2007.

There Were No Motor Vehicles Arsons

There were no reported motor vehicle fires that were considered intentionally set. The total number of reported motor vehicle arsons decreased by two from the two reported in 2007.

**Motor Vehicle Fires & Arsons in Revere
1999 - 2008**



OUTSIDE AND OTHER FIRES

Outside and Other Fires Down 74% From 2007 Figures

There were 34 outside and other fires reported to MFIRS in 2008. These 34 fires included 33 outside rubbish fires and one grass, tree or brush fires. Outside and other fires comprised 8% of the 443 Revere fires reported in 2008. These 34 incidents are a 74% decrease in the number of outside and other fires in Revere from the 133 reported in 2007.

No Outside and Other Arsons

In 2008, Revere did not report any outside or other arsons. In 2007, Revere did not report any outside and other arsons either.

FATAL FIRES

There were no fatal fires in Revere in 2008.

JUVENILE-SET FIRES

2 Juvenile-set Fires

There were two reported juvenile-set fires in Revere in 2008. The two juvenile-set fires were structure fires.

ALL CALLS

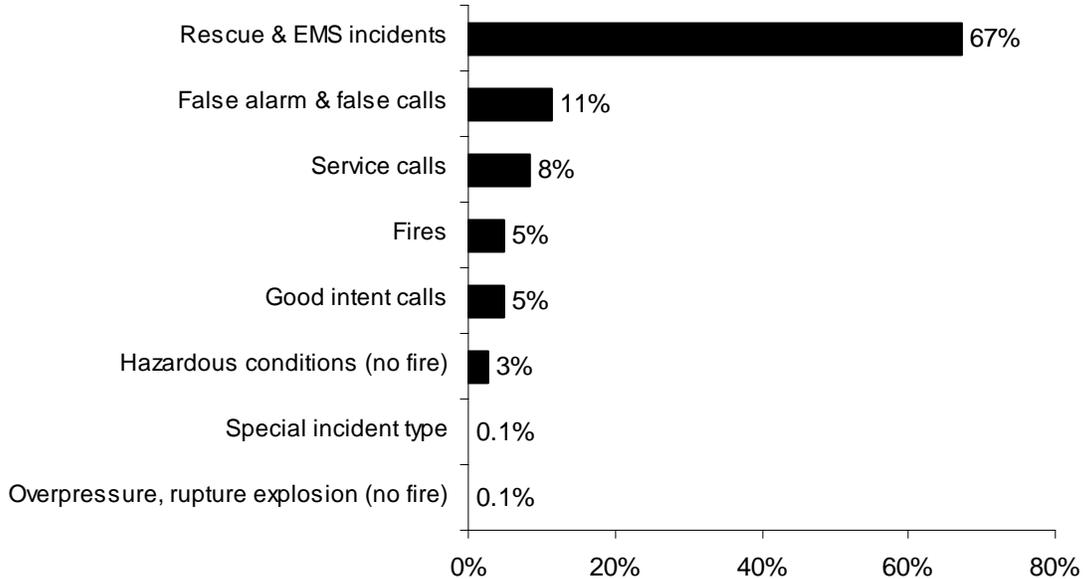
Rescue & EMS Calls Are 2/3 of All Reported Responses

In 2008, the Revere Fire Department reported 8,071 total responses to MFIRS. Of these 8,071 responses, 7,628 non-fire calls were voluntarily reported.

Of these 7,628 non-fire calls, 5,428, or 67% of all the responses reported in 2008, were reported rescue and emergency medical services (EMS) calls; 910, or 11%, were reported false alarm or false calls; 671, or 8%, were reported service calls such as lock-outs, water or smoke problems, unauthorized burning or public service assistance; 377, or 5%, were reported good intent calls; 225, or 3%, were reported hazardous condition calls with no fire; 12, or 0.1%, were special incident type calls such as citizen complaints; five, or 0.1%, were reported overpressure, rupture, explosion or overheat calls with no fire; and there was one overpressure or rupture explosion with no ensuing fire response that caused 0.1% of all 2008 calls in Revere.

Four hundred and eighty-six (443), or 5%, of the total responses submitted by the Revere Fire Department were fires.

2008 Revere Calls by Incident Type



Revere Reported Giving Mutual Aid 155 Times

In 2008, the Revere Fire Department reported coming to the aid of other fire departments 155 times. Of these 155 responses, 152, or 97%, were for service calls such as cover assignments; one, or 1%, was for a rescue or EMS incident; one, or 1%, was for a good intent call; and one, or 1%, was for a hazardous condition call without fire.

Revere Received Mutual Aid in 4 Incidents

In 2008, the Revere Fire Department reported receiving aid from surrounding departments in four incidents. Of these four incidents, three, or 75%, were for fires; and one, or 10%, was for a service call.

CONCLUSIONS

- **Structure Fires Were Up**

Structure fires increased 72, or 22%, from the 327 reported in 2007. Motor vehicle fires were down 16 and outside and other fires were down 99 in 2008.

- **Cooking Caused 86% of Residential Fires**

The leading cause of Revere’s residential building fires was unattended cooking and other unsafe cooking practices. This is where the department should focus its education and other prevention efforts. Two hundred and seventy-four (274), or 86%, of Revere’s

residential building fires were attributed to cooking. Two hundred and seventy (270) of these were confined cooking fires.

- **Heating Equipment Fires Second Leading Cause**

The second leading cause of residential fires in Revere was heating equipment fires accounting for 9% of the residential fires. This is the fifth year in a row that heating equipment was the second leading cause of residential fires in Revere.

- **95% of Residential Building Fires Were Confined Fires**

Three hundred and four (304), or 90%, of the 320 residential building fires in Revere in 2008 were confined to their non-combustible containers, the majority were confined fires.

- **1 Only Arson in Revere in 2008**

In 2008, Revere reported on one structure arson and no motor vehicle or outside and other arsons.

- **Smoke Detectors Operated in Just 44% Residential Fires**

Smoke or heat detectors operated in 140, or 44%, of the 320 residential fires. Unfortunately in 166 incidents, or 52% of residential fires, it was undetermined if smoke detectors were present or if they operated. Improved data collection would be helpful in order to better understand the relationship between fire casualties and smoke detector performance.

Revere **FDID: 25248** **Population: 47,283**

Total Fires **443** **\$389,050**

10.3 Fires/1,000 Population

Situation Found	Fires	% of Fires	Dollar Loss
Structure Fires	399	90%	\$355,500
Vehicle Fires	26	2%	33,500
Other Fires	34	8%	0

1 Civilian Injury 1 Fire Service Injury

8.44 Structure fires/1,000 population

0.21 Vehicle fires /1,000 population

0.72 Other fires/1,000 population

Building Fires: 398

Residential Building Fires: 320

Residential Building Fires Confined to Non-Combustible Containers: 304

Unconfined Residential Building Fires: 16

No Injuries

Occupancy	Fires	%	Detector Status	Fires	%
Apartments	221	69%	Operated	140	42%
1- & 2-Family homes	95	30%	Didn't operate	1	0.3%
Hotels/motels	3	1%	None	1	0.3%
Residential board & care	1	0.3%	Fire too small	3	1%
			Didn't alert (confined)	9	3%
			Undetermined	166	52%

Area of Origin ⁴³	%	Heat Source	%	%Unconfined ⁴⁴
Kitchen	87%	Radiated heat from op. eq.	1%	1%
Heating room or area	8%	Heat from operating equip.	1%	1%
Bathroom	0.3%	Spark, ember, flame op. eq.	1%	1%
Chimney or flue	0.3%			

⁴³ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

⁴⁴ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

Item First Ignited⁴⁵	%	Factor Contrib. to Ignit.	%	%Unconfined⁴⁶
Food, cooking materials	85%	Playing with heat source	1%	13%
Flammable, combustible liquid	8%	Abandoned materials	0.3%	6%
Rubbish, trash, waste	2%	Elec. fail., malfunc., other	0.3%	6%
Box, carton, bag	1%	Equipment unattended	0.3%	6%
Flamm. liquid/gas escaping	1%	Flamm. liquid/gas spilled	0.3%	1%
		Too close to combustibles	0.3%	1%

Equipment⁴⁷	%	Cause of Ignition	%	%Unconfined⁴⁸
Cooking equipment	85%	Unintentional	4%	88%
Boiler, furnace, cent. heat. unit	8%	Failure of eq./heat source	0%	0%
None	4%	Intentional	0.3%	6%
Chimney or flue	0.3%	Undetermined	0.3%	6%
		Cause under investigation	0%	0%

**Detector Alerted Occupants
(Confined Fires in Non-Combustible Containers)**

Alerted occupants	44%
Didn't alert occupants	3%
Undetermined	53%

Mutual Aid Given	# of Incidents
Chelsea	81
Malden	11
Everett	8
Winthrop	5
Melrose	2

⁴⁵ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

⁴⁶ Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed. These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Factors Contributing to Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

⁴⁷ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

⁴⁸ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Cause of Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

Month	Total Fires	Structure Fires	Vehicle Fires	Other Fires
January	28	26	1	1
February	34	32	1	1
March	36	31	0	5
April	47	39	1	7
May	49	44	1	4
June	30	26	1	3
July	33	27	1	5
August	30	27	0	3
September	35	33	0	2
October	45	42	2	1
November	31	27	2	2
December	45	45	0	0

Day	Total Fires	Structure Fires	Vehicle Fires	Other Fires
Sunday	59	53	0	6
Monday	55	48	2	5
Tuesday	49	44	2	3
Wednesday	79	75	1	3
Thursday	58	52	2	4
Friday	78	68	1	9
Saturday	65	59	2	4

Time	Total Fires	Structure Fires	Vehicle Fires	Other Fires
00:01 - 04:00	33	26	1	6
04:01 - 08:00	30	26	2	2
08:01 - 12:00	71	65	2	4
12:01 - 16:00	104	96	1	7
16:01 - 20:00	134	124	2	8
20:01 - 00:00	71	64	2	7

Motor Vehicle Fires

Total: 10

Automobiles: 5 (50%)

None of the automobile fires considered intentionally set.

Arson Fires

Total Arsons: 1 **\$0**

Situation	Arsons	% of Situation	% of Arson	Dollar Loss
Structure Arsons	1	0.3%	100%	\$0
Vehicle Arsons	0	0%	0%	0
Other Arsons	0	0%	0%	0

No Injuries

0.02 Arson fires/1,000 population
 0.02 Structure arsons/1,000 population
 0.00 Vehicle arsons /1,000 population
 0.00 Other arsons/1,000 population

Peak Times of Day for Arson Fires

Structure Arsons	#	%	Vehicle Arsons	#	%
08:01 - 12:00	1	100%			

Other Arsons **#** **%**

Occupancy	#	%
Apartments	1	100%

Winthrop Fires in 2008

68 Fires — 36 Structure Fires, 2 Vehicle Fires and 28 Other Fires

The Town of Winthrop reported 68 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2008. The 36 structure fires, four motor vehicle fires, 12 outside rubbish fires, nine brush and grass fires, and two special outside fires caused one civilian injury, two fire service injuries and an estimated loss of \$898,440. There were 3.7 fires for every 1,000 citizens in 2008. The statewide rate was 4.8 fires for every 1,000 people.

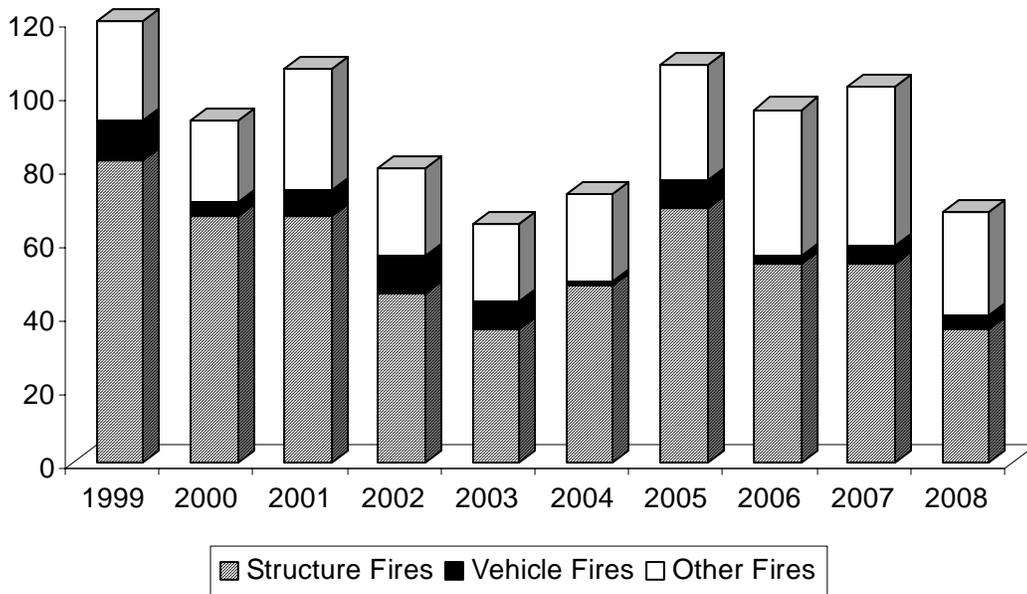
WINTHROP FIRES FROM 1999 TO 2008

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons
1999	120	82	11	27	17	1	4	12
2000	93	67	4	22	11	2	1	8
2001	107	67	7	33	13	1	1	11
2002	80	46	10	24	9	1	5	3
2003	65	36	8	21	8	2	1	5
2004	73	48	1	24	11	4	1	6
2005	108	69	8	31	7	1	0	6
2006	96	54	2	40	13	2	0	11
2007	102	54	5	43	11	3	0	8
2008	68	36	4	28	7	1	0	6

All Fires Down

The total number of fires reported in Winthrop decreased by 34 from 102 in 2007. Structure fires decreased by 18 from 54 reported in 2007. Motor vehicle fires decreased by one from five in 2007. Outside and other fires decreased by 15 from 43 in 2007.

Winthrop Fires by Incident Type

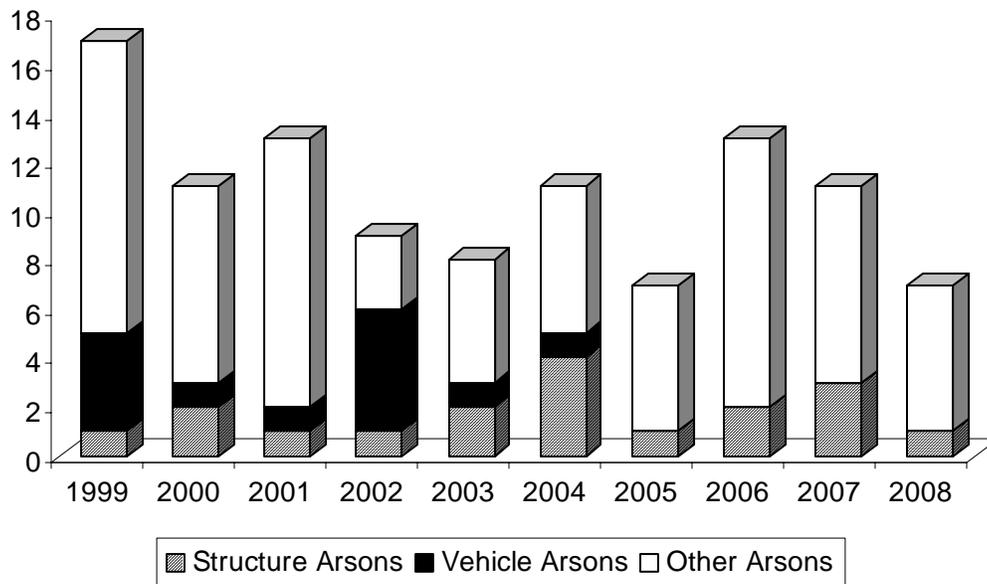


7 of Winthrop’s Fires Considered Arson

Seven (7), or 10%, of the 68 Winthrop fires were considered intentionally set, or, for purposes of this analysis, arson⁴⁹. The one structure arson and six outside and other arsons caused one civilian injury.

⁴⁹ In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

Winthrop Arsons by Incident Type



STRUCTURE FIRES

Structure Fires Remain the Same

The 36 structure fires caused one civilian injury, two fire service injuries and an estimated dollar loss of \$843,050. These incidents represented 53% of Winthrop's reported fires in 2008. This is a decrease of 18 structure fires from 2007.

Arson Caused of 3% of Structure Fires

The one structure arson caused a civilian injury. Arson was indicated as the cause of 3% of the structure fires. The structure arson accounted for 14% of the Winthrop arson fires reported in 2008. The total number of reported structure arsons decreased by two, or 67%, from the three reported in 2007.

BUILDING FIRES

There were 36 building fires of different types in Winthrop in 2008. These 36 building fires accounted for all of the structure fires in Winthrop.

81% of Building Fires in Homes

The 36 building fires that occurred in Winthrop in 2008 can be broken down by fixed property use as follows: 29, or 81%, of all the building fires reported in 2008, were in residential properties; one occurred in a public assembly property; one fire happened at a mercantile or business property; one fire occurred in an educational facility; one fire occurred in an institutional facility, one fire happened at a storage facility, and one took place in a special property.

RESIDENTIAL BUILDING FIRES

81% of Winthrop's Building Fires Occurred in Residences

Twenty-nine (29), or 81%, of Winthrop's 36 reported building fires occurred in residential occupancies. There was one reported residential building arson in 2008; it occurred in an apartment building.

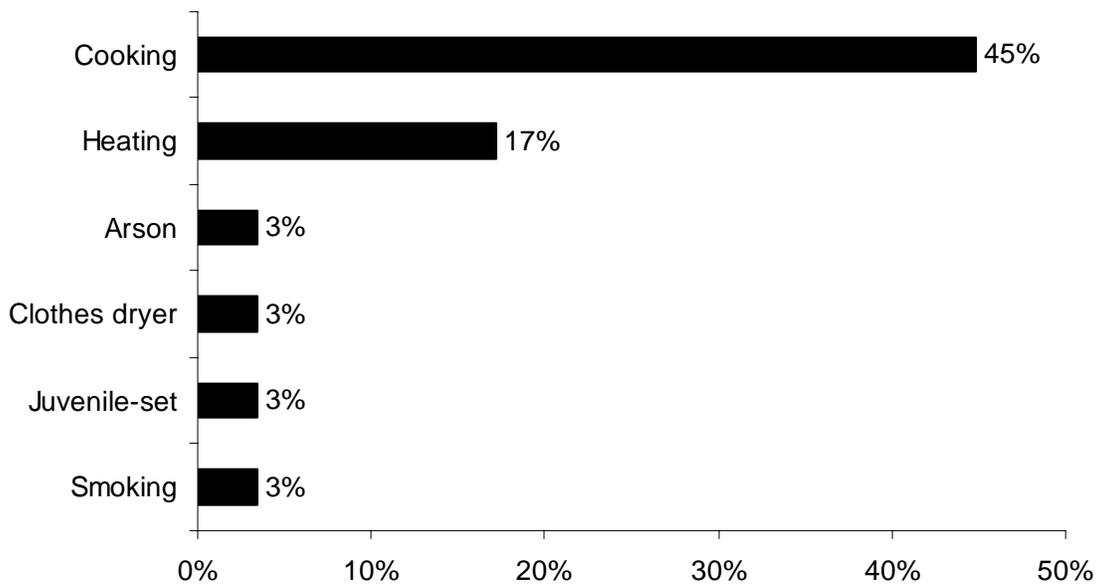
1- & 2-Family Homes Accounted for Over 1/2 of Residential Building Fires

The peak fixed property uses for residential building fires were one- and two-family homes, accounting for 52% of the residential building fires in Winthrop; 48% occurred in apartments, and 3% occurred in residential board and care facilities.

Unsafe Cooking Practices Caused 45% of Winthrop's Residential Fires

Cooking was the leading cause of fires in Winthrop residential properties in 2008, accounting for 45%. Heating equipment fires were the second leading cause, accounting for 17% of the fires. Arson, clothes dryers, juvenile-set fires and smoking each caused 3% of the fires in Winthrop's homes in 2008.

Causes of Residential Fires



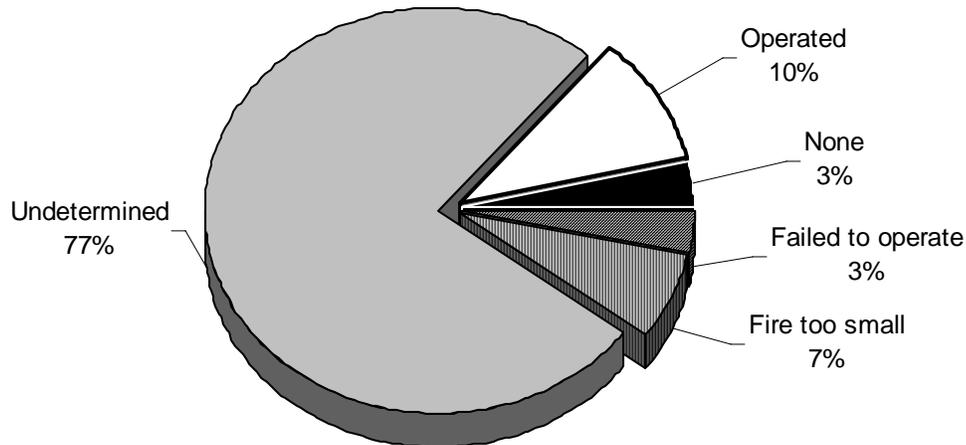
2/3 of Residential Building Fires Are Confined to Non-Combustible Containers⁵⁰

Nineteen (19), or 66% of all residential building fires, were reported as confined to non-combustible containers in 2008. Twelve (12) of the reported fires were cooking fires contained to a non-combustible container accounting for 41% of residential building fires. Four (4), or 14%, were fires confined to a fuel burner or boiler malfunction. Indoor rubbish fires caused two, or 7%, of all residential building fires. A confined chimney or flue fire caused 3% of these fires.

Detectors Alerted Occupants in Only 10% of Fires

Smoke or heat detectors operated and alerted the occupants in three, or 10%, of the residential building fires. Winthrop did not report any fires, where the detectors did not alert the occupants⁵¹. The detectors were present but did not operate in 3% of these fires. In another 3% of these fires, no detectors were present at all. In 7% of reported fires the fire was too small to trigger the detector. Smoke detector performance was undetermined in 22 incidents, or 77% of Winthrop's residential building fires.

Detector Status in Winthrop's Residential Structure Fires 2008



⁵⁰ In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved in Ignition. These incidents are not included in the analysis of these fields.

⁵¹ These represent confined fires where it was reported that the detector did not alert the occupants.

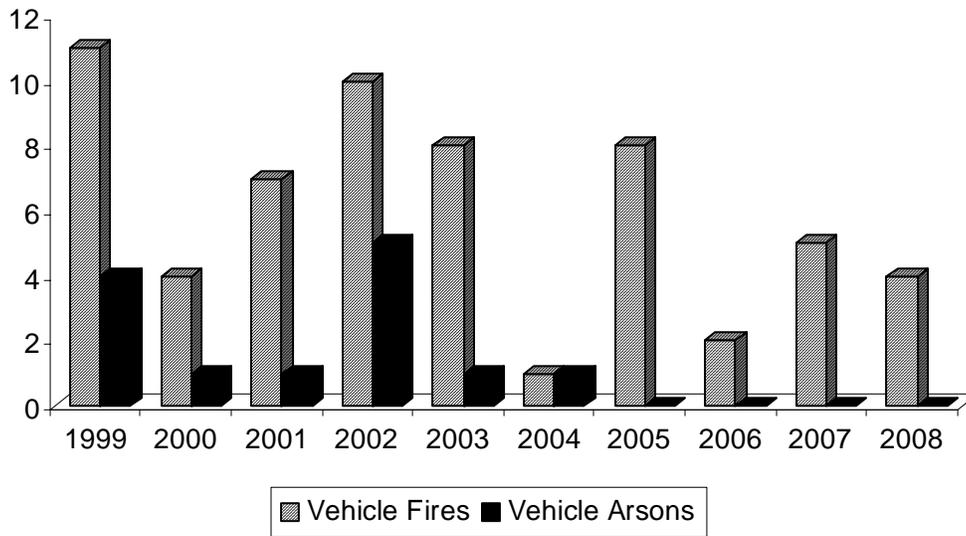
MOTOR VEHICLE FIRES

4 Motor Vehicle Fires Reported in 2008

The four motor vehicle fires caused an estimated dollar loss of \$41,450. Motor vehicle fires comprised 6% of Winthrop’s 68 reported fires in 2008. Motor vehicle fires decreased by one, or 20%, from the five fires reported in 2007.

None of the motor vehicle fires were determined to be intentionally set.

**Motor Vehicle Fires & Arsons
in Winthrop 1999 - 2008**



OUTSIDE AND OTHER FIRES

Outside and Other Fires Account for 42% of Winthrop Fires

The Winthrop Fire Department reported 28 outside and other fires to the Massachusetts Fire Incident Reporting System in 2008, a decrease of 15 from 43 in 2007. The 12 outside rubbish fires, nine brush and grass fires, five special outside fires, and two unclassified fires caused an estimated dollar loss of \$13,940. Outside and other fires comprised 41%, of the 68 Winthrop fires reported in 2008.

21% of Outside & Other Fires considered Arson

Seven (7), or 21%, of the 28 outside and other fires were considered intentionally set. There were four outside rubbish arsons, one special outside arson and one unclassified arson. This is a decrease of two, or 25%, from eight arsons reported in 2007. Outside and other arson comprised 86% of Winthrop’s total seven arsons.

JUVENILE-SET FIRES

1 Juvenile-set Fire

There was one reported juvenile-set fire in Winthrop in 2008. The one structure fire caused an estimated damage of \$10,000.

ALL CALLS

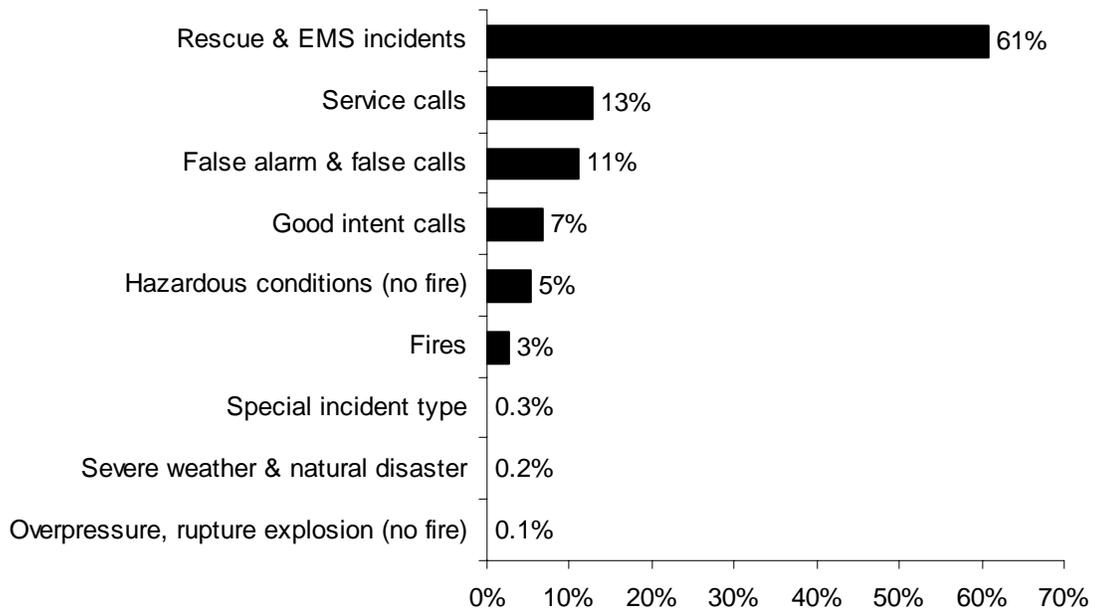
Rescue & EMS Calls Are 61% of All Reported Responses

In 2008, the Winthrop Fire Department reported 2,658 total responses to MFIRS. Of these 2,658 responses, 2,590 non-fire calls were voluntarily reported.

Of these 2,590 non-fire calls, 1,614, or 61% of all the responses reported in 2008, were reported rescue and emergency medical services (EMS) calls; 337, or 13%, were reported service calls such as lock-outs, water or smoke problem, unauthorized burning or public service assistance; 298, or 11%, were reported false alarm or false calls; 180, or 7%, were reported good intent calls; 144, or 5%, were reported hazardous condition calls with no fire; 8, or 0.3%, were special incident type calls such as citizen complaints; six, or 0.2%, were severe weather calls; and three, or 0.1%, were reported overpressure, rupture, explosion or overheat calls with no fire.

Sixty-eight (68), or 3%, of the total responses submitted by the Winthrop Fire Department were fires.

2008 Winthrop Calls by Incident Type



Winthrop Reported Receiving Mutual Aid 5 Time

In 2008, the Winthrop Fire Department reported receiving aid from surrounding departments five times. Three, or 60%, of the calls were for fires; one, or 20%, was a service call and another call, or 20%, as a rescue or EMS call.

Winthrop Reported Giving Mutual Aid Twice

Winthrop reported coming to the aid of other fire departments twice and both times it was for service calls (standby at station).

CONCLUSIONS**• Most Building Fires in Homes**

81% of building fires occurred in residences.

• Cooking Caused 45% of Residential Fires

Cooking caused 45% of Winthrop's residential building fires. Education and other prevention efforts should help address this problem.

• Heating Caused 17% of Residential Fires

Heating was the second leading cause of residential fires in Winthrop. Fires started by heating equipment caused 17% of residential building fires.

• Smoke Detectors Status Undetermined in 77% Residential Fires

It was undetermined if smoke detectors sounded the alarm in 77% of the residential fires. This could be an area of focus for improved data collection and reporting. This would help to better understand the relationship between fire casualties and smoke detector performance.

• All Fires Decrease

All types of reported fires, structure, motor vehicle and outside and other fires decreased from 2007 to 2008.

• Structure Fires Account for Over 1/2 of All of Winthrop's Fires.

Structure fires comprised 53%, or over half, of the 68 Winthrop fires reported in 2008.

Winthrop **FDID: 25346** **Population: 18,303**

Total Fires **68** **\$898,440**

3.72 Fires/1,000 Population

Situation Found	Fires	% of Fires	Dollar Loss
Structure Fires	36	53%	\$843,050
Vehicle Fires	4	6%	41,450
Other Fires	28	41%	13,940

1 Civilian Injuries 2 Fire Service Injuries

2.0 Structure fires/1,000 population

0.2 Vehicle fires /1,000 population

1.5 Other fires/1,000 population

Building Fires: 36

Residential Building Fires: 29

Residential Building Fires Confined to Non-Combustible Containers: 19

Unconfined Residential Building Fires: 10

Occupancy	Fires	%	Detector Status	Fires	%
1- & 2-Family homes	15	52%	Operated	3	10%
Apartments	13	45%	Didn't operate	1	3%
Residential board & care	1	3%	None	1	3%
			Fire too small	2	7%
			Didn't alert (confined)	0	0%
			Undetermined	22	77%

Area of Origin⁵²	%	Heat Source	%	%Unconfined⁵³
Kitchen	45%	Heat open flame/smok. mat.	10%	30%
Heating room or area	17%	Rad./conduct heat, op. eq.	10%	30%
Living room	7%			

Item First Ignited⁵⁴ **%** **Factor Contrib. to Ignit.** **%** **%Unconfined⁵⁵**

⁵² This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

⁵³ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

Food, cooking materials	45%	Abandoned materials	3%	10%
Flammable, combustible liquid	14%			
Exterior sidewall covering	7%			
Rubbish, trash, waste	7%			
Structural comp., finish, other	7%			

Equipment⁵⁶	%	Cause of Ignition	%	%Unconfined⁵⁷
Cooking equipment	41%	Unintentional	21%	60%
Boiler, furnace, cent. heat. unit	31%	Failure of eq. or heat source	3%	10%
Boiler, furnace, cent. heat. unit	14%	Intentional	0%	0%
Chimney of flue	3%	Cause under investigation	7%	20%
Clothes dryer	3%	Undetermined	3%	10%

**Detector Alerted Occupants
(Confined Fires in Non-Combustible Containers)**

Alerted occupants	0%
Didn't alert occupants	0%
Undetermined	100%

⁵⁴ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

⁵⁵ Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed. These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Factors Contributing to Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

⁵⁶ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

⁵⁷ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Cause of Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

Month	Total Fires	Structure Fires	Vehicle Fires	Other Fires
January	5	4	1	0
February	0	0	0	0
March	6	5	0	1
April	7	2	1	4
May	7	3	0	4
June	8	0	0	8
July	6	2	0	4
August	5	2	1	2
September	7	5	0	2
October	9	7	1	1
November	3	1	0	2
December	5	5	0	0

Day	Total Fires	Structure Fires	Vehicle Fires	Other Fires
Sunday	11	5	0	6
Monday	6	4	0	2
Tuesday	7	2	2	3
Wednesday	12	9	1	2
Thursday	7	3	0	4
Friday	11	6	1	4
Saturday	14	7	0	7

Time	Total Fires	Structure Fires	Vehicle Fires	Other Fires
00:01 - 04:00	5	2	0	3
04:01 - 08:00	4	3	0	1
08:01 - 12:00	9	7	0	2
12:01 - 16:00	12	7	0	5
16:01 - 20:00	17	8	1	8
20:01 - 00:00	21	9	3	9

Motor Vehicle Fires

Total: 4

Automobiles: 3 (75%)

None of the automobile fires were considered to be intentionally set.

Arson Fires**Total Arsons: 7****\$0**

Situation	Arsons	% of Situation	% of Arson	Dollar Loss
Structure Arsons	1	3%	14%	\$0
Vehicle Arsons	0	0%	0%	0
Other Arsons	6	21%	86%	0

No Injuries

0.38 Arson fires/1,000 population

0.05 Structure arsons/1,000 population

0.00 Vehicle arsons /1,000 population

0.22 Other arsons/1,000 population

Peak Times of Day for Arson Fires

Structure Arsons	#	%
04:01 - 08:00	1	100%

Other Arsons	#	%
20:01 - 00:00	4	67%
00:01 - 04:00	1	14%
16:01 - 20:00	1	14%

Peak Fixed Property Uses for Structure Arsons

Occupancy	#	%
Apartments	1	100%

Appendix

2008 Fires By County

County	Total				Civilian		Fire Service		Dollar Loss
	Fires	Structure Fires	Vehicle Fires	Other Fires	Deaths	Injuries	Deaths	Injuries	
Barnstable	1,081	481	124	476	6	40	0	18	\$10,337,845
Berkshire	713	430	46	237	1	7	0	7	6,997,973
Bristol	2,311	822	311	1,178	3	32	0	20	13,011,869
Dukes	18	11	3	4	0	0	0	0	437,500
Essex	2,887	1,628	326	933	8	13	0	45	25,585,337
Franklin	298	154	31	113	0	2	0	3	1,774,935
Hampden	2,485	1,395	271	819	6	48	0	73	20,446,331
Hampshire	518	223	42	253	2	13	0	6	5,902,133
Middlesex	5,260	3,402	506	1,352	7	56	0	136	48,545,309
Nantucket	24	13	5	6	0	0	0	0	3,320
Norfolk	3,067	1,830	290	947	5	26	0	99	26,505,096
Plymouth	1,773	774	232	767	5	28	0	48	17,351,650
Suffolk	5,535	3,833	428	1,274	4	37	1	70	52,226,746
Worcester	4,166	2,202	461	1,503	2	35	0	97	25,067,689
Total	30,136	17,198	3,076	9,862	49	337	1	622	\$254,193,733

2008 Arsons* By County

County	Total				Civilian		Fire Service		Dollar Loss
	Arsons	Structure Arsons	Vehicle Arsons	Other Arsons	Deaths	Injuries	Deaths	Injuries	
Barnstable	93	12	7	74	0	2	0	0	\$260,332
Berkshire	42	8	1	33	0	0	0	0	3,946
Bristol	129	31	22	76	0	0	0	4	1,528,560
Dukes	0	0	0	0	0	0	0	0	0
Essex	134	21	17	96	0	1	0	3	623,707
Franklin	14	1	1	12	0	0	0	1	2,700
Hampden	92	29	14	49	0	2	0	4	383,401
Hampshire	51	1	2	48	0	0	0	0	21,409
Middlesex	174	40	27	107	1	2	0	2	1,844,516
Nantucket	0	0	0	0	0	0	0	0	0
Norfolk	86	17	6	63	0	0	0	0	855,325
Plymouth	99	34	9	56	2	1	0	5	1,275,930
Suffolk	124	49	20	55	2	3	0	7	1,878,454
Worcester	143	36	24	83	0	0	0	11	3,301,894
Total	1,181	279	150	752	5	11	0	37	\$11,980,174

*For statistical purposes in MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

2008 Fires, Arsons and Deaths By County and By Population*

County	Population	Total Fires	Fires per 1,000 Pop.	Fire Deaths	Deaths per 1,000 Fires	Deaths per 10,000 Pop.	Total Arsons	Arsons per 1,000 Pop.
Barnstable	222,230	1,081	4.9	6	5.6	0.27	93	0.4
Berkshire	134,953	713	5.3	1	1.4	0.07	42	0.3
Bristol	534,678	2,311	4.3	3	1.3	0.06	129	0.2
Dukes	14,987	18	1.2	0	0.0	0.00	0	0.0
Essex	723,419	2,887	4.0	8	2.8	0.11	134	0.2
Franklin	71,535	298	4.2	0	0.0	0.00	14	0.2
Hampden	456,228	2,485	5.4	6	2.4	0.13	92	0.2
Hampshire	152,251	518	3.4	2	3.9	0.13	51	0.3
Middlesex	1,465,396	5,260	3.6	7	1.3	0.05	174	0.1
Nantucket	9,520	24	2.5	0	0.0	0.00	0	0.0
Norfolk	650,308	3,067	4.7	5	1.6	0.08	86	0.1
Plymouth	472,822	1,773	3.7	5	2.8	0.11	99	0.2
Suffolk	689,807	5,535	8.0	4	0.7	0.06	124	0.2
Worcester	750,963	4,166	5.5	2	0.5	0.03	143	0.2
Massachusetts	6,349,097	30,136	4.7	49	1.6	0.08	1,181	0.2

*Population statistics based on 2000 U.S. Census Bureau data.

2008 Non-Fire Responses By County and By Incident Type

County	Total Non-Fire Responses	Overpressure Rupt. & Explos. (No-fire)	Rescue EMS Incidents	Hazardous Conditions (No-fire)	Service Calls	Good Intent Calls	False Alarm Calls	Severe WX ¹ & Natural Disaster	Special Incident Type
Barnstable	37,270	53	26,838	1,747	2,562	1,506	4,354	56	154
Berkshire	11,921	23	6,453	945	1,824	557	2,006	59	54
Bristol	43,959	64	25,424	2,722	3,479	3,315	8,599	62	294
Dukes	129	1	4	10	3	1	109	0	1
Essex	68,431	131	37,489	3,922	8,865	5,000	12,468	119	437
Franklin	4,506	11	1,916	461	747	550	716	39	66
Hampden	40,334	91	23,099	2,090	3,977	3,277	7,547	70	183
Hampshire	10,060	34	5,359	805	685	596	2,425	45	111
Middlesex	139,279	189	74,464	10,080	14,857	7,993	26,138	281	5,277
Nantucket	1,911	1	798	115	414	21	560	1	1
Norfolk	77,473	93	46,214	5,189	8,671	4,542	11,928	57	779
Plymouth	45,174	94	27,643	3,635	4,886	2,869	5,601	145	301
Suffolk	86,517	81	40,436	4,436	12,465	13,036	15,767	25	355
Worcester	82,272	116	50,864	5,785	7,457	4,534	12,306	431	779
Massachusetts	649,236	982	366,917	41,942	70,892	47,797	110,524	1,390	8,792

¹ WX is the abbreviation for Weather.